

Appendix D

Natural and Built Environment Baseline



POOLE & CHRISTCHURCH BAYS SMP2

Sub-cell 5f

Appendix D

Natural and Built Environment Baseline

(Thematic Studies)

Bournemouth Borough Council

October 2010

Final Report

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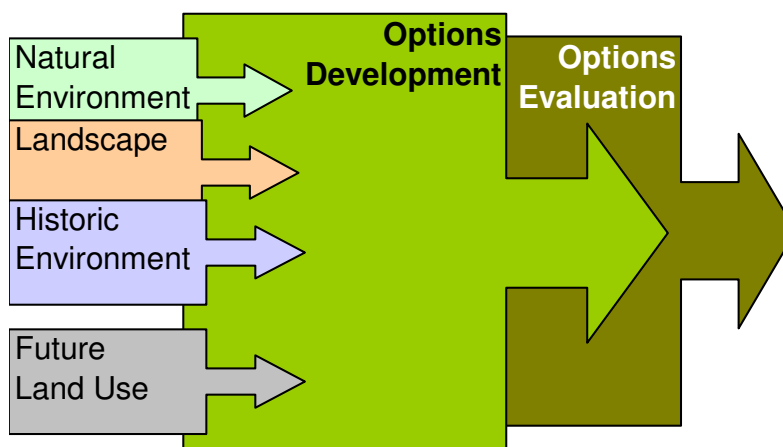
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1 Introduction

This Appendix provides a thematic review that establishes the key features along the coast and describes why these features collectively summarise the value of this area of coast. The values identified relate to the natural features of the coast, the landscape and character of the area and the historic structures and spatial features that define the overall character of this section of coast. It describes what make Poole and Christchurch Bays unlike any other section of the English coastline.

Thematic Basis of Options Development



The description of the coast in this way provides the foundation for shoreline management that accounts for the particular character of the area. It provides an understanding of the key elements that shape the unique character of this stretch of coast. Additionally, the likely future land use patterns in the study area have been reviewed based on a consideration of the relevant strategic and land use plans. The provision of this information underpins the development of policy options for the coast and informs a considered approach to options evaluation.

There are no conclusions drawn from this descriptive report. Its aim is to familiarise the reader with the diverse human, natural and historic environment of the Poole and Christchurch Bays. Separate reports cover coastal processes, structures and the Strategic Environmental Assessment.

2 Current and Future Land Use

This section provides an account of the urban environment in terms of existing land uses and patterns of development. The relevant regional strategies and local land use plans have been used as a structured basis for this description. With the introduction of Regional Spatial Strategies and Local Development Frameworks, the planning system is currently undergoing reformation and the majority of land use plans are either under review or to be replaced. The study area has been broken down by local authority boundary with an initial description offered from a regional perspective. Given that the use of land is determined by the statutory planning process, statutory plans have been the main focus of this study.

The regional plans that have formed the basis of this assessment are:

- Regional Planning Guidance for the South West - RPG 10
- Regional Planning Guidance for the South East – RPG 9

On a national level, Planning Policy Statement 9 (PPS9) on Biodiversity and Geological Conservation (2005) establishes the Government's policies on the protection of biodiversity and geological conservation through the planning system. Although not aimed at Shoreline Management Plans (SMP) in particular, the key focus within PPS 9 is that development (or for example SMP policy) should not harm biodiversity and geological conservation interests, unless there is sufficient reasoning (or benefits) that outweigh the impact.

At county level, the Bournemouth, Dorset and Poole Structure Plan (CSP28) provide current policy.

Local planning policy has been related to the following:

Borough of Poole (BoP)

- Regional Spatial Strategy (2006)
- Poole Local Development Scheme (2007)
- Bournemouth, Christchurch, East and North Dorset and Salisbury SFRA (2008)
- Bournemouth, Dorset and Poole Structure Plan (2000)
- Poole SFRA levels 1 and 2 (2008)

Bournemouth Borough Council (BBC)

- Regional Spatial Strategy (2006)
- Bournemouth, Dorset and Poole Structure Plan (2000)
- Bournemouth Local Development Scheme (2007)

Christchurch Borough Council (CBC)

- Regional Planning Guidance for the South West (2001)
- The Draft Regional Spatial Strategy for the South West 2006 – 2026 (2006)
- Borough to Christchurch Local Plan (2001)
- Christchurch Community Plan (2004)

- Christchurch and East Dorset Core Strategy (2008)
- Christchurch Beaches and Hinterland Management Plan 2008 – 2018 (2007)

New Forest District Council

- New Forest District Local Plan Part B (2005)
- New Forest District Local Plan (2005)
- New Forest District Council Local Development Framework: Core Strategy (2008)
- New Forest Corporate Plan 2008 - 2012 (2007)

Purbeck District Council

- Purbeck District Local Development Scheme (2007)
- Regional Development Strategy (2008)
- Purbeck District Local Plan (2011)
- A Sustainable Future for Purbeck (2001)
- Community Plan for Purbeck 2006 – 2009 (2005)

Compared to the cohesive management arrangement applied to the land, management of the marine environment has been disjointed. To improve this situation, a Draft Marine Bill was published in 2008. The Marine Bill aims to:

- create a strategic system of marine spatial planning,
- streamline and simplify licensing of particular activities at sea,
- revise measures for inshore fisheries management, and
- consider the need for a new maritime management organization.

In addition to the Marine Bill, the Water Framework Directive (WFD) has been introduced to improve and integrate the way water bodies, including coastal waters, are managed throughout Europe. The WFD is designed to:

- enhance the status and prevent further deterioration of aquatic ecosystems and associated wetlands, which depend on the aquatic ecosystems,
- promote the sustainable use of water,
- reduce pollution of water, especially by 'priority' and 'priority hazardous' substances, and
- ensure progressive reduction of groundwater pollution.

In the UK, much of the WFD implementation work will be undertaken by competent authorities. It came into force in December 2000, and was put into UK law in 2003. Under this framework, Member States must aim to reach good chemical and ecological status in inland and coastal waters by 2015 (from Defra website).

It is anticipated that these two legislative items will encourage a more cohesive management of the marine environment in the future.

2.1 Overview

This section presents an overview of the coastline from Hurst Spit to Durlston Head. The coast is divided into sub-cells, and these are described in turn. The sub-cells and key features are shown in Figure 2.1.

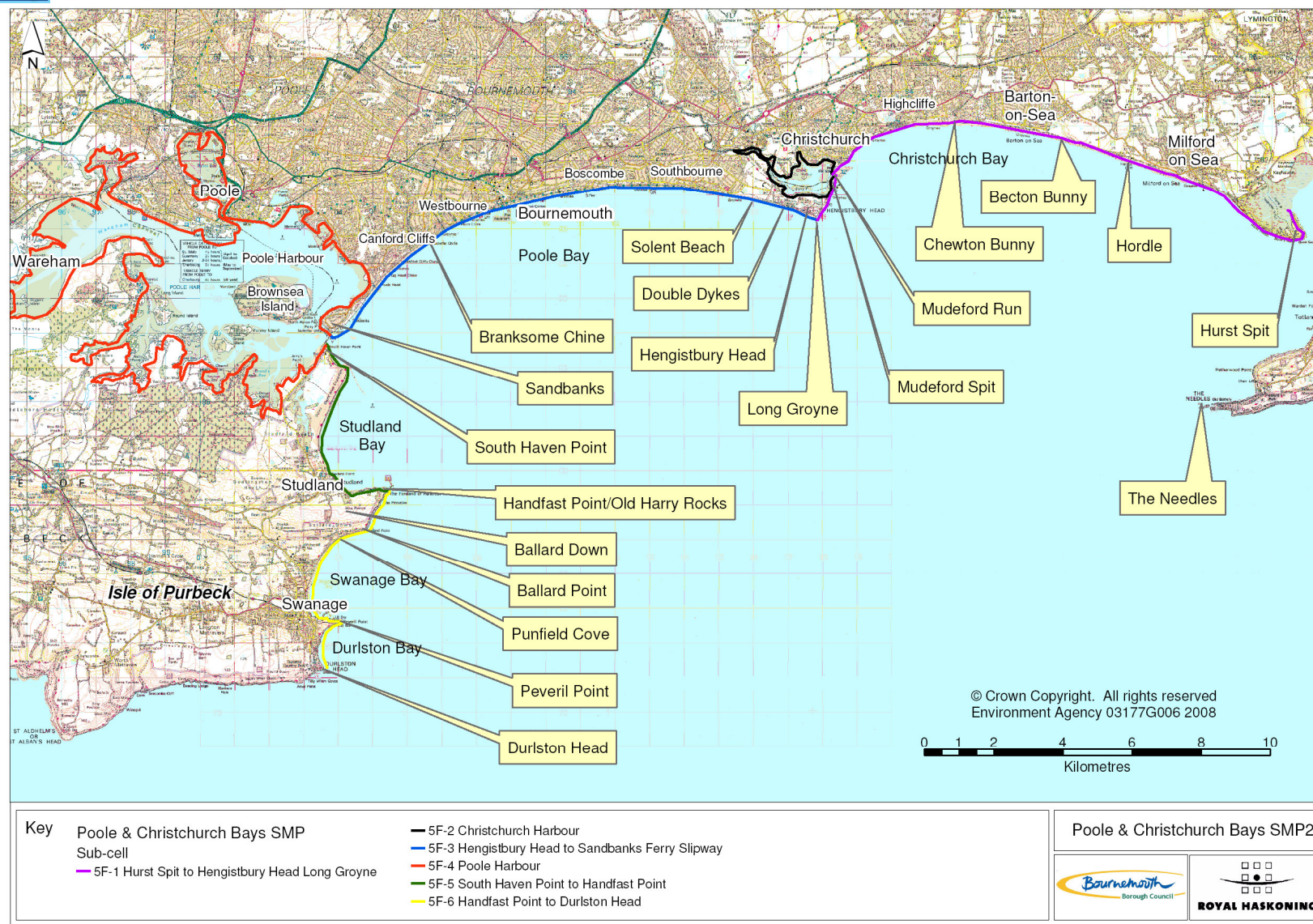


Figure 2.1 Overview Map

The main urban areas along the Shoreline Management Plan (SMP) coastline are Bournemouth, Christchurch and Poole. Smaller towns include Swanage, Wareham, Milford-on-Sea and Barton on Sea. There is considerable pressure for new residential development along the coast, owing, in part, to the substantial inflow of retired people to the region, and the continued demand for premium waterfront properties, particularly when associated with leisure facilities.

Sub-cell 5F-1 Hurst Spit to Hengistbury Head

This sub-cell covers all of Christchurch Bay. It is relatively undeveloped along the eastern coastline, with development increasing towards the west with Milford-on-Sea, Barton on Sea and the suburbs of Christchurch. This area consists mainly of residential properties, with tourism and service industries providing the main commercial and industrial activity. These settlements generally have an older than average population, with many people choosing to retire here.

The whole of this coast is accessible to the public with car parks and amenities at Milford-on-Sea, Barton on Sea and Taddiford Gap. The bathing water in the bay meets EC quality standards, and water-based sports such as swimming, sailing and fishing are popular (Milford-on-Sea Parish Council 2007). Sections of the cliffs along this section of the coast are constantly eroding and have resulted in considerable coast protection and management works in specific locations.

At the end of Hurst Spit is Hurst Castle (Figure 2.2), built for Henry VIII in the 1540s and currently under the stewardship of English Heritage (Milford-on-Sea Parish Council 2007). Access to Hurst Spit is by foot or boat, and it is a popular tourist destination.

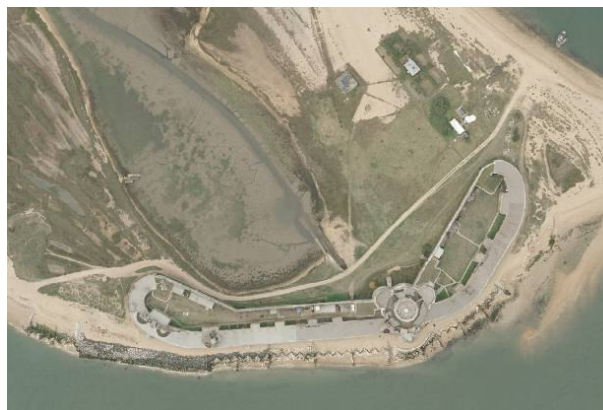


Figure 2.2 Aerial view of Hurst Castle

(Image courtesy of Channel Coast Observatory)

Milford-on-Sea originated in the centre of an agricultural parish, when the coastline was further south than it is now. The village expanded rapidly over the past 100 years, and is currently experiencing extensive redevelopment at the western end of the cliff. The area has a considerable amount of open space such as Hordle, Hurst Spit, Sturt Pond and Rook Cliff, as well as Studland Common, local sports grounds and golf courses.

Barton on Sea and Highcliffe are separated from Milford-on-Sea by an extensive clifftop golf course. The two towns mainly comprise of residential developments. These developments lie along the A337, the main east-west link road between Christchurch and Lymington. The county boundary between New Forest District Council and Christchurch Borough Council lies between Highcliffe and Barton on Sea, along a natural feature called Chewton Bunny. The beaches here are also popular with beach huts along the front and good facilities for visitors.

Sub cell 5F-2 Christchurch Harbour

Christchurch Harbour is a popular tourist destination, with the town of Christchurch (situated to the north and east of the Harbour) providing tourist accommodation and facilities. The Harbour has well-developed boating, windsurfing and fishing facilities, with Mudeford Quay the centre of the local sea fishing industry.

Christchurch is a residential and tourist town with a strong retirement population (approximately 34% of the population are over 65). This older population supports the local economy year round (services and retail), in addition to the tourism/holiday facilities in the summer.

The western side of Christchurch Harbour consists of marshland and is undeveloped. This area is popular with bird enthusiasts and retains its natural condition. The south western corner is dominated by a golf course and driving range. The communities of Mudeford and Mudeford Quay are located on the eastern spit of the entrance to Christchurch Harbour and comprises a quay, car park, boat park and offices. The quay is a popular destination, and ferries depart for points around the harbour and to Mudeford Sandbank. Approximately 130 static holiday caravans are situated at Sandhills behind Mudeford Quay and adjoining the coast.

The western sandspit is known as Mudeford Sandbank, a community of highly valued beach huts, a café and facilities. The sandspit is protected by rock groyne defences (Figure 2.3).



Figure 2.3 Mudeford Sandbank Beach Huts

Sub cell 5F-3 Hengistbury Head to Sandbanks Slipway

Hengistbury Head lies at the eastern extremity of this sub-cell. This undefended natural high point and landmark is a very popular walking and recreational spot, with a large visitors car park. The area is used year round by local residents and visitors. Access is possible to Mudeford Spit from here, and also to quiet beaches in front of the Hengistbury Head cliffs.

The frontage is highly developed west of Hengistbury Head, and is protected by a combination of rock and wooden groynes from Double Dykes westwards. The coast from Double Dykes to Hengistbury Long Groyne is undefended. This frontage includes Bournemouth and its suburbs Southbourne, Boscombe and Westbourne. The boundary between Bournemouth Borough Council (BBC) and Borough of Poole (BoP) lies at the eastward side of Branksome Chine, with Canford Cliffs and Sandbanks lying in the Borough of Poole. It is important to note that most of the Bournemouth frontage is privately owned with BBC as a lessee.

Bournemouth is a very popular recreational and tourist area that attracts 5.2 million visitors a year to its 8km (5 miles) of beach, promenade, and piers (Seafront Strategy Study 2006). The beach is considered Bournemouth's greatest asset, and a beach recharge programme ensures there is a healthy beach, providing amenity and coast protection.

BBC maintains 31 public buildings, over 500 seafront chalets, piers at Bournemouth and Boscombe (Figure 2.4), and a range of stores, depots and offices along the frontage. Additionally there are three cliff lifts (funicular railways) that enable access to the beach in addition to the numerous paths and steps. To minimise beach disruption any maintenance or improvements to the frontage is carried out in the winter months (BBC 2006).



Figure 2.4 Boscombe Pier

The frontage is very popular year round for recreational activities such as cycling, walking, running, fishing, bathing, surfing, personal watercraft use and paragliding. The piers are open year round and are frequently used for fishing.

Seasonal local cruises on the paddle steamers *Waverley* and *Balmoral* operate from Bournemouth Pier, as do regular trips by the *Dorset Belles* and the *Shockwave* speedboat (PHSG, 2006). Bournemouth is also preparing for an anticipated increase in visitors due to the 2012 Olympics sailing activities to be based in nearby Weymouth.

Bournemouth also hosts a range of regionally important events, such as fireworks shows, carnivals, live music festivals, boat races, car rallies and air shows. These events have and require good management and facilities due to their popularity (Figure 2.5).



Figure 2.5 Bournemouth beach

Photograph: Corbis

Crossing the boundary between BBC and BoP at Branksome Chine, there is no significant change in character of the beachfront, consisting of sandy beaches, wide promenade and seafront amenities. The Poole communities of Branksome and Canford Cliffs lie above the cliff which is punctuated with Branksome Dene Chine and Flag Head Chine.

The residential settlements that lie along the shoreline, particularly the community of Sandbanks, currently represent some of the most expensive properties in the area. Local government has demonstrated the need for affordable housing facilities in the area. However, the amount of undeveloped land in the Borough is limited, particularly within coastal areas, thus demand for residential flats to be re-developed has grown. As a result of this a number of proposed 'flat character areas' have been designated for the development of residential flats.

This stretch of coastline is well defended with seawalls and groynes. Rock groynes have recently been installed along the Sandbanks peninsular, and large car parks cater for the high numbers of visitors in the summer.

Sub-cell 5F-4 Poole Harbour

Poole Harbour is heavily developed along its northern side, with the borough of Poole between North Haven Point and Rockley Point. There is very little development on its eastern, and southern sides with the exception of Wareham. Poole is the most commercially active area in the unit, and properties along the waterfront are mostly commercial with limited high valued residential properties (i.e. Sandbanks community). A car and passenger ferry links the Sandbanks peninsula to the Studland peninsula.

There are residential waterfront communities at Lilliput, Parkstone and Hamworthy, with a large static caravan site at Rockley Sands. A railway links these communities with Bournemouth and Wareham, crossing Parkstone Bay, Holes Bay and Lytchett Bay by means of viaducts. The A35 trunk road also links Bournemouth and Poole. Hamworthy Quays and Old Town (with access to the port and industry) are connected by Poole Bridge, which is a lifting bridge and is often congested with traffic.



Figure 2.6 Aerial view of Poole Quays

(Image courtesy Channel Coast Observatory)

Poole Quays (Figure 2.6) is a busy commercial port facilitating cargo carrying vessels as well as cross-channel ferries, handling over 400,000 tonnes of cargo, over 70,000 units of roll-on/roll off freight traffic and around 700,000 ferry passengers per year. The ferry terminal has two Ro/Ro berths and covers 18 hectares (44 acres).

To maintain access for these larger vessels, the Harbour channels are dredged. Some of the dredged sediment has been used to maintain beach levels in Bournemouth, Poole and Swanage.

The area is a popular base for tourists and visitors, offering plenty of facilities. Poole Harbour is a shallow and well-protected with an extended period of high water, making it ideal for inshore water activities such as windsurfing, kite surfing, wakeboarding, water skiing, dinghy sailing and canoeing.

Poole Harbour is under the authority of Poole Harbour Commissioners, a non-profit making trust, who control any development extending below Mean High Water such as jetties and marinas, as well as maritime traffic in the Harbour. Existing alongside these large-scale commercial activities is an important local commercial fishing community, with approximately 100 boats based in the port, and areas of the seabed used for the cultivation of shellfish.

There is a significant area of light industry at Hamworthy & Holes Bay. One of the largest private sector employers in the county are Sunseeker, who construct luxury craft at their factories on the south side of Little Channel. There are also a number of yacht clubs, several thousand moorings and a Ministry of Defence (MoD) base along the northern side of the Harbour (PHSG, 2006). The Royal National Lifeboat Institution (RNLI) has its headquarters based in Poole, along with a training college. Private boat use is a major economic driver in Poole, with many small industries engaged in retail, maintenance and construction of small vessels.

There are a number of low-lying islands in the harbour, the largest of which is Brownsea Island. The island is owned by the National Trust, with Branksea Castle (Figure 2.7) on the eastern side of the island leased to a private company, and approximately 40% of the island leased to Dorset Wildlife Trust. The island does support a small local population, and some accommodation is available for visitors. Brownsea is a major attraction for bird watchers and nature



Figure 2.7 Branksea Castle Jetty

enthusiasts and supports a small but stable population of red squirrel. It is accessible to visitors by ferry from Sandbanks, Poole Quay and Swanage.

The second-largest island in the harbour is Furzey Island, containing Wytch Farm oil field, owned by BP and consisting of three separate oil reservoirs under Poole Harbour and Poole Bay. Drilling extends to 10km offshore to a depth of 1640m. This is the UK's largest inshore oil field, and this facility produces an average of 23,000 barrels of oil and 50 tonnes of Liquefied Petroleum Gas (LPG) per day. The original estimated capacity of the oil field when discovered in 1959 was 480million barrels (BP 2009). Other oil wells are located on Goathorn, Ower and Fitzworth Points.

Wareham (Figure 2.8) is situated at the western end of Poole Harbour, between the mouths of the Rivers Piddle and Frome. The historic part of the town is compact, and further development in the town is constrained by river valleys and the original Saxon earth ramparts that surround the town.



Figure 2.8 Wareham Quay

Sub cell 5F-5 South Haven Point to Handfast Point

Studland Bay lies to the south of Poole Harbour entrance, from South Haven Point to Handfast Point. It is primarily a long sandy beach, backed by dunes and heathland with limited development along its coastline. The heathland is a nature reserve owned and managed by the National Trust and designated under European & International directives & conventions.

South Haven Point at the northern end of the peninsular has the slipway for the Sandbanks ferry. A sculpture at South Haven Point marks the start or the end of the South West Coastal Footpath. This is the longest National Trail in the UK, and follows the coast from Poole Harbour to Minehead in Somerset.

Shell Bay is located at the northern end of the bay, with the small village of Studland located at the southern end of the Bay. The village of Studland consists of a small community of houses and shops (some of which cater for tourists), community open space, bed and breakfasts, a large hotel, village pubs and community buildings. Despite the influence of tourism at Studland, the village has managed to retain its local charm and character.

Studland Bay receives up to 1.5 million visitors a year, attracted by the sandy beaches and a range of beach and water-based activities. Visitors use the chain ferry from Sandbanks to South Haven Point for access, as it is a considerable drive around Poole Harbour.

5F-6 Handfast Point to Durlston Head

There are two bays in this sub-cell: Swanage Bay and Durlston Bay, separated by Peveril Point. To the north of Swanage Bay is Ballard Point and Ballard Down, owned and managed by the National Trust. Further north is Handfast Point (also known as The Foreland), which is the remnants of a chalk ridge that once extended to the Isle of Wight, indicated by the landmarks of Old Harry Rocks (Figure 2.9).



Figure 2.9 Old Harry Rocks (Handfast Point)

To the south of the bay lies the town of Swanage, a small town with some commercial activity based on local retail and fishing industries. The town sits behind both Swanage and Durlston Bays, and has a promenade along part of its frontage and a recently refurbished pier.

Swanage is popular for boating, fishing, diving and climbing, and the area draws a reasonable number of visitors. Swanage Bay is a long sandy beach (Figure 2.10)



Figure 2.10 Swanage Beach

defended with wooden groynes and beach recharge. Houses and hotels are situated on or close to the cliff top. Some parts of the cliff are eroding and slumping in places, and various cliff stabilisation measures have been undertaken in front of individual properties. Further north towards Ballard Point the beach is undeveloped and consists of beaches, cliffs and dunes. There are a number of huts along the beach.

Durlston Bay has a small amount of development protected by a revetment in the centre of the bay and is undeveloped towards the north and south. At the southern most point of Durlston Bay is Durlston Castle, built in 1886 of local stone. The castle is currently being renovated to house the Jurassic Coast Visitor Centre. Durlston Country Park covers 113 hectares and is owned and managed by Dorset County Council.

2.2 Shoreline Management Plan Population Dynamics

The resident population of the County of Hampshire in 1991, excluding Portsmouth and Southampton was 1,169,986; by 2001 this had risen to 1,240,103. This represents an increase of over 6%, compared to an increase of 4% from 1981 to 1991. This is an average population for a non-metropolitan county in England and is similar to the other coastal counties of East and West Sussex.

In the County of Dorset as a whole, including Bournemouth and Poole, the population increased from 645,200 in 1991 to 692,700 in 2001, an increase of 6.8%. During the same period, the population of Purbeck increased by 4.6%, from 42,445 to 44,416. In contrast, the population of England and Wales grew by only 0.12% between 1981 and 1991, suggesting that population increases in the SMP area are caused by in-migration from other parts of the country.

Population statistics showing changes in population in the main settlements of Milford-on-Sea, Christchurch, Bournemouth, Poole, Wareham and Swanage are shown in Table 2.1. These figures are based on the 1991 and 2001 census, which measures population on the day of the census.

Table 2.1 Populations statistics (census-based data)

Town	Total Population (2001)	Total Population (1991)	Increase (%)
Milford-on-Sea	4,703	4,434	5.7
Christchurch	44,869	41,123	8.3
Bournemouth	163,441	151,302	7.4
Poole	138,299	133,055	3.8
Wareham	5,620	5,680	<1
Swanage	10,140	9,520	6.1

Source: 2006-Based Sub-national Population Projections, ONS, Crown Copyright

This table shows Bournemouth and Christchurch experiencing the largest growth in population, while Poole and Wareham have only moderate increases. There has been almost no increase in the population of Wareham.

Along the highly developed parts of the coast, conflict exists between residential development of waterfront areas and other activities, such as boatyards and quays, which have no alternative venues but do not have the same high economic value. Recent urban developments have included substantial marinas with associated housing such as Moriconium Quay, in Poole.

2.3 Future planning targets

The Office for National Statistics produces *trend-based* sub-national population projections. These projections are based on observed levels from 2002 to 2006 and do

not take into account any future policy changes or local development policies that have not yet occurred. The latest sets are the 2006-Based Sub-National Projections and are constrained to the 2006 Mid-Year Population Estimates. A summary of these projections is shown in Table 2.2.

Table 2.2 Population projections for Bournemouth, Poole and Christchurch

Town	Year					
	2006	2011	2016	2021	2026	2031
Bournemouth	161,200	161,600	162,400	164,200	167,000	170,600
Poole	136,900	137,000	138,100	140,200	142,700	145,100
Christchurch	45,000	45,500	46,300	47,500	48,800	50,100

Source: 2006-Based Sub-national Population Projections, ONS, Crown Copyright

These population projections estimate a 3% increase for Christchurch and <1% increase for Poole and Bournemouth over ten years, with an estimated increase of 10% for Christchurch and 5% increase for Poole and Bournemouth over 25 years.

Over the last 10 years this region's population has grown by an average of 3% per annum and this trend is forecast to continue over the next 20 years. This has been identified as 'in-migration' of people and companies relocating from London and the South East. The Regional Spatial Strategy must enable delivery of this growth where it is sustainable to do so.

The Draft Regional Spatial Strategy identifies the following:

- The average age of the population will rise, and
- In absolute terms, the UK will get richer – many forecasts assume a 3% growth per annum, but inter- and intra-regional differences will persist.

The Draft Regional Spatial Strategy provides a clear focus on regeneration, with an emphasis on enhancing the tourism resource or diversification of the economic base. Accordingly the strategy will seek to maximise the benefits of coastal land for these purposes and maximise existing benefits and consolidate existing resources.

Previous expansion of Bournemouth and Poole is not considered to be sustainable for the future. Nature and landscape designations, at both national and international levels, limit future release of Greenfield land, with further constraints being the coast and areas of flood plain. Future physical development should be focused within the existing built up areas.

Bournemouth and Poole are identified in the RPG10 (Regional Planning Guidance for the South West) as Principal Urban Areas (PUA). Policy SS13 (Bournemouth and Poole) of RPG10 recommends the following be achieved:

- Further economic expansion by attracting high skill employment and improving educational and training levels due to the constraint on physical expansion,
- Conservation and enhancement of the national and international environmental designations,
- An improved public transport system,

- More efficient use of land and buildings within the urban areas through conversion, redevelopment and increased residential building densities, and
- Continued development of the Port of Poole and Bournemouth International Airport, including improvement of regional and local transport links.

Objectives for the coast are identified as:

- Regenerate coastal towns and communities, reinforcing their economic and social roles, and
- Conserve the environment of the coast and coastal waters, protecting undeveloped coast from inappropriate development.

RPG 10 proposes that outside of the PUAs future development should generally avoid significant growth in the larger towns, such as Swanage and Christchurch, which are within easy commuting distance of a PUA, in this case Bournemouth and Poole. It is recommended that housing development should not proceed out of step with employment.

There are continuing pressures for leisure, recreation, tourism and housing developments on the undeveloped sections of coastline. Future policies should aim to keep these areas substantially undeveloped, provided that the legitimate development needs of such areas can be met within the nearby urban areas or in less sensitive locations away from the coast.

In summary, Bournemouth and Poole are expected to increase in density through redevelopment, while smaller towns such as Swanage, Wareham, and Christchurch will experience a small increase in size, depending on the economic climate. The undeveloped parts of the coast are expected to remain undeveloped. Transport links are expected to improve, particularly near the ports and airports.

3 Natural Environment

The provision of shoreline management policies fundamentally seeks to provide the most practical, sustainable and equitable approach to protecting the environmental, social and economic values of the coastal zone. The environmental values have therefore been described as Nature Conservation, which encompasses all the designated areas within the study area and also the sites and features, which are important from an earth heritage perspective. The description of these two facets of the natural environment is entirely consistent with management of such areas by Natural England.

Earth heritage sites are also often important in their own right (for example exposures of fossil beds or type exposures) but equally in that they are intrinsically linked to natural processes, which critically underpin the maintenance of ecological values in the coastal zone. The natural environment within the coastal zone encompassing the area either side of the shoreline management line covered in this SMP includes terrestrial, intertidal and marine habitats and geology. Within the study area a wide diversity of sites and features are found which reflects the area's physical diversity and co-evolutionary past where human activity has shaped the landscape and local ecology.

3.1 Landscape and natural character assessment overview

Landscape character is an important national resource that is part of our natural and cultural inheritance, widely appreciated for its aesthetic beauty, contribution to regional identity and sense of place. The recognition of coastal landscape values is therefore critical to the choice of coastal defence options, since the consequences of such actions have the potential to radically change the coastal landscape.

Landscape Character Assessment (LCA) is an approach to understanding the differences between landscapes, and can serve as a framework for decision-making that respects local distinctiveness. It is a way of 'unpacking' the landscape and understanding how its distinctive elements contribute to sense of place. As such, LCA is a useful tool for engaging stakeholders in sustainable development. Communities, developers, farmers and land managers, landscape and planning professionals and others all have a role in identifying the characteristics that make a particular landscape unique, and using this understanding to plan and manage landscape change.

This section therefore reviews the identified coastal landscape features for the study area as they have been identified by means of local study or designation.

Key landscape features in this SMP are shown in Figure 3.1.

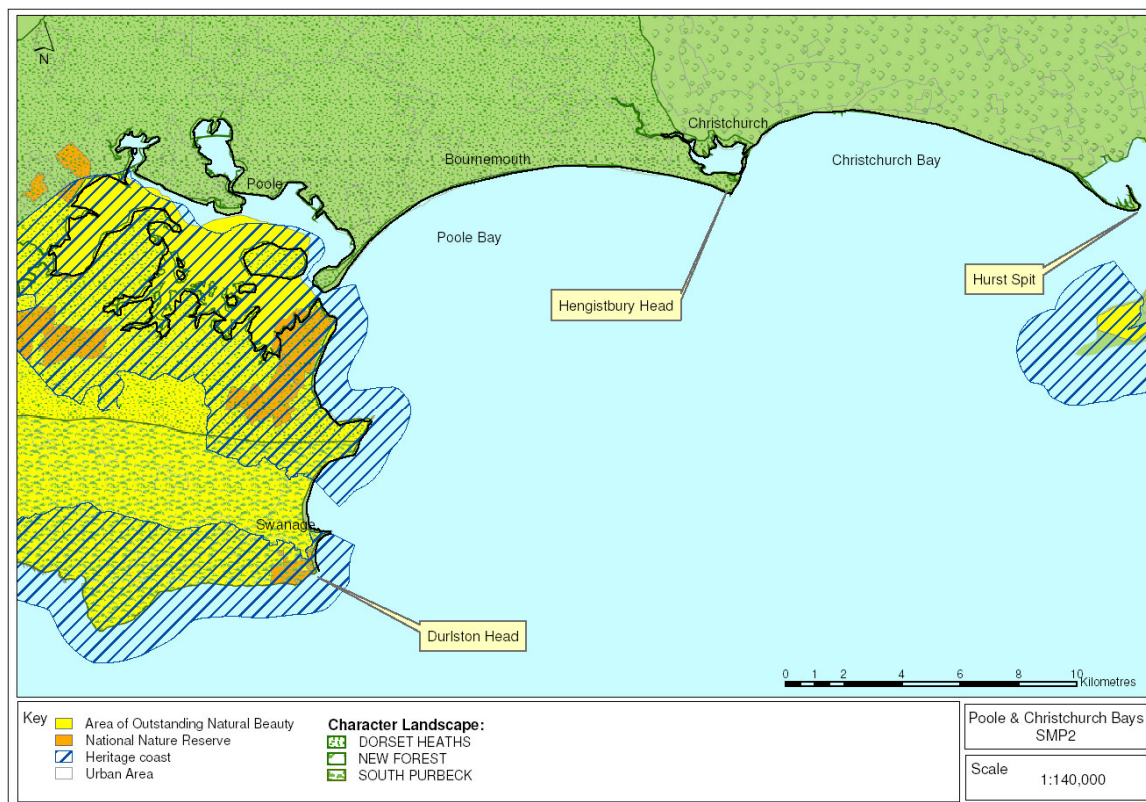


Figure 3.1 Key landscapes of the Poole and Christchurch Bays SMP2

Each sub-cell is described in terms of three spheres of environment:

- landscape environment
- coastal environment
- marine environment

Landscape environment discusses the inland nature of the coast, coastal environment describes the beach and intertidal nature of the coast, and marine environment describes the sub-tidal and offshore environments.

Sub-cell 5F-1 Hurst Spit to Hengistbury Head Long Groyne

Landscape Environment

Hurst Spit consists of a narrow shingle embankment extending approximately 2.5km seawards with a castle and lighthouse at its eastern tip. There is open sea to the south and saltmarsh creeks to the north. This is an area with a special sense of remoteness, being accessible only by foot or boat, and is of great natural beauty, which is accentuated by its sense of history.

The coastline here is generally open and exposed, producing characteristic windswept forms of growth. Key features are the soft eroding cliffs, shingle beaches and small wooded areas.

There are large areas of public open space and car parks along the cliff tops which are well used by local residents and visitors.

Milford-on-Sea to Highcliffe consists of low-lying slumped cliffs behind a sand and shingle beach. The cliffs between Highcliffe and Milford-on-Sea have not been designated as being of international geological importance. However they are considered to be of national importance due to stratigraphic, structural and fossil flora and fauna for the Tertiary to Palaeolithic geological periods. Important sites include:

- The cliffs between Highcliffe and Barton on Sea
- The coast from Friars Cliff to Milford-on-Sea
- Hordle Cliff

Between Highcliffe and Mudeford Quay there is a narrow sand and shingle beach protected from erosion by timber groynes, rock groynes, and concrete seawalls with areas of shingle recharge. Despite these defence works, erosion is still ongoing which allows access to the fossil rich Barton and Headon Beds, particularly from Friars Cliff to Milford-on-Sea.

Chewton Bunny is the only site to yield fossil plants from the Lower Barton Beds, whilst the Barton Cliffs are important for early Tertiary reptiles, particularly turtles. Paddy's Gap is a famous fossil plant locality with abundant fossil fruit remains. Hordle Cliff is a key site for fossil birds, mammals, reptiles and plants. There are seven genera of fossil plants found only at this site in Britain. Associations of plant fossil with faunal remains make this a valuable site for palaeoenvironmental analysis. This is a critical site for European Tertiary palaeobotany and palaeoecology.

Coastal Environment

The beach at Hurst Spit is mainly composed of shingle, which supports little vegetation. However, the shingle ridges at Hurst Spit support an important flora that is dependent on the substrate. Intertidal mudflats, cord-grass marshes and level mixed saltmarsh occur to the north of Hurst Spit and around Sowley Pond. These areas support large breeding and over-wintering populations of wildfowl and other birds.

The coastal cliffs are vegetated in places and form a habitat-type associated with soft cliffs. This includes species such as willow, reeds, reedmace and coltsfoot. In other areas the cliffs are actively eroding and are devoid of vegetation. The vegetated and open cliffs provide habitats for a range of invertebrates.

Marine Environment

Offshore to the south of Hurst Spit is the deepest area of the Solent reaching 60m in depth, and encompassing a diverse range of habitats and communities. The subtidal marine life represents a transition between the warm temperate (Lusitanian) and cold temperate (Boreal) marine biogeographic provinces, resulting in a rich variety of organisms including representatives of both provinces. The seabed is composed of sandy sediment, which supports a variety of organisms including the dominant slipper limpet, which is an alien species, and burrowing worms and molluscs. The coastal marine environment acts as a spawning and nursery area for several species of commercially important fish including Dover sole, cod, and bass.

An ironstone reef stretches 5km east of Hengistbury Head out into Christchurch Bay, forming the Christchurch Ledges. The Ledges provide a solid substrate in an area dominated by mobile sandy sediments, which support diverse assemblages of kelp and other algae, along with a variety of animals including nationally rare fish, bryozoans, sponges and anemones.

5F- 2 Christchurch Harbour

Landscape Environment

Christchurch Harbour is a natural harbour sheltered to the south from the higher ground of Hengistbury Head. The estuary, surrounding marshes, heath and woodland present a natural landscape creating a distinct character considered attractive. The Rivers Stour and Avon drain into Christchurch Harbour, and their alluvial deposits have created a flat flood plain to the west of the Harbour. The town of Christchurch lies adjacent to the Harbour on the west and north side. The area is not covered by any national landscape designations, although the local authorities recognise the beauty of the area and seek to protect it through local policies. There are no sites of high geological or geomorphological interest in Christchurch Harbour.

Coastal Environment

Christchurch Harbour contains a wide range of habitats including shallow mudflats, saltmarsh, reed beds, ditches, wet meadows, sand dunes, dry and neutral grassland, heath, woodland and scrub. These habitats support diverse plant and animal communities, and the site is of ornithological importance.

Marine Environment

The Harbour's narrow entrance reduces the level of flushing, and creates an internationally rare habitat of brackish lagoon conditions. Whilst few species are represented, there are large populations of intertidal and subtidal marine invertebrates. Extensive areas of shallow intertidal mudflats support dense populations of burrowing organisms, which provide an important food source for the internationally important and designated bird life that frequents the Harbour. Rare brackish water species include nationally rare amphipods and the tentacled lagoon worm.

The Harbour also acts as an important nursery ground for several commercial species of fish, including bass, Dover sole, thick-lipped mullet, thin lipped mullet, pollack and flounder. The estuaries that form the harbour are important salmon and eel fisheries and recreational angling occurs throughout the year.

Sub-cell 5F-3 Hengistbury Head Long Groyne to Sandbanks Ferry Slipway

Landscape Environment

Hengistbury Head is a dramatic promontory forming the eastern most point of Poole Bay, and the southern flank of Christchurch Harbour. The two-mile long headland consists of a partly wooded ridge, with mudflats on the north sides within Christchurch Harbour, and a sandy/shingly beach to the south. Within a small area there is a mixture of heath, woodland, meadow, saltmarsh, dune and a shingle and rocky shore.

The cliffs of Hengistbury Head undergo constant erosion. They have alternating deposits of Tertiary sands, loams and clays, capped at different levels with Pleistocene river gravels and alluvium (Hengistbury Head Management Plan, 1988). Hengistbury Head is a strategically important bridging exposure, and is included within the boundaries of the Christchurch Harbour SSSI for its geology features.

From Hengistbury Head, the cliffs rise and are more developed, with a promenade along the frontage from Bournemouth to Poole.

In 1991 BP undertook a Landscape Assessment of the Poole Bay conurbation. This divided the coast into the following character zones:

- *Southbourne*. Buildings are set back from the cliff top and consist mainly of Edwardian and 1930s detached properties. The cliffs are gently sloping and are vegetated with heath and grass.
- *Boscombe* has a denser provision of large properties in the coastal zone, mainly hotels or high-rise apartment blocks.
- *Bournemouth*. The western cliffs show sections of the Bournemouth Freshwater Beds. The beds have also yielded a diverse fossil flora of the mid-Eocene age. The eastern cliffs show unique exposures of the Bournemouth Marine Beds and of the Boscombe Sands. These formations display probably the best examples of meso-tidal estuarine sedimentation in the British Eocene. The eastern cliffs contain freshwater geology that is visible for study.
- *Canford Cliffs* is characterised by steep sandstone cliffs, cut in places by chines (steep-sided river valleys). Some of the chines have public gardens and provide access to the beach. Cliff top development consists of large detached suburban houses, converted into flats, on pine-clad slopes. This area contains important heathland habitats, which although not fully developed in some areas, currently supports good reptile populations of sand lizards.
- *Sandbanks* is a natural spit that extends across the mouth of Poole Harbour from the north. It has been extensively developed for housing and tourism, with the resultant loss of most of the original sand dunes, though some have regenerated.

Poole Bay frontage is of considerable geological interest. The discontinuous cliffs, composed of Branksome Sand topped with fluvio-glacial gravels, extend along the majority of the Poole Bay frontage. Erosion of these cliffs has historically contributed large quantities of sediment into the littoral zone.

Coastal Environment

Hengistbury Head, along with Christchurch Harbour, is an area of outstanding interest to bird life. The headland is a natural point of arrival and departure for migrating birds. The area also has a wide range of habitats in a small area including recently formed sand dunes west of Hengistbury Long Groyne, and lowland grass, scrub and woodland, which occupies most of the headland. The grassland includes scarce and rare species of flora and the rare Natterjack toad (Figure 3.2) occurs over a wide part of the area.

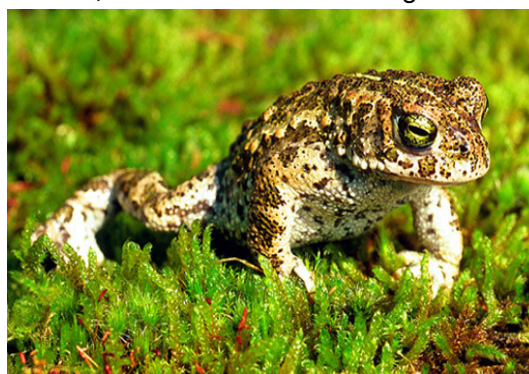


Figure 3.2 The Natterjack Toad

(Image from Wildlifeforall.org)

Other habitats on the headland include ericaceous heathland, semi-natural woodland and freshwater ponds. Hengistbury Head supports over 500 plant species, including the nationally rare sea knotgrass (Schedule 8), 14 scarce species and 39 locally rare species. More than 300 bird species have been recorded, as well as many insect and reptile species, including the Natterjack toad. The cliffs beneath Warren Hill have a regionally important colony of Sand Martins.

The cliffs along this coast undergo constant erosion, creating the unique landscape and habitats that have a significant value for nature conservation.

The cliffs fronting Poole Bay provide a narrow strip of natural habitat between the town and the wide seafront promenade. Sections of the cliff are designated as SSSI for their geological features and support populations of the rare and declining sand lizard. There are also local seepage features, which provide a habitat for specialised invertebrate fauna.

The sandy shores of Poole Bay are not of ecological interest, due to the presence of concrete seawalls and the high mobility of the sand along the coast, except for a residual area of sand dune at Sandbanks and Canford Cliffs, which has sand lizards.

Marine Environment

The gently shelving seabed presents all five major sediment types (mud, muddy sand, sand, muddy gravel and gravel) (EN 1994). The diversity of sediment types results in a varied marine benthic fauna (animals that live on the seabed). Burrowing bivalve molluscs are the dominant species present in the sediment with the alien slipper limpet dominating the surface of the seabed. Bournemouth Rocks make up the majority of hard substrate in the sub-cell, which supports a rich assemblage of algae and encrusting organisms.

Poole Bay supports a number of commercial species including the rare native oyster. The population of native oysters is the largest in the UK and is possibly the largest in Northern Europe (JNCC 1996). Poole Bay also supports commercial fishing including cuttlefish, oysters, whelks, scallops, edible crabs, spider crabs and lobsters. Recreational angling from the beaches and from boats also occurs throughout the year.

Sub-cell 5F- 4 Poole Harbour

Landscape Environment

Poole Harbour comprises of a wide expanse of water punctuated by wooded islands, creeks and mudflats with extensive modern development on its northern and eastern sides. Brownsea Island is within the Harbour, and is predominantly wooded, but has an enclosed man-made lagoon on its eastern side. Low-lying meadows flank the western margins of the Harbour and the southern shores are fringed with mudflats and marsh rising up to heathland and coniferous plantations. The sheltered waters and islands are a haven for wildlife, which forms a contrast to the bustling ferry port and the conurbation of Poole, which lies to the north. The onshore oil well at Furzey is screened from view by conifer plantations.

Ham Common is an area of national geological importance and is designated a SSSI. This is one of two sites yielding fossil plants from the Dorset Pipe Clays of Lower Eocene age. Over seventy fossil species have been recorded here, of which thirty species and three genera are restricted to this site in British Tertiary floras, whilst many are unique in the World's Tertiary deposits. The site is also the type locality for forty-four species and four genera of flora and is critical for studies of European Tertiary palaeobotany and palaeoecology.

Brownsea Island and Shipstal Point at Arne are both designated as Regionally Important Geological Sites (RIGS) and the Arne exposure is a Geological Conservation Review Site (GCR). The cliffs on the southern side of Brownsea Island and a cliff near Pottery

Pier show sections through the Branksome Sand and Parkstone Clay and the junction between them. Shipstal Point, at Arne, consists of a cliff exposure demonstrating the Poole Formation.

Coastal Environment

Poole Harbour is considered to be one of the best and largest examples of an enclosed, lagoonal harbour in the UK. The harbour has an average depth of 2m, and contains a high proportion of intertidal salt marshes and mudflats, which give way to fresh water marshes, reed beds and wet grassland. Heathland occurs on the higher sandy areas. Poole Harbour is a particularly extensive and diverse area of wildlife habitat, and is an area of outstanding nature conservation interest.

The harbour and surrounding areas support a large number of important over wintering birds, such as avocet, black-tailed godwit, shelduck, hen harrier and merlin. The harbour is also important as a feeding stop for birds on migration and for breeding birds such as Mediterranean gulls and common terns.

Intertidal feeding areas and adjoining grasslands, notably at Keyworth and in the Lower Frome Valley, are important as feeding sites and high water roosts. Areas of heathland support rare and uncommon birds and invertebrates and also rare reptiles. Pine woodlands on the islands are important habitats for the red squirrel. The heaths and downs surrounding the Harbour support nationally important breeding populations of nightjar, woodlark and Dartford warbler (Figure 3.3)



Figure 3.3 Dartford warbler

(Image from www.hants.gov.uk)

Ham Common has wet and dry heath with a rich associated flora and fauna. The area includes two protected reptiles (Schedule 5), the sand lizard and the smooth snake, as well as the Dartford warbler. Luscombe Valley supports a range of important habitats including heath, acid grassland and mire communities within areas of pine woodland. The Valley supports the sand lizard as well as a notable variety of rare and scarce moth species.

Brownsea Island is a National Trust site and is partly managed by the Dorset Wildlife Trust. The island supports a diverse range of wildlife including the red squirrel, Sika deer, green woodpecker, goldcrests, bats and wood ants. Additionally, the island has the largest colony of nesting grey heron in Dorset with up to 100 pairs present.

Marine Environment

Subtidal channels within the Harbour are maintained by natural scour and dredging, which provide an important nursery ground for a number of commercial species of fish. Extensive intertidal mudflats support dense populations of marine invertebrates, which are a critical food source for internationally important bird life. The fine sands of the central Harbour support rich communities dominated by beds of the peacock worm, which represents a unique habitat (Oil Pollution Research Unit 1993). The harbour also

supports several rare and restricted organisms including sponge, species of sea mats and sea squirts.

The estuary is important for salmon and trout but the harbour is fished commercially for bass, flounder, Dover sole, eels, salmon, sea trout and plaice (BP Exploration 1991). Also, the Harbour supports aquaculture of the Pacific oyster, native oyster, manila clams, hard-shelled clams and mussels. Oyster diseases have been noted though the cause is uncertain. Bait digging is also undertaken on the intertidal flats for ragworms and lugworms, which occur in dense populations (JNCC 1996).

Sub-cell 5F-5 South Haven Point to Handfast Point

Landscape Environment

Studland Bay forms a long, sandy beach, backed by dunes, heathland and pine woodland. The area is undeveloped and retains a very natural appearance. At its southern end the beach narrows and there are low cliffs. The village of Studland is situated behind cliffs and has a quiet, unspoilt character with winding lanes and footpaths leading to the excellent sandy beaches.

Studland is a key site for coastal geomorphology, for the advancing (prograding) sand beaches, in southern Britain. South Haven Peninsula is a key member of the national network of soft coastal sites.

Studland Cliffs compose a strip of maritime dense cliff-top grassland and adjoining hazel woodland. The cliffs are important for birds, including being one of only three sites in Dorset where cormorants nest. The cliffs are also an outstanding stratigraphic and structural site of national significance and an important location for paleontological studies. At the Bay's southern end, Ballard Down is a key site for coastal geomorphology, best known for the stacks, arches and caves at Handfast Point, such as Old Harry Rocks. The area is part of the World Heritage Site for its important Jurassic exposures.

Coastal Environment

The area from Studland Cliffs to Handfast Point supports vegetated sea cliff communities and rare plant and animal communities that colonise in eroding sea cliffs, such as early gentian. These are rare or threatened species protected by a Special Area of Conservation (SAC) designation.

Purbeck Ridge contains an important area of chalk grassland with a great diversity of plants and substantial populations of insects. Ballard Down is one of the top three sites in England for Chalk Cliff algae.

Marine Environment

There are eelgrass beds off Studland Bay, and a community of calcareous algae, known as maerl, is present offshore of Handfast Point at the eastern limit of its known distribution. Other species include Ross coral and certain species of worms and amphipods, which are also at the eastern limit of their distributions.

Experimental artificial reefs have been constructed off Studland. Two years after their establishment approximately two hundred species were recorded to be on or around these reefs (BP Exploration Understanding Poole Bay 1991).

The process unit is a spawning site for Dover sole and cod, and a nursery for Dover sole. A variety of fish species, edible crabs, spider crabs, lobsters, whelks and Pacific oysters are fished commercially.

Sub-cell 5F-6 Handfast Point to Durlston Head

Landscape Environment

Handfast Point is dramatic promontory of chalk cliffs, rock stacks and the well known landmark Old Harry and His Wife at its tip. Ballard Down is a large area of heathland and is the eastern extent of the Purbeck Chalk Ridge.

Swanage Bay has a narrow, sandy and shingle beach, backed by the residential and tourist seafront town of Swanage. Peveril Point and Durlston Head are headlands south of Swanage while the landscape inland is rolling downland with grassland and farmland, criss-crossed by drystone walls and hedgerows. Durlston Castle, located on Durlston Head, is a Victorian folly built of locally quarried stone.

The coastal cliffs and fossiliferous rocks around Durlston Head are of international geological importance; specifically, the Purbeck Beds at Durlston Head have yielded the richest Lower Cretaceous fauna of fossil reptiles, fish, insects and mammals of that age anywhere in the World. Durlston Bay (Figure 3.4) is also the most important late Jurassic-early Cretaceous fossil insect site in Europe. Due to its high importance for geological conservation the area has been designated a SSSI and is part of the World Heritage Site for Jurassic Geology.

Coastal Environment

The area from Handfast Point to Durlston Head, similar to the east, supports vegetated sea cliff communities and rare plant and animal communities that colonise in eroding sea cliffs, such as early gentian. These are rare or threatened species protected by an SAC designation.

Marine Environment

Swanage Pier supports rich assemblages of encrusting marine life, which are noted as being of particular nature conservation importance (JNCC 1996). There are also eelgrass beds in the area. The offshore sediments are composed of mixed sand, shingle and maerl, some areas of which are dominated by the slipper limpet.

The limestone outcrops of the Ballard Ledges and softer chalk platforms at Handfast Point add to the diversity of substrates and the respective encrusting organisms. Limestone reefs and mussel beds occur off Durlston Head. This area is a spawning site for Dover sole and cod, and a nursery for Dover sole. A variety of fish species, edible crabs, spider crabs, lobsters, whelks and Pacific oysters are fished commercially.



Figure 3.4 Durlston Bay

3.2 Designated area assessment

The SMP coastline has a rich, natural environment, much of which is recognised for its international or national value to nature conservation. Information on the natural environment for this study has been updated from the SMP published in 1999. This section outlines the relevant designations and summarises the overall interest of the natural environment within the study area.

3.2.1 Relevant Designations

Designations applied to ecological and geological features may be of international, national, or regional and local importance. Those relevant to the study area are listed below, with a hierarchical structure of international through to local representing the relative weight or importance placed on each resource, and the hierarchy of legal protection afforded to the sites.

International Designations

Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora, transposed into UK law by the Conservation (Natural Habitats) Regulations 1994 ('the Habitats Regulations') has resulted in the identification of several SACs along the length of the SMP coastline. The Council Directive 79/409/EEC on the conservation of wild birds ('The Birds Directive') is implemented in the UK through the Wildlife and Countryside Act 1981 as amended, and provides for the identification of Special Protection Area (SPAs).

The EC Habitat Regulations apply to both SACs and SPAs and strengthen the protection afforded to sites by the Wildlife and Conservation Act of 1981, as amended, by making illegal *any* damage to breeding sites or nesting places of protected species. Any developments, within the meaning of the Conservation (Natural Habitats etc.) Regulations 1994, which are likely to affect an SPA or SAC will not be permitted, unless the relevant 'competent authority' has decided, on completion of an 'appropriate assessment', that there are no alternative solutions and that the development must be carried out for imperative reasons of overriding public interest. Should this be the case, then mitigation or compensation must be provided.

The European and British legislation has led to the designation of various levels of nature conservation sites, some being of international importance, others of national importance. As well as this there are sites designated locally, usually by the Local Planning Authority and/or the local Wildlife Trusts.

Special Areas of Conservation (SAC). This designation aims to protect habitats or species of European importance. There are six SACs in this area: River Avon, Solent Maritime, Dorset Heaths, Dorset Heaths (Purbeck and Wareham) and Studland Dunes, Isle of Portland to Studland Cliffs and St Albans Head to Durlston Head. These SACs have been identified as they contain habitats that are afforded particular protection under Annex 1 of the Habitats and Species Directive.

Special Protection Areas (SPA). These internationally important sites establish a network of protected areas for birds. Within the study area there are four SPAs; these include Solent and Southampton Water, Avon Valley, Dorset Heathlands and Poole Harbour.

Ramsar sites. The objective of this designation is to stem the progressive encroachment onto, and loss of, wetlands. Ramsar sites arise from an international convention and are ratified by signatory countries. The sites should receive the same level of protection as designated SPA/SACs as a matter of national government policy. All the sites identified as SPAs above are also listed as Ramsar sites.

Biogenetic Reserve. These are a European network of reserves to conserve representative examples of European flora, fauna and natural areas. There are three Biogenetic reserves in the Study Area: Arne, Hartland Moor and Studland Heath. Altogether there are five Biogenetic Reserves in the UK, all of which are heathland sites.

World Heritage Sites (WHS) The 1972 World Heritage Convention aims to protect the values of cultural or natural sites selected by UNESCO (United Nations Educational, Scientific and Cultural Organisation). States Parties to the Convention contribute the necessary financial and intellectual resources to protect World Heritage sites. The Dorset and East Devon Coast World Heritage Site is known as The Jurassic Coast, and spans the Triassic, Jurassic and Cretaceous periods.

The locations of those internationally designated sites within the study area are shown on Figure 3.5, along with Local Nature Reserves (LNR) and SSSI sites.

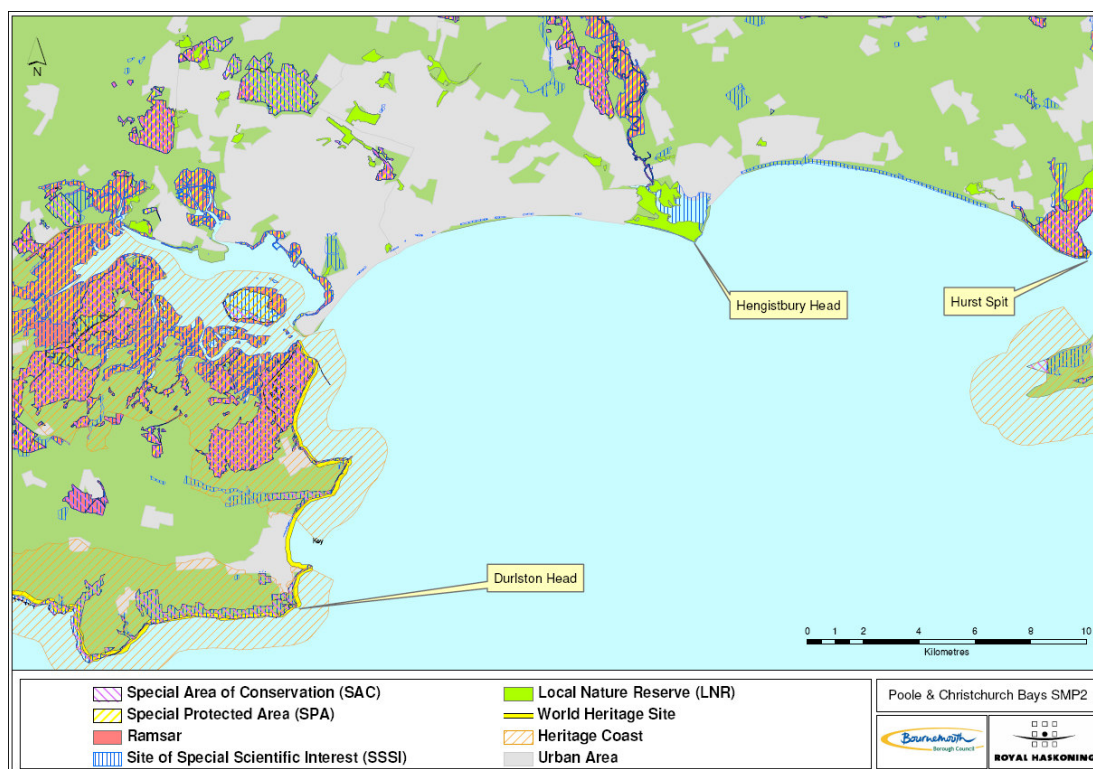


Figure 3.5 Overview of Designations in the SMP area

All SPA, SAC and Ramsar sites are underpinned by component Sites of Special Scientific Interest (SSSI), except those in the marine environment below Mean Low Water.

National Designations

SSSI is the principal national designation of ecological importance to nature conservation in the UK. Natural England designates SSSIs as being "of special interest by reason of... flora, fauna, or geological or physiographical features".

All public authorities along the coastline, including local planning authorities, have a duty under the amended Wildlife and Countryside Act 1981 to further and enhance the nature conservation interests of these sites whilst carrying out their statutory functions. This should be achieved by consulting the relevant government nature conservation advisors (in this case Natural England) for advice on whether works under a proposed licence or work to be undertaken directly for the authority is likely to harm the SSSI interests. If the advice is not followed, the authority must provide reasons for this in writing to the Secretary of State, and make good any damage to the site.

Sites of Special Scientific Interest (SSSI). These sites, notified by Natural England, represent some of the best examples of Britain's natural features including flora, fauna, geology or physiography. Any owner of a SSSI (including Local Authorities) who propose works that constitute operations likely to damage the interest features of the site, must in advance seek consent/assent to conduct the works from Natural England.

National Nature Reserves (NNRs). These represent some of the most important natural and semi-natural ecosystems in Great Britain, and are managed to protect the conservation value of the habitats that occur on these sites. The study area for the SMP contains six NNR, which are Arne reedbeds, Holton Heath, Hartland Moor, Studland Heath, Godlingston Heath and Durlston.

Voluntary Marine Nature Reserve (VMNR). These are set up by representatives of the users of a subtidal area in order to initiate management of that area. Management may have a variety of purposes from conservation of a marine biologically important area, to use for educational purposes. The area between Peveril Point and Anvil Point has been designated a VMNR.

Sensitive Marine Areas (SMA). Under the Sensitive Marine Areas initiative, Natural England has identified 27 such sites along the whole of the English Coast. Much of the coastline within the SMP has been recognised as SMA (Poole Bay, Isle of Purbeck and Solent). The objective of the initiative is to raise awareness of the importance of the marine environment and work towards developing integrated management for whole marine areas.

Areas of Outstanding Natural Beauty (AONB). The purpose of this designation is the conservation and enhancement of the natural beauty of an area and falls under the framework of the Countryside and Right of Way Act (2000). This includes protecting its flora, fauna, geological and landscape features. In achieving this, consideration is given to local socio-economic needs of the community and in particular to the traditional land uses and practices that are intrinsic elements of the landscape to be conserved. Dorset AONB is the only AONB within the study area.

Regionally and locally important sites. Local Planning Authorities have powers to identify Sites of Importance for Nature Conservation (SINCs). Whilst these sites are not protected by legislation, the local planning assumption is that development which would result in loss or significant harm to the wildlife value of these areas would not be

permitted. In addition, positive management of these sites is often facilitated in the form of assistance with funding applications from local conservation groups, or with recognition in local plans in order to facilitate planning gain opportunities.

Local Nature Reserves (LNR). These are established by local authorities in consultation with Natural England and then managed by or in agreement with the local authority. These sites are generally of local significance and provide important opportunities for environmental education and public enjoyment of nature. However, LNRs are often also SSSIs, and therefore can be of national importance. There are 10 LNRs in the study area: Branksome Dene Chine, Ham Common, Hengistbury Head, Iford Meadows, Luscombe Valley, Milford on Sea, Purewell Meadows, Stanpit Marsh, Steamer Point and Turlin Moor.

Sites of Interest for Nature Conservation (or SINC) or Sites of Nature Conservation Interest (SNCI). These sites are defined as being of county importance for nature conservation. These are not statutory but form an Integral part of the formulation of planning policies relating to nature conservation issues. Some of these sites may be of equal quality to SSSIs and can support protected species. Hampshire County Council uses the designation SINC, whereas Dorset County Council uses SNCI. They are an equivalent designation.

Regionally Important Geological Sites (RIGS). These are sites designated for their importance to geological conservation.

Geological Conservation Review (GCR). These sites are of national and international importance. The designation displays sediments, rocks, fossils, and features of the landscape that make a special contribution to our understanding of the geological history of Britain.

Non-Designated Areas and Protected Species. Although site designations are a very important method of identifying areas of significance to nature conservation they are not the only method. Animals are unlikely to restrict themselves to designated boundaries. Rare plants and insects also occur outside of designated sites. Care must be taken not to consider an area unimportant just because it is not within an SAC, SPA or SSSI.

3.3 Assessment of the Natural Environment

This section details the natural environment of the area by each sub-cell.

Sub-cell 5F-1 Hurst Spit to Hengistbury Head Long Groyne

Hurst Spit is covered by three international nature conservation designations: SPA, Ramsar site and a SAC. Most of the remainder of the coastline is SSSI, SINC or SNCI.

Mudford Quay and Mudford Sandbank are both designated as SNCI's for their flora and Hengistbury Head is an LNR. Barton Common and Beckton Bunny are designated SINC's for their heathland vegetation. Studland Common is a SINC for its unimproved grassland and Sturt Pond is a SINC for its semi-natural coastal habitat.

The designations in this process unit are shown in Table 3.1.

Table 3.1 Designated Conservation Areas for Sub-cell 5F- 1

Type	Name of Area	Main Reason for Designation
International Designations		
SAC	The Solent Maritime	Ecology - Atlantic salt, meadows, vegetated sea cliffs, cordgrass swards
SPA	Solent and Southampton Water	Ecology – bird populations
Ramsar Site	Solent and Southampton Water	Ecology – wetland habitat
National Designations		
SSSI	Hurst Castle and Lymington River Estuary	Ecology and Geomorphology
	Highcliffe to Milford Cliffs	Geology - Fossils and bed exposures. Key site for European Tertiary palaeobotany and palaeoecology
AONB	South Hampshire Coast	Landscape
GCR	Barton Highcliffe Friars Cliff Paddy's Gap	Geology Geology Geology Geology
Local Designations		
LNR	Hengistbury Head	Ecology - Heathland
	Steamer Point	Ecology - Heathland
SNCI	Barton Common	Ecology - Heathland
	Beckton Bunny	Ecology - Heathland
	Studland Common	Ecology – Un-improved grassland
	Sturt Pond	Ecology - Semi-natural coastal habitats
	Chewton Bunny	Ecology - Decidious woodland
	Hengistbury Head	Ecology - Sand dunes, gravel, shingle foreshore
	Mudford Quay	Ecology - Dry ruderal grassland

Sub-cell 5F- 2 Christchurch Harbour

The whole of Christchurch Harbour, including Hengistbury Head and the grazing land and marshes on the eastern side are all designated and form Christchurch Harbour SSSI. Stanpit Marsh is also an LNR and supports a rare flora, as well as providing an essential food source for wildfowl and wading birds.

The River Avon is an ecologically important chalk river that drains into Christchurch Harbour. The Avon Valley shows a greater range of habitats and a more diverse flora and fauna than any other chalk river in Britain. It has therefore been designated as a SSSI, SPA and Ramsar site.

Christchurch Harbour is included in the Poole Bay SMA and the Christchurch Harbour SSSI (EN 1994, JNCC 1996) for its nationally important marine and lagoon plant and animal life.

These designations are shown in Table 3.2.

Table 3.2 Designated Conservation Areas for Sub-cell 5F- 2

Type	Name of Area	Main Reason for Designation
International Designations		
SAC	River Avon	
SPA	Dorset Heathlands Avon Valley	Ecology - Wet heathland Ecology - Chalk River
Ramsar	Avon Valley	Ecology - Chalk River
National Designations		
SSSI	Christchurch Harbour	Ecology – Saltmarsh Geology
	River Avon System	Ecology
	Avon Valley (Bickton to Christchurch)	Ecology
	Purewell Meadows	
Sensitive Marine Area	Poole Bay and Isle of Purbeck	Marine and Lagoon Ecology
Local Designations		
LNR	Stanpit Marsh	Ecology - Grazing marsh
	Purewell Meadows	
	Ilford Meadows	
SNCI	Stanpit	Ecology - Semi-improved grassland and fern
	Stony Lane Drain	Ecology - Wet grassland and ditch
	Milham's Head	Ecology - Wet tall herb

Sub-cell 5F-3 Hengistbury Head Long Groyne to Sandbanks Ferry Slipway

The heathland on Hengistbury Head is covered by the Dorset Heaths SAC and the headland is an SPA for its bird populations. Hengistbury Head is included in the western limit of the Solent and Isle of White SMA (JNCC 1996), for its nationally

important marine plant and animal communities and has been designated an LNR for the various habitats and its importance for the appreciation and study of wildlife. The Poole Bay cliffs are of high ecological and geological importance and parts of it are designated SSSI or SNCI. The subtidal zone is within the Poole Bay and Isle of Purbeck SMA designated for its important marine wildlife.

These designations are shown in Table 3.3.

Table 3.3 Designated Conservation Areas for Sub-cell 5F- 3

Type	Name of Area	Main Reason for Designation
International Designations		
SAC	Dorset Heaths	Ecology - Heathland
SPA	Dorset Heathlands	Ecology - Wet Heathland / Birds
National Designations		
SSSI	Poole Bay Cliffs	Geology - Sedimentation and fossils Ecology - Sand lizard, invertebrates
	Christchurch Harbour	Ecology - varied habitats Geology - Stratigraphy and sediments
GCR	Hengistbury	Geology – Sediments
	East Bournemouth Cliffs	Geology - Sediments
	West Bournemouth Cliffs	Geology - Sediments and fossils
Sensitive Marine Area	Poole Bay to Isles of Purbeck	Varied marine benthic fauna
Local Designations		
LNR	Hengistbury Head	Range of Habitats
SNCI	Sandbanks	Ecology - Dunes, grassland and reptiles
	Boscombe Southbourne Cliffs	Ecology - Cliff grassland
	Alum Chine	Ecology - Woodland
	Flaghead Chine	Ecology - Heathy Cliffs and reptiles
	Branksome Cliffs	Ecology - Grassland and heathland habitats

Sub-cell 5F- 4 Poole Harbour

Poole Harbour is designated an SPA site for the bird populations and species that visit the area and also a Ramsar site due to fringes of saltmarsh and reedbed. There are also extensive tidal mudflats. Little Sea and East Lake on the Studland Peninsula are also part of the Poole Harbour Ramsar site.

The southern shore of Poole Harbour is designated both Heritage Coast and AONB.

Parts of the area around the harbour are designated Ramsar sites, Dorset Heathland SPA and SAC for the heathland, which fringes the southern shore and includes the following habitats/species:

- Wet heathland with Dorset Heath and cross-leaved heath. The SAC is one of only 2 outstanding sites in the UK and contains more than 40% of the UK resource of this type of heathland,
- Coastal dune heathland. This is considered to be one of the best areas in the UK for coastal dune heathland,
- Wet heathland with cross-leaved heath
- Dry heaths
- Southern damselfly
- Depressions on peat substrates
- Shifting dunes
- Shifting dunes with marram grass

Wet heathland with Dorset heath, cross-leaved heath and coastal dune heathland are priority habitats and are recognised as being particularly rare within the European context. The remainder of the habitats listed above and the southern damselfly are also considered to be rare or threatened within the European context.

The entire harbour foreshore has been designated a SSSI for its varied habitats and associated flora and fauna. The Arne reedbeds have been designated an NNR, as have the shores of Holton Heath and Studland Heath. The north shore, at Ham Common and Luscombe Valley, has been designated LNRs as well as SSSIs. The Arne peninsula is a RSPB reserve. There are also a number of SNCIs.

Part of Poole Harbour is included in the Poole Bay and Isle of Purbeck SMA. All the islands in the harbour have been designated SSSI, as well the intertidal areas of Poole Harbour (the area between mean high water and mean low water), and some of the surrounding areas of terrestrial habitat for the extensive intertidal mudflats and associated marine animals.

These designations are shown in Table 3.4.

Table 3.4 Designated Conservation Areas for Sub-cell 5F- 4

Type	Name of Area	Main Reason for Designation
International Designations		
Biogenetic Reserve	Studland Heath	Ecology
	Hartland Moor	Ecology
	Arne	Ecology
SAC	Dorset Heaths	Ecology - Heathland
	Dorset Heaths (Purbeck and Wareham) and Studland Dunes	Ecology - Heathland, dunes and damselfly
SPA	Dorset Heathlands	Ecology - Bird species
	Poole Harbour	Ecology - Bird species
Ramsar	Dorset Heathlands	Ecology - Wetland habitat
	Poole Harbour	Ecology - Wetland habitat
National Designations		
SSSI	Arne	Ecology

Type	Name of Area	Main Reason for Designation
	Poole Harbour	Ecology - Varied habitats and rare species
	Ham Common	Ecology - Heathland and reptile Geology - fossils
	Luscombe Valley	Ecology - Varied habitats and sand lizard
	Studland + Godlingston Heaths	Geomorphology - Coastal Ecology - Heathland and dunes
NNR	Arne Reedbeds	Ecology and breeding birdlife
	Holton Heath	Lowland heath and woodland
	Hartland Moor	Heathland and birdlife
	Stoborough Heath	Heathland ecology, birdlife and invertebrates
	Studland and Godlingston Heath	Ecology - Heathland, dunes and reptiles
AONB	Dorset	Landscape
GCR	Arne	Geology
Heritage Coast	Purbeck	Landscape
SMA	Poole Bay Isle of Purbeck	Marine Ecology
Local Designations		
LNR	Ham Common	Ecology / Geology
	Luscombe Valley	Ecology – Varied habitats and reptiles
	Parkstone Bay	Birds
SNCI	Greenland	Ecology - Acid grassland
	Sandbanks	Ecology - Dunes and grassland
	Fitzworth	Ecology - Semi-improved grassland and saltmarsh
	Purbeck Forest	Ecology - Remnant heath, bog and grassland
	Ham Hill Copse	Ecology - Dry Heath and scrub
	Brooks Pit	Ecology - Reptile Interest
	Holes Bay Relief Road	Ecology - Grassland
	Harkwood Saltmarsh	Ecology - Saltmarsh
	Lytchett Bay Meadows	Ecology - Grassland and Wetland
RIGS	Brownsea Island	Geology
	Shipstal Point, Arne	Geology
	Whitecliff	Geology
	Parkstone Bay	Geology
Other Reserves	Brownsea Island	Bird Populations
	Arne Nature Reserve (RSPB)	Bird Populations
	Bestwall (RSPB)	Bird Populations
	Ridge Moors (RSPB)	Bird Populations

Sub-cell 5F-5 South Haven Point to Handfast Point

The coastline between South Haven Point and Handfast Point is considered to be of national and international landscape importance, a designated World Heritage coast and within Dorset AONB. The coastline was awarded the coveted Diploma for Landscape, awarded by the Council of Europe, in 1984. The coastline from South Haven Point to Swanage Bay is part of the Jurassic Coast World Heritage Site.

The coastline between South Haven Point and Handfast Point is designated for its nationally and internationally important habitats. The coast from Studland Cliffs to Durlston Head (and beyond) is an SAC (Isle of Portland to Studland Cliffs SAC).

The area of Studland and Godlingston Heaths is within the Dorset Heaths (Purbeck and Wareham) and Studland Dunes SAC. This area includes:

- wet heathland with Dorset heath and cross-leaved heath, and
- coastal dune heathland.

These are priority habitats under the European Habitats Directive, and therefore are given special protection. Other habitats and species for which the area has been internationally designated include:

- wet heathland with cross-leaved heath
- dry heaths
- southern damselfly
- depressions on peat substrates
- shifting dunes
- shifting dunes with marram grass

This area is of international importance for its dune system and heathland, and has been designated a Biogenetic Reserve.

The coast is part of the Dorset Heathland SPA and Ramsar site. This covers a number of sites in southern Dorset, and includes Studland and Godlingston Heaths. This area is a Ramsar site for its wet heathland habitats and contains one of the best-developed and most significant tracts of the habitat in the lowlands. The heathland supports appreciable assemblages of rare plants and animals. The Dorset Heathland qualifies as a SPA by supporting nationally important breeding populations of three rare species, nightjar, woodlark and the Dartford warbler.

Studland and Godlingston Heaths is designated as an SSSI for its range of habitats, as described above. The site also includes all six British reptiles including strong populations of the sand lizard and smooth snake.

The subtidal area from South Haven Point to Handfast Point is contained in the Poole Bay to the Isle of Purbeck SMA for its marine ecology, which includes important algal communities and rare eel grass beds in Studland Bay. The eelgrass beds are now known to be the habitat of breeding populations of the two species of seahorse native to the UK.

These designations are shown in Table 3.5.

Table 3.5 Designated Conservation Areas for Sub-cell 5F- 5

Type	Name of Area	Main Reason for Designation
International Designations		
World Heritage Site	Orcombe Point to Studland Bay	Important geology, palaeontology and geomorphology
Biogenetic Reserve	Studland Heath	Ecology - Heathland
SAC	Isle of Portland to Studland Cliffs	Ecology - Vegetated sea cliff, early gentian and orchid populations
	Dorset Heaths (Purbeck and Wareham) and Studland Dunes	Ecology - Heathland and southern damselfly
SPA	Dorset Heathlands	Ecology - Bird species
Ramsar Site	Dorset Heathlands	Ecology - Wet heathland
	Poole Harbour	Ecology - Wetland habitat
National Designations		
SSSI	Studland & Godlingston Heaths	Geomorphology Coastal Ecology - heathland & reptiles
	Studland Cliffs	Geology, Geomorphology and Ecology - grassland and breeding birds
NNR	Studland and Godlingston Heath	Ecology - Heathland
GCR	Ballard Point to Studland Bay	Geology
	South Haven Peninsula	Geomorphology
	Studland Bay	Geology
AONB	Dorset	Landscape
Heritage Coast	Purbeck	Landscape
Sensitive Marine Area	Poole Bay Isle of Purbeck	Marine Ecology
Local Designations		
SNCI	Studland Hill	Ecology - scrub and calcareous grassland

Sub-cell 5F-6 Handfast Point to Durlston Head

The coastline between Handfast Point and Durlston Head is considered to be of national landscape importance and lies within Dorset AONB. The entire coast, with the exception of Swanage, is designated World Heritage coast. The coastline was awarded the coveted Diploma for Landscape, awarded by the Council of Europe, in 1984. The coastline from Durlston Bay westwards is part of the Jurassic Coast World Heritage Site which extends as far as Exmouth in Devon.

The coastline between Handfast Point and Durlston Head is designated for its nationally and internationally important habitats. The coast from Studland Cliffs to Durlston Head (and beyond) is an SAC (Isle of Portland to Studland Cliffs SAC). Studland Cliffs and Purbeck Ridge (East) have been designated a SSSI.

The subtidal area from Handfast Point to Durlston Head is contained in the Poole Bay to the Isle of Purbeck SMA for its marine ecology.

The subtidal zone of Durlston Bay (Peveril Point to Durlston Head) is part of a VMNR, which has been designated due to the presence of diverse marine communities and relatively common cetacean sightings, particularly of bottle-nosed dolphins.

These designations are shown in Table 3.6.

Table 3.6 Designated Conservation Areas for Sub-cell 5F- 6

Type	Name of Area	Main Reason for Designation
International Designations		
World Heritage Site	Orcombe Point to Studland Bay	Important geology, palaeontology and geomorphology
SAC	Isle of Portland to Studland Cliffs	Ecology - Vegetated sea cliff, early gentian & orchid populations
	St. Albans to Durlston Head	Ecology - Chalk grassland and vegetated sea cliffs
	Dorset Heath (Purbeck and Wareham) and Studland Dunes	Ecology - Heathland and southern damselfly
National Designations		
SSSI	South Dorset Coast	Ecology, geology and geomorphology
	Purbeck Ridge (East)	Geology Ecology - Chalk acid grasslands and insects
	Studland Cliffs	Geology, Geomorphology and Ecology - grassland and breeding birds
GCR	Peveril Point to Furzey Cliff	Geology & Geomorphology
	Ballard Point to Studland Bay	Geology
	Ballard Down	Geomorphology
	Handfast Point to Ballard Point	Geology
	Swanage	Geology
	Punfield Cove	Geology
	Durlston Bay	Geology
NNR	Durlston	Hay meadow ecology
AONB	Dorset	Landscape
Heritage Coast	Purbeck	Landscape
Sensitive Marine Area	Poole Bay Isle of Purbeck	Marine Ecology
Local Designations		
Voluntary Marine Conservation Areas	Durlston Marine Research Area	Marine ecology / research and education

3.4 Conservation targets and plans

There is currently no Coastal Habitat Management Plan (ChaMP), at the District or County level, which covers the Poole and Christchurch SMP2. However, the River Basin Management Plan for the South West is currently in preparation.

The New Forest SAC Management Plan (NFDC 2001) outlines the following priorities for managing New Forest habitats and species:

- Maintain existing habitats in favourable condition by continuing to implement existing maintenance programmes
- Restore designated habitats currently in unfavourable condition to favourable condition through a series of restoration programmes

Habitats with conditions categorised as ‘unfavourable-declining’, especially where inherent fragility makes them particularly vulnerable to damage (such as wetland habitats) are the first priority for restoration treatments. Habitat conditions categorised as ‘unfavourable-maintained’ are regarded as the second priority for restoration treatments.

New Forest District Coastal Management Plan (NFDC 2004) outlines actions for Hurst Spit (Keyhaven and Lymington Marshes), and two actions relevant to this SMP are reproduced below:

- Z5.2 continue to monitor and study the erosion and causes of erosion of the saltmarshes, and to cooperate with the Lymington Harbour Commissioners, and others, with a view to establishing an environmentally acceptable means of reducing the rate of loss. This may involve making beneficial use of dredged sediments to recharge the inter-tidal mudflats and restore saltmarsh.

Future environmental policies for Mudeford Sandbank have been identified in the Mudeford Sandbank Management Plan (CBC 2001). These policies aim to retain the character and to preserve the bio-diversity of Mudeford Sandbank and its adjoining habitats. The policies also aim to balance the ecological needs of the site without impacting on important ecological sites nearby.

Christchurch Borough Council have developed 9 Objectives (EE1 to EE9) to meet these policies, and these are shown below.

- Objective One (EE1) Balance the ecological needs of this site with the need to protect other valuable and vulnerable sites nearby
- Objective Two (EE2) Maintain and enhance the habitats (possibly by using positive planting schemes) which currently support rare species and to seek to enhance the bio-diversity of the site and adjoining habitats without compromising the natural transience of the site whilst protecting existing flora/fauna
- Objective Three (EE3) To build upon the Habitat Database being established as part of the planning requirement for the current capital schemes. This will evolve into a long term Habitat Management Plan (including the marsh, dunes and the strand) to be absorbed into the Coast Protection Maintenance Programme and become an integral part of the Sandbank Management Plan.
- Objective Four (EE4) Begin to establish a continuous network of footpaths and access routes which by-pass sensitive habitats, whilst providing interesting and taxing routes for walkers.

- Objective Five (EE5) Prohibit the importing of non-indigenous flora to the area, and carry out controlling measures for the gradual elimination of existing non-indigenous, and potentially damaging flora where present.
- Objective Six (EE6) Provide an information and education service via strategic use of signposts and information boards leaflets, pamphlets to increase awareness of the environment and ways to protect and enrich it.
- Objective Seven (EE7) Establish on-going discussions with Bournemouth Borough Council (BBC) and the Hengistbury Head Outdoor Education and Field Studies centre to ensure continuity of policy and information dissemination. It has also been proposed that Bournemouth Borough Council and the Council work in collaboration towards achieving the ultimate objective of substantial environmental improvements which could then lead to SSSI designation by English Nature for the Sandbank.
- Objective Nine (EE9) Protect the Sandbank, Christchurch Harbour, the beaches, Mudeford Quay, and inland waters from pollution.

The Hengistbury Head Management Plan (BBC 2005) identified the following main objectives:

- J. 3 To ensure effective measures are put in place to protect the environment and its biodiversity through implementing local Agenda 21 action plans, developing the right mix of formal and natural habitats and undertaking a consistent, coherent educational policy that reaches out to all sections of the community.
- J. 4 To ensure effective measures are put in place to protect, maintain and sustain the quality of Bournemouth's parks and countryside
- J. 5 To establish an environmental monitoring programme that measures levels of biodiversity for wildlife within Bournemouth
- J. 7 To develop new partnerships at a regional, national and local level, and in particular encourage the development of voluntary groups and countryside volunteering.

Environmental objectives have been proposed for the Poole Bay study area, and are detailed in the Poole Bay and Harbour Strategy Study Strategic Environmental Assessment Baseline and Objectives Report (PCG 2004). Objectives for nature conservation assets have generally been framed in terms of habitats rather than species. The objectives for the European nature conservation sites have been set to address the qualifying interests of the site as well as the formal conservation objectives that have been set by English Nature. The Countryside and Rights of Way Act introduced a number of amendments to the Wildlife and Countryside Act 1981 and these have been taken into account when formulating objectives, particularly in relation to the SSSIs.

The environmental objectives for Poole Bay and Poole Harbour are summarised below. For specific details of environmental objectives, please refer to tables 5.1 to 5.3 in the Poole Bay and Harbour Strategy Study Strategic Environmental Assessment.

- Avoid constructing any new coastal defences that would be detrimental to the earth science, nature conservation or landscape value of designated areas
- Maintain/enhance recreational resources in the coastal zone, where environmental sustainable, practical, economic and financially viable.
- Maintain or restore natural processes to maintain favourable condition of designated areas (SSSIs, SACs, Ramsar, SPAs)

4 Historic Environment

4.1 Assessment of the Historic Environment

The historic landscape of the coast, shore and intertidal zone and its component features demonstrate the extent to which human communities have occupied and used the coast, sea and shore over thousands of years. Present and submerged landscapes and deposits hold vital and irreplaceable evidence of the development of the landscape and seascape and the strong influence of past communities in shaping and exploiting the shoreline. The management of this heritage is therefore critical in sustaining the social and historical values of the coast.

Heritage contributes vitally to local character not only underpinning community identity, but also acting as a major attraction for visitors and a key element of the economic benefits of tourism. The coast here boasts many buildings, sites and monuments of national or regional interest, for example Hurst Castle. Many sites of national importance are protected by law, such as Scheduled Monuments (SM), buildings of national importance are protected by Listing, and areas of historic settlements by Conservation Area status. Notable designed landscapes, parks and gardens are included on a national Register and universally important heritage may be inscribed by UNESCO as World Heritage Sites. All these designations enable protection of the heritage value and the management of change.

Archaeological remains are a finite and non-renewable resource, highly fragile and vulnerable to damage and destruction. Upstanding and buried remains need to be protected and managed sympathetically within new development. At present, the provision of government policy on archaeological remains is set out in Planning Policy Guidance (PPG) 16 Archaeology & Planning. The historic environment is also the subject of PPG15 and is referred to in other PPG and PPS documents relating to development and to the coast. PPG 15 and 16 provide clear guidance to ensure that heritage features are considered and impacts assessed and mitigated in all initiatives relating to land use and planning. There is a presumption in favour of preservation in situ, where this is not possible the evidence is preserved by archaeological recording.

The management of changes proposed by development can be achieved through the planning system, however coastal erosion and sea level change present additional, different challenges, where natural forces are the agents of change. Along the coast some archaeological remains are likely to be affected or lost due to erosion caused by climate change and future increased sea levels. Depending on the importance of the archaeological site, it would be appropriate to consider preservation by record. Where Listed Buildings, Conservation Areas and other designated features are at risk, a similar approach should be considered.

The key archaeological assets, in particular SMs and historic sites within the Poole and Christchurch Bays SMP2 are presented in Figure 4.1. The majority of these assets are associated with the surrounding areas of Poole Bay, Poole Harbour, and the Isle of Purbeck Bays (Durlston, Swanage, Studland).

There are areas in Poole and Bournemouth which can be identified as having especially high archaeological potential where applications for development are particularly likely to require an archaeological programme include:

- The Old Town
- Lower Hamworthy (Roman military site and port)
- The Stour Valley
- The Northern Heathland
- Upper Hamworthy (Rockley Sands, Turlin Moor and Upton Park)
- The shores and bodies of Poole Harbour including Lytchett, Holes and Parkstone Bays
- The Poole Bay Littoral
- The Roman Road and its environment

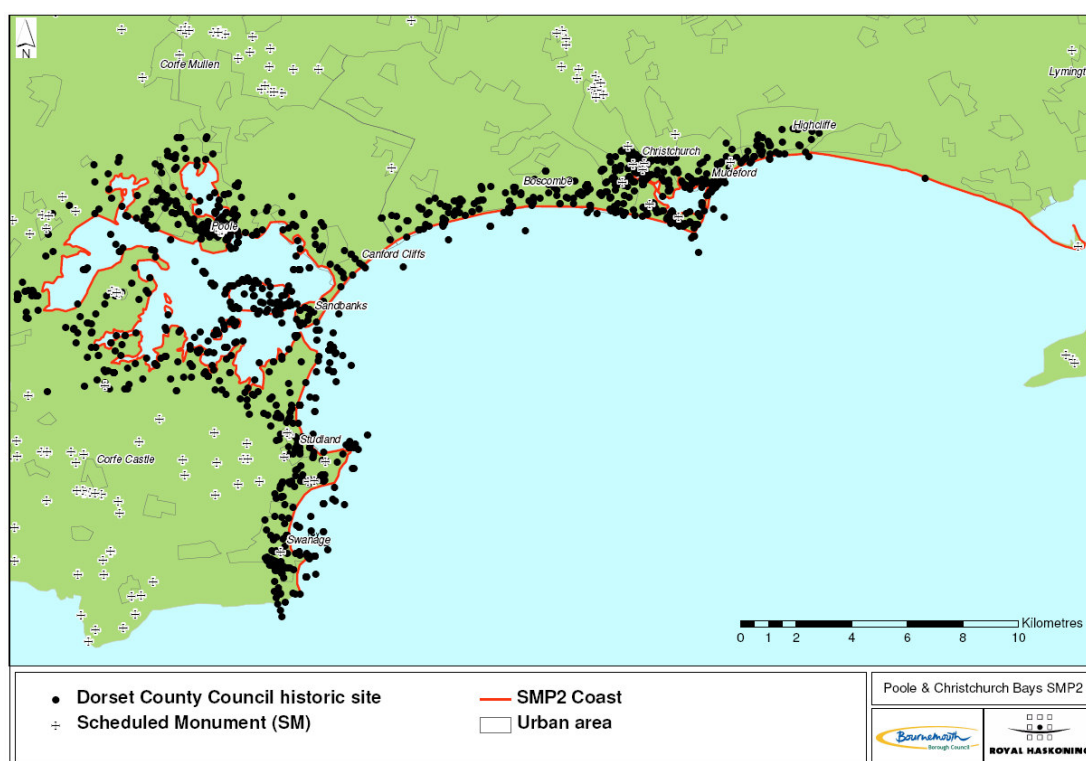


Figure 4.1 Historic Sites and Scheduled Monument Locations

In addition to SMs, there are also several hundred listed buildings in the area of Poole and Bournemouth. Historic Parks and Gardens include Compton Acres, part of Coy Ponds on the boundary with Bournemouth, Poole Park, Poole Cemetery, and Durlston Estate.

Information on the known historical and archaeological sites in a county is held on a County Sites and Monuments Record (SMR) or Historic Environment Record (HER); these records include both designated and undesignated sites and structures, all of which must be considered in the management of change. These data sets often also include Listed Buildings, Conservation Areas, and Registered Parks, Gardens and Historic Battlefields.

The following section gives a brief summary of some of the most significant archaeological features along the coastline of this study.

Sub-cell 5F-1 Hurst Spit to Hengistbury Head Long Groyne

Hurst Spit Castle was built between 1541 and 1544 by Henry VIII, and formed part of a string of coastal defences built to protect Southern England from France. It is now designated an SM.

Highcliffe Castle is a Grade I Listed Building and one of the most important Listed Buildings in the Area. Christchurch Borough Council (CBC) owns the Castle and has recently undergone a £5.2m programme of repair works.

There are two Conservation Areas under the jurisdiction of CBC:

- Bramble Lane - Situated in an area to the north of Chewton Common Road, it comprises a number of residential developments from different historical periods, the oldest of which were once part of a C18th hamlet. A number of the cottages are Grade II Listed and are of local interest.
- Mudeford Quay - This conservation area falls within the boundaries of two process units but is described in detail in sub-cell 5F-2.

Two Conservation Areas have also been designated in Milford-on-Sea by NFDC. One is centred around the green in the village centre and the other centred around the church. The previously derelict White House hospital on the sea front at Milford-on-Sea which is now undergoing redevelopment and repair is an important Listed Building and prominent coastal landmark.

Another feature of important archaeological interest within this area is Double Dykes on Hengistbury Head, a SM dating back to the Iron Age. The majority of this site falls within Sub-cell 5F-3, and is discussed further in that section.

SM's of relevance to the SMP area are shown in Table 4.1.

Table 4.1 Scheduled Monuments of relevance to the SMP (Sub-cell 5F-1)

Parish	SM No	Description	NGR
Lymington	SM 26716	Hurst Spit Castle	SZ 4318 0897
Christchurch	SM 821	Bronze Age Bowl Barrow	SZ 1918 9281
Bournemouth	SM 824	Bronze Age Round Barrow	SZ 1793 9056
Bournemouth	SM 824	Bronze Age Pottery	SZ 17989096
Bournemouth	SM 824	Palaeolithic Flint Assemblage	SZ 1780 9050
Bournemouth	SM 824	Mesolithic Flint Assemblage	SZ 1780 9050
Bournemouth	SM 824	Bronze Age Round Barrow	SZ 1797 9055

Note: SM = Scheduled Monument; NGR = National Grid Reference

Many artefacts have been discovered along the coastline west of Hurst Spit. At Barton on Sea, one find consisted of 128 implements including 97 Palaeolithic hand axes. A number of isolated finds of worked flint tools have been found in the Friars Cliff and Mudeford vicinities dating from Prehistoric, Neolithic and Bronze Age eras. Some pieces of Bronze Age metalwork have also been discovered in the area. One interesting find is that of a deserted village which was recorded in 1066 and included 6 salt houses. However, the only archaeological site above the cliffs that could be under threat from

erosion is the earthworks at Taddiford Gap that may have been associated with the medieval village of Hordle.

The drowned river valleys of the River Solent lie to the south of this area. Work on this valley has produced a wide range of archaeological information and would feature in any detailed assessment of the area.

A number of wrecks exist offshore including two British Dumb barges that were stranded in 1889; the S.B Hume, a British Brigantine, which was stranded in 1895, and an English Merchant Vessel; William and Eliza lost in 1884. A Neolithic hand axe; probably the finest ever found in Hampshire was also discovered offshore.

Sub-cell 5F-2 Christchurch Harbour

The medieval town of Christchurch also contains Roman material and important prehistoric remains. Much of the town centre has been designated a Conservation Area with many Listed Buildings as well as Ancient Monuments. It is noted that there are 5 Grade I Listed Buildings in the town centre and those within the SMP area include Christchurch Priory, Constable's House, Town Bridge and the Castle.

A Saxon Monastery of the Church of the Holy Trinity existed on the site of the present Priory Church which itself was commenced in 1094. The Priory Church was built at the same time as Twynham Castle and a domestic building to house the Constable was erected at the foot of the Castle a little later in about 1160. The ruins of these remain today and the area is designated a SM.

A number of other 'local grade' listed buildings of importance (identified in the local plans) are within this area. These should also be taken into consideration in the light of any significant development.

There are many features of terrestrial and maritime archaeological interest in the area that are listed in Appendices B and C respectively. The SM's are listed in Table 4.2.

Table 4.2 Scheduled Monuments of relevance to the SMP (Area 5F-2)

Parish	SM No	Description	NGR
Bournemouth	SM 860	Bronze Age Bowl Barrow	SZ 1528 9209
Christchurch	SM 22962	C15th Medieval Bridge	SZ1608 9276
Christchurch	SM22962	Early Christian Cemetery	SZ 1603 9255
Christchurch	SM22962	Augustinian Priory	SZ16039255
Christchurch	SM 22962	Motte and Bailey Castle	SZ 1600 9270
Christchurch	SM22962	Constables House	SZ 1600 9270

Note: SM = Scheduled Monument; NGR = National Grid Reference

Three other SM's exist outside the Town Centre Conservation Area, all of which contain the remains of Bronze Age Barrows. Isolated findings of flint and pottery were also found within the area dating from Prehistoric and Bronze Age eras respectively.

The older 'hamlets' of Purewell, Stanpit and Mudeford have numerous statutory Listed and Locally Listed Buildings situated along historic streets. A number of Conservation

Areas exist, many of them within these areas along this stretch of coastline. These include:

- Mudeford Quay - The Quay has a long association with the fishing community and this is reflected in the terraces of fishermen's cottages found in the area. These are grouped closely together with an inn on the head. The area also contains a number of listed cottages from the 17th and 18th century including the Grade II 18th century house 'The Moorings'. The historical interest and visual quality of the area are integral to its character. The Quay has particular policies to protect its historical and amenity interest within the Christchurch Local Plan by preventing development of an unsympathetic nature.
- Mudeford/Christchurch Harbour Frontage - This area contains a number of Grade II Listed Buildings that front Mudeford.
- Purewell - This area contains several Grade II Listed and Local Interest Buildings dating from the early 18th and early 20th centuries. Fine examples include Hengistbury House and Purewell Farmhouse.
- Stanpit and Fishermans Bank - groups of white or cream rendered or painted brick terraced cottages characterise the area. Other properties of interest include a Grade II Listed Building, a row of 18th century Coastguard cottages along Stanpit and The Watch House at Fisherman's Bank.
- Christchurch Central Conservation Area - Retaining its Saxon street plan and millstream, the character of the historic town centre is maintained through its network of narrow streets, the quality of its buildings and variety of architecture. The importance of the town centre is reflected in the number of statutory Listed and Local Interest Buildings.
- Mudeford Sandbank - The remains of an attempt to create a permanent harbour entrance can still be seen here. The Clarendon Rocks, an inshore training wall was built by the Earl of Clarendon in 1666 in an effort to make the River Avon navigable for trade. Its sister training wall lies beneath a modern groyne. The sandbank also has a shipbuilding pedigree, with two coasting barques of 200-ton burthen being built there in the mid-1800s. The Black House, c1898, is thought to have been built to support the boat building industry.

There is substantial evidence of submerged land surfaces within the harbour. The presence of a Mesolithic occupation site, below Mean High Water at Mother Siller's Channel, on Stanpit Marsh, raises the possibility of other prehistoric and later sites at or below HWM. The work by Oxford University (Professor Cunliffe) provides a good insight into the archaeological potential of the Harbour.

A Roman shipwreck was reported as being discovered in the Harbour at the beginning of this century (SMR Christchurch 30). However, finds sent to the British Museum in 1910 have since been lost. Should such a vessel be rediscovered it would be of considerable historic importance and would almost certainly be designated under the Protection of Wrecks Act. The presence of Bronze Age, Iron Age, Roman, Saxon and Medieval ports around the Harbour raises the possibility of other ancient wrecks being discovered in the Harbour sediments.

Sub-cell 5F-3 Hengistbury Head Long Groyne to Sandbanks Ferry Slipway

The main archaeological interest is Hengistbury Head dating back to well before the Iron Age. The remains of an Iron Age Fort at Hengistbury Head indicate the extent of the original site, and highlight the considerable amount of land loss that has taken place

here since Iron Age times. Much of this land loss is believed to have occurred since the Iron stone working of the mid nineteenth century.

At Double Dykes there is evidence of Bronze and Iron Age Man including pottery finds and a settlement. This site is rich in archaeological remains including a late Palaeolithic camp. Hengistbury Head is the only non-cave occupation site known in the region that dates back from the earliest (Palaeolithic) period. The discovery of a rich range of artefacts from the Iron Age promontory fort constructed at Hengistbury Head reveals that the promontory was a trading centre for goods, such as wine and glass from the continent and Mediterranean, and with copper from Cornwall. There is also evidence that surface deposits of iron ore were worked on the site.

There was a significant find of Haematite Iron Ore in a smelting pit on the East Overcliff Drive during reconstruction works in 1968. The ore has a higher iron content than the ores naturally occurring at Hengistbury Head and hence demonstrates that ancient man transported Jurassic Iron Ore here in order to produce bronze or improved iron products (Siderite composition).

The SM's are listed in Table 4.3.

Table 4.3 Scheduled Monuments of relevance to the SMP (Sub-cell 5F-3)

Parish	SM No	Description	NGR
Bournemouth	SM824	Bronze Age Barrow (earthwork)	SZ 1660 9102
Bournemouth	SM824	Bronze Age Long Barrow	SZ 1669 9106
Bournemouth	SM824	Bronze Age Bowl Barrow	SZ 1673 9106
Bournemouth	SM824	Bronze Age Round Barrow	SZ 1719 9069
Bournemouth	SM824	Bronze Age Round Barrow	SZ 1720 9061
Bournemouth	SM824	Bronze Age Round Barrow	SZ 1728 9069
Bournemouth	SM824	Bronze Age Round Barrow	SZ 1771 9063
Bournemouth	SM824	Iron Age Round Barrow	SZ 1704 9069
Bournemouth	SM824	Iron Age Cross Dyke	SZ 1640 9082
Bournemouth	SM824	Iron Age Settlement	SZ 1695 9090
Bournemouth	SM824	Roman Settlement	SZ 0695 9090
Bournemouth	SM824	Bronze Age Metal work	SZ 1768 9066
Bournemouth	SM824	Bronze Age flint/stone axe	SZ 1726 9082
Bournemouth	SM824	Mesolithic Chipping Floor	SZ 1721 9059
Bournemouth	SM824	Palaeolithic worked stone	SZ 1747 9050
Bournemouth	SM824	Prehistoric Flint Assemblage	SZ 1700 9070
Bournemouth	SM824	Prehistoric Flint Assemblage	SZ 1620 9120
Bournemouth	SM820	Bronze Age Barrow	SZ 1634 9135
Bournemouth	SM820	Bronze Age Barrow	SZ 1625 9125

Note: SM = Scheduled Monument; NGR = National Grid Reference

There are more than 250 Listed Buildings in the Borough of Bournemouth dating mainly from Victorian times, however some earlier buildings have survived. Eight Conservation Areas border the coast spanning the Victorian and Edwardian eras in addition to some early 20th century development. The first five areas fall under the jurisdiction of Bournemouth with the latter two controlled by the BoP and include:

- Undercliff Road - a terrace of twenty properties built at the turn of the century by McEwan Brown

- East Cliff - extending from Bath Hill to Boscombe Chine along the cliff top. There is a great diversity of architecture and buildings with a strong reminder of the original Victorian development along East Overcliff Drive and Grove Road.
- West Cliff/Poole Hill – includes much of the remaining early development carried out in the second half of the 19th Century on the slopes and plateau immediately to the west of the Bourne Valley and south of Norwich Avenue/Poole Road.
- West Overcliff Drive - stretching from Durley Chine to Alum Chine, the area was developed primarily between 1900 and 1925 with Edwardian mansion houses of great character set in large grounds.
- Boscombe Manor - developed in the grounds of a Georgian villa, Shelley Lodge, the area is largely comprised of detached villas built between 1895 and 1920 with the largest plots nearer the sea.
- Beach Road - Only one of two conservation areas containing a SNCI. Characterised by low-density development intermingled with wooded open space.
- Canford Cliffs - characterised by low-density development, large distinguished houses from the Victorian and inter war periods, set in mature landscaped grounds.
- The Upper, Central and Lower open parks of Bournemouth are also of special historic interest. These gardens are an important part of the heritage of Bournemouth and are Grade II Listed on the Register of Parks and Gardens of Special Historic Interest due to their national importance.

A number of offshore wrecks also exist within Poole Bay including up to seven Valentine tanks (Figure 4.2). These are located mainly in the western part of the bay with one tank just south of Boscombe pier. The tanks date from experiments carried out in 1942. Other significant discoveries include the Antler Wreck, a small wooden wreck on the



Figure 4.2 Valentine Tank

(Image: www.wrecksite.eu)

edge of Hook Sands (possibly an 18th century stone barge) and a group of 20 stone anchors in Poole Bay, which currently remain undated. The discovery of wreck timbers near Durley Chine dating from the 17th or 18th century (SMR Bournemouth 166) also indicates the presence of a potentially important wreck offshore. In addition, a survey undertaken by BP identified seventy-five sonar targets in the Area, all of which were considered shipwrecks.

Sub-cell 5F-4 Poole Harbour

Poole Harbour has been identified by English Heritage as one of the most important areas for coastal archaeology in England. The degree and rate of sea level rise in the harbour since the Iron Age has been studied in some detail. There have been frequent preservations of organic material such as pieces of wooden furniture, which have been excavated at a Romano-British site off Brownsea Island and it is expected that other submerged sites and features exist within the Harbour. A number of structures have been built within the Harbour ranging from the causeway linking Green Island to the

mainland (undated but believed to be Phoenician), to individual posts protruding from the mud. Its continuous use, from prehistoric times to present, means that structures of almost any date could survive.

Poole Harbour has been historically important as a commercial harbour since pre-Roman times. The area has been inhabited since before the Iron Age and it contains a network of settlements such as those located on Furzey and Green islands, which were exploiting mineral resources both within Poole Harbour and the Isle of Purbeck.

Evidence of past land use includes the discovery of Roman saltworks within the Arne vicinity and ridge and furrow field systems dating from the Medieval and Bronze Ages. Remains of Roman roads have also been discovered at a number of locations within this area. A number of sites within the Harbour were associated with the trade of goods, in particular Green Island and Hamworthy.

The historic importance of the harbour is reflected in the number of Conservation Areas that border the coast here. These areas span Victorian and Edwardian eras in addition to some inter-war development. They include:

- Evening Hill - characterised by low-density development, large distinguished houses from the Victorian and inter war periods, set in mature landscaped grounds
- Old Town - contains the highest concentration of Listed Buildings and is vital to the heritage of the town
- Quay - the essential character of the Quay Conservation Area derives from the buildings in the centre of the Quay, such as the former Custom House, from the Old Harbour Office to Old Orchard. Tall gable fronted warehouses are the predominant building form.
- High Street

There are over 200 'Listed' Buildings of special architectural or historic interest and 13 SMs within the BoP. Most are located in the Old Town, Quay and High Street Conservation Areas. A number of buildings within the area are not of sufficient quality to be included on the statutory list but they have been recognised for their local architectural or historical interest. A list of these buildings is provided in the Poole Local Plan.

A number of sea defence structures dating from the early 18th century can also be found around Swineham Point and the mouth of the Frome. Such structures are of historical importance and should be recorded with the impact of any future coastal defence works assessed prior to their construction.

The SMs within the Area are listed in Table 4.4.

Table 4.4 Scheduled Monuments of relevance to the SMP (Sub-cell 5F- 4)

Parish	SM No	Description	NGR
Poole	SM 44	The Town Cellar	SZ 0085 9030
Poole	SM154	The Guildhall	SZ 0100 9056
Poole	SM 71	Scaplans Court High Street	SZ 0090 9035
Poole	SM 566	The Town Wall	SZ 0081 9032
Poole	SM 752	The Custom House	SZ 0087 9030
Arne	SM 28301	Bowl Barrow on Arne Hill	SZ 9692 8815
Arne	SM 28302	Bronze Age Bowl Barrow Arne Hill	SZ 9717 8806

Note: SM = Scheduled Monument; NGR = National Grid Reference

There are also areas in the Borough that can be identified as being of especially high archaeological potential. Those of relevance are described below:

- Hamworthy - Particularly rich in Roman remains including a Roman port, settlement, road and saltworkings. Also evidence of material from other periods.
- The Old Town - Area occupied by the medieval town of Poole, deep deposits of medieval stratigraphy
- Poole Harbour - Due to anticipated increases in the rate of sea level rise, the inter-tidal zone is of particular importance in future archaeological conservation. Deeper waters may contain structural and artefactual remains such as causeways and wrecks.
- Eastern shore of Poole Harbour - Potential for submerged material along the harbour and settlement/burials along the ridge

The Sandbanks area of Poole Harbour also falls within an Area of High Archaeological Potential, which is outlined in the Local Plan. The specific areas identified are the harbour edge where there is potential for submerged material and the ridge above it that may have settlements or burial sites along it. The inter-tidal zone in this area is also of particular importance due to the substantial rise in sea levels, and submerged sites present in the archaeological record.

Brownsea Island has 20 Grade II listed buildings, and over 50 more sites of historical interest, such as the deserted village of Maryland, Victorian kilns, battery stations and pit workings.

Wareham is a town of considerable historic interest, situated on a site that was established as far back as the Iron Age. The town was an important cross channel port in Saxon times. In 876AD, the Danes captured the town, and as a result of this, Wareham was one of a number of Wessex towns that were subsequently defended by building high walls. The town walls, which surround the old town on three sides are SMs and are among the best-preserved earthworks of the Saxon period in Western Europe. The 'Wareham and Stoborough Conservation Area' covers a large amount of the old part of the town and the surrounding land. There are approximately 250 Listed Buildings in the town of Wareham and the local parishes.

There are several areas of historic landscape that require protection. Those of relevance include Poole Park on the northern shore of Poole Harbour and Upton House on the shore of Holes Bay. In addition Compton Acres, off Canford Cliffs Road, has been designated as a Historic Park and Garden under the National Heritage Act, 1983.

There are numerous records of shipwrecks within Poole Harbour including a large iron-age log boat (Figure 4.3), which was discovered off Brownsea Island in 1965. This would have provided transport for goods within the harbour and the presence of which indicates the great potential for preservation of assets within the silts that are present. There have been numerous scattered finds that indicate the presence of several wrecks, dating back to the early eighteenth century. As well as wrecked ships, Holes Bay was traditionally used as a dumping ground for old vessels and the remains of many ships can be found there.



Figure 4.3 Poole Log Boat

Sub-cell 5F-5 South Haven Point to Handfast Point

There are a number of Grade I and II Listed Buildings within the area. There is also a Conservation Area at Studland.

Purbeck as a whole has a rich and diverse archaeological heritage with 512 archaeological sites listed in Dorset County Council's Sites and Monuments record, 168 of which are SMs.

Evidence of past land use has been well documented in the County Sites and Monuments Record. In the Parish of Studland Iron Age and Medieval field systems have been discovered and there is also evidence of a Roman settlement within the Area, with remains of a Roman cemetery on the site of St Nicholas Churchyard. Salt works dating from Roman and Medieval times have also been found within the parish, as well as the remains of an old windmill.

The majority of archaeological remains to be found within the Purbeck area consist of Bronze Age barrows (see Table 4.5)

Table 4.5 Scheduled Monuments of relevance to the SMP (Sub-area 5F-5)

Parish	SM No	Description	NGR
Studland	22992	The King Barrow	SZ 0461 8201
Studland	22995	Bowl Barrow, eastern end of Ballard Down	SZ 0420 8132
Studland	22999	Bowl Barrow, west of Studland Bay House	SZ 0330 8298
Studland	23000	Bowl Barrow, 100m NW Studland Bay House	SZ 0323 8305

Note: SM = Scheduled Monument; NGR = National Grid Reference

There are a number of known wrecks and potential wreck sites that lie within the area. Of particular interest is a 16th century vessel in Studland Bay. This wreck site is of national importance and designated under the Protection of Wreck Act 1973. Some artefacts also remain in an area known as 'The Yards', off the northern side of Handfast Point. Several damaged vessels were beached and broken up in this vicinity.

Sub-cell 5F-6 Handfast Point to Durlston Head

There are a number of Grade I and II Listed Buildings within the area in addition to a Conservation Area at Swanage. A major enhancement scheme has also been proposed for Swanage seafront to restore and maintain its special and unique historic character.

SM's in this area consist of two barrows on Ballard Down and the old prison and pump in Swanage. These are detailed in Table 4.6.

Table 4.6 Scheduled Monuments of relevance to the SMP (Sub-cell 5F-6)

Parish	SM No	Description	NGR
Swanage	153	The old prison and pump	SZ 0299 7876
Swanage	487	Two round barrows, eastern end Ballard Down	SZ 0400 8130

Note: SM = Scheduled Monument; NGR = National Grid Reference

There is evidence of shale working within the parish of Swanage dating from Roman times and an Iron Age field system. Remains of a Roman British settlement have also been discovered near the present day site of Swanage Caravan Park.

The entire area from South Haven Point to Durlston Head also falls within one of known 'high archaeological potential', as detailed in the Purbeck District Local Plan, which means that it is likely to contain archaeological remains.

At the limit of the study area, Durlston Castle, the Great Globe and the Chart are all Grade II Listed structures

5 References

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6 Abbreviations and acronyms

AONB	Area of Outstanding Natural Beauty
BAP	Biodiversity Action Plan
Defra	Department for the Environment, Food and Rural Affairs
EA	Environment Agency
EC	European Commission
EIA	Environmental Impact Assessment
ER	Environmental Report
ESA	Environmentally Sensitive Area
EU	European Union
GIS	Geographical Information Systems
Ha	Hectares
JNCC	Joint Nature Conservation Committee
km	Kilometre
km²	Kilometre squared (or 100ha)
LBAP	Local Biodiversity Action Plan
m	metre
MNR	Marine Nature Reserve
NNR	National Nature Reserve
NTS	Non-Technical Summary
PPPs	Plans, Programmes and Policies
R&D	Research and Development
RBD	River Basin District
RDP	Rural Development Plan
SAC	Special Area of Conservation
SAM	Scheduled Ancient Monument (now SM)
SEA	Strategic Environmental Assessment
SFRA	Strategic Flood Risk Assessment
SM	Scheduled Monument
SPA	Special Protection Area
SR	Scoping Report
SSSI	Site of Special Scientific Interest
UK	United Kingdom
UKCIP	UK Climate Change Impact Programme
UNESCO	United Nations Educational, Scientific and Cultural Organisation
WFD	Water Framework Directive
WHS	World Heritage Site