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Cross-border Cooperation Programme  
2007-2013  
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**DORSET**  
COAST FORUM

# The C-SCOPE Marine Plan



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## Foreword

I am very privileged and proud to be the Chairman of the Dorset Coast Forum because the Dorset coast is a very special place in the world, both for those who live and work here and for our large numbers of visitors. The unique beauty and character of the Dorset coast has led to important national and international designations including the Dorset Area of Outstanding Natural Beauty and the Dorset and East Devon Coast World Heritage site (the Jurassic Coast.)

Although of great beauty and interest, this coast is increasingly active and vibrant in response to the many pressures and opportunities. The long history of coastal activities in Dorset has given rise to a rich cultural heritage and the management of this beauty and heritage has always been a major focus of the Dorset Coast Forum. I recall long and complex debates within the Forum regarding whether a marine plan was required and if so what form it should take. As ever, the Forum decided that an innovative attempt should be made to design a plan that would be based on the best data and information that was available. Recognising the national and international importance of the plan, the Forum decided to take a collaborative approach that would involve local, national and international partners.

The C-SCOPE Project was the perfect vehicle to drive the plan forward. European funding came with the help of Belgian partners who were eager to work with us and regional and national partners stepped forward to support us. We knew that the development of the plan could only be successful if it had the support of stakeholders in the Dorset coast. I'm pleased to report that generous stakeholder support has been provided from the beginning.

The plan is, in effect, an experiment. It is non-statutory but we believe important nonetheless because development of the plan has involved so many stakeholders in the future of the Dorset coast. We believe that it will be a pilot in helping to shape national methods and immensely valuable because it has drawn together an enormous amount of information in one place.

The Dorset Coast Forum has again undertaken a complicated and challenging task that has, I believe, delivered a valuable and ground-breaking marine plan. I also believe that it will enrich our enjoyment and understanding of the Dorset coast for many years to come.



**Dr. Bob Huggins MBE, Chairman, Dorset Coast Forum.**

A handwritten signature in black ink, reading "R. Huggins". The signature is stylized and written in a cursive script.

## Executive Summary

Combining Sea and Coastal Planning in Europe (C-SCOPE) is a European collaboration between the Dorset Coast Forum (DCF) and The Coordination Centre on Integrated Coastal Zone Management in Belgium, funded by the EU Interreg IV A 'Two Seas' programme. The C-SCOPE Marine Plan is one of three key outputs of the project. Additional information on the background, funding and governance of the project can be found at [www.cscope.eu/en/](http://www.cscope.eu/en/)

[Chapter Two](#) of this document provides an overview on the international and national policy context for marine planning in England, whilst [Chapter Three](#) explains how the C-SCOPE marine plan was developed. Background information on the marine plan area, 1000km<sup>2</sup> of Dorset's coast and sea between Portland Bill and Durlston Head and out to twelve nautical miles, can be found in [Chapter Four](#). The core of this document is [Chapter Five](#) which sets out eight objectives to deliver sustainable development for the marine plan area, and the policies which sit under them.

### **Objective 1: healthy, diverse, productive marine and coastal environment**

*A healthy, productive marine environment where diversity and natural beauty is protected and enhanced, and whose resources are used sustainably, maintaining the integrity of marine ecosystems.*

### **Objective 2: thriving, resilient coastal communities**

*Coastal communities that have a high quality of life, that can thrive and prosper in harmony with a healthy marine environment.*

### **Objective 3: successful, sustainable marine economy**

*Successful, efficient marine enterprises that operate safely and responsibly, making innovative and sustainable use of the environment on which they depend while respecting the limits of that environment to accommodate change and development.*

### **Objective 4: responsible, equitable and safe access**

*Opportunities to experience the marine environment responsibly, enjoyably and safely are made available to all, managed at a level the environment can sustain and in a way which is compatible with commercial and other strategic uses.*

### **Objective 5: adaptation and mitigation for coastal and climate change**

*Maritime communities and businesses are well prepared for the physical, economic and management challenges they face, and well placed to take advantage of the opportunities presented by coastal and climate change, particularly where they benefit the local economy.*

### **Objective 6: strategic significance of the marine environment**

*Decisions about and uses of the marine environment recognise its strategic significance to the UK's national security and its social, economic and environmental well-being.*

### **Objective 7: valuing, enjoying and understanding the marine and historic environments, and wider cultural heritage**

*Organisations and individuals value, understand and conserve the character and diversity of the marine environment, including its significant natural and cultural heritage.*

### **Objective 8: Using sound science and data, and ensuring integration with existing plans and policies**

*Decisions should be made for the long-term on the basis of sound science and evidence, informed by local knowledge and priorities, or robust assessment of risk where evidence is not available. The Plan should integrate with SMPs, terrestrial plans, LDFs and other relevant plans and policies.*

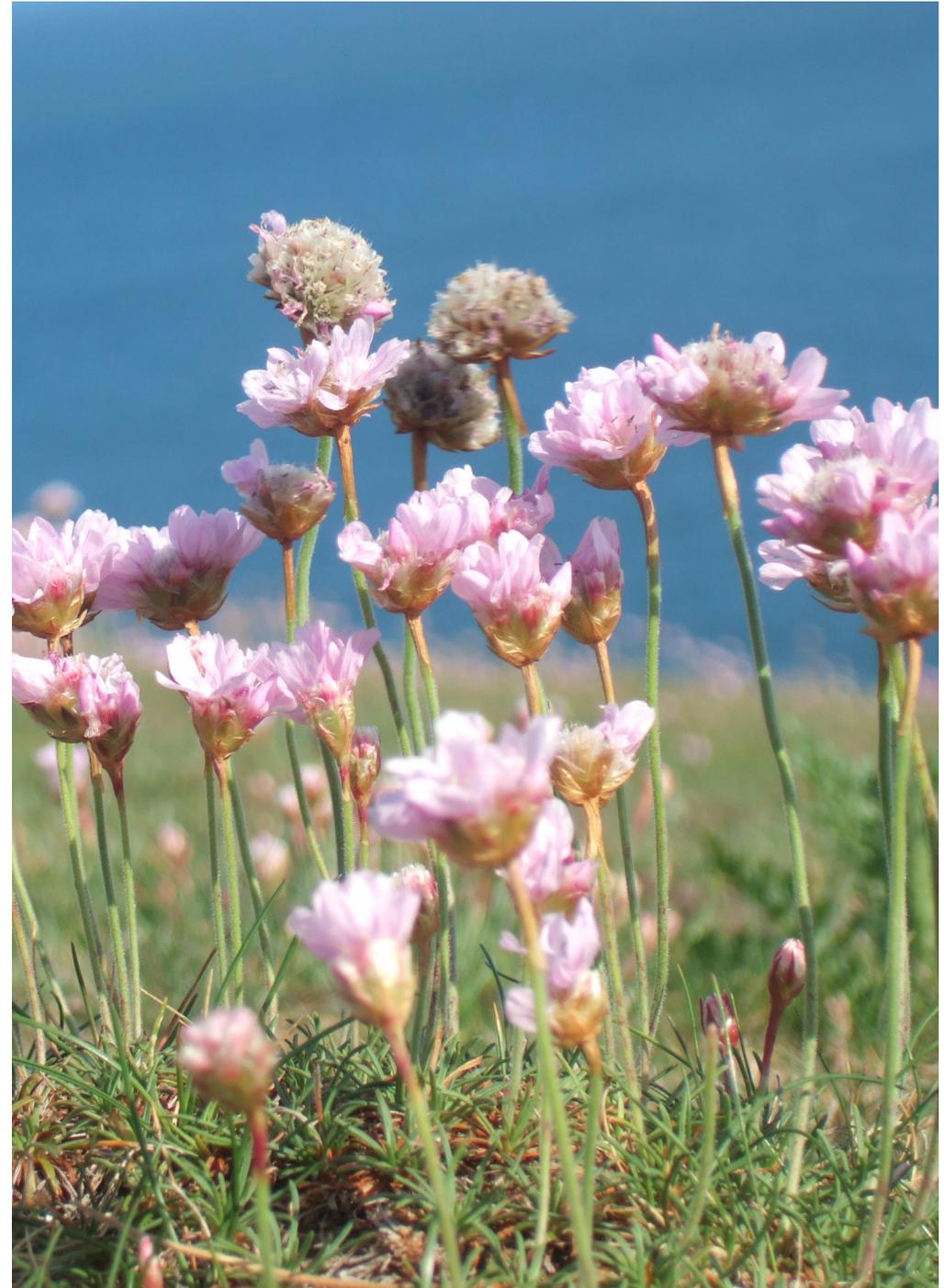
A total of sixty four policies take forward these objectives to provide guidance for decision makers and developers. Many policies have associated maps and are linked to the [Dorset Coastal Planning Tool](#). [Chapter Six](#) sets out the need for indicators, monitoring and review of the marine plan.

## Chapter 1: Introduction

Combining Sea and Coastal Planning in Europe (C-SCOPE) is a European collaboration between the Dorset Coast Forum (DCF) and The Coordination Centre on Integrated Coastal Zone Management in Belgium, funded by the European Union Interreg IV A 'Two Seas' programme. Its main aim is to achieve an integrated approach to land and sea planning and management. Both partners focused on three elements which link together to provide a comprehensive plan and information resource to underpin sustainable coastal management:

1. Developing a framework for integrating terrestrial and marine planning
2. Tools for achieving sustainable coastal economies and environments
3. Achieving commitment to Integrated Coastal Zone Management (ICZM) through stakeholder engagement.

The C-SCOPE Marine Plan seeks to take forward these elements. Additional information on the background, funding and governance of the project can be found at [www.cscope.eu/en/](http://www.cscope.eu/en/)



## Chapter 2: The international and national context for marine planning

### 2.1 What is marine planning?

Recognition of the economic, social and environmental importance of marine areas has grown significantly in recent decades. This has led to more widespread development of marine planning as a means of addressing risks, seizing opportunities and managing potential conflicts which arise in the marine and coastal environment.

Marine planning is a process which helps to deliver sustainable development and management of resources in the marine environment. Defra define it as *“strategic, forward-looking planning for regulating, managing and protecting the marine environment, including through allocation of space, that addresses the multiple, cumulative, and potentially conflicting uses of the sea.”*<sup>1</sup>

Globally, marine planning has taken a variety of forms, from early spatial plans which were designed to create and manage Marine Protected Areas, through multiple-use zoning schemes which have sought to allocate space for differing uses, to more recent attempts to apply an ‘ecosystem approach’ to the multiple-use of marine environment.

### 2.2 The international policy context

Marine planning is becoming an important vehicle for delivering a wide range of international policy objectives. Agreements made at the World Summit on Sustainable Development (Johannesburg, 2002) and The Convention on Biological Diversity place requirements for sustainable management of marine ecosystems and good governance of the marine environment on all signatories. At a European level the UK is bound by several important commitments including the OSPAR Convention’s Biodiversity Strategy (1992), the EC Biodiversity Strategy (1998), the EU Habitats Directive (Natura 2000 Network) and the Marine Strategy Framework Directive (MSFD, 2008). The MSFD aims to achieve ‘good environmental status’ of EU marine waters by 2020 and to protect the resource base upon which marine-related economic and social activities depend. This aim is transposed into UK law as

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<sup>1</sup> Canning, R., 2003, “The Elements of Marine Spatial Planning” in Coastnet Conference “Spatial Planning in the Coastal and Marine Environment: Next Steps to Action”, 1st October 2003.

the Marine Strategy Regulations (2010). Marine Planning must also operate within the framework of the Common Fisheries Policy and will help to deliver government obligations under the International Maritime Organisation and Council of Europe Conventions.

### 2.3 The national policy context

Nationally, the single most important driver for marine planning has been the Marine and Coastal Access Act (2009). The Act sets out the Government’s overarching intentions regarding the social, economic and environmental elements of sustainable development to manage local and regional plans and programmes by covering five principles including planning in the marine area. With respect to planning, the stated aim is: *“To create a strategic marine planning system that will clarify our marine objectives and priorities for the future and direct decision-makers and users towards more efficient, sustainable use and protection of our marine resource”*.

Part 3 of The Act legislates for the production of a Marine Policy Statement (MPS), which was published in March 2011. The MPS is expected to lead to more strategic and efficient management of the marine environment and marine resources. It sets out policies in the UK marine area to contribute to the achievement of sustainable development and provide a consistent policy steer for decision makers and users in the marine area. It takes into consideration the priorities of all the UK Administrations and aims to be forward looking (over 20 years and longer where possible). It aims to address European Union (EU) and international obligations and commitments and to explain how UK Administrations are addressing these and taking them forward through domestic policies.

The Marine Management Organisation (MMO) is tasked to deliver marine planning in England. The process is now underway and the inshore and offshore waters have been split into 11 plan areas (Figure 1), with an aim to deliver two plans every two years. The East Inshore and East Offshore areas were selected as the first areas for marine planning and the process officially began on 1st April 2011. The next two marine plan areas to be planned have yet to be selected by the MMO.

With a sustainable development marine plan model, there are close links between planning and licensing, with marine plans governing licensing decisions. As it currently stands, the Marine Policy Statement is the framework for decision making on licensing applications in areas without marine plans.

The MPS sits alongside the new (March 2012) National Planning Policy Framework (NPPF), which sets out Government’s planning policies for England and how these are expected to be applied. In a change to previous policy, the NPPF leads on a presumption in favour of sustainable development. The existing national policy statements, which are produced for Nationally Significant Infrastructure Projects (NSIPs) in key sectors under the Planning Act 2008 (including energy, ports, transport, water, wastewater and waste), remain part of the overall framework of national planning policy, and are a material consideration in decisions on planning applications. The Infrastructure Policy Commission which rules on NSIPs was abolished in April 2012, and major infrastructure developments will now be dealt with through the Planning Inspectorate.

Within the NPPF, local planning authorities are tasked to work collaboratively with the Marine Management Organisation in marine areas as well as to take account of marine plans and apply ICZM across land/sea boundaries when managing risk from coastal change. They are also required to identify Coastal Change Management Areas where an area is likely to be affected by physical changes to the coast.

Further reform of terrestrial planning in England will take place as a result of the passage of the Localism Act 2011. The planning and regeneration provisions of the Act abolish Regional Spatial Strategies and the Infrastructure Planning Commission as well as providing for neighbourhood plans. Parish Plans, particularly with regard to housing development, will also become increasingly influential under the Localism Act. At the time of writing, many of the provisions of the Act are due to come into force in April 2012, but significant uncertainty remains as to how terrestrial planning might interact with national and local marine planning.

## 2.4 Marine Planning in England

In the UK, the Marine Management Organisation (MMO) is tasked to deliver marine planning. The process is now underway, and in England, the inshore and offshore waters have been split into 11 plan areas (Figure 1), with the aim of delivering two plans every two years. The East Inshore and East Offshore areas were selected as the first areas for marine planning and the process officially began on 1st April 2011. The next two marine plan areas have yet to be selected by the MMO.

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**Figure 1: Marine Plan Areas in England.** Source: MMO. © British Crown, NERC and Sea-  
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# Chapter 3: Development of the C-SCOPE Marine Plan

## 3.1 Purpose and status of the Plan

The C-SCOPE Marine Plan is intended to provide non-statutory guidance. It provides users, managers and regulators of the marine plan area, whether in public, private or voluntary sectors, with direction, policies and advice to ensure that their plans and activities contribute to sustainable development in the area. While the Plan should be taken as a whole, it is also intended to be complementary to existing plans and strategies. It seeks to avoid duplication as far as possible but does, in conjunction with the Coastal Explorer Planning tool developed in parallel, sign-post users to other relevant plans and strategies.

## 3.2 Starting points for the C-SCOPE Marine Plan

### 3.2.1 Sustainable Development in Marine Planning

The UK Marine Policy Statement takes the achievement of sustainable development as the starting point for marine planning. At its simplest, sustainable development can be defined as *“development that meets the needs of the present without compromising the ability of future generations to meet their own needs”*.<sup>2</sup>

The Government’s strategy for sustainable development recognises the needs of the economy, society and the natural environment, alongside the use of good governance and sound science. The five core principles are laid out in Figure 2, and these are reflected in the High Level Marine Objectives (HLMOs):

- achieving a sustainable marine economy
- ensuring a strong, healthy and just society
- living within environmental limits
- promoting good governance
- using sound science responsibly.

The achievement of sustainable development and the HLMOs have therefore been used as the basis for the objectives of the C-SCOPE Marine Plan.

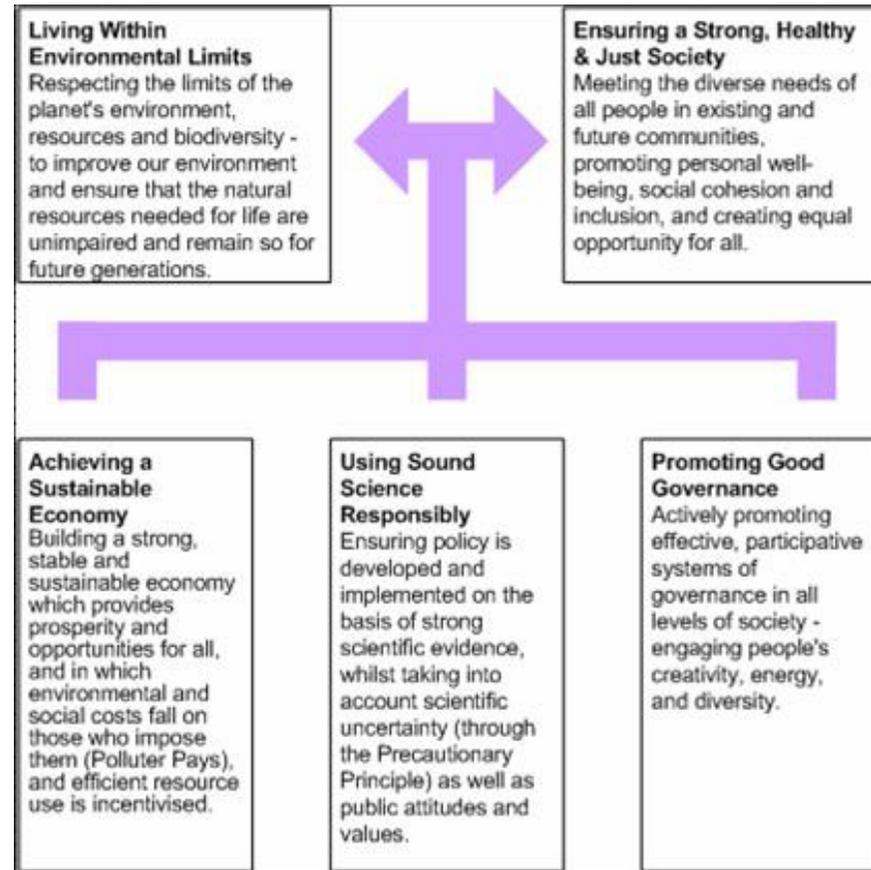


Figure 2: Shared UK Principles of Sustainable Development. Source: Defra

2 Bruntland Commission report 'Our Common Future' (1987)

### 3.2.2 An ‘Ecosystem Approach’ to Marine Planning

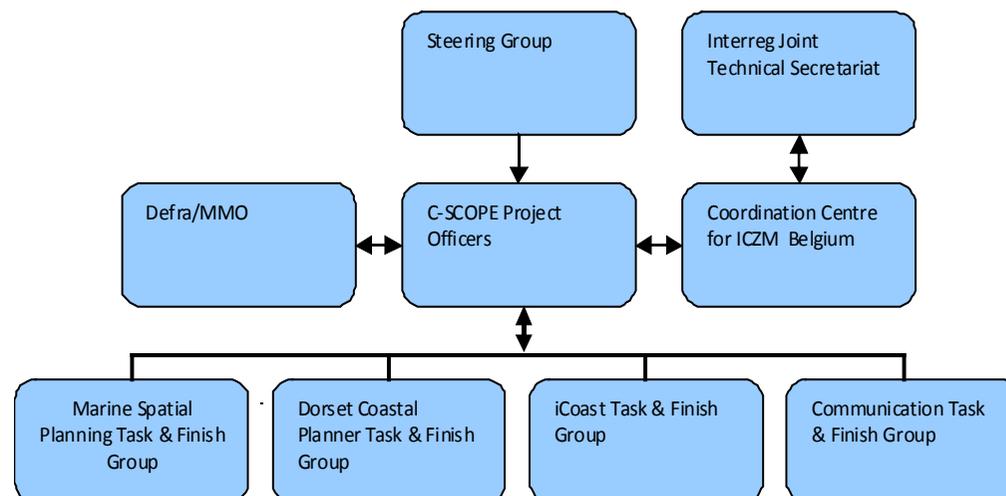
The Convention on Biological Diversity (CBD) describes an Ecosystem Approach as “a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way”. The Approach adopted by the CBD looks beyond ‘natural’ ecosystems to include social, cultural and economic factors which are wholly interdependent with biodiversity and ecosystem goods and services. This approach is embedded firmly in UK marine policy: the Marine Strategy Regulations (2010), state that the Strategy “*must apply an ecosystem-based approach to the management of human activities within the marine strategy area*” which it proceeds to define as one “*which ensures that the collective pressure of human activities is kept within the levels compatible with the achievement of good environmental status and does not compromise the capacity of marine ecosystems to respond to human-induced changes*”. The C-SCOPE Marine Plan also adopts this approach.

### 3.2.3 Stakeholder engagement in Marine Planning

A key principle underpinning the Ecosystem Approach required by the UK Marine Policy Statement is that it should involve all stakeholders and balance local and wider public interests. To do so, requires engagement with “*a broad range of institutions, organisations, groups and individuals that have an interest in, understanding of, or potential influence over, the management of a given ecosystem.*”<sup>3</sup>

The existing networks, relationships and trust established by the Dorset Coast Forum (DCF) have been an essential delivery mechanism for stakeholder engagement within the C-SCOPE project. DCF is a strategic coastal partnership established in 1995 to address the long-term, broad-scale issues facing the Dorset coast and its inshore waters<sup>4</sup>. It has over 260 member organisations from the private, voluntary and public sectors. Its membership has wide-ranging expertise, local knowledge and a deep understanding of Dorset’s coast and its inshore waters. The Forum has no executive powers, its members have no voting rights and as far as possible it operates on an ‘equal partners’ basis.

Stakeholder engagement was initially implemented/managed through the C-SCOPE Steering Group (Appendix 1) which was established in early 2008 to help develop the project. The Group has met on a quarterly basis throughout the project, providing strategic advice to the C-SCOPE team. Four Task and Finish Groups (Appendix 1) were set up to help deliver key aspects of the project; DCF members were given an open invitation to join any Group of their choice. Each Group had its own Terms of Reference and Chair. Figure 3 highlights how stakeholders were integral to the project’s management and delivery.



**Figure 3: Project structure**

The Marine Planning Task & Finish Group met a total of eight times (Table 1) over three years and was involved in every stage of marine plan development. Stakeholders from the Group were also engaged on a one-to-one basis where necessary; for instance several meetings were held with Portland Harbour Authority Ltd to ensure integration between its numerous Port plans and strategies and the C-SCOPE Marine Plan.

<sup>3</sup> POSTNOTE Number 377, May 2011. The Ecosystem Approach. Parliamentary Office of Science & Technology.

<sup>4</sup> Coastal and inland boundary is non-defined and issues dealt with on an individual basis. ‘Inshore waters’ includes all waters out to the 12nm boundary.

The Group was not, and could not be, totally representative of all stakeholders, so other means of engagement were also used. An interactions matrix was completed as part of the marine plan evidence base. For this study over fifty stakeholders were interviewed including representatives from major sectors such as shipping, offshore renewables, ports, MOD and fishing. Over 120 DCF members were also involved in a consultation workshop for the Land and Seascape Character Assessment.

At a more local level, a series of six community road-shows were held throughout the marine plan area which allowed residents to share their vision for the Dorset coast and express how and where they use the coast. These visions can be found in [Appendix 2](#). A detailed analysis and comparison of stakeholder engagement in Dorset and Belgium will form part of the joint final outputs of the C-SCOPE project.

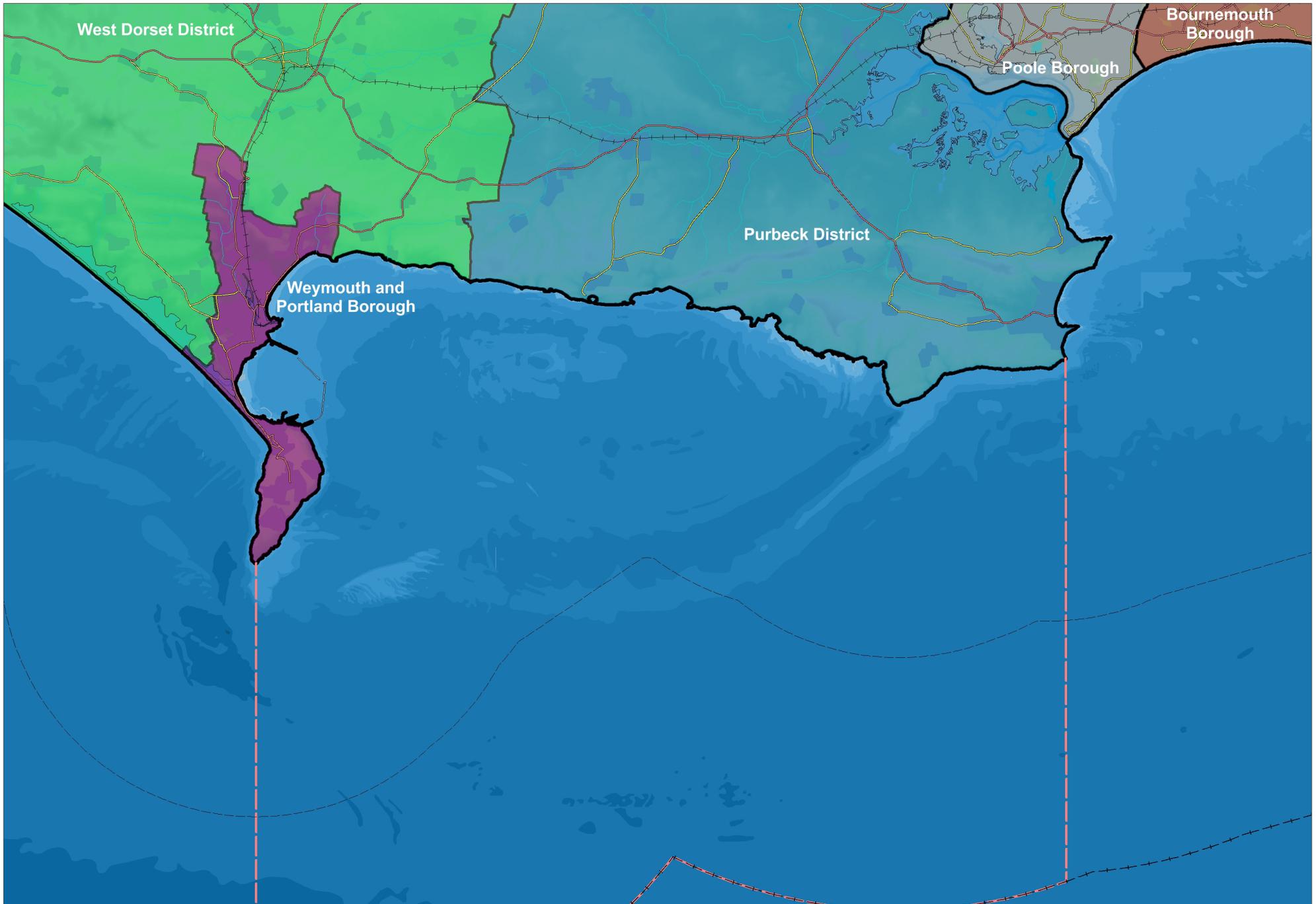
### 3.2.4 Integration of the C-SCOPE Marine Plan with existing plans

The primary aim of the C-SCOPE project is to achieve a seamless, integrated approach to land and sea planning and management. Within the C-SCOPE Marine Plan area there are many existing plans and policies to which it must have regard:

- **Local Plans/Local Development Frameworks (LDFs):**  
(Figure 4) The Planning and Compulsory Purchase Act 2004 included the replacement of local plans with local development frameworks. Development frameworks comprise a portfolio of development plan documents and supplementary planning documents that provide locally specific planning policy guidance against which to determine planning applications. However, although they started to produce LDFs Weymouth & Portland Borough Council and West Dorset District Council are currently producing a joint Local Plan, which will replace their individual existing Local Plans. The draft joint Local Plan is due for consultation in the summer of 2012. Purbeck District Council is in the process of producing an LDF, with the Core Strategy due for adoption in June 2012. Strategic Flood Risk Assessments and the Bournemouth, Dorset and Poole Minerals and Waste Development Framework also form part of the evidence base for LDFs and need to be taken into account.



Figure 4: Local Authorities Boundaries



- **Local Transport Plans:** The Bournemouth, Poole and Dorset Local Transport Plan 2011 – 2026 came into effect from April 2011. It includes a 15 year Strategy, which sets out a long-term vision for how the transport network will be developed and a three year Implementation Plan setting out planned expenditure on transport over the period April 2011 to March 2014.
- **Shoreline Management Plans:** the Durlston Head to Rame Head Shoreline Management Plan 2 is an assessment of the risks associated with coastal processes and provides a 'route map' for local authorities to adapt to future coastal change. Although a non-statutory plan, the SMP is a key strategy in managing flooding and coastal erosion and has been adopted by all local authorities within the C-SCOPE Marine Plan area; it is therefore important that policies within the C-SCOPE plan are compatible with it.
- **The SW River Basin Management Plan (2009):** created under The Water Environment (Water Framework Directive) Regulations (England and Wales) 2003, the Plan sets out the environmental objectives for all water bodies out to one nautical mile, presents a programme of measures to achieve these objectives and contains a monitoring programme to assess progress. Strong links between river basin planning and the C-SCOPE Marine Plan are essential to achieve their overlapping objectives.
- **Management Plans for protected sites:** two further plans play a significant role within the C-SCOPE Marine Plan area and require careful integration into the MSP. The Dorset AONB Management Plan 2009-2014 sets out the Partnership's vision for the AONB, and is a material consideration in the planning process. As it covers a coastal protected landscape with harbour, estuarine and intertidal areas within its boundary, the Plan takes into account the special issues surrounding the land/sea interface. The Dorset and East Devon Coast World Heritage Site Management Plan 2009-2014 sets out proposals for conservation of the geology and geomorphology for which the area was designated, access, education and science as well as identifying ways in which World Heritage Site status can help sustainable development in the wider area. There are important connections with both the SMP2 and the AONB Plan which helps to conserve both the WHS and the wider countryside that surrounds it.
- **Dorset Coast Strategy:** the Dorset Coast Strategy 2011-2021 (DCS) is a non-statutory document which aims to set out a consensus view on the way in which the members of the Dorset Coast Forum will work together to improve the planning and management of the Dorset Coast and inshore waters. The goals of the Strategy are to:
  - Establish integrated policy;
  - Establish guidelines for more detailed coastal management plans;
  - Identify strategic opportunities for resource development;
  - Engage and develop participation of a wide range of partners;
  - Develop a co-ordinated approach to strategy implementation;
  - Identify solutions for the sustainable coastal development and management;
  - Evaluate success and report results throughout Europe.

As the C-SCOPE marine plan helps to fulfil many of the goals of the Strategy, it shares its vision.

### 3.3 Process for producing the C-SCOPE Marine Plan

#### 3.3.1 Project timescales

The project was awarded funding in November 2008 and, following staff recruitment, was officially launched in April 2009. Due originally to complete in March 2012, a project extension was granted by the Joint Technical Secretariat of the Interreg IV A 'Two Seas' programme until June 2012. Key events and milestones of the marine plan are listed below.



**Table 1. Key events and milestones**

Date	Event/Milestone
November 2008	Funding Awarded
March/April 2009	Staff recruited
April 2009	Project launched
August 2009	First Task & Finish Group meeting. Vision scope and early objectives
September 2009	MSP and indicators conference
November 2009	Task & Finish Group meeting. Reviewed HLMOs and existing marine plans
February 2010	Task & Finish Group meeting. Reviewed draft objectives, workshop to identify current issues, forces for change and opportunities
April 2010	Offshore Renewables Capacity Report
May 2010	Task & Finish Group meeting. Discussed structure of marine plan and how objectives could be expressed spatially
September 2010	Land and Seascape Character Assessment Report
October 2010	Task & Finish Group meeting. Reviewed first draft policy framework
November 2011	Socio-economic conference
December 2010-February 2011	Community Roadshows
April 2011	Appointed Sustainability Appraisal consultants
May 2011	Task & Finish Group meeting. Reviewed evidence base and high level Alternatives for Sustainability Appraisal
August 2011	Sustainability Appraisal Scoping Report
September 2011	Seabed Habitat Maps
October 2011	Sustainability Appraisal Workshop (Task & Finish Group)
December 2011 – March 2012	Draft Marine Plan Consultation
June 2012	End of Project Conference and reports

### 3.3.2 Compiling the Evidence base

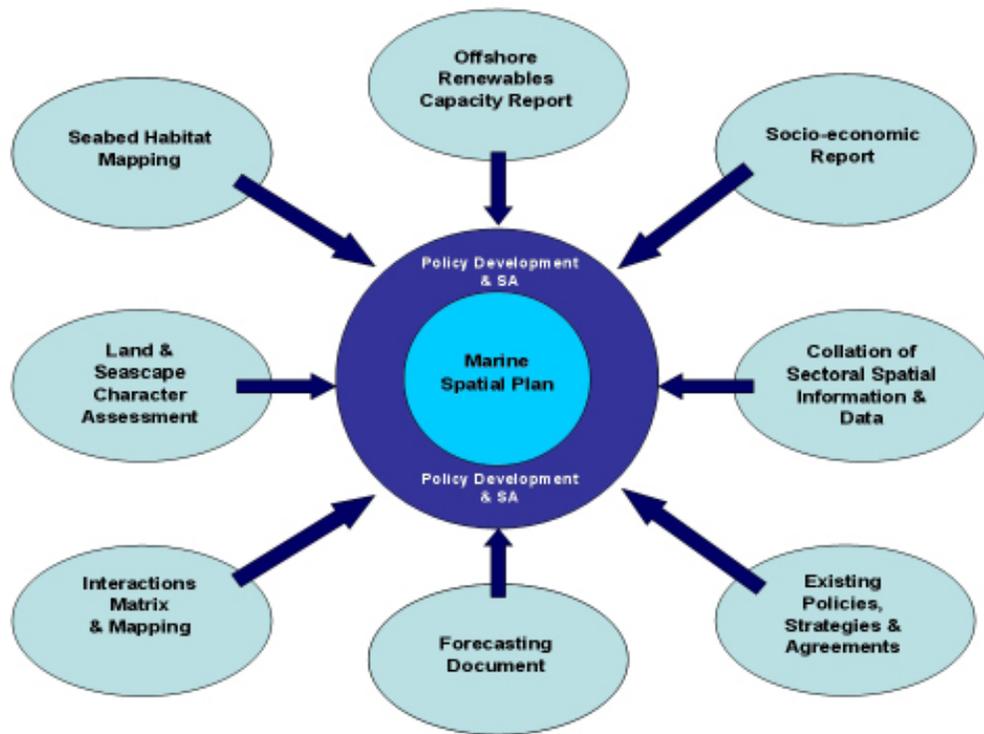


Figure 5: Evidence base schematic

A robust evidence base is an essential foundation for marine planning and a number of studies have either been commissioned, or undertaken by the project team, to inform development of this Plan. Key elements of the evidence base related to:

- Collation of existing datasets: the first stage in evidence gathering involved collecting and collating existing datasets from a wide range of sources. Data were compared to existing national sets and gap analysis conducted. All spatial data are held on a MapInfo Geographic Information System (GIS). A confidence assessment was conducted on data used within the Plan (methods can be found in [Appendix 3](#)). Best available data were used. However, data given a low confidence rating were treated with due caution in decision making.
- Existing plans and strategies: Marine Planning does not happen in isolation; to ensure integration with terrestrial planning as well as compliance and/or

compatibility with existing marine Plans, Policies and Programmes (PPP) relevant documents were collated and reviewed - details can be found in the Sustainability Appraisal Report.

- Seabed maps: a fundamental piece of work involved the production of detailed seabed and habitat maps. Over 800km<sup>2</sup> of multi-beam sonar survey in combination with video drop-down and grab sampling were conducted alongside sedimentary and oceanographic modelling to create a high-resolution seabed habitat map to EUNIS (European Nature Information System) level 3 standards. These maps were used to develop sensitivity maps which will help to inform all future planning decisions, ensuring developments are located in optimum locations and cause minimum damage to the marine environment.
- Offshore Renewable Energy Capacity: the UK Government target to achieve 15% renewable energy use by 2020 was a key driver for the development of a national marine planning system. An Offshore Renewables Capacity Study was undertaken to gain an understanding of those areas within the Dorset marine environment that may be considered suitable for marine renewable energy development from wave, tidal stream and offshore wind technology groups. The study also reviewed current and emerging technologies and land-based infrastructure requirements.
- Landscape and Seascape Character: Landscape Character Assessment is an established factual and objective technique which is used in a range of terrestrial planning and management situations. New methods, consistent with national guidance, were developed to produce a Landscape and Seascape Character Assessment for Dorset which describes the character of coastal and marine environments, the key forces for change and how these might be managed in the future. The importance of this work was recently recognised in awards granted by the Landscape Institute and the South West Royal Town Planning Institute (RTPI).
- Socio-Economic Characteristics: it is anticipated that marine planning will play an important role in helping to stimulate economic regeneration in coastal towns and to improve the wellbeing of local populations. To identify key issues which need to be addressed, a socio-economic report for the Marine Plan area was conducted. This includes information on population, housing and the local labour market, a profile of marine industries and an Economic Impact Assessment of these industries on the local economy.

- Spatial interactions: It was also essential to understand the complex spatial interactions which take place between sectors in the coastal and marine waters off Dorset. A matrix was used to capture information on the nature, extent and intensity of these interactions as well as their temporal nature. Over fifty face-to-face interviews were recorded, and this narrative is as informative as the interactions themselves. Interactions were later mapped using GIS to highlight areas where competition for space is more intense and identify where there are opportunities to enhance current use.
- Forecasting of future trends: Finally, by its very nature, a marine plan is forward looking. It is important to understand both national and local sectoral trends and possible future developments which will need to be factored in to the marine plan. Climate change is also a major force for change and its potential effects on the marine environment, sectors and communities also need to be considered. A forecasting document has been produced to address these needs.

**All supporting documents and appendices can be found alongside the Marine Plan.**

### 3.3.3 Conducting spatial analysis

In the initial stages of the marine planning process, the project team explored a range of tools to support decision making<sup>5</sup>. Whilst there are a wide range of such tools available, it was felt that few addressed the specific needs of marine planning for sustainable development. Therefore, the project team adapted and developed a range of techniques and tools to enable them to interrogate the data and inform policy.

All data are held on a MapInfo Geographic Information System (GIS) which in itself allows for simple data analysis. To gain a greater understanding of the intensity and location of human activities within the C-SCOPE Marine Plan area, an activity 'heat map' was produced. As might be expected, the results showed a concentration of activity in the coastal zone. However, these activities do not necessarily take place at the same time, or in the same three-dimensional space. Results from the interactions matrix were expressed spatially, and the resulting series of maps revealed that many activities which were apparently competing for space were actually 'neutral' interactions. When considered in combination with forecast activities in the C-SCOPE Marine Plan area, plus existing spatial and temporal management measures (Table 2 below), these findings reinforced the Task and Finish Group's decision that further measures were not necessary in the Marine Plan.

<sup>5</sup> Decision support tools considered include Marxan with Zones and Multi-criteria analysis.



**Table 2. Existing Spatial Management Measures within the C-SCOPE Marine Plan Area (adapted from the UNESCO Step by Step Guide to Marine Spatial Planning)**

<b>Sector</b>	<b>Spatial Management Measures</b>	<b>C-SCOPE Marine Plan Area and Surrounding Waters</b>
<b>Marine Transportation</b>	Mandatory Vessel Traffic Routes	Commercial shipping route into Portland Harbour
	Ship Routes/Fairways	Buoyed fairway into Portland Harbour for marina traffic
	Vessel Traffic Separation Schemes	Channel Separation Scheme to the south of the area
	Areas To Be Avoided (by vessels)	Overwintering Bird areas – The Fleet, Portland Harbour
	Precautionary or Prohibited Areas	Portland Port unauthorised navigation prohibited area
	Particularly Sensitive Sea Areas (PSSAs)	Portland MEHRA High Risk cell
<b>Ports</b>	Pilot Boarding Areas	Portland Harbour and Weymouth Harbour Joint Pilotage Area
	Safety Zones Around Oil Spill Response Operations	Oil spill clean up priority areas, entire coastline
	Safety Zones Around Vessels and Terminals	Portland Port unauthorised navigation prohibited area
	Anchoring & No-Anchoring Grounds or Areas	Portland Harbour safe anchorage area, Anchorages, Refuge Anchorage Weymouth Bay
	Security Zones in Ports and Waterways	Portland Port unauthorised navigation prohibited area
<b>Fishing</b>	Fishery Closures Areas, including Seasonal Closures	Southern IFCA Byelaws
	No Trawl Areas	MCZ Reference Areas – Not designated yet
	Artificial Reef Areas	Wreck to Reef
<b>Oil &amp; Gas</b>	Oil & Gas Lease or Concession Areas	Multiple throughout the area
	Areas Withdrawn from Leasing	Multiple throughout the area
<b>Renewable Energy</b>	Wind Farms, Wave Parks, & Tidal Energy Lease or Concession Areas	Crown Estate Round 3, Zone 7 – West of Wight
<b>Pipelines &amp; Cables</b>	Energy Transmission Cable Rights-of-Way	QinetiQ De-gaussing Cable, and Noise Range, Weymouth Bay
	Cable Lines (not always in Rights-of-Way)	QinetiQ De-gaussing Cable
<b>Sewage</b>	Sewer Lines and Diffusers	Multiple long and short-fall sewer outfalls
<b>Dredging</b>	Dredging Site or Areas	Non active
	Dredged Material Disposal Areas or Sires (Active and Inactive)	Disposal Site, Weymouth Bay
<b>Military</b>	Military Operations or Exercise/Training Areas (“Hot Zones”)	Multiple throughout area
	Danger, Restricted, or Security Areas	Lulworth Ranges Inner and Outer Danger Areas
	Military Testing Ranges	QinetiQ De-gaussing and Noise Range, Weymouth Bay
	Submarine Operating Areas	Entire Area; although not-often used

<b>Sector</b>	<b>Spatial Management Measures</b>	<b>C-SCOPE Marine Plan Area and Surrounding Waters</b>
	Security and Safety Around Naval Ships	Portland Port security for Royal Fleet Auxiliary Ships
<b>Recreation</b>	Wildlife Viewing Areas	Portland Bird Observatory
	Personal Watercraft Areas	PWC Channel within Portland Harbour and at Bowleaze Cove
	Watersports	Ski boat and sail board approach channels, Weymouth Bay, Recreational management plan, Portland Harbour
	Bathing Areas	Weymouth Bay, Swanage Bay
<b>Marine Protected Areas</b>	MCZ	South Dorset, South of Portland, Chesil Beach and Stennis Ledges, and Broad Bench to Kimmeridge Bay rMCZs – not designated yet
	MCZ Reference Area	South East of Portland Bill and South Dorset Reference Areas – not designated yet
	Special Protection Area Chesil and the Fleet	Chesil & the Fleet
	Special Areas of Conservation	Chesil and the Fleet, Studland to Portland pSAC - not designated yet
	Voluntary Marine Protected Areas	Purbeck Voluntary Marine Reserve, Kimmeridge
	SSSI	Chesil and the Fleet, Portland Harbour Shore
	Ramsar	Chesil and the Fleet
<b>Nature Conservation</b>	Fish Spawning Areas	Sprat and Sole spawning areas – Weymouth Bay
	Fish Nursery Areas	Whiting , Lemon Sole at Lyme Bay/Fleet, Mackerel entire area, Bass at the Fleet
	Protected Seabird Feeding Areas	The Fleet, Portland Harbour
<b>Research</b>	Scientific Reference Sites	South East of Portland Bill and South Dorset Reference Areas, Purbeck Marine Wildlife Reserve, Durlston Marine Research Area

An analysis of future activities within the area revealed that, in addition to offshore renewables, shellfish mariculture is the most likely development to occur within the timescale of the Marine Plan. Constraints mapping was therefore conducted to identify the most appropriate areas for developers to target and these were incorporated into the policy framework.

Spatial analysis methods can be found in [Appendix 4](#).



### 3.3.4 Conducting the Sustainability Appraisal and Habitats Regulations Assessment

In developing a marine plan there are inevitably a number of potentially conflicting priorities. Indeed, Government guidance on sustainable development to the MMO recognises that the high level marine objectives are themselves potentially conflicting<sup>6</sup>. Strategic decisions may benefit one sector more than another or policies may emphasise, for example, protecting the environment over development; the Sustainability Appraisal (SA) process helps to ensure that these decisions are fair, transparent and contribute to achieving sustainable development.

Sustainability Appraisal is based on European Directive 2001/42/EC “on the assessment of the effects of certain plans and programmes on the environment” (the ‘Strategic Environmental Assessment (SEA) Directive’). This is transposed in England by “*The Environmental Assessment of Plans and Programmes Regulations*” (the ‘SEA Regulations’). The SEA Directive and Regulations are essentially procedural in nature and provide a level of leeway as to their substantive interpretation. In England, the Government decided to interpret the requirements more broadly, to include wider social and economic aspects. This process is referred to as ‘Sustainability Appraisal’ (SA).

While the C-SCOPE Marine Plan is non-statutory and there is no obligation to conduct an SA, it was felt that it could perform a key role in the planning process, ensuring full integration of environmental, social and economic objectives and providing a robust test of the plan-making process with an element of external challenge.

In addition to the SA, a full Habitats Regulation Assessment was conducted alongside the development of the Marine Plan to ensure integration of the findings not only with the Plan but with the SA. The Habitats Regulations Screening Assessment, alongside the Sustainability Appraisal, accompanies the Marine Plan for consultation.

<sup>6</sup> Draft statutory guidance to the Marine Management Organisation on its contribution to the achievement of sustainable development. Presented to Parliament pursuant to section 2(6) of the Marine and Coastal Access Act 2009. March 2010.

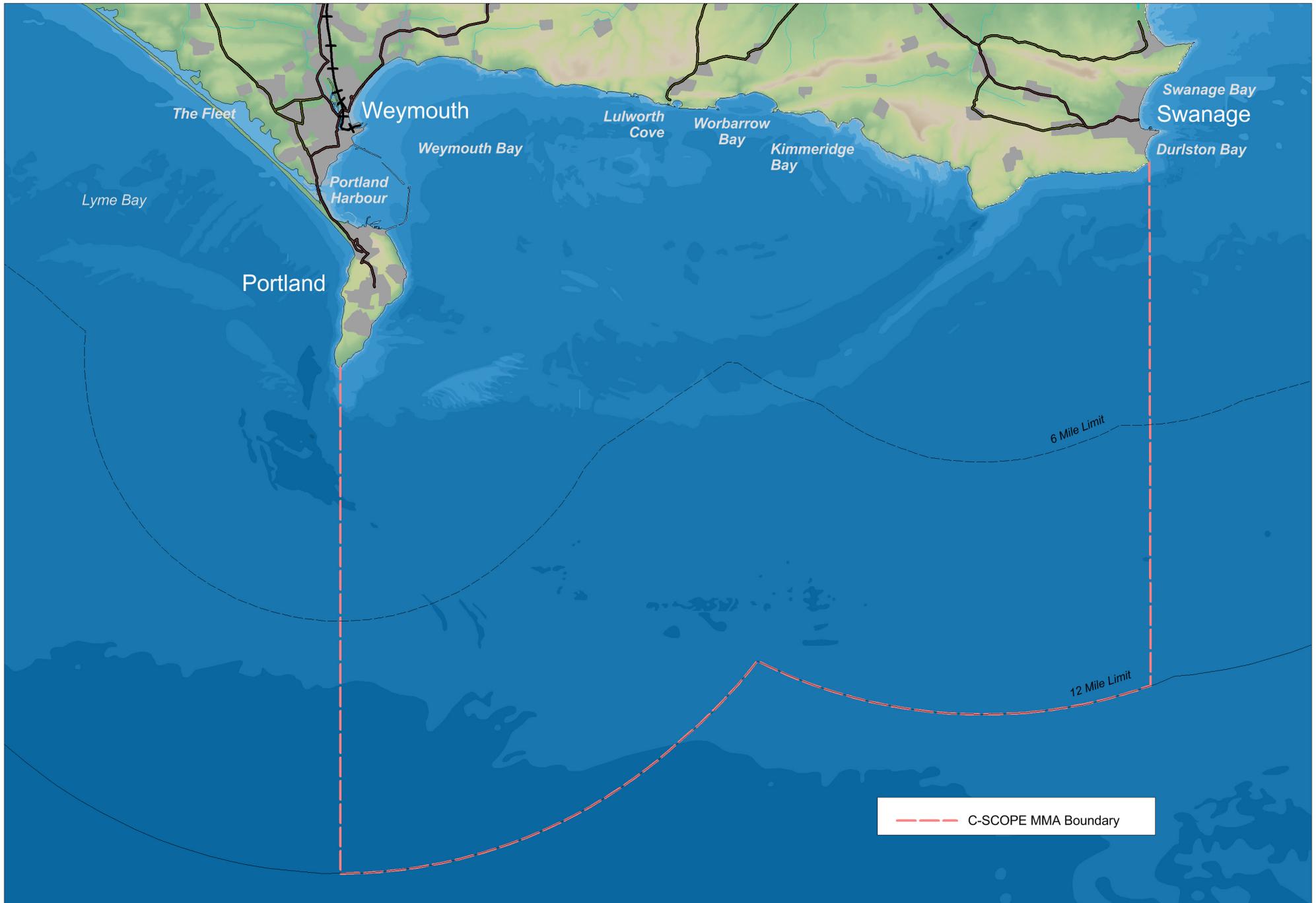


## Chapter 4: An overview of the C-SCOPE Marine Plan Area

### 4.1 Site description

Covering an area of 953 km<sup>2</sup>, The C-SCOPE Marine Plan area stretches from Portland Bill in the West to Durlston Head in the East. Its seaward extent is the 12 nautical mile territorial seas limit (Figure 6). The Fleet, whilst outside the boundary, has been included in all decision making as it is connected to the waters of Portland Harbour via Smallmouth and the Narrows, through which the tide ebbs and flows. This area was chosen to encompass a variety of coastline types and a wide range of uses, including the urban and industrial areas of Weymouth & Portland. Due to an almost infinite number of ways which it could be delineated, the inland limit has deliberately not been defined.

Figure 6: C-SCOPE Marine Plan Area



## 4.2 Geology

The Dorset coast is renowned for its geology and in December 2001 a 155km (95 mile stretch of East Devon and Dorset coast, including most of the Marine Plan area, was declared a World Heritage Site by UNESCO as *“an outstanding example representing major stages of the Earth’s history, including the record of life, significant ongoing geological processes in the development of landforms, and significant geomorphic or physiographic features”*.

The area is also world famous for fossils, with new discoveries constantly being uncovered. The sequence of cliffs and bays along Dorset’s coast also reveal the complexity of the geological structures, with a considerable range of geomorphological features and processes evident along the coast line, often little impacted by human activity. Numerous examples of landslides, and beach formation and evolution in relation to sea level change are apparent, again making the Dorset coast an extremely important resource.

On the Isle of Portland thin limestone soils support rich flora and fauna – particularly orchids and butterflies. Quarrying of the fine white limestone on Portland continues to this day, and many of London’s finest buildings, including St Paul’s Cathedral, are built from it.

To the east of Weymouth the coast is made up of a complex sequence of rocks, formed from Upper Jurassic clays, limestones and sandstones, which are twisted by folds and faults. Around Osmington there is a natural seep of oil rising from the seabed, and oil can still be seen seeping onto the sea surface near Bran Point. In 1826, a landslide at White Nothe created the famous ‘Burning Cliff’ when a chemical reaction caused the organic-rich clays to start smouldering.

Lulworth Cove is a perfect horseshoe bay formed when the sea flooded through a narrow gap in the hard Portland Limestone that formed the cliffs, allowing it to erode the much softer rocks behind. Close by, the Lulworth Crumple is a complex fold, formed by major earth movements in the same period as the Alps were formed, and Durdle Door is a perfect coastal arch of rocks tilted almost vertically.



Kimmeridge Bay contains a thick sequence of Kimmeridge Clay, with harder bands of dolomite and bituminous shales creating a series of rocky ledges running out to sea which provide some of the best access to marine wildlife in the UK. Further east, oil held in the Middle Jurassic Cornbrash Limestone layer, has been extracted on the cliff top since 1959; production is currently 80 barrels per day (12,720 litres). The nearby Wytch Farm Oilfield is the largest onshore field in Western Europe.

The Purbeck section of the coast consists mainly of early Cretaceous limestones alternating with shales and marls. Coastal limestone downland supports internationally important plants and animals and the cliffs are home to large colonies of breeding seabirds. The area has been quarried since Roman times and the qualities of the stone vary from layer to layer, making it suitable for a range of uses; from ornamental columns to hard-wearing paving stones.

Cliff falls and rock falls are common within the Marine Plan Area. The large cracks and fissures mean that the parts of the coastal cliffs are prone to collapse at any point throughout the year. Landslides are also a common occurrence, at various scales, both large and small. The instability of the coast is due to the numerous situations where permeable strata, principally the chalk and Upper Greensand, over-lie impermeable clays as well as erosion of the toe of cliffs by the sea.

As shown by the DORIS seabed map (Figure 7), the complex geological features are not limited to the land. For example, a series of limestone ledges up to 15m across can be found in Worbarrow Bay and St Alban's ledges, another limestone feature, extends out over 10km offshore. Extensive bedrock terraces occur off Portland Bill, where the coastal cliffs extend underwater and are clearly visible as 20m drop-offs.

There is a mixture of seabed sediment forms that are indicative of the hydrodynamic conditions affecting them. Inshore waters around the headlands are exposed to greater current flows and typically have sediments scoured off to expose the underlying bedrock. This most noticeably occurs around Portland Bill and St Alban's Head. There is little sediment cover between Portland and Swanage, revealing another dimension of the rock structure; faults, folding, and erosion are all evident. In larger bays tidal currents and exposure to wave influence are greatly reduced and so sediment regimes are indicative of depositional environments and therefore, softer sediments (muds and muddy sands prevail).

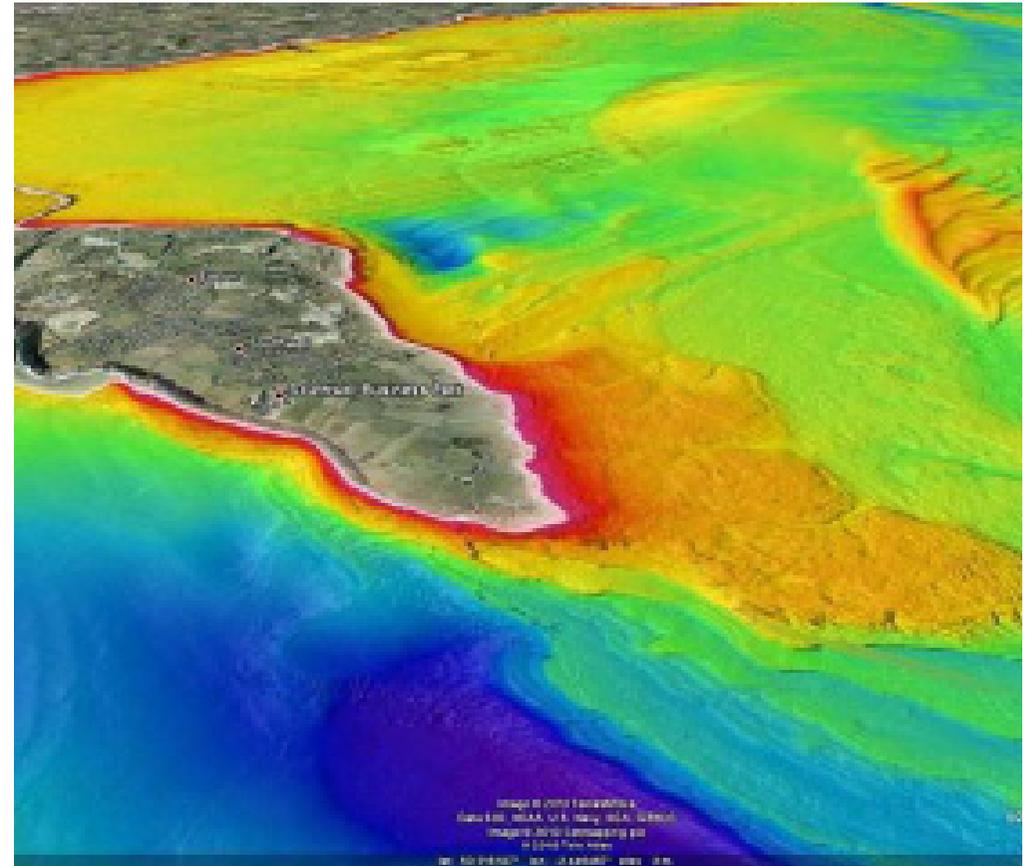
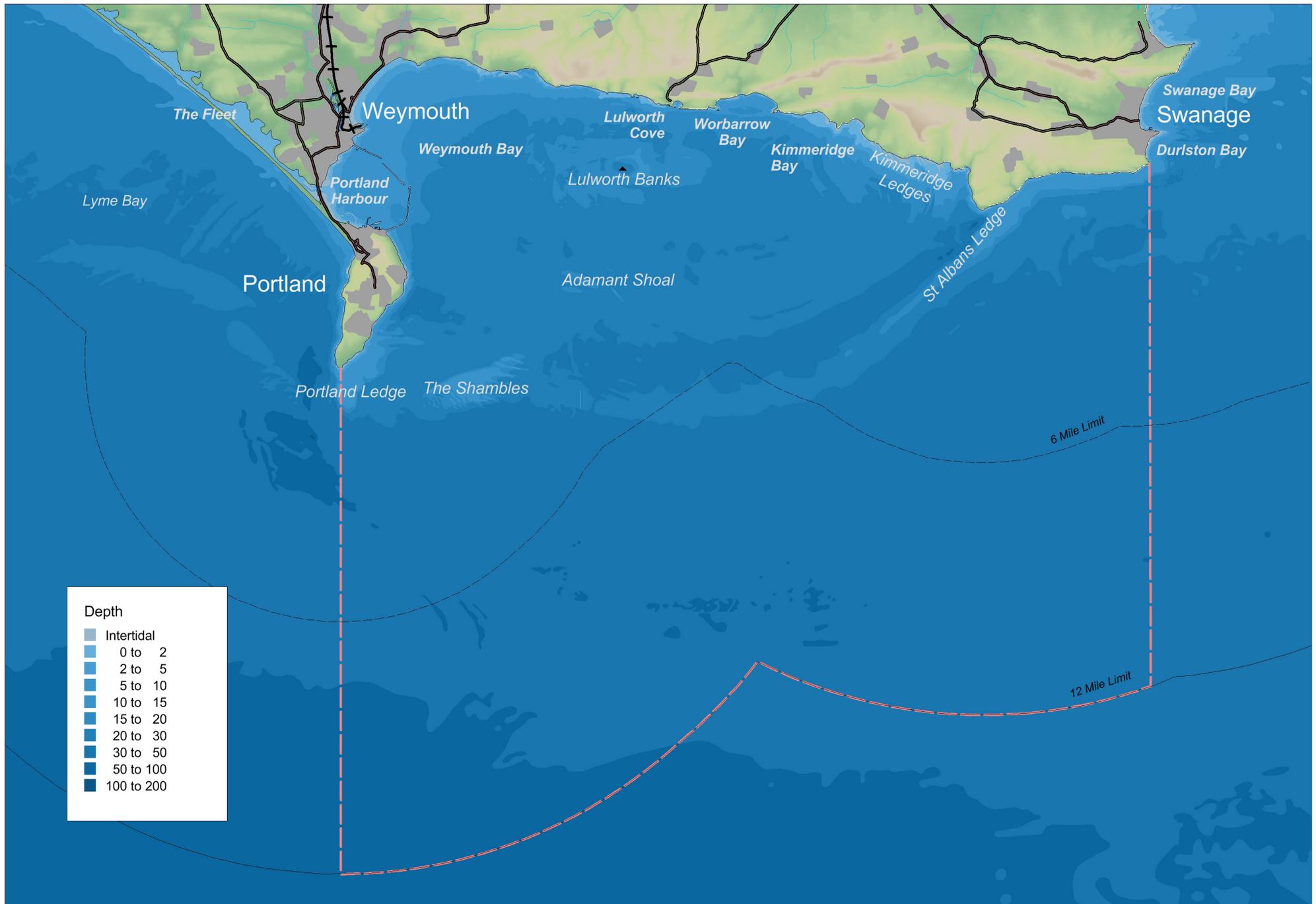


Figure 7: Land topography and DORIS bathymetry

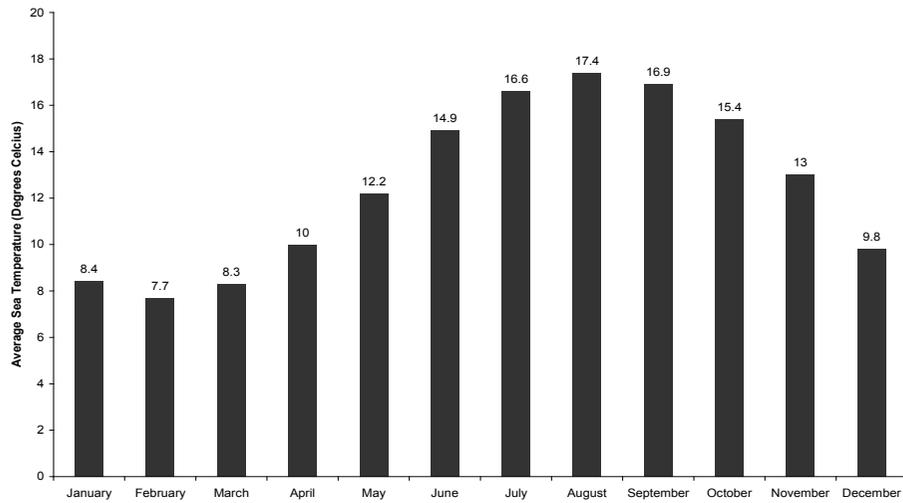
Figure 8: Marine Plan area Bathymetry



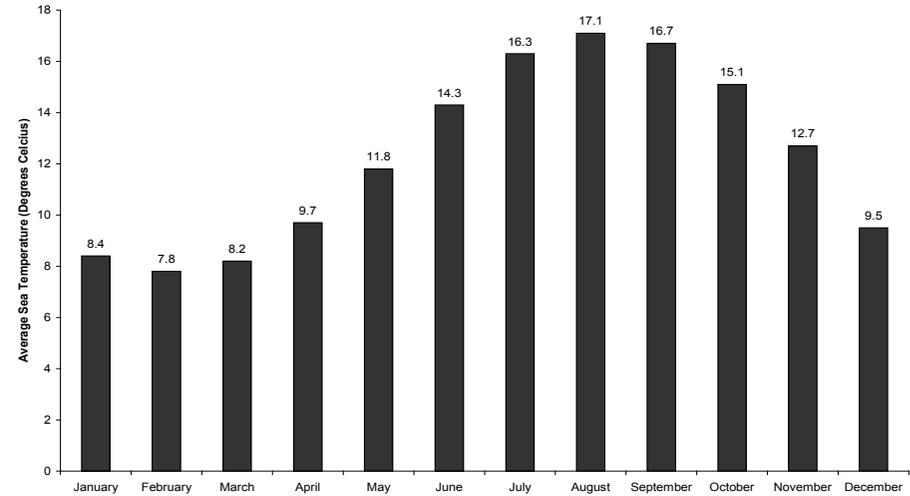
### 4.3 Oceanography

The waters of the Marine Plan Area form part of the English Channel. The majority of the area is less than 50m in depth, with shallow features such as the Shambles and Lulworth Banks, Adamant Shoal and St Alban’s Ledges, which are all less than 20m (Figure 8). Average surface sea temperatures within the MMA over the last five years range from 7.7°C in winter to 17.4°C in summer (Figure 9 a and b).

**Figure 9: Average values for sea temperature at a) Weymouth and b) Chesil, 2006-2011.**  
Data Source: Channel Coastal Observatory.



**a) Weymouth**



**b) Chesil**

Most of the Marine Plan area is affected by semi-diurnal tides, which have a range generally less than 2m. East of St Alban’s Head there is a double high tide - the first low is less pronounced, so it seems like a dip between two highs, to the west (and certainly at Kimmeridge) the first low is an appreciable low water, though the second is usually lower, especially at spring tides. Conversely in Weymouth Bay and Portland there is a double low tide. The water column consists of well-mixed shelf water. Although lower than in winter, salinity values remain relatively high in summer along the centre of the English Channel due to the movement of Atlantic water towards the North Sea. Salinity values decrease toward the coast in both summer and winter but normally remain above 34.5 g/kg, except locally at river mouths, where there is dilution from freshwater discharge (Figure 10).

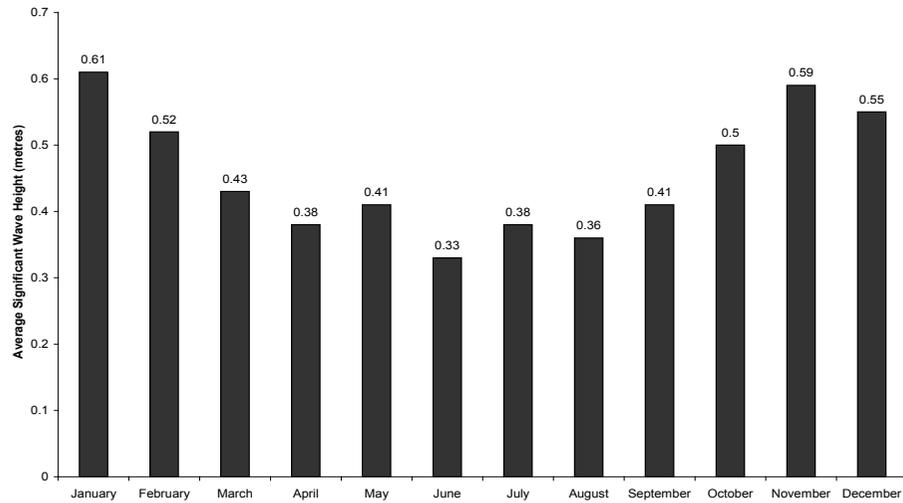


**Figure 10: Mean surface salinity of seawater in summer and winter in g/kg of total dissolved salt. Source: Lee & Ramster (1981). © Crown copyright.**

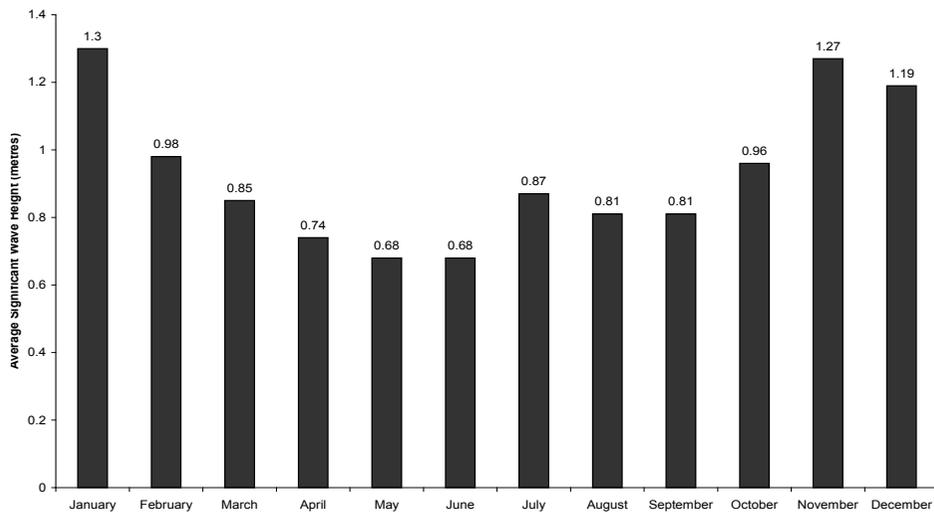
There is a strong contrast in exposure to wave energy between east and west sectors. The dominant wave directions are from the south-west and south-south-west, which means the coastline west of White Nothe is relatively protected by Portland and offshore banks and shoals. Average significant wave heights over the last five years range from 0.3m at Weymouth to 1.3m at Chesil (Figures 11 a and b). Waves are transformed as they enter the nearshore zone by offshore bathymetry and this, combined with the presence of inshore reefs and ledges at various locations, sets up complex local wave refraction.



**Figure 11: Average values for wave height at a) Weymouth and b) Chesil, 2006-2011. Data source: Channel Coastal Observatory.**



**a) Weymouth**



**b) Chesil**

Tidal range is small; with a maximum of 3m (Figure 12) and currents are relatively weak except at Portland Bill, Durlston and St Alban’s Headlands and also where tidal flows are confined by reefs, such as at Ringstead Bay. Current vectors are parallel to the coast and reverse before and after high water. Sediment transport is dominantly wave-induced and net direction of littoral transport is west to east, consistent with the direction of approach of dominant wave fronts. In spite of a large overall input of sediment from cliff and shoreface erosion ( $200,000\text{m}^3\text{a}^{-1}$ ), much of the material supplied is either clays or other weakly resistant rock that is rapidly abraded by wave action and transported seaward in suspension.

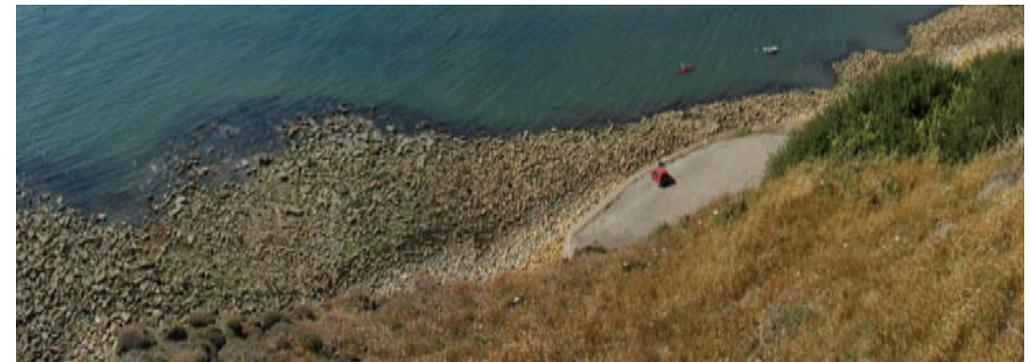




Figure 12: Tidal range (m) at mean spring tides.  
Source: Lee & Ramster (1981). © Crown copyright.

Littoral drift is also not continuous as it is intercepted by numerous headlands and embayments and this, combined with the presence of deep water in front of some cliffed sections, inhibits long distance longshore transport (Figure 13a and 13b).

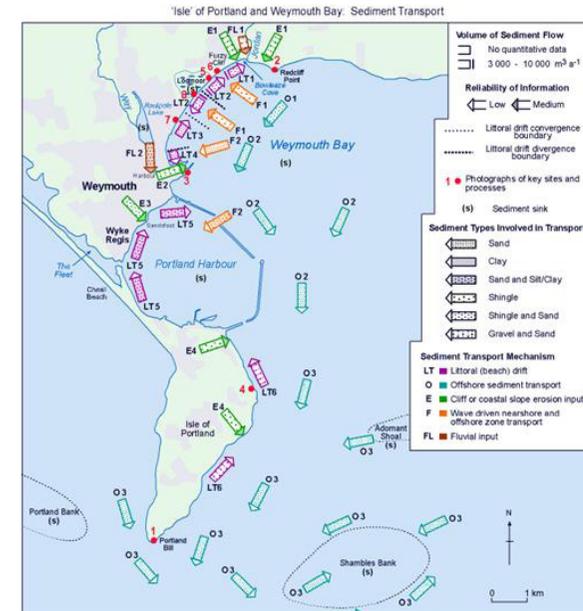


Figure 13a: Isle of Portland and Weymouth Bay sediment transport. Source: Rame Head to Durlston Head SMP2, Baseline Process Understanding. Halcrow (2008).

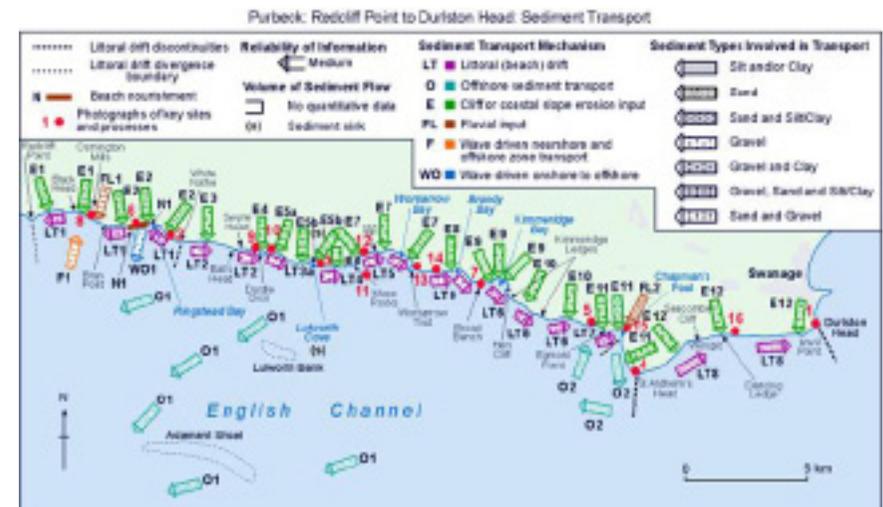


Figure 13b: Purbeck sediment transport. Source: Rame Head to Durlston Head SMP2, Baseline Process Understanding. Halcrow (2008).

#### 4.4 Hydrology and drainage

There is only one significant river which flows directly into the Marine Plan area; this is the River Wey, which flows into Weymouth Bay, passing through the centre of the urban area from the north. The River Jordan drains a small area to the east of Weymouth, flowing into Bowleaze Cove and the Osmington Stream flows across Moigns Down into Weymouth Bay. Along the Purbeck coast there are many small springs and streams which drain the chalk and limestone ridges (Figure 14).

Twelve rivers and streams within the Marine Plan area are included within the South West River Basin Management Plan. Of these Winspit Bottom Stream, Chapman's Pool Stream, Encombe Stream, Tyneham Stream, River Wey and Upper Portesham Stream are all identified as having Good Current Overall Potential<sup>7</sup>, with an Overall Status Objective to be Good by 2015. Kimmeridge Stream, Osmington Stream, Lodmoor Stream, River Jordan, West Fleet Stream and Rodden Stream are all identified as Moderate Current Overall Potential, with an Overall Status Objective to be Good by 2027.



<sup>7</sup> As defined within the SW River Basin Management Plan; <http://publications.environment-agency.gov.uk/PDF/GESW0910BSTR-E-E.pdf>.

Figure 14: Hydrology and drainage in Dorset.



## 4.5 Coastal and marine ecology

The coastline and marine waters within the Marine Plan area support a wealth of wildlife which is of significant international, national and regional importance. Designations within the area include five Sites of Special Scientific Interest (SSSI), three Special Areas of Conservation (SAC) with coastal elements, as well as the Studland to Portland draft inshore SAC (Figure 15). The Marine Plan area also contains many coastal and marine Biodiversity Action Plan priority habitats and species (Figure 16).

A large part of the Marine Plan area coastline consists of high cliffs, varying from grey shales and clays to sheer limestone faces and ledges. Maritime crevice and ledge plant communities occur above the mean high water line and, when in flower, characteristic species such as thrift, rock samphire, sea campion, wild cabbage and rock sea spurry can create splashes of colour on the otherwise sparsely vegetated cliffs. Nationally rare plants associated with these cliff habitats include the Portland sea lavender, early spider orchid and early gentian. The Lulworth skipper butterfly can be found amongst taller grassland vegetation on the cliff edges.

In places such as St Alban's/Aldhelm's Head, Gad Cliff, White Nothe and the East Weares on Portland, where there are undercliffs, areas of scrub have developed with associated characteristic wildlife. These areas provide important staging posts and shelter for many migrant birds.

Birds which breed on the cliffs include fulmar and shag, whilst breeding populations of puffin, guillemot and razorbill are located on the limestone cliffs west of Swanage. Where the cliffs are soft and crumbling, there are valuable niches for a host of specialised invertebrates including mining bees and wasps.

Rocky shores of varying wave exposures and rock types exist along most of the Marine Plan area coastline; a diverse range of habitats including wave-cut platforms, rockpools, fissures, crevices and overhangs provide ideal conditions for a diverse variety of species. There is a contrast between sheltered rocky shores within Portland Harbour and more exposed intertidal ledges and reefs at Kimmeridge and Osmington. East of Chapman's Pool rocky shores are limited to the wave-cut platform fringing the limestone cliffs.

Classic rocky shore zonation is found throughout, although there is a very limited upper shore area due to the unusual double low tides and shoreline profile in this area.

The middle shore is often dominated by brown seaweeds with associated limpets, winkles and top shells, with more exposed shore being dominated by barnacles and limpets. Lower shores frequently have a rich seaweed assemblage, possibly influenced by the unusual tidal regime. The extended low-water stand which occurs west of St Albans Head is especially significant at equinoctial spring tides when the extreme lower parts of the shore may be exposed for much of the afternoon. Peveril Point to Durlston Head was nominated as a European Important Plant Area for marine algae, as a "diversity hotspot" with many nationally rare species. Kimmeridge Ledges, Weymouth and The Fleet were nominated as Important Plant Areas for algae in the UK.

Encrusting coralline algae are exposed on the lower shore on extreme low tides or in rock pools. Some areas of softer rock such as at Chapman's Pool are bored by piddocks. A number of rare and scarce species have been recorded such as the brown seaweeds *Padina pavonia* and *Asperococcus compressus*. Several unusual fish are found at Kimmeridge such as Montagu's blenny, the Connemara clingfish and the Cornish sucker.

The main area of intertidal sediment occurs in Portland Harbour, although there is also a long sandy beach at Weymouth. Suspension feeders dominate, and include burrowing anemones, peacock and sandmason worms and up to nineteen species of bivalve mollusc. Small amphipod crustaceans live in the more mobile wave exposed sands of Weymouth Bay. Wading birds such as turnstone can often be seen foraging around the water's edge.

The shallow water, fine mud habitat within Portland Harbour contains many rare species, including the only population of the fragile sea pen in southern Britain redband fish, black-faced blenny and Couch's goby. Of particular significance is the saline lagoon sandworm (a protected species under Schedule 5 of the Wildlife & Countryside Act 1981) which is a lagoonal species vulnerable to potential habitat loss.

The 2009 DORIS seabed survey revealed small to medium Sabellaria spinulosa reefs in areas predominantly characterised by mixed sediments throughout the Marine Plan area. Mussel beds associated with strong currents to the south and south-east of Portland Bill form a substantial feature, and are mainly comprised of mature mussels, although some areas are dominated by juveniles (spat). These beds also stretch into the shallower, infralittoral zone off Portland to depths of approximately 12m. Particularly dense brittlestar beds were found to the south-west of Kimmeridge Bay, whilst beds to the south of The Shambles were found among a rich mussel bed.

The nationally rare or scarce trumpet anemone was identified in five different locations around Worbarrow and Kimmeridge Ledges in low numbers, although Seasearch data indicates that it is far more widespread and common than the survey suggests.

The survey also confirmed existing data on sea grass beds in Weymouth and Worbarrow Bays, as well as Maerl beds to the south-east of Ringstead Bay, south of Worbarrow Bay, Lulworth Cove and Anvil Point. The most easterly populations of pink sea fans in the UK occur within the Marine Plan area, and a large population is known to occur in the Purbeck Marine Wildlife Reserve. However, the species was only found at a few locations during the DORIS survey. Areas of extremely dense aggregations of gravel sea-cucumbers (*Neopentadactyla mixta*) have been reported by divers in Worbarrow Bay and between St Alban's and Swanage. In deeper water south and east of St Alban's Ledges, the DORIS ground-truthing survey found extensive areas of stable cobbles with a rich covering of encrusting sponges.

An unusual feature identified by the survey was large mats of *Ampelisca* sp (tube-dwelling amphipods) throughout the Marine Plan area. Significant amounts of silt surround the tubes, filling the small spaces within the mat, and it is thought that this could support a unique infaunal community. Currently there is no apparent biotope within the EUNIS classification system describing such a habitat, and a new biotope description will most likely be required.

Evidence from the DORIS survey, alongside other studies, has been used to confirm the presence of Annex I reef habitat within the new Studland to Portland draft Special Area of Conservation.

The Marine Plan area consists of transitional waters between Atlantic and Eastern Channel, leading to a diverse mix of species, some of which are close to their limits of distribution. Mobile species include valuable commercial fish species such as plaice, sole, bass, herring and mackerel. Regular sightings of bottlenose dolphin and harbour porpoise occur within the Marine Plan area, whilst seals, marine turtles, basking shark and baleen whales have all been spotted.



Figure 15: Designated coastal and marine sites

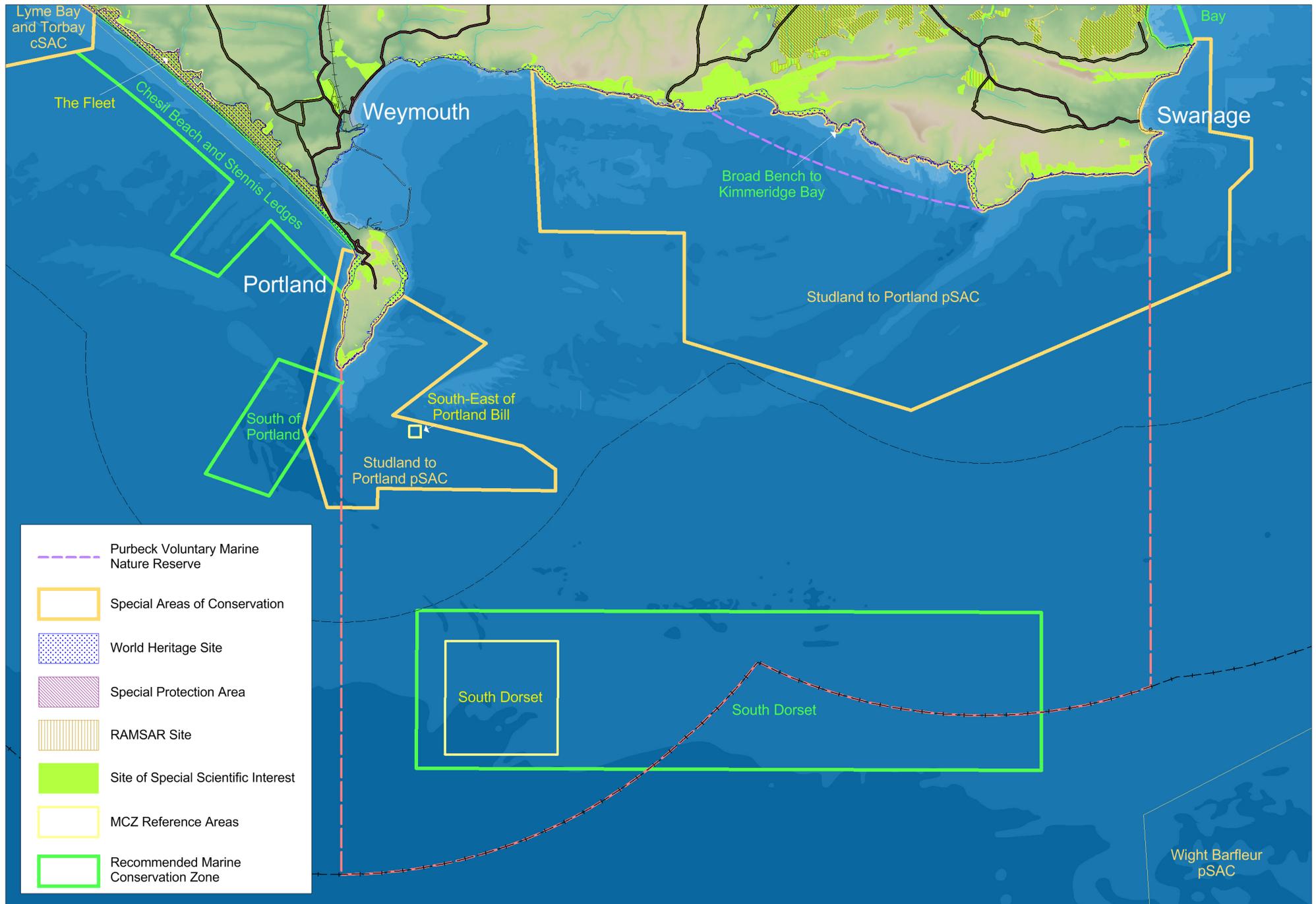
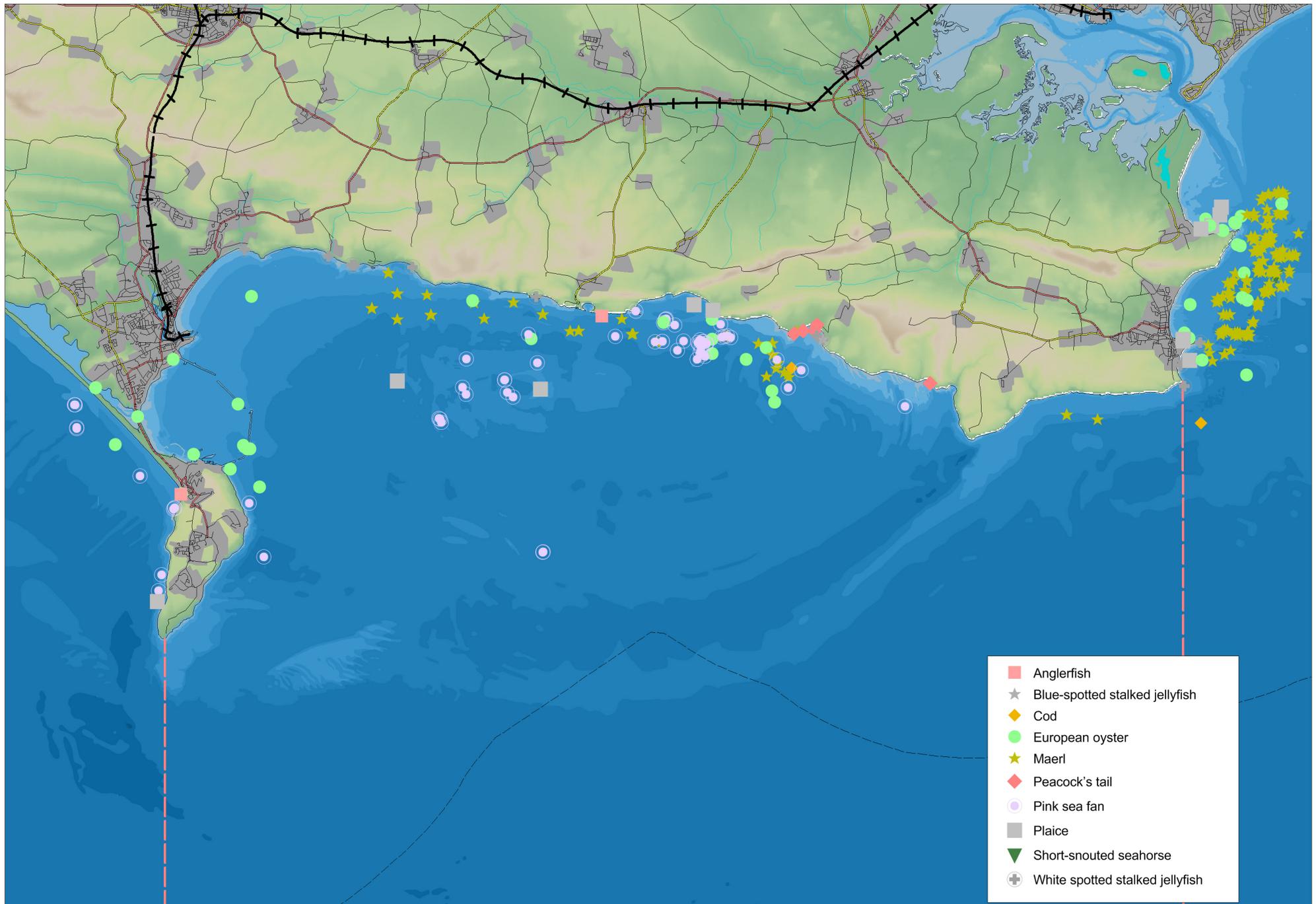


Figure 16: UK Marine Biodiversity Action Plan Species



## 4.6 Landscape and seascape

The majority of the county of Dorset is protected under the Area of Outstanding Natural Beauty (AONB) designation, and as such is nationally important. Much of the county's coastline is also designated as Heritage Coast and the Dorset and East Devon Coast World Heritage Site covers the majority of the Marine Plan area (Figure 17). Most of the Marine Plan area's coastline is included in the Dorset AONB, designated in 1959 for its landscape diversity, tranquillity, panoramic views, historic landmarks and an undeveloped rural character. The same section of coastline is also part of the Purbeck Heritage Coast designation, which also extends to the seaward.

Landscapes within the Marine Plan area are a result of interactions between the local topography and geology, farming and forestry practices, plant and animal life, building styles and settlement form, historical and cultural associations. The Dorset

Landscape Character Assessment (LCA) is a detailed assessment of the character of the county, and covers the landward side of the Marine Plan area. In addition there are district-wide LCAs for West Dorset, East Dorset and Purbeck, and an LCA for the Dorset Area of Outstanding Natural Beauty. Commissioned for the C-SCOPE project, the Dorset Land and Seascape Character Assessment provides a seamless link between terrestrial, coastal and marine landscapes and seascapes. It identifies six terrestrial character types, five coastal character types and four marine character types within the Marine Plan area (Figure 18a and 18b).

The Marine Plan area contains an exceptionally diverse and popular landscape with sharp contrasts within a relatively small area, and also has significant historic interest such as early medieval industrial sites. The spectacular coastline encompasses chalk/shale and vertical limestone cliffs with sheltered bays, bold headlands, caves and sweeping coastal views. For this reason it is assessed as a landscape with a strong character. The urban areas of Weymouth contrast with the distinctive coastal landscape of the mainland to the east and the unique wedge-shaped limestone peninsula of Portland to the south. Over the centuries, Dorset's landscapes have inspired poets, authors, scientists and artists, many of whom have left a rich legacy of cultural associations.

Much of the seascape of the Marine Plan area consists of shallow waters with strong visual and physical relationships with the coastline. The waters directly off Purbeck are generally quieter, with valuable inshore fisheries and seasonal (spring and summer) low levels of sailing and recreational activities, whilst Weymouth Bay

and the areas to the south and east of Portland Harbour are more active with inshore fisheries, shipping and recreational activities. These shallow waters are underlain by complex superficial sediments over bedrock and have high marine biodiversity value.

Portland Harbour, a large area of deep water enclosed by man-made sea wall, has a high intensity of port and recreational activities and is also valuable for its natural habitats and biodiversity.

It is an important setting for Portland and Weymouth, and is associated with extensive land-based activities and industries. Further offshore, the visual relationship with the coast is less marked. There is a mix of uses, with no single dominant activity, and shipping is typified by north-south movements of cross-Channel ferries and other vessels moving between harbours and deep water. There are generally strong currents, and complex superficial sediments supporting high biodiversity.



Figure 17: World Heritage Site and AONB Designation

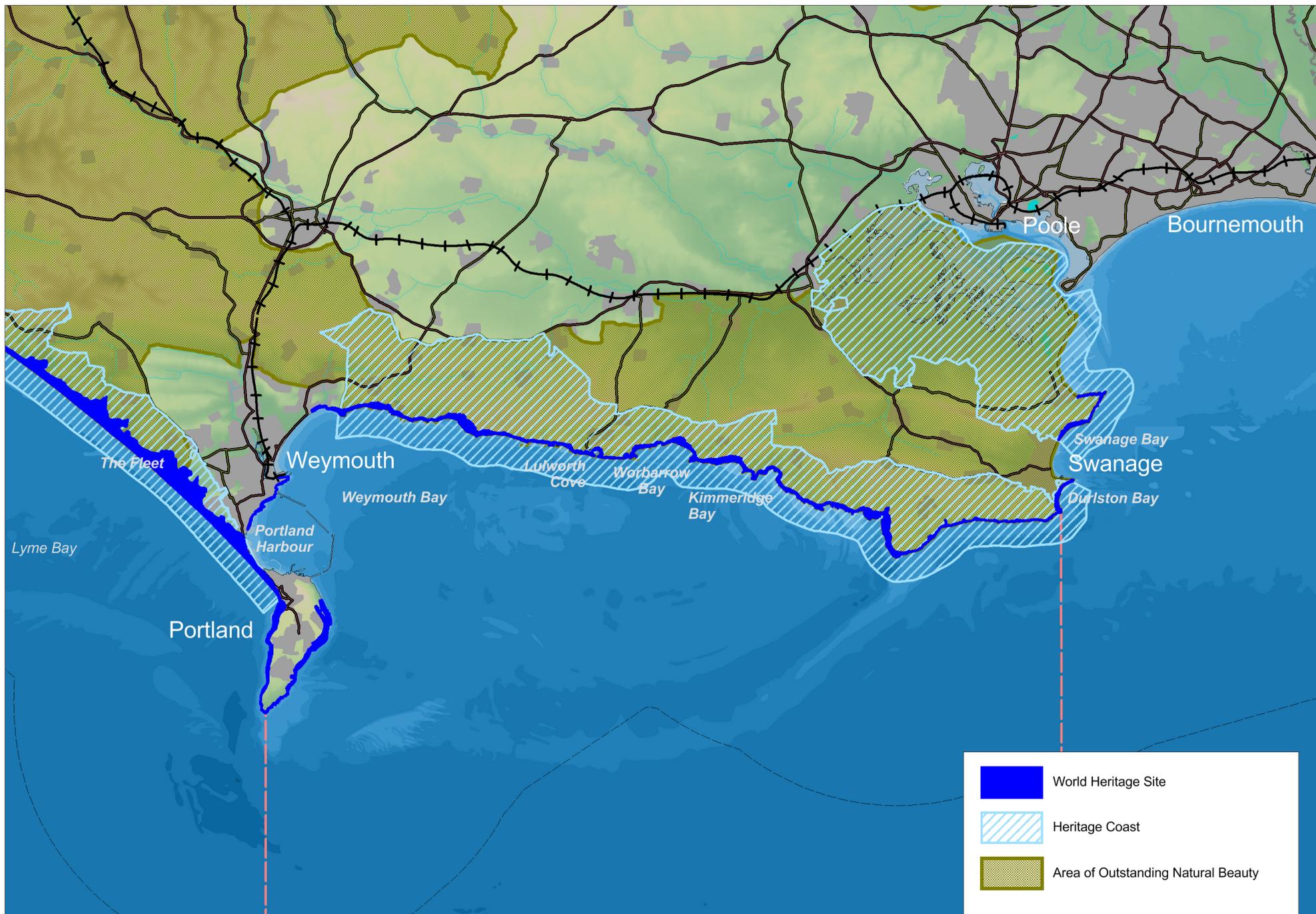


Figure 18a: Seascape Character Areas

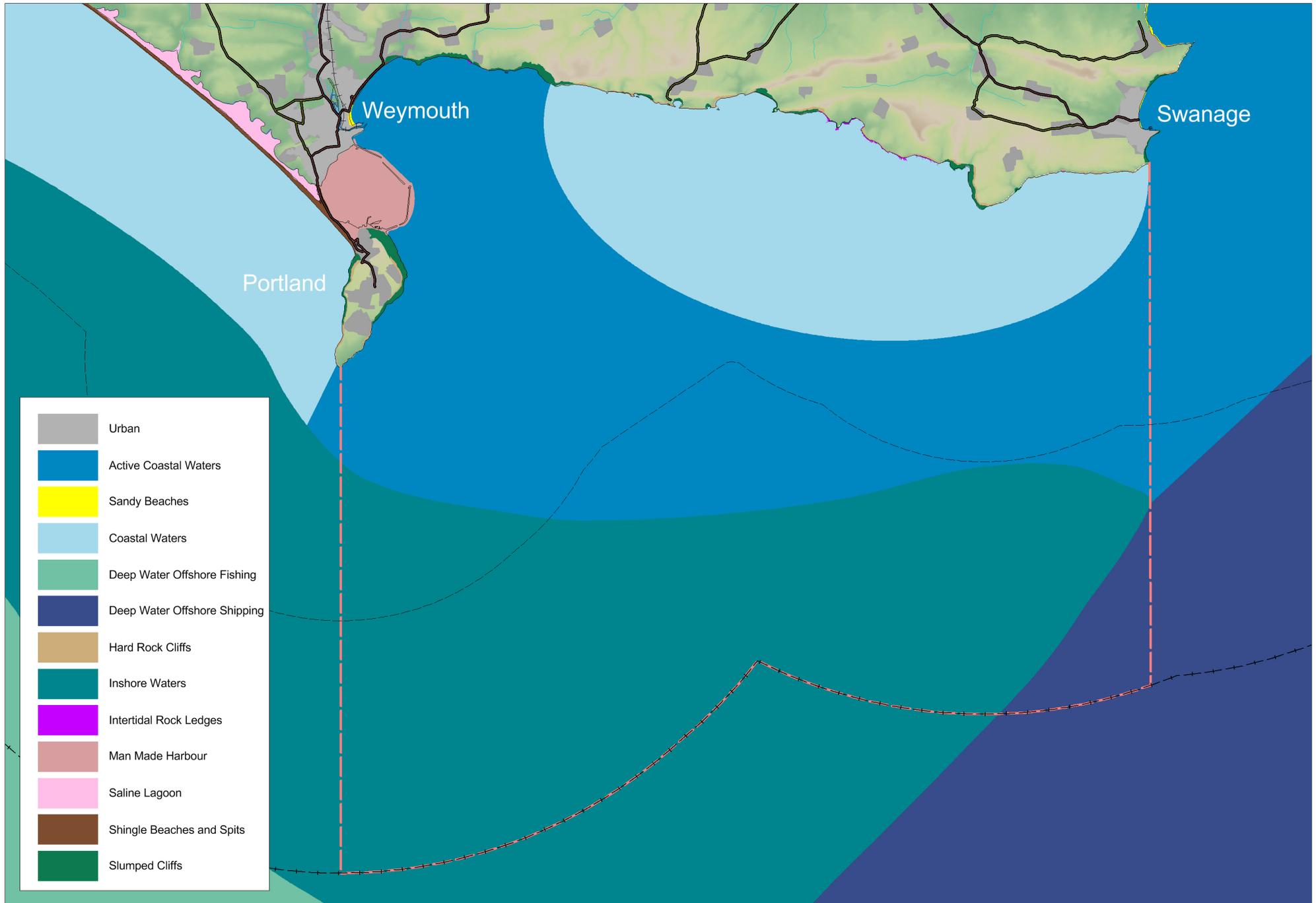


Figure 18b: Seascape Character Areas



## 4.7 Cultural heritage

### 4.7.1 Coastal

The historic environment of the Dorset coast is rich with archaeological remains both on the coast (Figure 19) and offshore, telling the story of more than five thousand years of human activity in the form of buildings, monuments, sites and landscapes and submerged prehistoric features. Evidence of the historical evolution of the Marine Plan Area's landscape is preserved in a rich archaeological heritage of burial sites, hillforts and ancient patterns of fields, woodlands, hedges, settlements and rights of way. The best preserved sites survive generally in the least intensively used areas of land. Along the Dorset Coast there are some fine, visible archaeological remains including the extensive Neolithic- Bronze Age ceremonial landscape of the Southern Dorset Ridgeway. During World War I and II the Dorset coast was important for the Royal Navy and so was also a target for military action. Portland Harbour was, for many years, and during the two Wars, an important Naval Base. There is significant defence infrastructure and relics along the coast including radar stations, coastal batteries and anti-tank blocks and pill boxes.

Ships have visited the coast from as early as prehistoric times. By the mid 14th century trade considerably increased dealing particularly in fish and wine from western France, expanding to fish trade with Newfoundland in the early 17th century. Weymouth and Melcombe were relatively important ports with the towns starting to expand as early as the 12th century. In 1348 the 'Black Death' plague arrived at Melcombe Regis, with a devastating impact on local villages, and many were abandoned at this time. As early as the 18th century, George III took holidays at Weymouth, while he was ill, and the resort has been popular since those times. Portland became more important as a Naval Base from 1845 onwards, with breakwaters being built between 1849 and 1903, which still exist to the present day.

Weymouth Bay 30,000 years ago would have been dry land. Large lagoons at this time may have supported an abundance of game fish, waterfowl, deer and wild cattle, and it would have been an ideal place for early communities to establish seasonal camps. Evidence of these early camps may possibly survive on the seabed.

The Isle of Portland itself shows evidence of human presence from the Palaeolithic period onwards. Early sites include Mesolithic shell middens, Bronze Age burials, a defended enclosure from the Iron Age and Roman period and the 13th century St Andrew's Church. Portland Castle, on the fringe of Portland Harbour is an impressive Tudor fortress which saw much action in the Civil War. Quarrying has had a

profound influence on the Portland landscape and environment. Dating back over 2,000 years, evidence of its long history can be found throughout the Isle.

Inland, the Southern Dorset Ridgeway, much of which has coastal views, encompasses the most extensive Bronze Age cemetery in the country, with a minimum of 428 round barrows in 14 major groups. There are around 500 other round barrows throughout the Ridgeway's landscape. Stone circles also date from this period. The Lulworth region has a rich history with evidence of prehistoric field systems and Iron Age, Romano-British and medieval settlements. East Lulworth village also includes the remains of a medieval deer park. The area between Kimmeridge and Lulworth has been almost entirely closed to the public since 1943 for Ministry of Defence use; Tyneham 'ghost village' is rich in archaeology, bearing a prehistoric field system; numerous mounds and bowl barrows; a Bronze Age cremation burial; a Romano-British occupation and industrial site; medieval settlement, including the site of a chapel; an Elizabethan house, as well as subsequent occupation until its coercive abandonment in 1943.

Kimmeridge and its environs have burials and artefacts dating back to the Iron Age and the Romano-British era. There is evidence of use of the extensive natural resources in the area, such as the black shiny Kimmeridge shale which was widely used right through to the late Roman period for manufacture of armlets, finger rings, vessels and even furniture. Also salt, evaporated from seawater, was traded far inland right through the Iron Age.

There was a thriving pottery industry in Purbeck during the Roman period, exporting Black Burnished Ware across the Empire. The Romans also exploited Purbeck for building materials, such as Purbeck marble and a white siltstone. The fashion for Purbeck marble endured into medieval times with huge quantities transported for decorative fittings in churches and cathedrals throughout the country. Quarrying in Purbeck reached a peak in the 18th and 19th centuries and the sites are still clearly visible from the sea. The Clavell Tower, dating back to 1831, is a useful example of the challenges presented by dynamic coastal conditions for historic conservation; in danger of falling into the sea, it recently cost nearly £1million to move it 25 metres back from the cliff edge.

The Clavell Tower, dating back to 1831, is a good example of how an eroding coastline creates particular issues for historic conservation; in danger of falling into the sea, it recently cost nearly 1million to move it 25metres back from the cliff edge.

Figure 19: Terrestrial Designated Heritage Assets



Worth Matravers has evidence of prehistoric settlement, including flint-working, Bronze Age pits and Iron-Age/Romano-British burials/barrows. It also has a medieval manor house and other remains of medieval settlement. More recently, Winspit Quarry was used in WWII for naval and air defence.



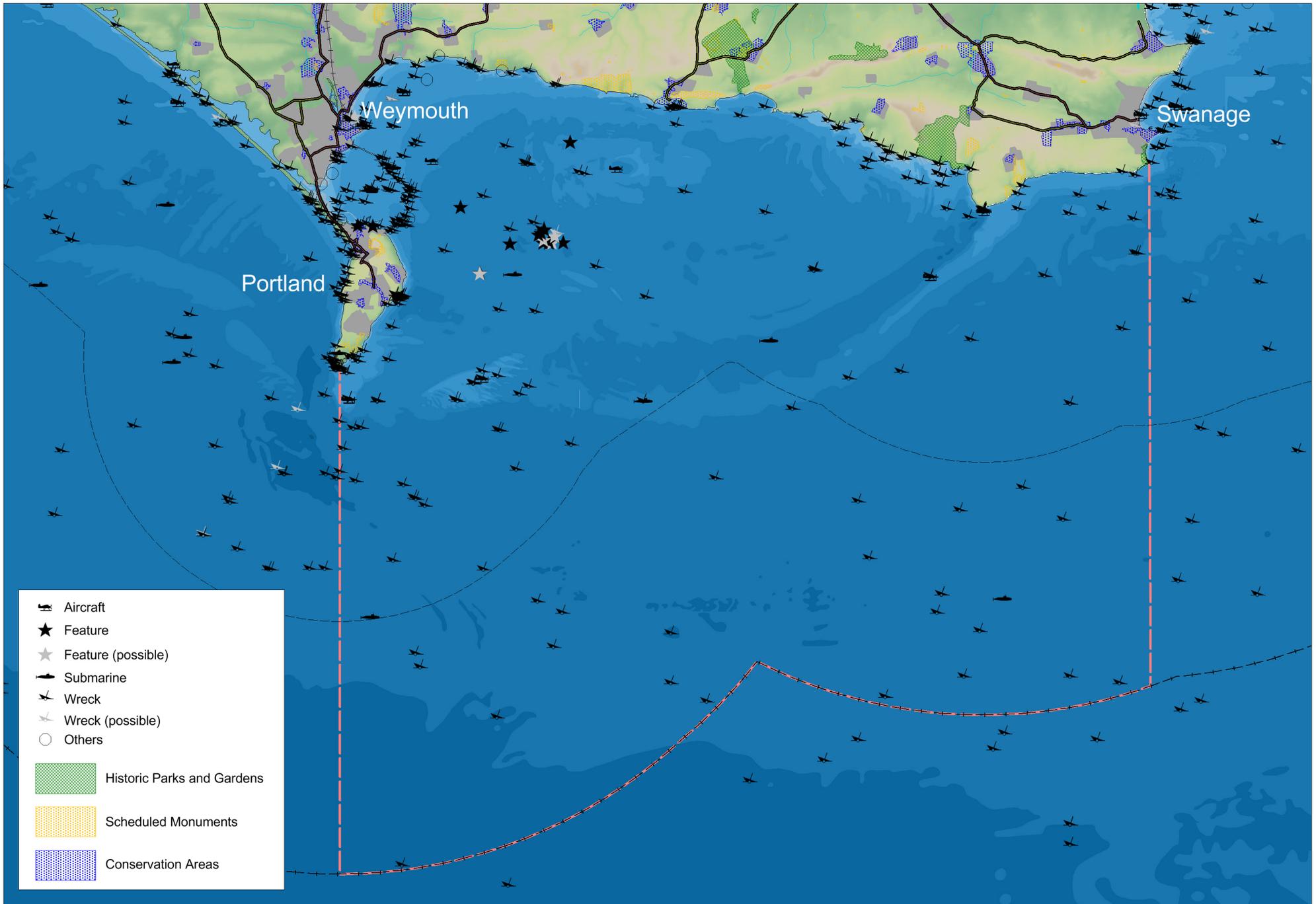
#### 4.7.2 Marine

Dorset waters have played a significant role in maritime history. One of the greatest sea battles of the early Middle Ages took place near Swanage, when King Alfred destroyed a Danish fleet of more than 100 vessels in 878. Several Spanish Armada battles took place within the Marine Plan area. In July 1588, a general engagement between the English and Spanish Fleets was fought off Portland Bill, where some of the biggest Spanish warships were rendered ineffective. Many ships have been lost in storms over the centuries, and shipping in the English Channel was a strategic target during both World Wars. Consequently the Marine Plan area contains a prolific number of wrecks, including ships, aircraft, submarines and other vehicles (Figure 20). These wrecks are a popular focus for divers, and some inshore wrecks have been adopted by the Nautical Archaeological Society under their 'adopt a wreck' scheme.

Other wrecks of note include:

- Halsewell - A British East Indiaman which was wrecked off the isle of Purbeck on 6th January 1786.
- Earl of Abergavenny - A British East Indiaman which sank in Weymouth Bay on 5th February 1805.
- The Royal Adelaide – a sailing ship which had 67 passengers and crew. It was washed ashore and wrecked on the 25th November 1872, Chesil Beach.
- HMS Hood - scuttled in Portland Harbour, 1914.
- SS Kyarra - A twin-screw passenger and cargo liner, built in 1903 which was torpedoed by UB-57 on 26th May, 1918. This is one of the most popular dive sites on the Dorset coast.
- Countess of Erne - A nineteenth century paddle steamer, she ended her days as a coal hulk in Portland harbour, finally sinking on 16th September 1935.
- Black Hawk - A Second World War Liberty Ship which was torpedoed off Portland on 29th December 1944. The stern section sank, but the forward section was towed towards land finally sinking off Worbarrow Bay.
- U772 - A German U Boat probably sunk by HMCS Calgary on 30th December 1944, shortly after U772 had torpedoed the Black Hawk.
- MV Aeolian Sky - A 10,715 ton Greek motor vessel which sank following a collision on 3rd November 1979.

Figure 20: Marine Heritage Assets



## 4.8 Water quality

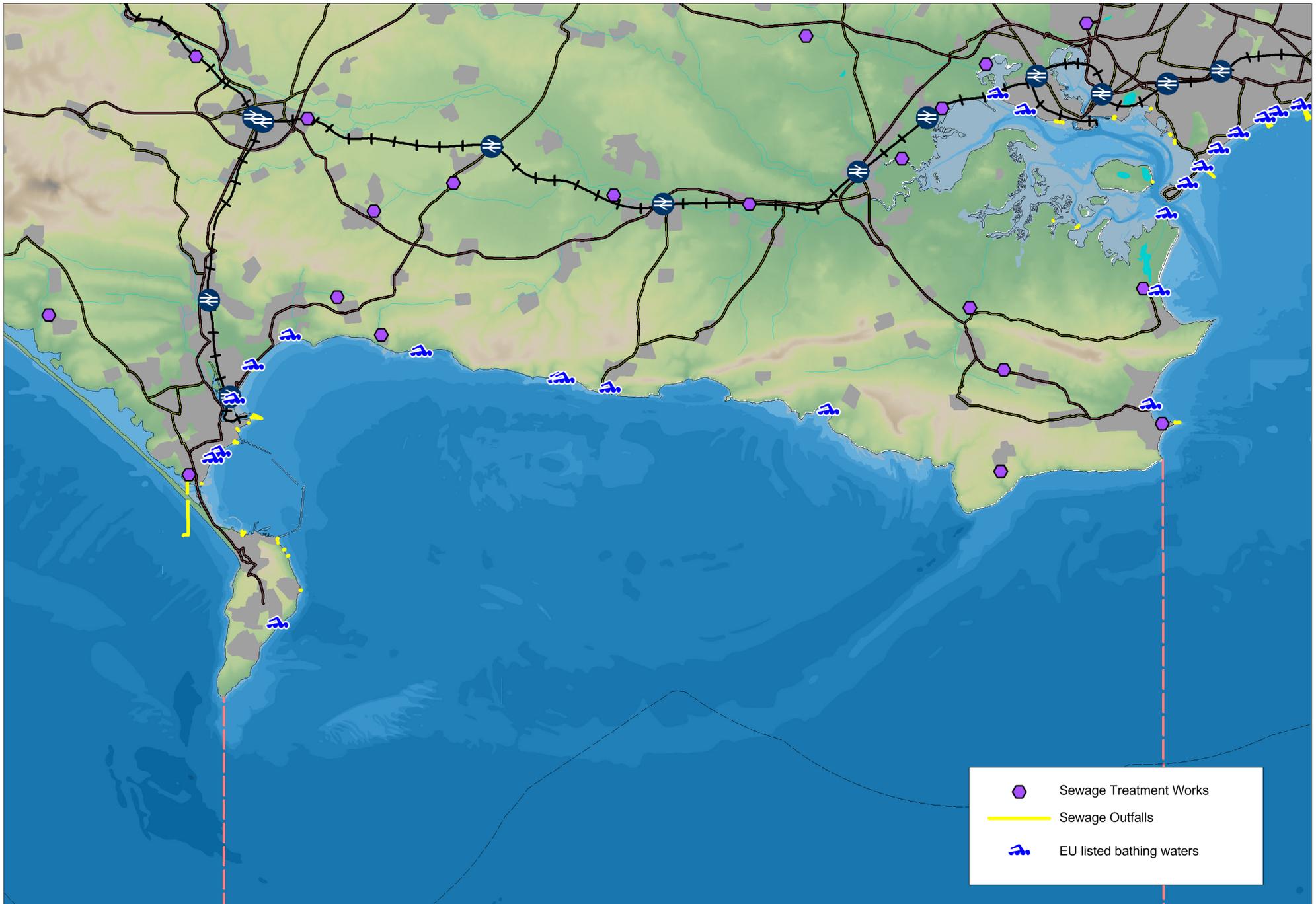
Accessible beaches and clean coastal waters are two of the main attractions of the Dorset coast, making water quality an important issue for the local economy. Bathing water quality in the nearshore area is measured by the amount of bacteria within water samples. These counts are undertaken by the Environment Agency to monitor whether water quality meets the EC's Bathing Water Directive (Figure 21).

Designated sites are sampled 20 times from 15th May to 30th September, and at present compliance with the Directive requires that in order for bathing water to comply, 95% of these samples must have less than 10,000 total coliform bacteria and no more than 2,000 faecal coliforms per 100ml. However the revised Bathing Water Directive which comes into force in 2015 requires more stringent parameters, including a change from a pass/fail approach to classification based on four classes: poor/sufficient/good/excellent. The South West River Basin Management Plan (SWRBMP) makes delivering compliance with the revised Directive a high priority.

Beach waters can be influenced by extended periods of heavy rainfall during the summer, which leads to pollution caused by surface water runoff from farmland and urban areas, and the more frequent operation of combined sewer overflows, into streams and rivers, estuaries and the sea. Bathing water quality can therefore vary considerably from year to year, and season to season.



Figure 21: Current outfalls and sewage treatments, bathing waters



## 4.9 Current activities

### 4.9.1 Commercial fishing

Commercial fishing has always played an important role in the Dorset economy and way of life. Most of the inshore fleet are multi-purpose vessels which can use several methods of fishing to take advantage of seasonal fisheries. Fishers target a mix of species depending on the season, using whichever method and location best suits the prevailing conditions and enable them to earn a reasonable wage.

The numbers of registered and licensed fishing vessels within the Marine Plan area, as of 1st September 2010, are given in Table 3.

**Table 3. Registered and Licensed Fishing Vessels within the C-SCOPE Marine Plan Area (2010)**

Home Port/Harbour	10 metres and under overall length	Over 10 metres overall length
Weymouth	53	5
Portland	25	1
Kimmeridge	1	0
Lulworth Cove	3	1
Swanage*	10	1
Poole*	88	5

\* Registered outside the Marine Plan area, but operate within it.

Approximately 90% of boats registered within the Marine Plan area are skipper-owned, and because of this it is difficult to estimate the number of people dependent on fishing within the area. Most of these boats are, with one or two exceptions, day boats, leaving in the morning to return and land their catch later that day. They are generally home-based but may also travel between local ports.

Since April 2011, inshore vessels are controlled by the Southern Inshore Fisheries and Conservation Authority (formerly the Southern Sea Fisheries Committee (SSFC)). The Southern Inshore Fisheries and Conservation Authority (SIFCA) manages sea fisheries from the high water mark out to 6 nautical miles, and all fishing vessels operating within the district must be registered with them. Under district byelaws, vessels must be less than 12m; although a few skippers have 'grandfather rights' which

exempt vessels over the permitted size prior to the introduction of the byelaw to continue until ownership of the vessel changes. Inshore Fisheries and Conservation Authorities have a remit not only for sustainable management of inshore fisheries, but also to support the conservation objectives of designated sites, such as SSSIs and Ramsar sites and Marine Conservation Zones within the IFCA district.

The fishing fleet is dominated by static gear operators, and a large number use pots to target crabs and lobsters along the rocky inshore ledges. The potting fleet is increasing, and is mainly operated by full time fishermen. Vessels sometimes stake and operate within boundaries, with a degree of local cooperation and respect of each other's boundaries. Boats set between 400 and 1,000 pots each, in fleets of 20-100 pots from a couple of metres from the shoreline, sometimes out to 30 miles offshore. It is currently estimated that there are 6000 crab and lobster pots around the Weymouth and Portland areas alone. Portland Harbour is also potted for prawns and whelks, caught in purpose-built pots, are targeted for the rapidly growing Far-east market. Cuttlefish are also targeted by potters at certain times of the year.

Bass are an important demersal target species, and provide income for many part time and casual fishermen in the warmer months. Fishermen use gill and trammel nets, but there has been a trend to switch from netting to rod and lining which usually takes place at dusk and dawn. This particularly applies to smaller vessels operating out of Weymouth which fish the Portland Race and the Shambles.

Bass are taken further offshore by visiting pair trawlers, which often land their catch in France, and these trawlers also take herring, mackerel and sprat during the colder months. Other fin-fish which are targeted in smaller quantities by the local fleet include bottom dwelling flatfish, such as sole, rays and plaice as well as demersal and pelagic species such as cod, pollack and mackerel.



Scallop dredging, by a small number of boats, mainly occurs to the west of the Marine Plan area in Lyme Bay, but commercial divers gather scallops from the rough grounds on Lulworth Bank during the summer months.

Weymouth is the main landings port within the Marine Plan area, and in 2009 a total catch of 1,952 tonnes worth £2,153,000 was recorded. Shellfish were the dominant catch, primarily made up of mussels, crab, whelks and scallops. Bass dominated the demersal catch and the only other major landings were skates and rays. The only pelagic species landed in 2009 was mackerel. Landings into Weymouth have been decreasing since 2005, although the value of those landings has remained relatively stable (Figure 22a). Over the same period, landings into Poole have steadily increased and are now greater than Weymouth (Figure 22b).

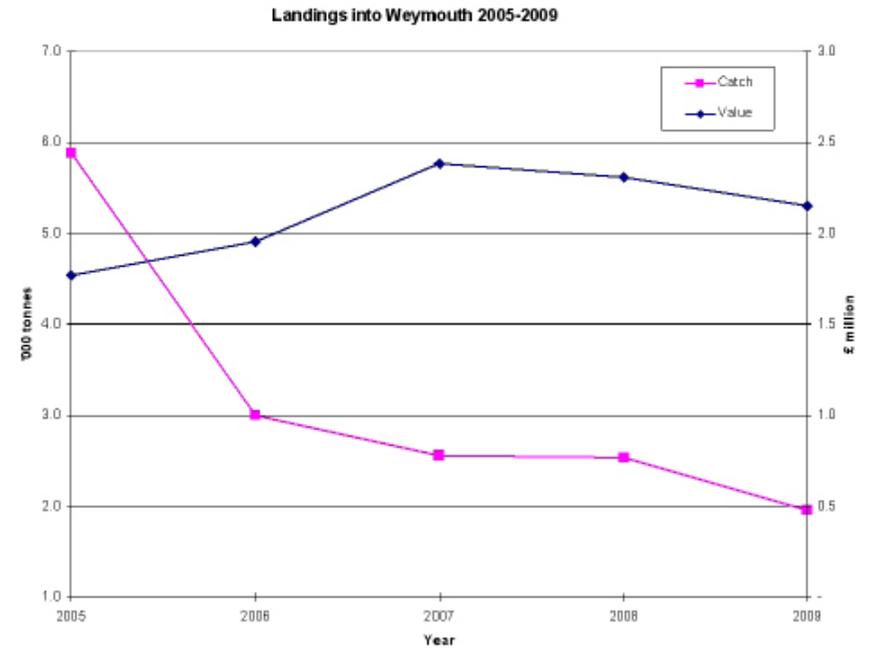


Figure 22a: Landings and Catch Value of Fisheries into Weymouth (2005-2009)

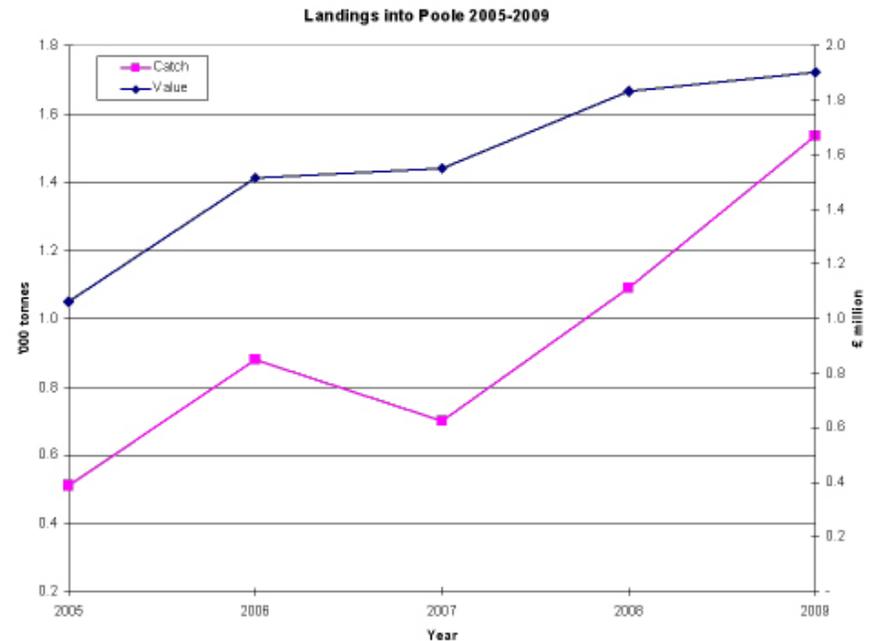


Figure 22b: Landings and Catch Value of Fisheries into Poole (2005-2009)

#### 4.9.2. Aquaculture

There is a small aquaculture industry within the Marine Plan area, which is currently limited to shellfish. Four areas – The Fleet, Portland Harbour East, Portland Harbour West and the Shambles Bank – are designated shellfish waters, under the EC Shellfish Waters Directive (Figure 23), and it is the responsibility of the Environment Agency to monitor a variety of parameters including pH, salinity, suspended solids and a variety of heavy metals. Harvesting areas are classified as:

Class A ( $\leq 230$  E. coli/100g) - molluscs can be harvested for direct human consumption.

Class B (90% of samples must be  $\leq 4600$  E. coli/100g; all samples must be less than 46000 E. coli/100g.) - molluscs can be sold for human consumption:

- after purification in an approved plant, or
- after re-laying in an approved Class A re-laying area, or
- after an EC-approved heat treatment process.

Class C ( $\leq 46000$  E. coli/100g) - molluscs can be sold for human consumption only after re-laying for at least two months in an approved re-laying area followed, where necessary, by treatment in a purification centre, or after an EC-approved heat treatment.

There are two classification systems in England and Wales:

1. the annual or “temporary” classification system
2. the long-term classification (LTC) system.

New areas will initially be given annual/temporary classifications until they meet the criteria for an LTC. Harvesting sites that do not meet LTC criteria are automatically classified under the annual/temporary classification system.

Table 4 shows the current status of shellfish waters, with the exception of the Shambles which is monitored but not classified, within the Marine Plan area.

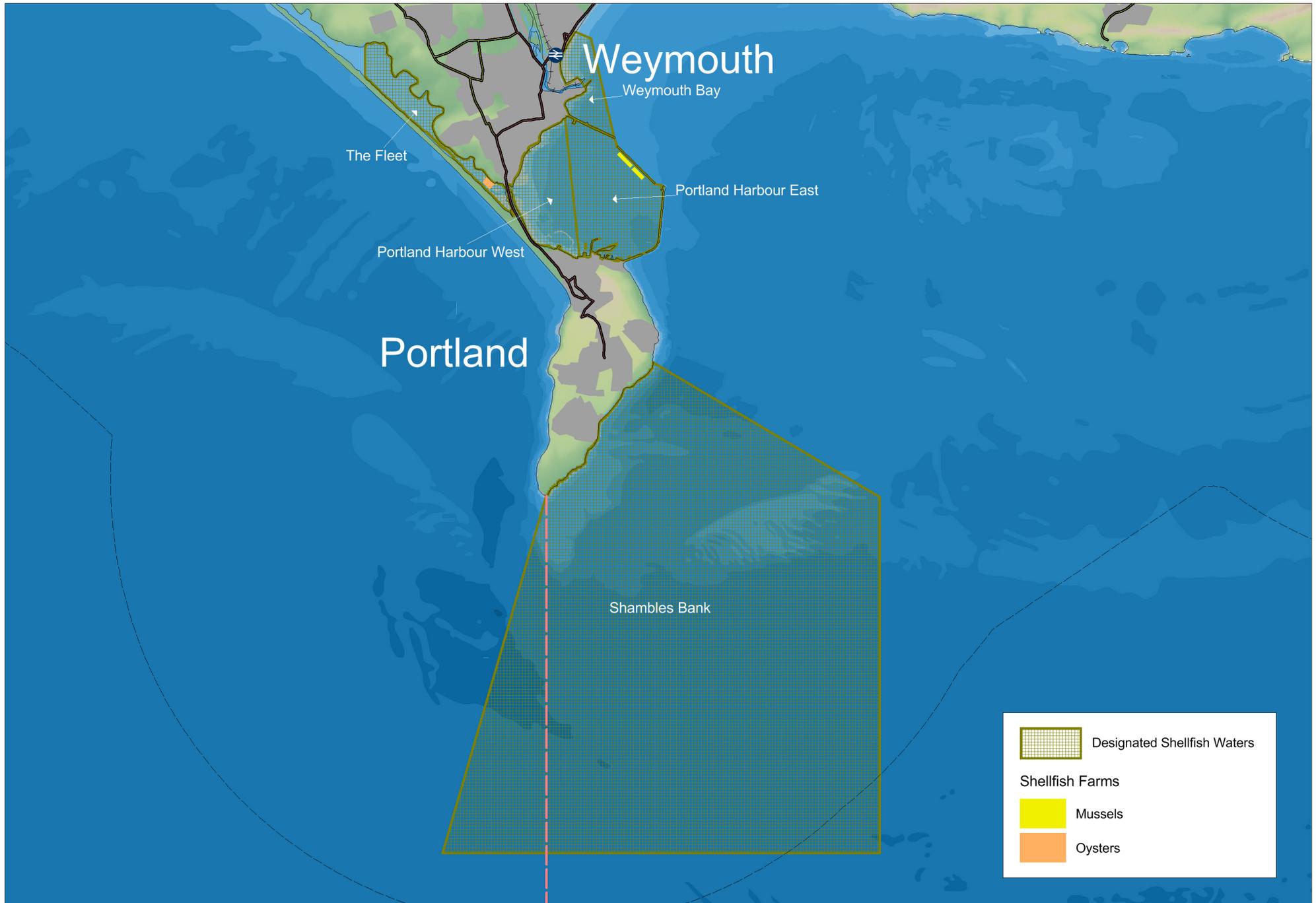
**Table 4: Designated Bivalve Mollusc Production Areas in England and Wales Effective from 1st September 2011. Source: Food Standards Agency.**

Production Area	Bed Name	Species	Class	Explanatory Note
Portland	Fleet – Bed F1	<i>C.gigas</i>	B – Long Term	
	Harbour – Bingleaves Breakwater mussel lines	<i>Mytilus spp</i>	B – Long Term	
	Harbour – Bingleaves Breakwater oyster lanterns	<i>C.gigas</i>	B	
	Harbour – West Shore Palourdes	<i>T. decussatus</i>	B	PRELIMINARY

There is one mussel farm located within Portland Harbour (Figure 23), which is managed by Lyme Bay Fisheries and is located on the middle breakwater of the Harbour. The site is on lease to the consortium from Portland Port Ltd until 2013. The farm also rents the breakwater and the Vernon building. Plans exist to install a purification plant and to purchase a new crane to enable larger lines to be lifted. Mussel spat is collected from the end of Portland Bill and the farm currently holds fourteen ropes with one hundred drop down lines, producing 800 kilos of mussels a week.

A several order, Portland Harbour Fishery (Variation) Order 1999, covered most of the south western side of the harbour, but this expired in 2009 and has not been renewed. The deep water off Portland Bill is also an important natural source of seed mussels. Some are taken from the area and stored in Portland Harbour to meet winter demand, but the majority are re-laid on subtidal ground lays in Poole Harbour for fattening, which accounts for 90% of the mussel production from Poole Harbour. Although there is currently no finfish aquaculture in the area, advances in technology and husbandry mean that future developments of cod, bass, turbot and even salmon farms are a possibility.

Figure 23: Mariculture sites



### 4.9.3 Recreation and tourism

Tourism is one of Dorset's predominant industries, and the coast is arguably Dorset's most important single tourism asset. As well as traditional beach holidays, walking, angling, scuba diving, sailing and other watersports are all popular attractions. There is a strong contemporary cultural scene and the county's museums, archives, arts, poetry and literature are all popular with visitors. In 2008, the total visitor related spend in Dorset was £1.5 billion. Employment in the sector equates to 13% of total employment in the county, with related employment standing at 41,034 in 2008. In recent years tourist demographics have shifted, with a higher dependency on pensioner coach parties and the rise of geotourism thanks to the World Heritage designation.

Weymouth's main attraction is its clean, family-friendly, sandy beaches. Weymouth Central consistently has the highest standards of water quality. There is a range of accommodation, but the emphasis is on affordable family hotels, B&Bs and self-catering properties. Just over half of all day visits are specifically to the coast, which equates to a total spend of £32 million in 2008. 16% of employment in Weymouth is supported by tourism. However, like many coastal towns, tourism at Weymouth is seasonal and often leads to low-paid and part-time employment.

Holiday parks represent a large proportion of the accommodation stock in rural Dorset. In some cases these can be visually intrusive and, at present, many local holiday park owners are undertaking environmental improvements - such as planting trees and improving the appearance of their sites. Some of these parks are located in areas which are vulnerable to coastal flooding.

The coast is one of the most popular attractions in Purbeck; renowned for its spectacular geomorphological features, quaint villages, and dramatic walks on the Dorset Coast Path. The stretch of coast between Lulworth and Portland is the first area to be put forward by Natural England towards an England Coast Path. Features such as Lulworth Cove, Stair Hole and Durdle Door attract up to 750,000 visitors a year and the pebble beaches in this area are popular for beach activities, rock-pooling, bathing and water sports. In 2008 the District attracted 744,000 day visits to the coast, equating to a total spend of £29 million. Swanage accounts for much of this spend but, although outside the Marine Plan area, it acts as a gateway for exploring the rest of the Purbeck coast.

The area also attracts large numbers of educational groups of all ages. It is a classic field studies site, and many groups stay for up to a week in centres in Swanage, Weymouth and west Dorset.

### 4.9.4 Scuba diving

The Dorset coast is visited by scuba divers from all over the country, with a wealth of wrecks and scenic reef dives to explore. Weymouth & Portland is one of the most popular diving locations in the UK. There are currently ten commercial hard boats and RHIBs offering a mixture of shuttle and charter trips, five diving schools and four slipways serving over 35,000 diver days per year. Dive clubs also take advantage of the slipways to launch their own RHIBs, which can cause congestion during the summer months.

It is estimated that £260,000 is spent on diving in the Weymouth & Portland with additional spend on accommodation, food, parking and equipment of approximately £360,000 a year. Swanage has three shuttle boats and one charter boat which offer diving within the Marine Plan area, and most of the charter boats from Poole also head for the area. Shore diving is also popular, with several accessible sites, including Kimmeridge Bay.

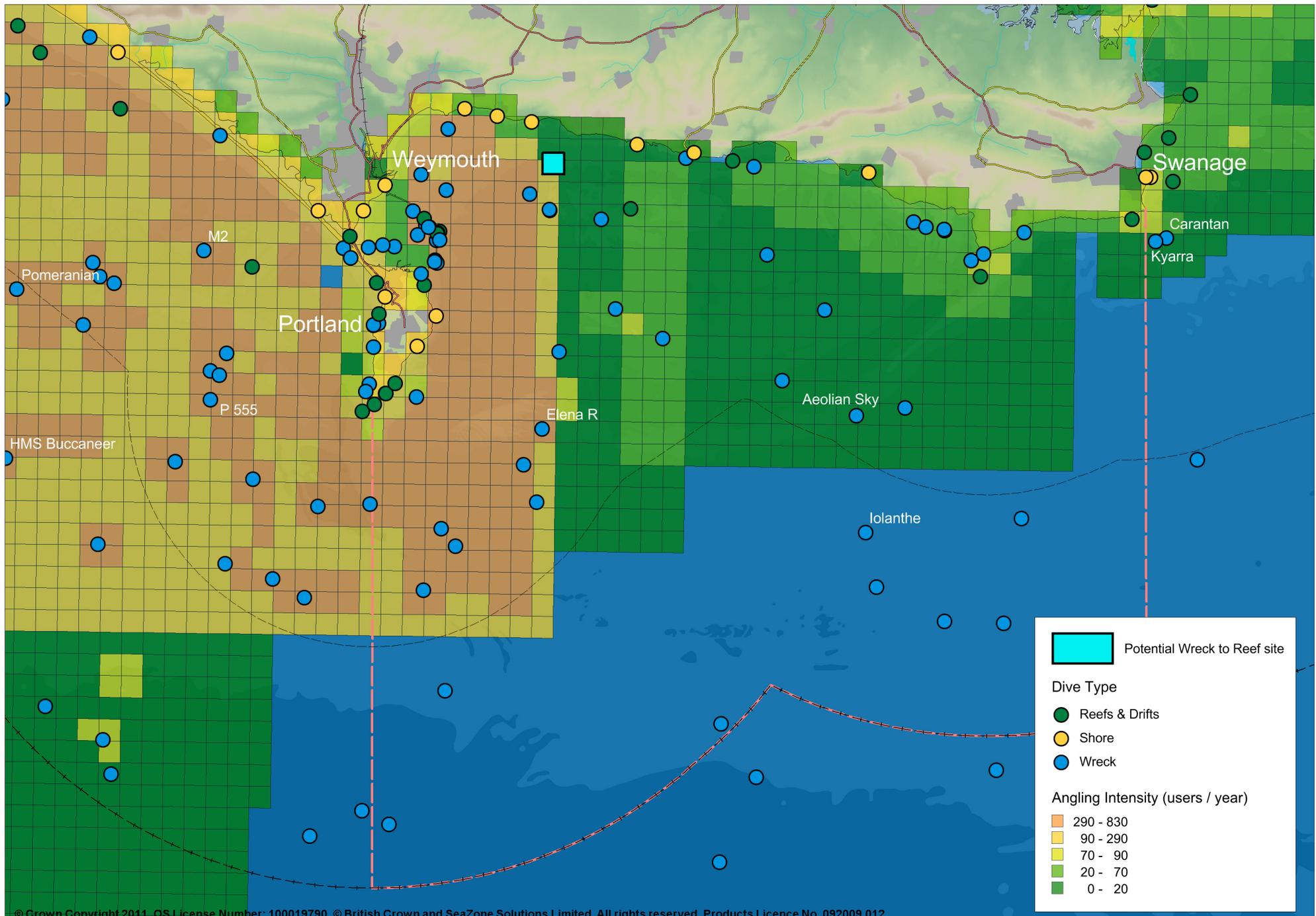
Most boats offer 'two-tank' dives; the first is usually at slack water on a wreck, onto which the skipper will drop a shot-line when they arrive at the site. Most boats do not anchor, idling close to the shot line. Second dives often involve a drift dive, with the skipper following surface marker buoys. Many divers will opportunistically collect crab, lobster, scallops and flat-fish. Shuttles, where the boat returns to harbour in between dives, are becoming increasingly popular, and this has led to increased boat traffic within the Marine Plan area.

Popular dive sites include the MV Aeolian Sky, Countess of Erne, HMS A3, Lulworth Banks and Anvil Point Lighthouse (Figure 24). The Kyarra, whilst just outside the Marine Plan area, is one of the most visited wrecks in the country.

### 4.9.5 Wreck to Reef project

Weymouth and Portland Wreck to Reef is a non-profit community group which aims to sink a ship off Ringstead Bay (Figure 24). Drawing on the experiences and the resulting benefits of previous man-made artificial reefs, notably in Plymouth, it is believed that this project will help redress the economic down-turn within the local diving industry. Within the area of seabed leased from the Crown Estate, there will also be lobster restocking reefs and artificial reef balls.

Figure 24: Diving and angling recreation



#### 4.9.6 Shore and sea angling

Angling is widespread in Dorset, from both shore and boat (Figure 24). There are 4 tackle shops in Weymouth & Portland and another in Swanage, as well as three sea angling clubs which hold regular shore and boat competitions. Shore anglers can be found all year round and local knowledge is essential to catch target species; 'marks' are often closely guarded by regulars, but there are at least 30 well known marks within the Marine Plan area. Although just outside the Marine Plan area, Chesil Beach is regarded as an international shore angling site, and is busy all year round. Target species depend on location and time of year, but bass, mullet, flounders, cod, mackerel, garfish, scad, pollack, wrasse and pouting can all be caught from shore; and modern generation beach-casting rods allow anglers to cast well over a 90 metres to target species as the small-eyed ray.

In the 70s many skippers of licensed fishing boats realised it was more lucrative to take out parties of anglers wreck fishing, and inshore wrecks were soon fished out. Skippers began to invest in faster boats and go longer distances to find the better fishing which led to a more specialist angling fleet. Many dive skippers also offer angling from their boats, so it is hard to gauge the exact number operating at any one time. However there are at least 18 charter boats operating from Weymouth & Portland and, although neither Swanage nor Poole are within the Marine Plan area, a further 23 boats enter the area from these towns.

Most boats offer both reef and wreck fishing. Wreck fishing is conducted either whilst drifting in the current, or at anchor once the tide has slackened sufficiently; the main target species at slack water are usually conger eels and ling, although cod, pouting, anglerfish and turbot are also caught. The Weymouth harbour fleet will often head out to the Shambles Bank where plaice, turbot and brill are targeted, along with pollack and blonde rays at the Kidney Bank.

The Portland Race is an area of fast moving turbulent water which attracts bass. The most turbulent water in the front of the race often produces the bigger fish, and boats drift at speeds sometimes in excess of 5 or 6 knots to catch them. When the drift has dropped below 2 knots the bass will usually stop biting, and skippers will head to the Shambles and Kidney Banks.

Dorset Wildlife Trust have been actively involved in the national Recycle Fish campaign, which encourages recreational sea anglers to take only the fish they need for their immediate family and to return all other fish to the sea.

#### 4.9.7 Sailing

Yachting has been a feature of the Dorset coast for over two hundred years. The main centres are at Poole Harbour and Weymouth & Portland (Figure 25) but there is also significant activity around Swanage. Thanks to a combination of clean winds, sheltered waters and weak tides, Weymouth Bay and Portland Harbour are widely recognised as some of the best small-boat sailing waters in the world. Heavily used RYA yacht cruising routes run parallel to the shore, and there are several less heavily used routes passing through the Marine Plan area.

In more recent years there has been a renaissance of sailing in the Weymouth & Portland area with the development of the Weymouth and Portland National Sailing Academy (WPNSA) on the site of the old naval establishment of HMS Osprey. Since opening, WPNSA has contributed in the region of £70m to the local economy and the annual contribution, discounting the Olympics, is approximately £11.4 million – supporting around 180 full time jobs in the wider local economy.

Weymouth also provides the shortest crossing to France west of Folkestone, which makes it a popular berthing location. Weymouth Inner Harbour has two marinas that are managed by the Weymouth Harbour Master providing over 450 permanent berths for vessels 6-12 metres in length. Weymouth Marina, which sits just beyond the town's lifting bridge, offers over 300 fully serviced berths. Portland Marina opened in April 2009 and will be part of the venue for the 2012 Games. It currently offers 300 fully serviced berths, but this will double to 600 in its second phase of development in time for the Games. The development also includes 15 new business/retail units and five large commercial units.

#### 4.9.8 Other watersports

The last ten years has seen an increase in both established and new watersports within the Marine Plan area. Portland Harbour provides a safe environment for many types of watersports, with windsurfing and kitesurfing being particularly popular. Certain byelaws apply, and permits are required for most watersports, including waterskiing, wakeboarding, windsurfing, kitesurfing and personal water craft (jet skis). Within the inner harbour, PWCs must keep to a designated channel/fairway. These activities are also subject to the General Directions or the Local Notices to Mariners (Figure 26). There is a similar permit scheme within the limits of Weymouth Harbour Authority. Weymouth and Portland Borough Council operates a zoned watersport area within Weymouth Bay, which separates activities away from bathing areas; this includes a PWC channel at Bowleaze Cove (Figure 27). There are several training schools that cater for windsurfers, powerboating, waterskiing and kitesurfing in the area.

Figure 25: Yachting and sailing areas

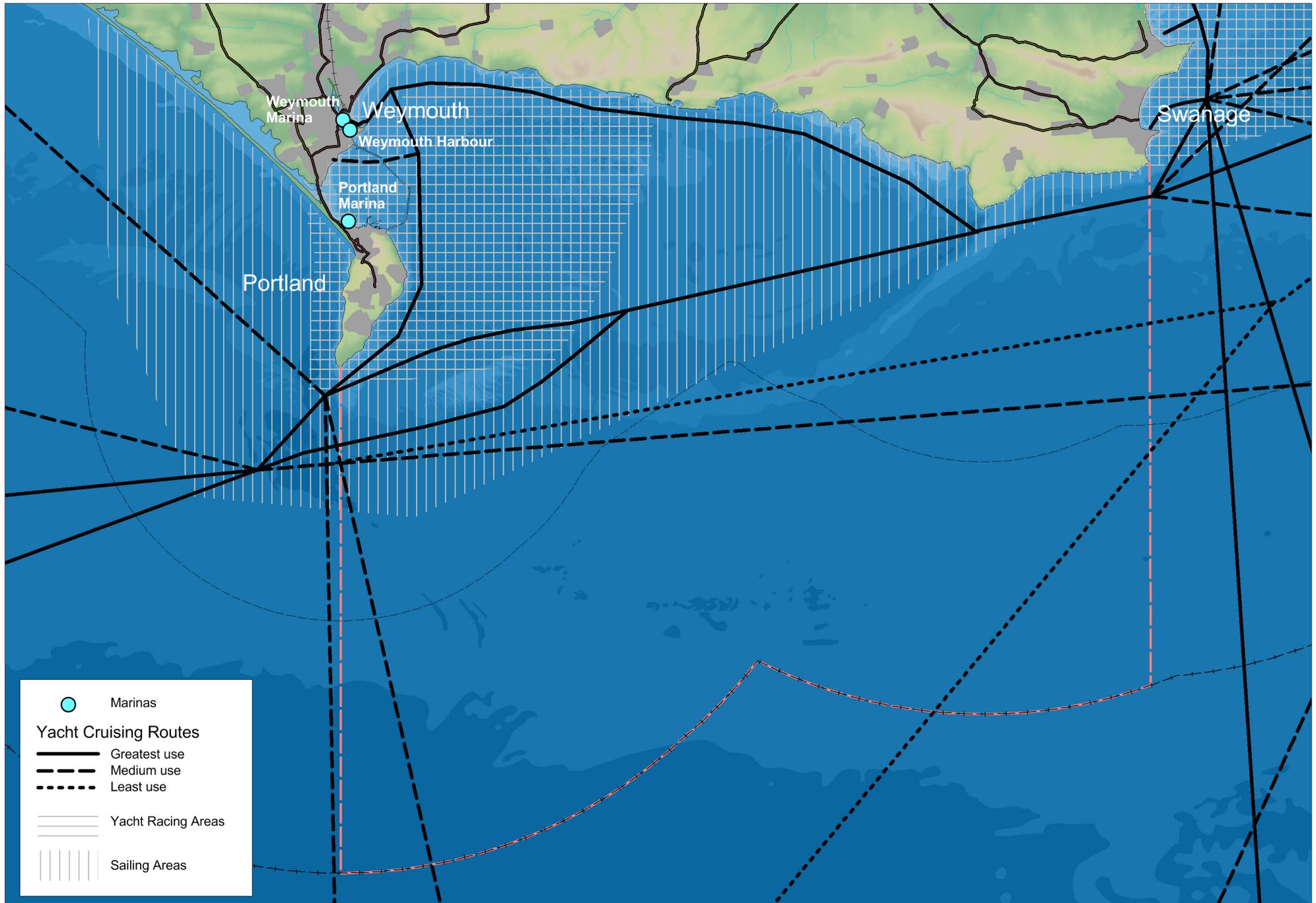


Figure 26: Portland Harbour recreational management plan

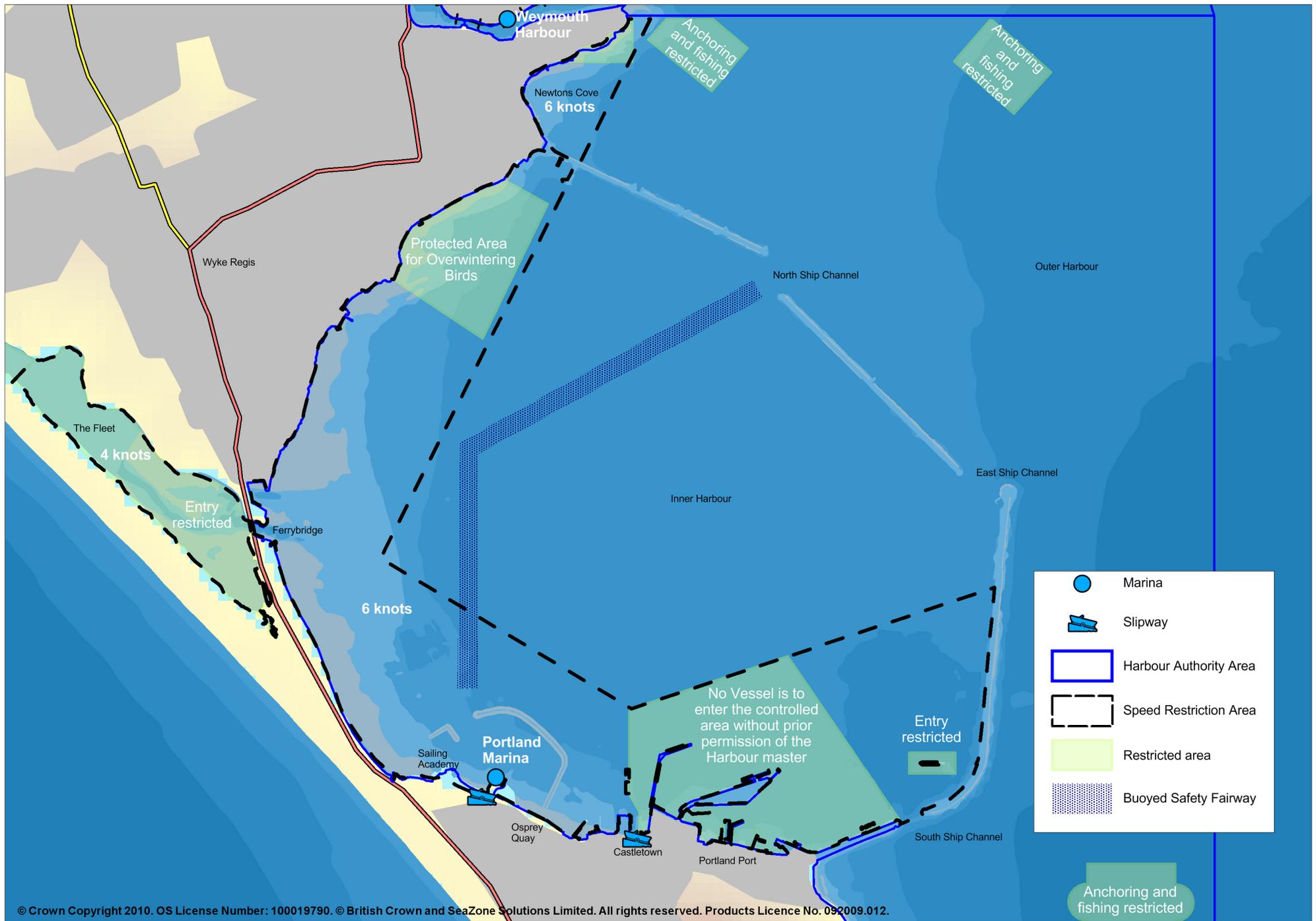
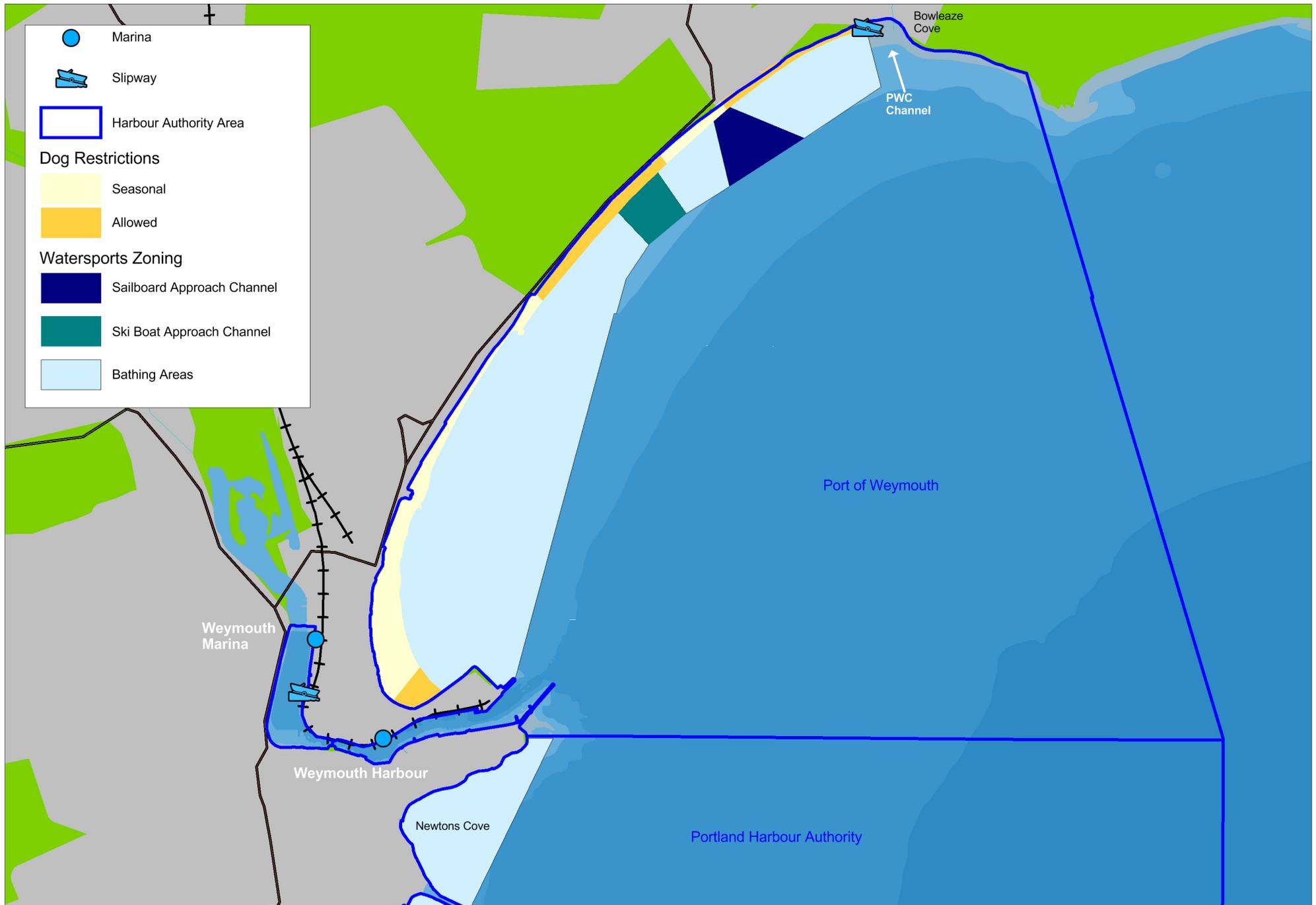


Figure 27: Weymouth beach management plan



There tends to be less motorised watersports off the Purbeck Coast, with the emphasis on more 'tranquil' sports. Kimmeridge Bay is highly popular for both surfers and windsurfers. It is acknowledged as one of the best surfing spots on the south coast, and when the wind is from the NW, N or NE, surfers flock to the Bay and it can get quite crowded. Kayaking is also popular, with launches mainly from Swanage, Kimmeridge Bay and Lulworth Cove; many companies offer kayaking and camping tours of the area. Coasteering has seen a rapid increase in popularity, and the cliffs and caves of Purbeck have proved to be a major draw for companies offering this activity.

#### 4.9.9 Harbours and ports

Weymouth Harbour and Portland Port both feature prominently within the Marine Plan area. As well as being important commercial hubs, they also offer popular recreational facilities, house important historic structures and are of great ecological value.

##### Weymouth Harbour

Weymouth Harbour (Figure 27) is owned and managed by Weymouth and Portland Borough Council, which has been the Statutory Harbour Authority since 1861. The Harbour has no tidal restrictions and provides shelter from the predominantly south westerly winds, allowing for safe and easy access at all states of the tide. Pilotage within the Harbour's jurisdiction is compulsory for all vessels over 50m in length, and it can accommodate ships with a maximum length of 130m and a maximum draft of 5.2m on its commercial berths. Diesel fuel is available within the Harbour.

Facilities for handling bulk, utilised commodities and containerised goods are available. Current uses include imports of bulk animal feeds and fertilisers and exports of aggregates and pre-slung /palletised case cargo. Temporary storage facilities are available prior to shipment, but space is limited. In addition to passenger transport, the Condor Ferries also offer a year round light freight fast ferry service between Weymouth, Channel Islands and St. Malo providing a vital supply link for all kinds of fresh and frozen produce.

Weymouth is a licensed port for the discharge of bulk fish and has a designated fish landing quay to comply with EEC Fish Landing Directive. This area must be used for landing of fish and shellfish for human consumption only. There are currently 57 fishing vessels registered to Weymouth Harbour, and in 2008 109,000 tonnes demersal fish worth £556,000 and 2,422,000 shellfish worth £1,742,000 were landed.

The Harbour also offers extensive berthing for yachts and other pleasure craft, and it has seen an increase in the size of visiting vessels over the last few years. Currently the majority of visiting vessels are 11-13m in length. There are numerous byelaws and a zoning scheme which control recreational activities within the Harbour's jurisdiction.

##### Portland Harbour

Portland Harbour (Figure 28) has been a strategic military location since the time of King Henry VIII in the 16th Century. Construction of the modern harbour began in 1849 when the Royal Navy created a breakwater to the south of the anchorage, made of blocks from local quarries on the Isle of Portland. This was completed in 1872 and provides protection from south-easterly winds. The Harbour continued to serve as an important naval base until 1995.

Following closure of the navy base, its assets were purchased by Langham Industries Ltd in 1996, bringing about the creation a new deep-water commercial Port. Portland Harbour Authority Ltd became the statutory Harbour Authority for Portland Harbour and its surrounds following the adoption of the Portland Harbour Revision Order (HRO) on 1st January 1998. Within the HRO, provision is made for Portland Harbour Authority Limited to make byelaws as considered necessary for the management and regulation of the harbour and harbour premises. Pilotage is compulsory within the Port's jurisdiction for any vessel over 50 metres, and any vessel over 20 metres carrying dangerous cargoes or more than 12 passengers. The Port is also HM Customs inventory linked, offering Phase II clearance.

Portland Port sits within the second largest man-made harbour in the world, 35km (22 miles) north of the westerly shipping lanes and on the main maritime trade routes allowing fast, safe access 24 hours a day. Depths are up to 20 metres in the outer harbour and 15 metres in the inner harbour, although vessel size is limited by the charted depth at the breakwater entrance of 13.8 metres. The Port has the capacity to handle all types of cargo from unit load/containers, general cargo and bulk through to project cargoes, heavy lifts and most categories of hazardous goods. A new development in 2009 provided 8,400m<sup>2</sup> (approx. 2 acres) of cargo handling hard-standing with an adjacent cargo shed, suitable for Ro-Ro and General Cargo operations. Seventeen designated anchorages, bunkering, ship repair and maintenance, vessel replenishment and diving services are all available, and there are numerous berths, piers and jetties serving diverse traffic including cruise ships, cable ships and general cargo vessels. The Port also maintains strong links with the navy, particularly the Royal Fleet Auxiliary.

There are 25 companies based within the Port's estate. These include Shipbuilders and engineers Manor Marine, Global Marine Systems, the world's largest independent provider of marine cable installation and maintenance, bunkering providers Aegean Oil, and underwater maintenance providers, UMC International. In 2008 planning permission was granted for Portland Gas to develop a gas storage facility on the site of former navy buildings at Upper Osprey. Fourteen caverns, capable of storing up to 1000 million cubic metres of gas, will be formed by dissolving rock salt 2,400 metres under Portland. Three pipelines, one gas and two brine, will be built including a nine-kilometre section across Weymouth Bay. It is not yet known when the development will be constructed as this is dependant on securing the necessary finance for the scheme. In light of the uncertainty over the implementation of the project, five planning applications have been made which seek to extend the time period for implementation of the project. These will be issued shortly following the securing of a legal agreement.

Portland Harbour Authority Ltd were recently awarded the Portland Harbour (Improvements) Order 2010 which allows for major expansion of the commercial port area and includes provisions for additional operational land, improvements to the passenger terminal, berths and yard areas, and a floating dry dock. The Navitus Bay offshore wind site will also provide significant opportunities for the Port to offer both construction and service facilities.

## 4.10 Shipping

### Oil Tankers and Cargo Vessels

Dorset sits on the 560km (350 miles) long English Channel, which is one of the busiest shipping lanes in the world; AIS data shows approximately 400 vessels traversing the channel on a typical day. The Traffic Separation Scheme in operation means that westbound vessels pass along the English coast to the south of the Marine Plan area. While some ships call into a Dorset port, many don't; only 20-30 will berth at Poole, Portland or Weymouth.

However, passing shipping have the potential to create impacts within the Marine Plan area, particularly pollution; litter thrown overboard and oil resulting from dumping of fuel washings, do come ashore on Dorset's beaches. Emergency plans are in place to deal with collisions or wrecks taking account of both casualties and possible pollution from fuel, oil or hazardous cargoes. Incidents such as the grounding of the MSC Napoli near Branscombe in 2007 are always a possibility. Storms can force shipping to shelter within the Marine Plan area, and there is a bad

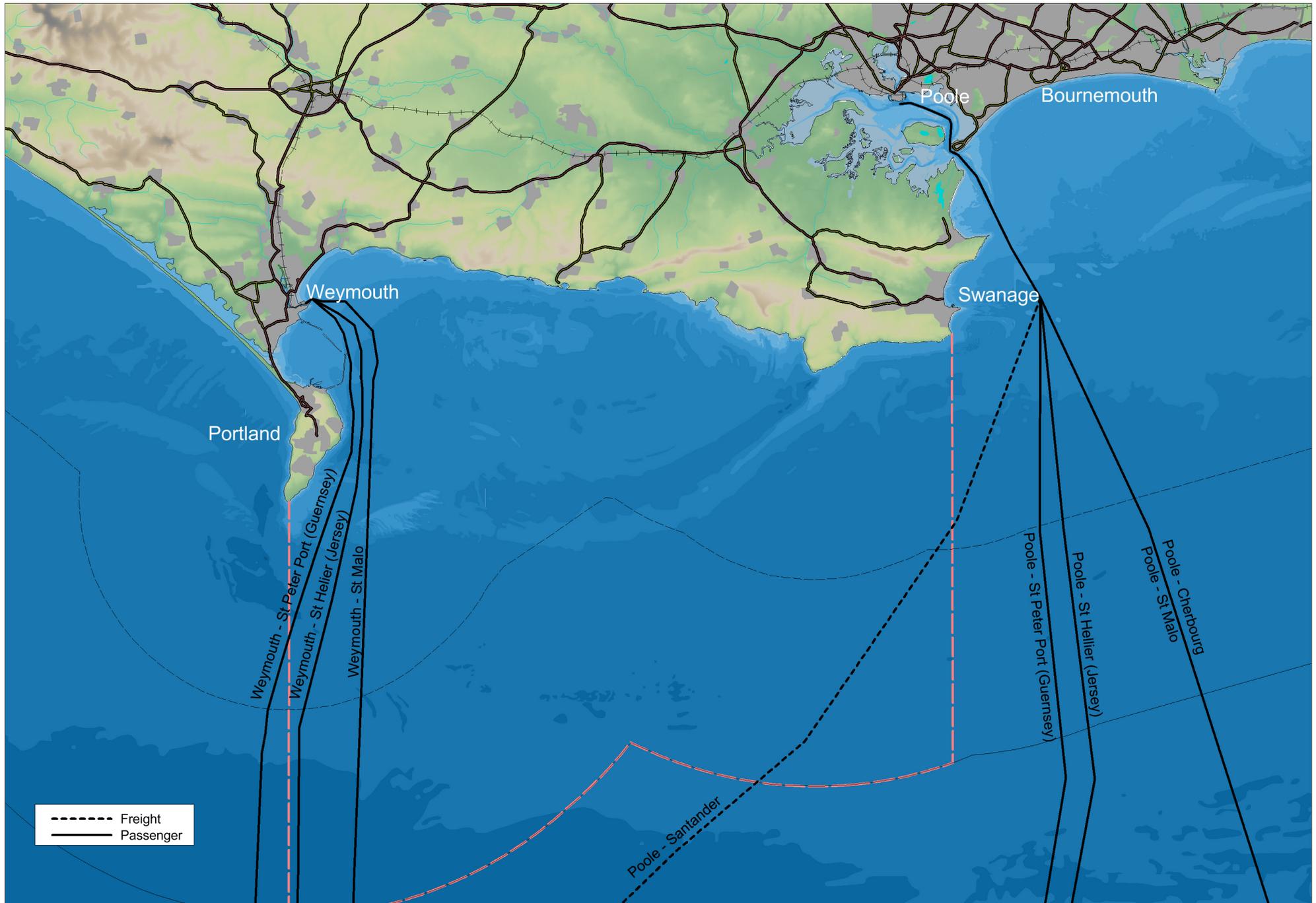
weather refuge anchorage area within Weymouth Bay, offering shelter from the prevailing south-westerly winds. This anchorage area is likely to be moved slightly to the east once pipelines for Portland Gas are constructed. Bunkering is available within Portland Harbour.

### Passenger Ferries and Cruise Ships

Condor Ferries operate out of Weymouth with routes to the Guernsey, Jersey and St Malo (Figure 28). The ferry terminal is in the heart of the town, next to the Pavilion, and traffic can occasionally be a problem in the summer months. The company operates a conventional all-weather ferry designed to carry 300 passengers and 100 cars, as well as high-speed catamarans which carry 741 passengers and 175 cars. With a service speed of 38 knots, the catamarans take just two hours to get to Guernsey; routes travel north-south and run close to the western boundary of the Marine Plan area. In 2008/2009, ferries from Weymouth carried a total of 182,710 passengers and 55,409 vehicles.

Portland Harbour currently receives approximately 5-8 cruise ships per annum, with capacities ranging from 50 to 500 berths. Ships use the Harbour as a base for excursions, as well as turnaround, and it has a dedicated cruise passenger terminal which was refurbished in 2005. Portland Harbour Authority Ltd is aiming to increase business to fifty turnaround cruises per year, which could contribute approximately £5-7.5 million per annum to the local economy. Weymouth has very occasional visits by medium-sized cruise ships.

Figure 28: Ferry routes from Weymouth and Poole



#### 4.11 Marine industry

Marine and Maritime Industries play an important role in Dorset's economy; 2685 marine businesses in the South West generate a turnover of over £1.3 billion per year employing some 32,000 people, with 18% of these businesses in Dorset. Businesses range from boat building and marine equipment manufacture to marine research and international communications. The county also attracts a large number of recreational watercraft, which requires overnight moorings, chandlery and repair services.

There are a number of associations representing marine and maritime industry in Dorset. The largest is British Marine Federation Wessex (a regional group affiliated to the BMF), with a current membership of around 90 companies. The Dorset Marine Network works to promote the diverse range of marine businesses in the county. Within the Marine Plan area, activity is clustered in Weymouth and Portland. Weymouth and Portland Borough Council are working with marine sector stakeholder groups to establish the area as a centre of international marine and leisure excellence. They aim to attract additional marine businesses, increase the contribution of the marine sector to the local economy and the number of people employed by marine related businesses.

Redevelopment of the former HMS Osprey site has given significant opportunities to replace the estimated 4500 defence jobs that were lost on Portland. The site will provide up to 55,000 square metres of development land. A significant part of the site is for employment and marine leisure use. Current occupiers include Sunseeker, who hope to create up to 1050 jobs in super-yacht design and manufacture, dive equipment manufacturers O'Three, Portland Marina and the Maritime and Coastguard Agency.

Portland Harbour Authority Ltd provides extensive commercial port facilities with deep water access, and hosts a growing number of tenants from the marine industry. These cover sectors including submarine cabling, commercial diving, underwater services, marine engineering and boat building.

The West Isle of Wight wind farm zone provides a great opportunity for marine industry in Dorset. In the south-west as a whole, it is estimated offshore wind will require investment in excess of £5 billion and has the potential to create thousands of onshore and offshore jobs. Portland Harbour offers great potential as both a construction and service port. Marine and other businesses should also be able to capitalise upon the increased leisure craft and watersports usage that will occur in

the area before and after the sailing events for the 2012 London Olympic Games. Pressure on waterside land is seen as one of the greatest constraints on growth of the marine and maritime sector. A shortage of land and pressure for prime and low cost waterside sites is leading to increased competition with other developments in the coastal zone and rising commercial land values. Available sites can be lost to residential development. It was hoped that the former DERA/QinetiQ site at Bincleaves would be retained as employment land for marine tourism and recreation, but permission has been granted for a mixed use development. There are also strong national concerns within the BMF about the implications of environmental designations along the coastline for daily operation and future development of the marine industries.

#### 4.12 Transport infrastructure

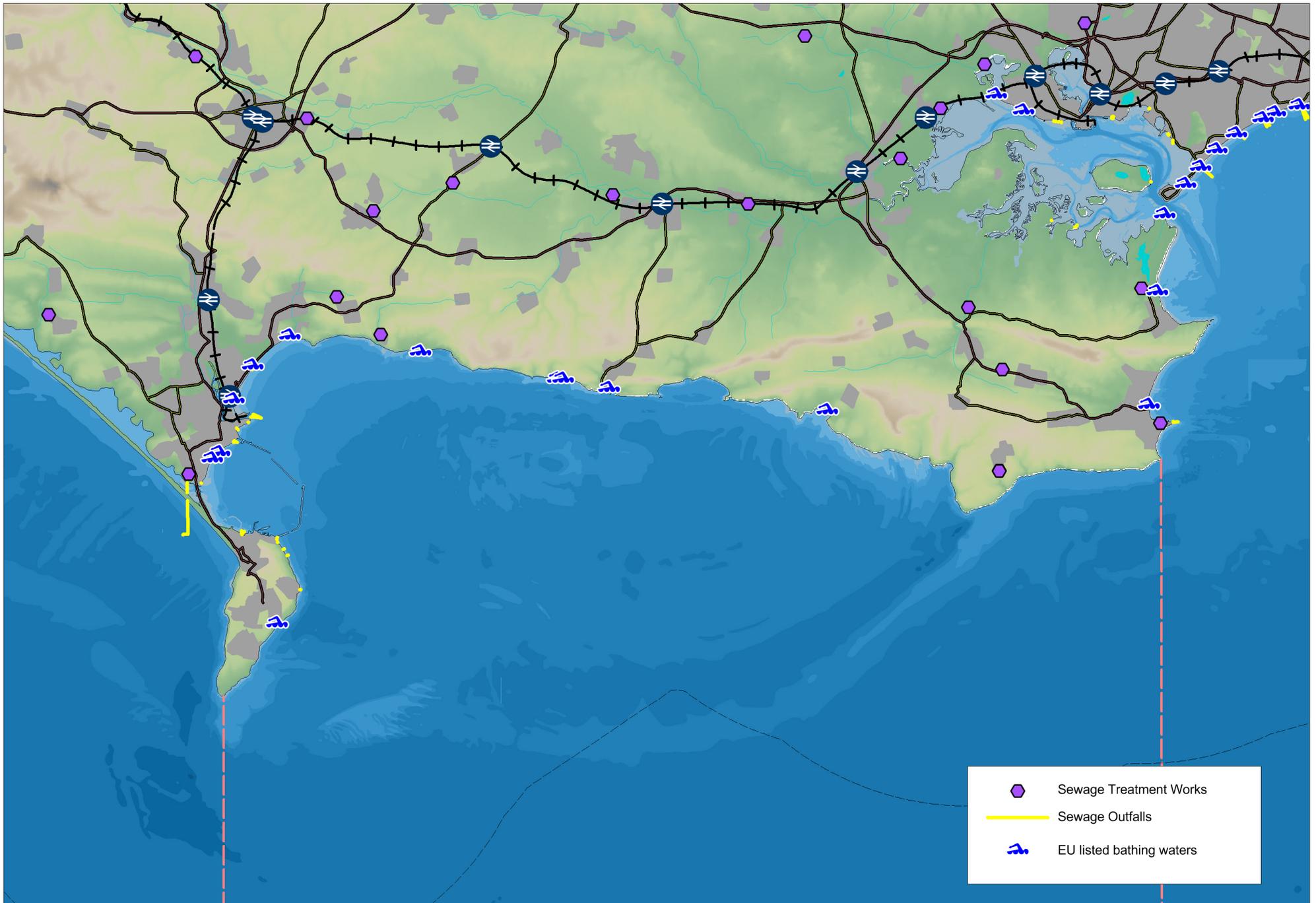
Dorset is a predominantly rural county made up of Market Towns, Villages and small Rural Settlements. The transport network matches this rural nature with limited rural bus and train services, no motorways and only short lengths of dual carriageway. The study area covers the Towns of Weymouth, Dorchester, Portland and Wareham with Swanage just outside the eastern boundary. Other settlements of note within the study area are Wool, Corfe Castle and Lulworth. The current Bournemouth, Poole and Dorset Local Transport Plan (LTP) provides detailed information about Dorset's transport infrastructure.

##### Roads

The A354 linking Dorchester to Portland via Weymouth is the predominant North - South corridor in the study area. This road represents the primary artery for freight and passenger transport providing the link to the wider road network. Prior to completion of the Weymouth Relief Road this corridor suffered with congestion during peak times which was exacerbated with the addition of tourist traffic in the summer months, leading to severe congestion, delays and unreliable journey times. To address these problems and assist in the future development of Portland Port, the Weymouth Relief Road was opened in 2011 and complemented with junction improvements on the A35 around Dorchester. Since the completion of these improvements congestion along the A354 corridor has been greatly reduced.

Distributing traffic from the A354, the urban road network in Weymouth and Portland is often subject to periods of high demand during the morning and evening peaks. Weymouth is also a popular visitor resort and until recently the increased demand associated with tourism in the summer season regularly could not be accommodated, resulting in severe congestion and delay for all users. The Olympic

Figure 29: Existing terrestrial infrastructure



Sailing Events are being held in Weymouth and Portland during 2012 and improving the urban road network was a key component of the Games preparations. In response to this, extensive road works were completed towards the end of 2011 that will serve to reduce the congestion experienced by road users.

In terms of East – West movement, the A35 which skirts the north of the study area is the primary artery for long distance trips into and across the county. This road generally operates within capacity outside of the visitor season with congestion only apparent during the morning and evening peaks at key junctions close to urban centres, such as Dorchester, Bere Regis, Poole and Ferndown (A31). As with the A354, the added visitor demand during the summer months exacerbates this and can lead to increased congestion and delay during peak times.

The A352 and A353 provide the link from Dorchester (A352) and Weymouth (A353) to Wool and Wareham in the east, continuing on to Corfe Castle and Swanage with the use of the A351. There is no coast road in Purbeck and access to Lulworth Cove, along with other small coastal villages found in this area, is gained via narrow rural roads which run perpendicular to the A353 and A352 and terminate at the coast. The A352 and A353 carry much less cross county traffic than the A35 and, with the exception of delays related to the Wool level crossing, are rarely congested outside of the visitor season. However, these roads provide access to a number of popular visitor attractions and experience high demand during the summer months which can lead to congestion and negatively impact on the settlements along this corridor with pollution and severance of communities.

The A351 connects to the A352 at Wareham leading up to the A35 at Upton on the outskirts of Poole. This road represents the sole access point to southern Purbeck including Corfe Castle and Swanage which are popular visitor destinations. With no alternative route this road is often subject to severe congestion, particularly at the junction with the A35 (Bakers Arms Roundabout) which is greatly increased during the visitor season. This congestion negatively impacts on numerous settlements along the corridor with air pollution, severance and safety issues. The ability to address these issues with additional road space or significant traffic management improvements is limited by environmental designations which protect the landscape in the area.

#### **Buses**

The A354 Dorchester/Weymouth/Portland corridor is well served with interurban bus services and has recently been improved with the addition of real time passenger information. There are a number of services that incorporate this route

providing connection between the towns at around a 20 minute frequency. Outside of the Dorchester/Weymouth/Portland corridor there are fewer services available, reflecting the rural nature and dispersed population found within the county. The primary East – West service is the X53 which operates along the A352/A353 on a two hourly frequency between Exeter and Poole, incorporating Dorchester, Weymouth, Wool and Wareham. During the summer this service is supported by the X43 which runs between Weymouth, Wool, Wareham and Swanage which operates four buses a day in each direction. Heading towards the west, away from the study area the 31 operates an hourly service between Axminster and Weymouth and covers Dorchester, utilising the A35 and A354.

Within Purbeck the primary bus routes are the service 40 which runs between Poole, Wareham and Swanage along the A35 and A351; and service 50 running between Bournemouth and Swanage utilising the chain ferry between Studland and Sandbanks. Both of these services operate on an hourly frequency with service 50 increasing to half hourly during the summer season.

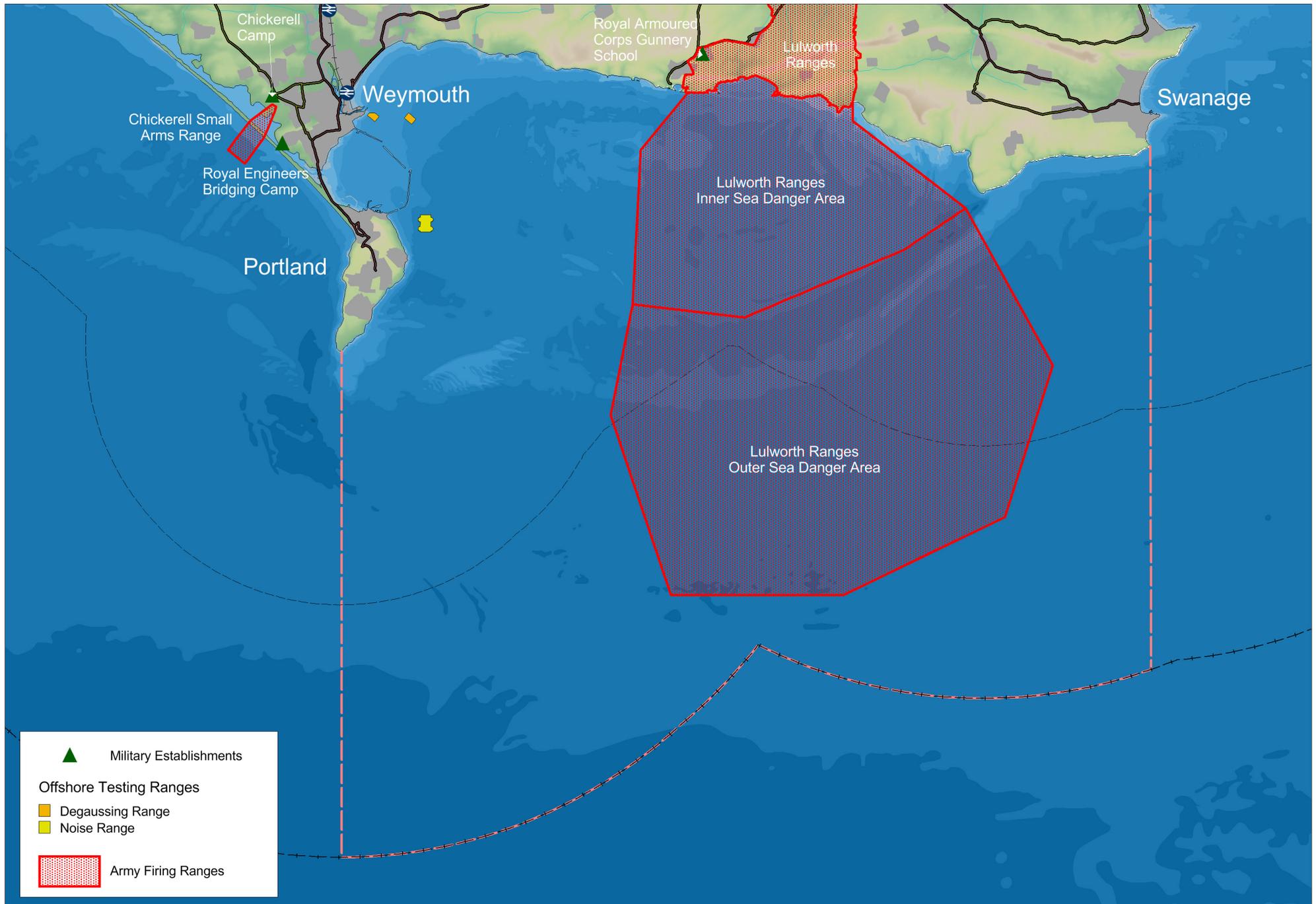
#### **Trains**

The study area is reasonably well served by rail with two mainline services originating from Weymouth. The London line passes through Dorchester (South) then heads east through Moreton, Wool and Wareham in Purbeck, operating on a two trains per hour frequency. The other mainline service runs once every two hours linking Weymouth to Bristol via Dorchester (West). There is an aspiration to improve the Bristol service with better rolling stock, more frequent trains and shorter journey times, however, these improvements are not yet programmed for delivery. In addition to the mainline services a heritage railway operates between Norden (Corfe Castle) and Swanage. This service is focused on leisure trips, operating a variable frequency with more trains running during the summer months. Reconnection to the Weymouth to London mainline at Wareham with a regular amenity service to Swanage is planned for delivery in the near future.

#### **Walking & Cycling**

There are numerous opportunities for walking and cycling within the study area and across Dorset as a whole. There are some 4664km of Rights of Way in Dorset which are subject to an ongoing maintenance and improvement plan. The South West Coast Path offers a long distance unbroken route with stunning views along the whole study area coast. The National Cycle Network (NCN) is well represented in the study area with NCN 2 linking Dorchester with Bridport in the west and Poole via Purbeck in the east. NCN 26 joins Weymouth with Dorchester and NCN2, offering a predominantly paved and off road route alongside the newly completed Weymouth Relief Road.

Figure 30: Military activities within the Marine Plan area



#### 4.13 Military

There is a long history of military use of Dorset's coast. The most significant site has been the naval base at Portland, which was established in the 1840s but closed in 1995. HMS Osprey, the Navy's helicopter base at Portland also closed in 1999. These closures had significant effects on the local economy within the Marine Plan area. There is still, however, a strong military presence (Figure 30) with important ranges and training schools at Lulworth and Poole, The Royal Fleet Auxiliary regularly berths at Portland Port and defence research industries retain some testing ranges and facilities.

The Royal Armoured Corps Gunnery School, Lulworth provides live firing and tactical training for the Army. The ranges have been a feature of the coast since World War I. They cover more than 2,830 hectares of land east of Lulworth, and a defined Sea Danger Area of around 30,000 hectares. About 70,000 high explosive shells are fired each year and this has left the seabed scattered with used casings. In the late 90s the MoD signed a new 100-year lease on the facilities.

Safety requirements mean that public access is severely restricted, but the Range Walks and beaches are open during the main school holiday periods and all but six weekends of the year. Access is also permitted during Christmas, Easter, the month of August and all Public Holidays. When the Range walks are closed a 12-mile detour along roads is necessary.

The limited public access and reduced agricultural activity within the ranges has had some benefits for wildlife. It has also restricted access to important geological sites such as the Fossil Forest at Lulworth. The Sea Danger Area also restricts recreational boating and fishing for much of the time outside the main holidays.

Based at Poole, The Landing Craft Wing, Royal Marines is the centre for all landing and raiding craft training for the Royal Marines, and a critical part of the Forces' amphibious capability. The Wing use 7.4 metre, fast Rigid Raiders and Landing Craft of 13.5 and 27.4 metres. Most of their activity takes place within Poole Harbour, although Studland Bay, Lulworth Cove, Worbarrow Bay and Portland Harbour are used for training.

The Wyke Regis Training Area is used mainly by the Army, although public use of climbing facilities and adventure training has increased over the last few years. Two sites are located on the northern side of the Fleet including a small arms range that extends across Chesil Beach and out to sea. The range is typically used for 150 days per year and sentries are posted when it is live, to police the footpaths and offshore area. There is also a bridging camp on the shoreline of the Fleet.

Offshore there are several designated naval exercise areas although this has substantially decreased since the closure of the Portland naval base and relocation of the Navy's sea training unit. Surface use by warships is now much reduced and takes place mainly off Devon and Cornwall. Submarine exercises are now also extremely rare off the Dorset Coast and the Navy suggest that these can be discounted as an activity.

QinetiQ, with close links to the MoD, is a leading international provider of technology-based services and solutions to the defence, security and related markets. It has several operations within the Marine Plan area, including a number of ranges for noise measurement and testing torpedo technology. It also has a permanent and temporary vessel degaussing (demagnetisation) station within the limits of Portland Harbour. Portland Harbour Authority Ltd actively promotes the use of the harbour for military activity including Special Forces and Royal Navy training.



#### 4.14 Agriculture

Agriculture is a significant land use along the Dorset coast covering over 80% of the land area. Farming types reflect the wide range of soils, hydrology and topography. Stock farming is dominant in the wetter, steeper and more marginal areas and dairy and arable dominate on the more freely draining soils that are more easily cultivated. Agriculture has traditionally been an important source of local employment. In 2006, 897 (2.6% of total workforce) people were employed in agriculture and horticulture within Purbeck, and 58 (0.1% of total workforce) in Weymouth & Portland.

However, the industry continues to lose employment with a reduction in labour intensive dairy giving way to arable or beef. Livestock numbers have steadily decreased over the past twenty years, and there has been a reduction in the number of medium sized farms (20-100ha), with a corresponding increase in numbers in both larger farms (over 100ha) and smallholdings. As farm incomes have dropped over recent years, many smaller farms have become economically unviable. Some farmers have diversified into retail enterprises and non agricultural-based activities such as tourism and leisure.

Within Purbeck District, agriculture is the main land use, with just 4% given up to urban development. Farming is mainly mixed in the vale and on the limestone plateau. On steeper slopes and along the coast pasture is predominant. Most of the land is owned by a small number of large private estates, but a large proportion of this is managed under generational tenancies. The Corfe Valley is mainly under pasture, enclosed within hedgerows with dense belts of hedgerow trees. Further east, there is mixed farmland, with mainly arable pasture around Smedmore.

Towards Weymouth most of the land is in mixed agricultural use, with arable cultivation mainly on the ridges and flatter valley sides. On the steeper slopes, especially around Osmington, there is mainly pasture with more substantial hedges and hedgerow trees. Grassland is also present on the steepest valley sides, in places with patches of gorse scrub, and on the coast.

Climate change is likely to affect farming practices in the future, with potential change to crops more suited to drier and warmer conditions, such as vines and sunflowers. In addition changing patterns of rainfall could result in increased soil erosion.

Agricultural runoff contributes to diffuse pollution in the Marine Plan area coastal waters; management policies are set out in the South West River Basin District River Basin Management Plan, which was published in December 2009. There are also initiatives such as the Catchment Sensitive Farming Delivery Initiative, which encourages land managers to ensure that diffuse emissions of pollutants into rivers, groundwater and other aquatic habitats are maintained at acceptable levels.

#### 4.15 Aggregates

Marine sand and gravel aggregates are becoming increasingly important for concrete production, road construction, and building as well as for beach replenishment and coastal defences, and today approximately 21 per cent of the sand and gravel used in England and Wales is supplied by the marine aggregate industry. No licensed extraction areas for marine aggregates exist within the Marine Plan area. However, there is a large area to the south east of Poole in Poole Bay which produced 72,551 tonnes in 2009. Generally, the South West and Dorset areas are a low priority for extraction due to the absence of any market demand. There are resources present, but it is unlikely that these will be commercially viable in the short term. The exception of this could be the increased need for coastal protection. However, given the policy move towards working with natural processes and reducing the need for coastal defence, this seems unlikely in the short to medium term.

Figure 31: Oil and gas licensing blocks

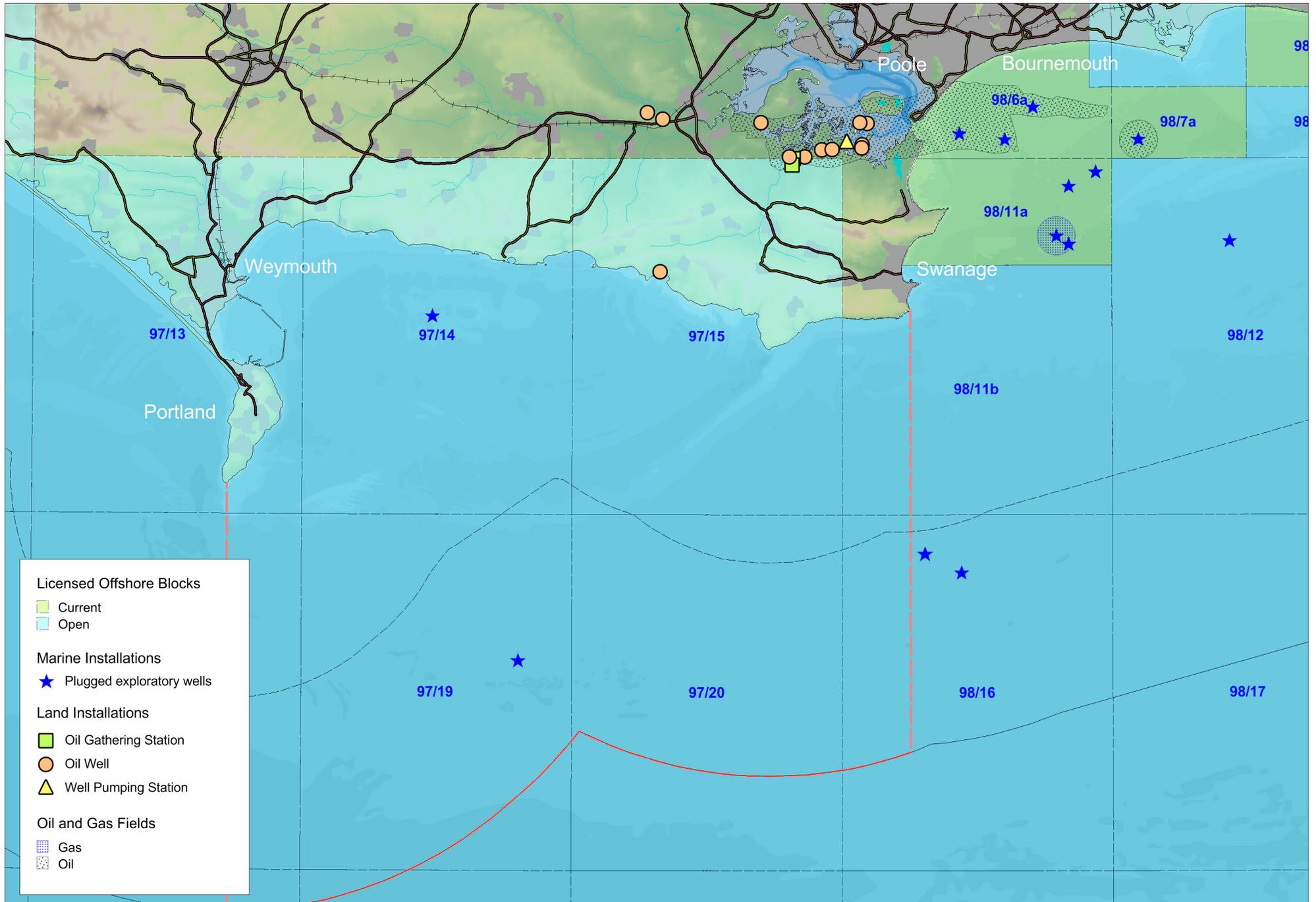
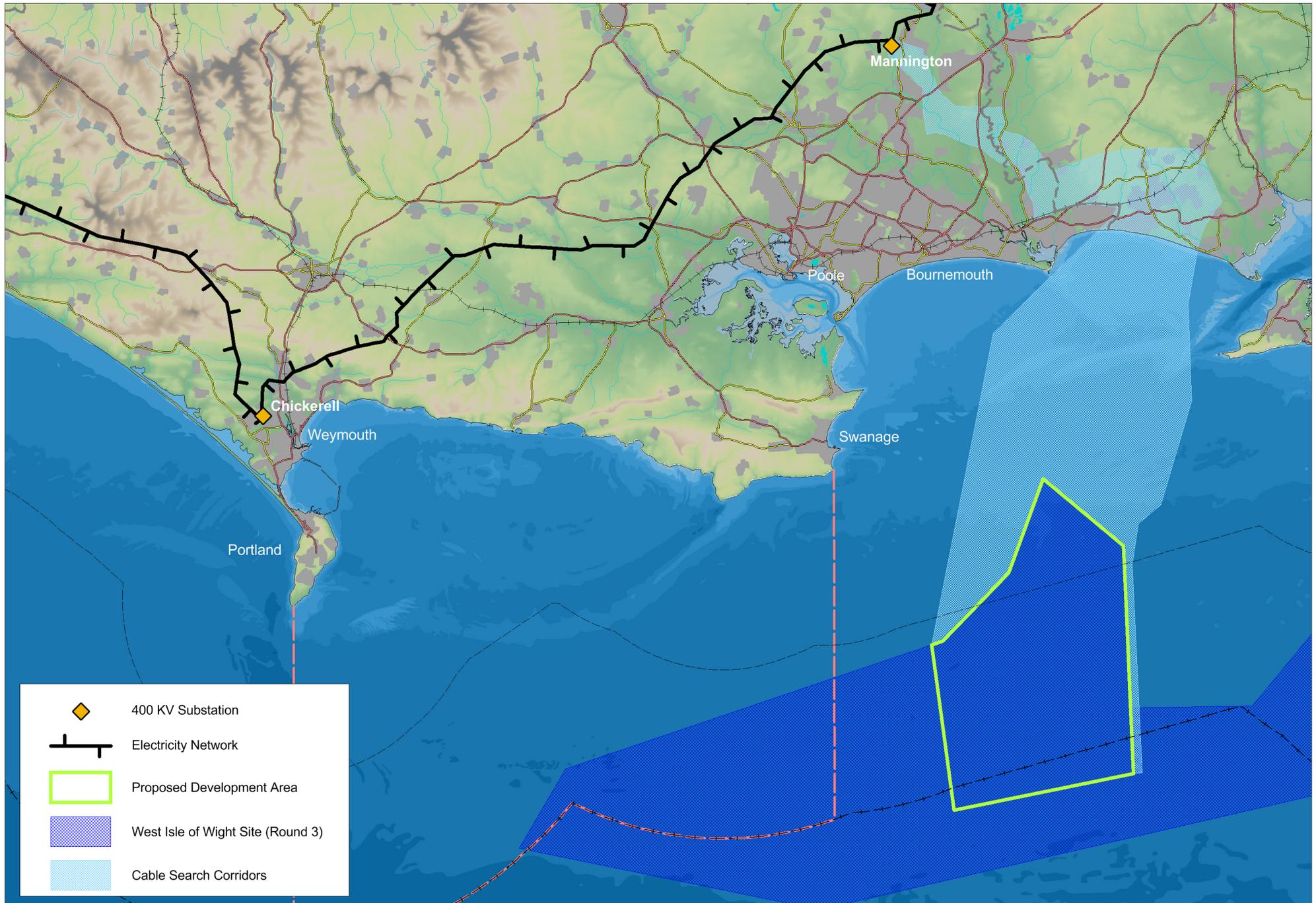


Figure 32: West of Wight zone and area to be developed



## 4.16 Energy

### Oil and Gas

Oil and gas are an important economic resource within Dorset; of the £134 million GVA generated through marine industries in 2008 in Dorset, £106.6 million was produced by the industry. Its distribution is based on the underlying geological resource. Oil is held in the Middle Jurassic Cornbrash Limestone layer in Kimmeridge, and has been extracted on the cliff top since 1959; production is currently 65 barrels per day. There are no offshore gas or oil fields in production or under development within the Marine Plan area, but several blocks are licensed in Poole Bay and inland, including under Poole Harbour (Figure 31). Operated by Perenco UK Ltd, the nearby Wytch Farm Oilfield is the largest onshore field in western Europe, and both oil and natural gas are extracted. About 120 operations staff are employed. There have been a number of exploratory wells, now plugged and abandoned, in and around the Marine Plan area with significant deposits of oil known to exist.

### Offshore Renewables

At present there are no offshore renewable energy sites within the Marine Plan area. At the beginning of 2010, The Crown Estate awarded Eneco the lease to develop Zone 7 (West of Wight) of the Round 3 offshore wind sites. The total zone area equates to 723.7km<sup>2</sup> (279 square miles), but only 197km<sup>2</sup> ( 76 square miles) of this will be developed (Figure 33). At its closest turbines will be sited 13.1 km (8.2 miles) from Pevenil Point, Swanage and its Northern most boundary will be located 16.3km (10.2 miles) from Bournemouth and 13.4km (8.4 miles) south-west of the Needles. The type (and therefore height) of turbines will be determined following further research and consultation and this in turn will dictate the number of turbines within the development. Eneco currently state there will be approximately 180-300 turbines spaced 1.5km apart with a total power capacity of 0.9GW, powering between 615,000 and 820,000 homes.

Construction is currently expected to commence in 2016, and to be completed in 2018. The network connection will be at the Mannington sub-station, and the onshore cable route is proposed to follow the road network as much as possible but there are a number of obstacles that would need to be crossed. The cable route is now unlikely to be within the Marine Plan area.

Neither The South West Regional Development Agency (SWRDA) Offshore Renewables Resource Assessment and Development Technical Report (2010), nor The Offshore Valuation Group Report (2010) identified further practical fixed offshore wind resource (what is available after consideration of external physical constraints) in Dorset waters. The Dorset Offshore Renewable Energy Capacity Study

identified two Potential Development Areas, but this study imposed fewer hard constraints and listed development considerations (i.e. parameters that may influence the complexity of development within these areas but do not restrict it outright). Both areas lie within 12nm of the coast.

The study also identified the potential for tidal stream development off the coast of Portland Bill. This area is not considered one of the UK's best tidal resource locations due to relatively shallow water depths, which may be insufficient to allow the installation of high capacity devices, and inconsistent tidal flows - where flow reversals of up to 35% have been recorded. Further areas around St Alban's Ledges may also be suitable in the future should technology progress to enable commercialisation in slightly lower resource areas.

As would be expected, given the County's location in the English Channel, no suitable wave resource exists within Dorset's waters, although there is potential for ¼ scale test devices.

## 4.17 Climate Change

The UK climate has varied greatly over time due to natural causes, but human activities, and in particular the emission of greenhouse gases from agriculture, industry and waste disposal, are now believed to be causing changes to the climate including an accelerated warming trend. Scientific evidence suggests that this could influence a great many physical, chemical, biological and human activities.

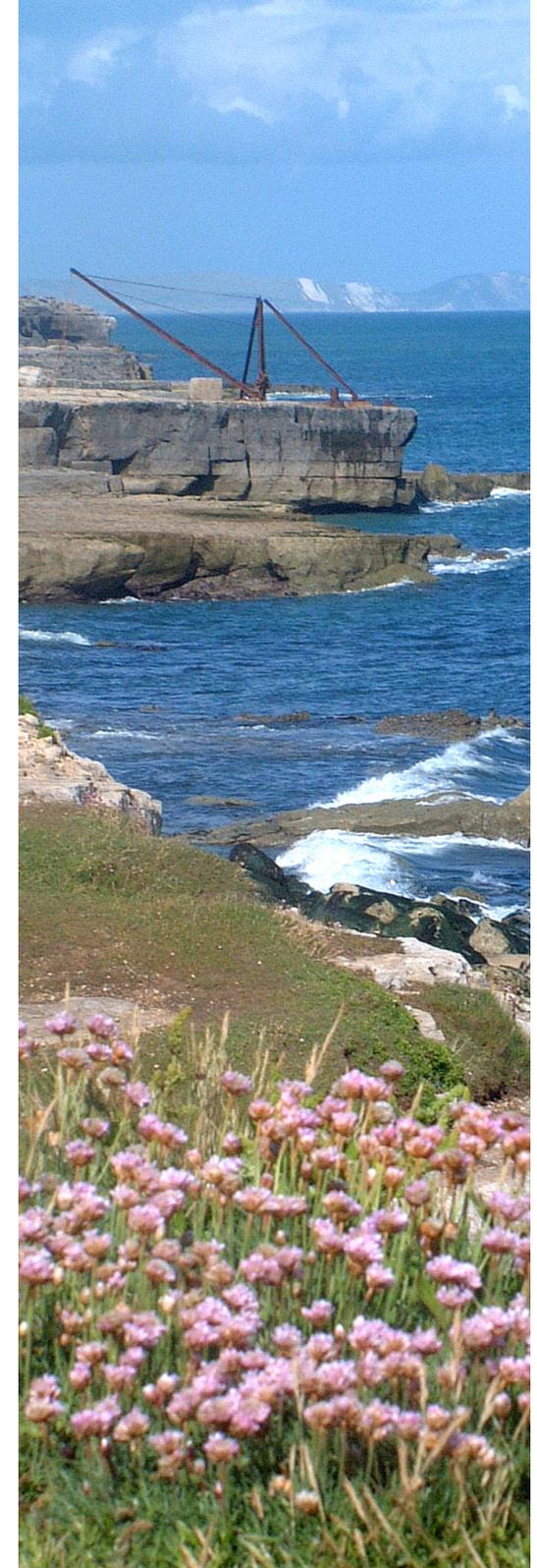
According to the United Kingdom Climate Projections 2009 (UKCP09), by 2050 Dorset will experience hotter summers with an increase in average summer temperature of between 1.3 - 4.6°C on the current average summer temperature. Total annual rainfall is unlikely to change, but the patterns of rainfall could shift with a decrease in summer rainfall and an increase in winter.

Sea levels in the English Channel have risen by 10cm since 1900, and they are now rising at an accelerating rate. Around the south-west coast they are expected to rise by 18 - 26cm by 2050, increasing to 30 - 44cm by the 2080s. Coastal storm surge modelling is not conclusive, but even if the pattern of coastal storms does not change drastically, the extreme high-water levels they generate coupled with this increase in absolute sea levels means that the overall risk of increased damage and loss on the Dorset coast will increase.

Within and around the Marine Plan area, there are a number of locations that have been identified as being particularly vulnerable to storms over the next 100 years and subsequently flooding and/or accelerated erosion. The Portland causeway, Weymouth (lower town centre and the Park District) and Poole Town are the most notable. Coastal flooding issues are being addressed through the Shoreline Management Plans which, in addition to traditional engineering solutions, also use natural processes as a response to sea level rise.

UKCP09 projections for the period 2070 -2098 also suggest that the seasonal mean Sea Surface Temperatures (SST) for English Channel waters will be warmer by up to 4°C in summer and 2°C in winter. These waters are likely to have a slightly lower salinity than today. There is also a chance that major oceanic currents and wave patterns could be altered in the future.

These physical changes could have important consequences, both positive and negative, for the distribution of plankton, fish larvae and fisheries stocks which in turn will affect fishing activity. The 2009-2010 Marine Climate Change Impacts Partnership report states with medium confidence that biodiversity is already increasing in southern areas as warm water species extend their distributions faster than cold water species are retreating. Changes in crustacean abundance in some locations and the occurrence of previously undocumented species in others suggest some degree of climate-influence in Shallow and Shelf Subtidal Habitats whilst increased seawater temperatures have been linked with disease outbreaks in seafans, changes in algae distribution and abundance, and the appearance and increased occurrence of a previously unrecorded warm-water barnacle in southern and south-western areas (all low confidence). With rising sea levels and increased coastal erosion, intertidal areas, which are often rich in invertebrate sediment communities, may be squeezed with consequences for over-wintering wildfowl and waders.



# Chapter 5: The C-SCOPE Marine Plan

## 5.1 Vision

**The Marine Plan helps to fulfil many of the goals of the Dorset Coast Strategy. As such, it shares its vision:**

In 2050, the Dorset coast and marine environment, its landscapes and seascapes, cultural heritage and rich biodiversity, are protected and enhanced for current and future generations. Communities living there are healthy, resilient and living in harmony with natural processes, whilst a diverse and thriving coastal economy which uses natural resources sustainably supports those communities. Both residents and visitors alike are using the coast responsibly for enjoyment, education and inspiration.

## 5.2 Marine Plan objectives

In setting objectives for the Marine Plan, the High Level Marine Objectives set in the UK Marine Policy Statement have been taken into account, adapted to reflect the particular needs and opportunities within the area covered by the plan:

**Objective 1: healthy, diverse, productive marine and coastal environment**

*A healthy, productive marine environment where diversity and natural beauty is protected and enhanced, and whose resources are used sustainably, maintaining the integrity of marine ecosystems.*

**Objective 2: thriving, resilient coastal communities**

*Coastal communities that have a high quality of life, that can thrive and prosper in harmony with a healthy marine environment.*

**Objective 3: successful, sustainable marine economy**

*Successful, efficient marine enterprises that operate safely and responsibly, making innovative and sustainable use of the environment on which they depend while respecting the limits of that environment to accommodate change and development.*

**Objective 4: responsible, equitable and safe access**

*Opportunities to experience the marine environment responsibly, enjoyably and safely are made available to all, managed at a level the environment can sustain and*

*in a way which is compatible with commercial and other strategic uses.*

**Objective 5: adaptation and mitigation for coastal and climate change**

*Maritime communities and businesses are well prepared for the physical, economic and management challenges they face, and well placed to take advantage of the opportunities presented by coastal and climate change, particularly where they benefit the local economy.*

**Objective 6: strategic significance of the marine environment**

*Decisions about and uses of marine ecosystems recognise its strategic significance to the UK's national security and its social, economic and environmental well-being.*

**Objective 7: valuing, enjoying and understanding the marine and historic environments, and wider cultural heritage**

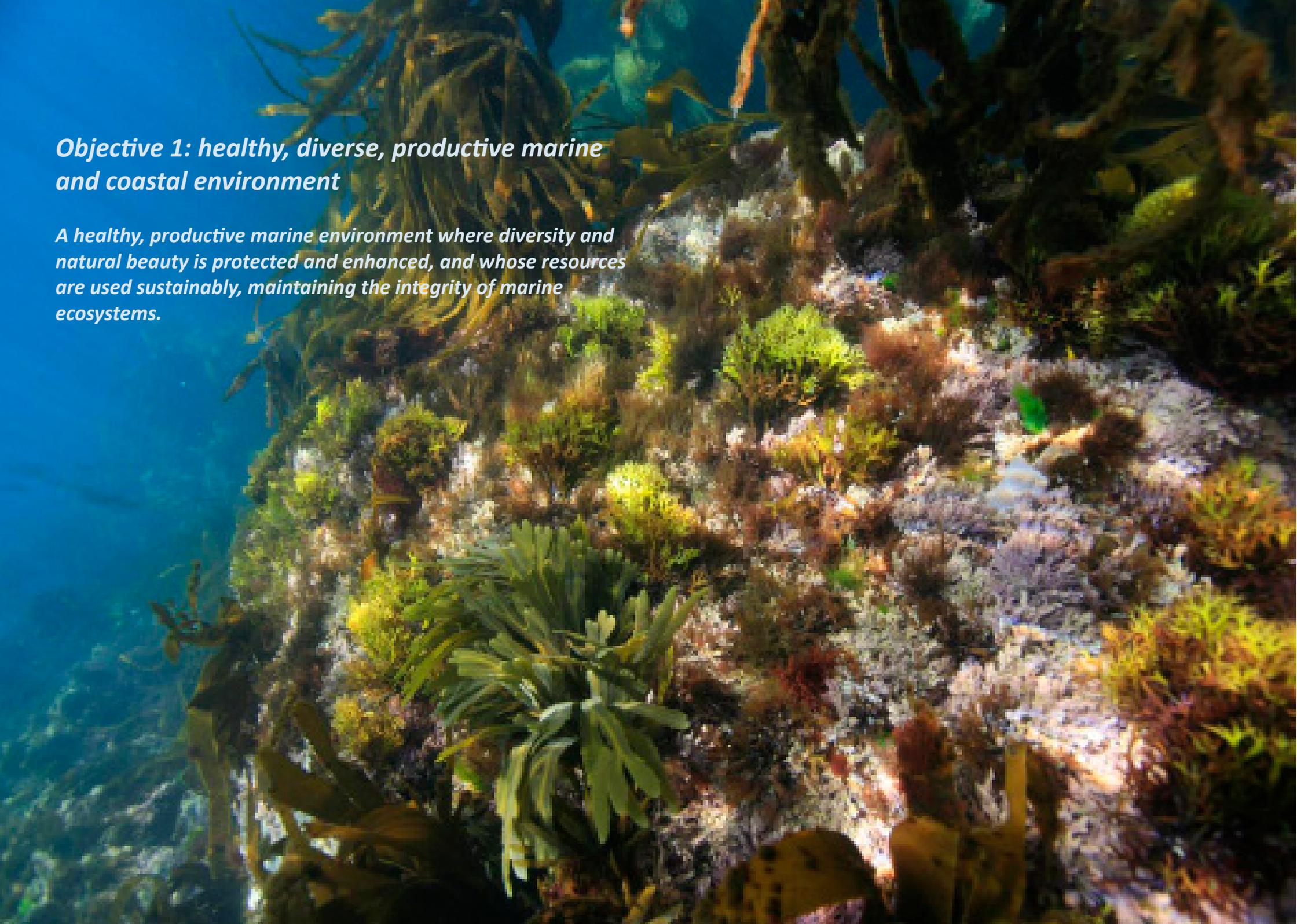
*Organisations and individuals value, understand and conserve the character and diversity of the marine environment, including its significant natural and cultural heritage.*

**Objective 8: Using sound science and data, and ensuring integration with existing plans and policies**

*Decisions should be made for the long-term on the basis of sound science and evidence, informed by local knowledge and priorities, or robust assessment of risk where evidence is not available. The Plan should integrate with SMPs, terrestrial plans, LDFs and other relevant plans and policies.*

Policies designed to take forward each objective, and a summary of the evidence and justification for each policy, are detailed below. All Policies are interrelated and must be read together to understand their combined effect upon a planning proposal. Where necessary maps accompany policies and these should be consulted alongside the specific policy. Policies also include live links to [\[Dorset Coastal Planning\]](#) which allows data to be turned on and off, interrogated and viewed at different scales. It is important to consult this tool, as it holds the most up-to-date spatial information on the Marine Plan area. A help function is available should you need it.

Those responsible for implementing policy and making judgements on appropriateness and acceptability are deemed to be the relevant and competent authorities which are defined as any person or organisation that has the legally delegated or invested authority, capacity, or power to perform a designated function.



*Objective 1: healthy, diverse, productive marine and coastal environment*

*A healthy, productive marine environment where diversity and natural beauty is protected and enhanced, and whose resources are used sustainably, maintaining the integrity of marine ecosystems.*

## Protecting designated sites and delivering their associated management plans

### Justification

Globally, the marine environment is under constant and increasing pressure from human activities. There is a growing body of evidence that Europe's marine habitats are declining significantly, and are continuing to deteriorate, threatened by multiple and cumulative pressures such as pollution from land-based activities, commercial fishing, mineral extraction, marine incidents, marine litter and coastal and offshore developments<sup>8</sup>.

Climate change is already starting to impact on the marine environment, causing changes to biological, chemical and physical processes. The main impacts include loss of inter-tidal habitat due to sea level rise, increased sea temperatures leading to changes in complex food-webs, and acidification of sea water - which is becoming a critical problem threatening a wide range of marine organisms, especially corals and molluscs. Additionally, these changes are likely to lower the resilience of ecosystems to the human pressures discussed above<sup>9</sup>.

If we are to continue to benefit from the many goods and services that the sea provides, it is essential that marine biodiversity is protected and conserved. This is recognised in both European and UK legislation, most particularly the Habitats Directive and the Marine and Coastal Access Act (2009). The Habitats Directive requires member states to take measures to maintain or restore natural habitats and wild species listed on the Annexes to the Directive at a favourable conservation status, introducing robust protection for those habitats and species of European importance. In addition to existing protection from SSSI, SPA and SAC sites with marine elements, the UK government has committed to have an *“ecologically coherent network of marine protected areas (MPAs) substantially in place by the end of 2012”*; this network will include SACs and MCZs.

<sup>8</sup> Charting Progress 2, UK National Ecosystem Assessment, Composite Report on the Conservation Status of Habitat Types and Species as required under Article 17 of the Habitats Directive, 2009.

<sup>9</sup> <http://www.oursouthwest.com/climate/scopingstudy.htm>, Marine Climate Change Impacts Partnership 2010-2011 Annual Report Card

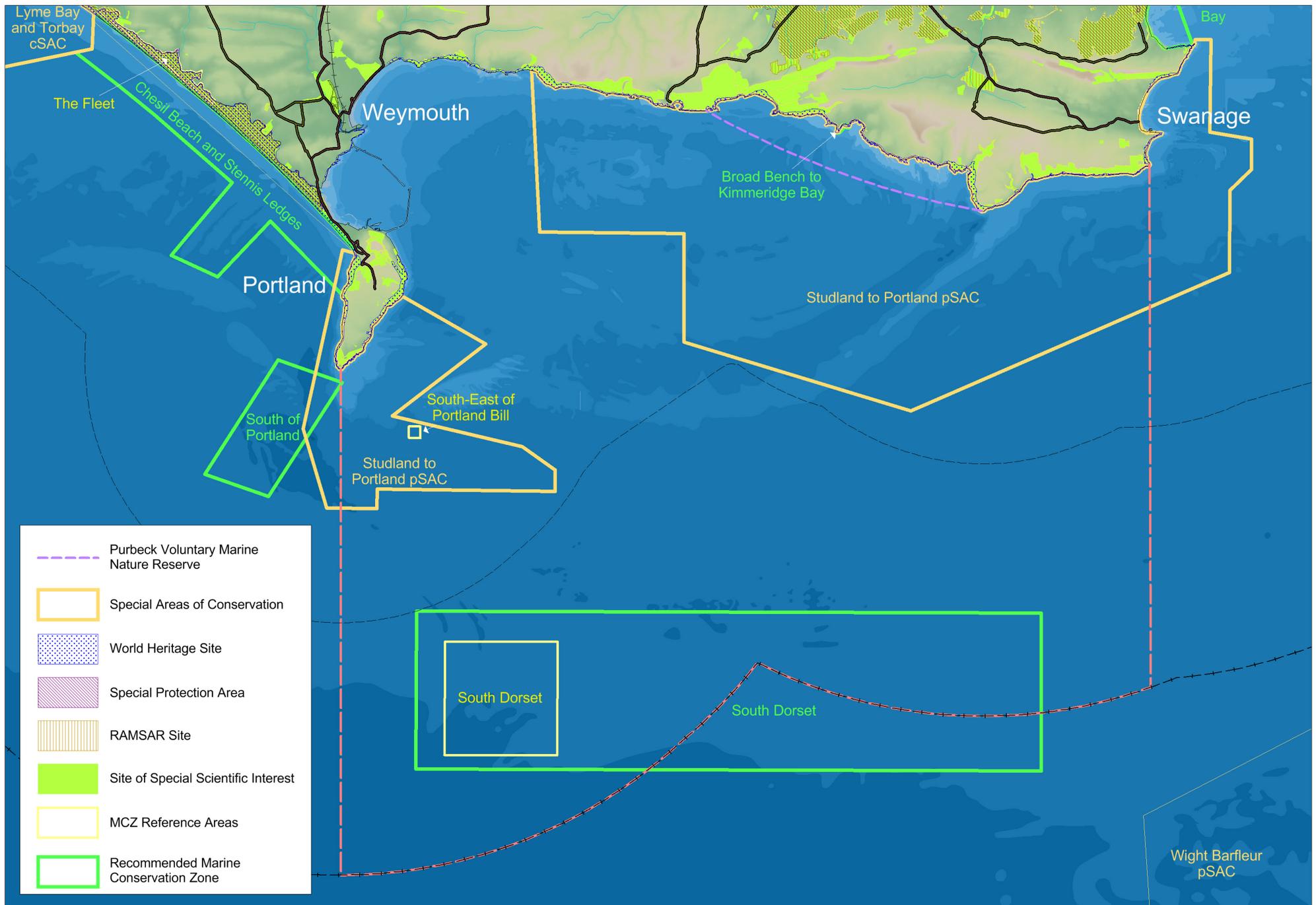
Each individual designation has, or will have, its own management plan which amongst other criteria sets out the human activities that are acceptable within the site. To ensure the integrity of designated sites, and avoid substantial fines from the European Union, it is important that all potential developments and activities within the Marine Plan area not only ensure they are causing no adverse effects on those areas and species with statutory protection, but also comply with its management plan. Future activities and developments will also have to comply with existing EIA regulations, as set out in The Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999.

The Marine Plan area also contains two important landscape and heritage designations with substantial coastal elements; Dorset AONB and the Dorset and East Devon Coast World Heritage Site, the latter of which extends to MLW. Both sites have statutory management plans which must also be considered by any potential development.

**HME 1:** Development or activities will respect the purpose of international and national environmental designations within the marine and coastal environment, and contribute to their enhancement where possible, in a manner that is consistent with terrestrial plans.

**HME 2:** Future development will take account of the management plans for European and national environmental designations, including Special Areas of Conservation (SACs), Special Protection Areas (SPAs), Sites of Special Scientific Interest (SSSIs), Marine Conservation Zones (MCZs), Areas of Outstanding Natural Beauty (AONB) and World Heritage Sites.

Figure 33: HME 1 & HME 2 Designated coastal and marine sites



### These policies comply with:

- European legislation Council Directive (92/43/EEC) on the Conservation of natural habitats and of wild fauna and flora (Habitats Directive)
- EC Marine Strategy Framework Directive (2008/56/EC)
- Council of Europe European Landscape Convention (2000)
- Marine & Coastal Access Act (2009)
- Wildlife and Countryside Act (1981)
- The Conservation of Habitats and Species Regulations (2010)
- The Dorset and East Devon Coast World Heritage Site Management Plan (2009-2014)
- Dorset Area of Outstanding Natural Beauty Management Plan (2009-2014)
- Dorset Coast Strategy (2011-2021)

### Protecting important species and habitats not covered by European or National legislation

#### Justification

European and UK legislation makes provision for protecting a wide range of species and habitats, and delivery mechanisms include the designation of SACs, SPAs SSSIs, and MCZs. However, these provisions cover priority species and habitats and do not necessarily protect wider ecosystem function outside designated areas.

Marine ecosystems are complex and there are still many interactions which are not fully understood. The regulating, cultural, supporting and provisioning services that these ecosystems provide are also strongly interlinked; but the relationship between biodiversity processes and the provision of services remains un-quantified. By adopting the precautionary principle and ensuring developments and activities have regard to adverse affects on all habitats and species, this policy will help to sustain and potentially increase ecosystem services within the Marine Plan area. This policy seeks to ensure ecosystem function is considered in the context of any existing permitting processes, and the hierarchy of significance for protected sites is respected. It is therefore envisaged that there will not be an additional process burden on developers.

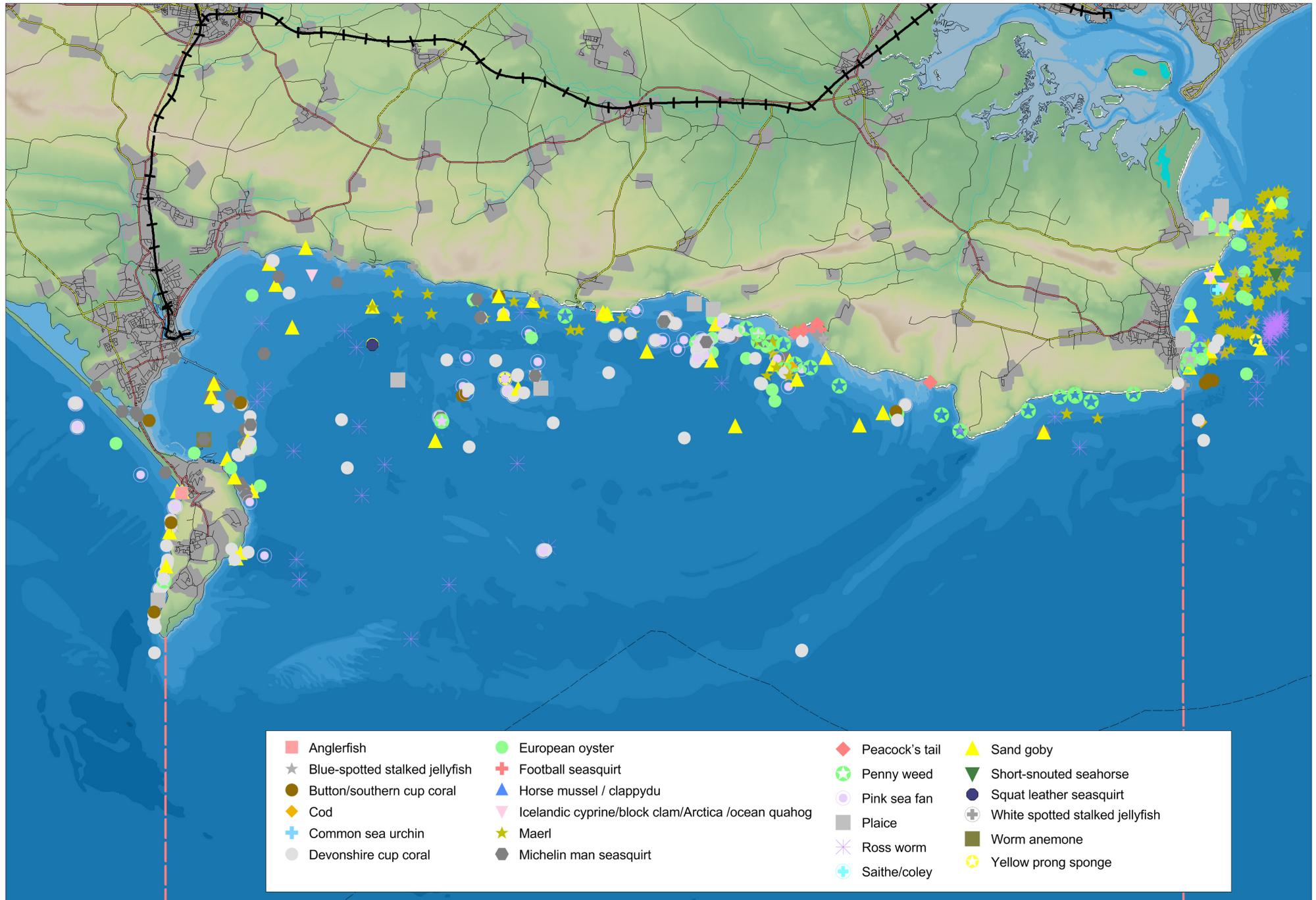
**HME 3:** Developments or activities should have regard to the potential adverse effect either directly, indirectly or cumulatively on habitats or species which are not designated under European or National legislation but which warrant protection to maintain wider ecosystem function, or as providers of marine goods and services.

### This policy complies with:

- European legislation Council Directive (92/43/EEC) on the Conservation of natural habitats and of wild fauna and flora (Habitats Directive)
- EC Marine Strategy Framework Directive (2008/56/EC)
- Marine & Coastal Access Act (2009)
- Wildlife and Countryside Act (1981)
- National Planning Policy Framework (2012)
- Dorset Local Biodiversity Action Plan (2003)
- The Dorset and East Devon Coast World Heritage Site Management Plan (2009-2014)
- Dorset Area of Outstanding Natural Beauty Management Plan (2009-2014)
- Dorset Coast Strategy (2011 - 2021)



Figure 34: HME 3 UK Nationally Important Marine Features/Features of Conservation Interest Species



## Restoration of degraded ecosystems

### Justification

There is growing evidence that the UK's marine habitats are declining<sup>10</sup>. The Habitats Directive requires member states to take measures to maintain or restore these habitats and wild species. Marine Protected Areas and their associated management plans are the primary delivery mechanism to achieve this requirement, by removing stressors and allowing the conditions for suitable natural recovery.

Active restoration techniques are also possible and, whilst they are not particularly effective in open coastal and marine habitats, can be very successful in coastal bays, estuaries and fringing habitats. Habitat restoration may be a mitigation requirement in granting permission for certain developments, but this policy encourages developers and other users of the marine and coastal environment within the Marine Plan area to take opportunities beyond statutory requirements by helping to enhance the natural goods and services that they are taking advantage of.

**HME 4:** Where existing habitat or ecosystem degradation is apparent at potential development sites, the opportunity to restore the integrity of the site should be taken where possible.

### This policy complies with:

- EC Marine Strategy Framework Directive (2008/56/EC)
- European legislation Council Directive (92/43/EEC) on the Conservation of natural habitats and of wild fauna and flora (Habitats Directive)
- Marine & Coastal Access Act (2009)
- The Dorset and East Devon Coast World Heritage Site Management Plan (2009-2014)
- Dorset Area of Outstanding Natural Beauty Management Plan (2009-2014)
- Dorset Coast Strategy (2011 - 2021)

Ensuring commercial exploitation of fish and shellfish are within safe biological limits.

<sup>10</sup> Charting Progress 2, UK National Ecosystem Assessment, Composite Report on the Conservation Status of Habitat Types and Species as required under Article 17 of the Habitats Directive, 2009.

### Justification

Although fishing mortality has declined significantly in 67% of assessed fish stocks in UK waters over the last ten years, fishing activity remains the most widespread human pressure on the marine environment. The large majority of scientifically assessed stocks continue to be fished at rates well above the values expected to provide the highest long-term yield, whilst illegal, unreported and unregulated fishing is a significant threat to fish stocks, marine biodiversity and to the livelihoods and food security of coastal communities<sup>11</sup>.

Within the Marine Plan area, shellfish make up the majority of targeted species (2,415 tonnes of shellfish landed into Weymouth in 2010 compared to 120 tonnes of demersal fish). Static gear used to target shellfish is highly selective and any non-target species or undersized specimens can be returned live. Although it is deemed to be a less intensive fishing method and there are minimum landing sizes for most non-quota species, over-fishing is still possible.

It is currently estimated that there are 6000 crab and lobster pots around the Weymouth and Portland areas. Lack of data makes objective assessment of the health of inshore stocks unreliable. There is no evidence of serious declines, but the best available evidence is that exploitation levels are close to the sustainable limit. A substantial increase in effort would therefore be a cause for concern. With the probable adoption of both the Studland to Portland potential SAC and recommended MCZ network, there could be increased pressure on the surrounding areas caused by displacement fishing. Fishermen who currently use mobile gear could also turn to static methods, causing greater competition and pressure - particularly on rocky reefs. By ensuring the commercial exploitation of fish and shellfish are kept within safe biological limits as a minimum requirement, stocks will be given a chance to return to sustainable levels, the fishing industry will have a more secure future and food security both locally and nationally will improve.

**HME 5:** In addition to complying with the Common Fisheries Policy and Southern Inshore Fisheries and Conservation Authority byelaws, as a minimum requirement the commercial exploitation of fish and shellfish should be within safe biological limits.

<sup>11</sup> Charting Progress 2, Sustainable Production and Consumption of fish and shellfish; Environmental Impact Analysis, 2007. Royal Haskoning Report for Defra, Sea fisheries: steps to sustainability. Natural England, 2009. ISBN 978-1-84754-157-4. Catalogue Code: NE193

### This policy complies with:

- World Summit on Sustainable Development in Johannesburg (2002)
- EC Marine Strategy Framework Directive (2008/56/EC)
- EU Common Fisheries Policy (2003)
- Marine and Coastal Access Act (2009)
- Dorset Coast Strategy (2011-2021)

## Supporting sustainable Dorset fisheries

### Justification

Small-scale fishing, which constitutes the majority of commercial fishing effort within the Marine Plan area, makes a significant economic and social contribution to the lives of individuals and coastal communities. It not only provides jobs and high quality fresh fish, but also attracts tourists, and contributes to the character and cultural identity of the villages and towns throughout the area.

Recent years have seen a slow decrease in the numbers of fishing vessels in Dorset, but with a shift from part-time to full-time work, fishing effort has probably increased. However, the inshore fleet is currently facing increased pressure due to rising costs, most notably fuel prices which have increased operating costs and reduced profitability. Fishermen using mobile-gear also face the possibility of being excluded from fishing grounds closer to their home ports, requiring them to travel further and bear additional fuel costs. With a decreasing fishing fleet, strong financial barriers to purchasing new boats and high property values within the Marine Plan area, there is anecdotal evidence that young people are not able or willing to work in fishing, which could result in further decline of the industry.

Fisheries enhancement initiatives, such as appropriately located artificial reefs, developments which improve the ease of access to markets or add value to catches, and projects which seek to develop new more sustainable ways of working, could help to secure the long-term future for the local fishing industry and increase food security for communities living within or near the Marine Plan area.

**HME 6:** Fisheries enhancement initiatives which contribute to the maintenance and development of a sustainable fishing industry in Dorset will be encouraged where consistent with other policies in this plan.

### This policy complies with:

- World Summit on Sustainable Development in Johannesburg (2002)
- EC Marine Strategy Framework Directive (2008/56/EC)
- EU Common Fisheries Policy (2003)
- Marine and Coastal Access Act (2009)
- National Planning Policy Framework (2012)
- Dorset Coast Strategy (2011-2021)

## Ensuring good long-term water quality

### Justification

During the construction, operation and decommissioning phases of developments, there can be discharges to water and adverse ecological effects resulting from physical modifications to the water environment. Whilst many of these effects will be short term, cumulative impacts may result in damage to sensitive seabed habitats and create further changes to tidal regimes, sediment and freshwater transport, currents or wave action. Such changes have the potential to affect marine ecosystems at a broad scale.

Most developments which have the potential to change hydrographical regimes will be subject to strict licensing conditions, and will most likely require an Environmental Impact Assessment (EIA) before they are granted development consent. This policy encourages developers and decision makers to identify those seabed habitats that are most sensitive to these pressures prior to the EIA and licensing process, ensuring developments are directed to the most appropriate location within the Marine Plan area.

**HME 7:** Developments which have the potential to create sustained or long term changes to temperature, salinity, or pH should refer to [Appendix 5](#), FOCI Habitat Maps and Sensitivity Tables, and avoid seabed areas highly sensitive to these pressures wherever possible. Developments must demonstrate that Best Available Technique will be used during survey and construction and a Best Practicable Environmental Options assessment conducted for the operating phase.

### This policy complies with:

- EC Marine Strategy Framework Directive (2008/56/EC)
- European legislation Council Directive (92/43/EEC) on the Conservation of natural habitats and of wild fauna and flora (Habitats Directive)
- Marine & Coastal Access Act (2009)
- Dorset Coast Strategy (2011-2021)

### Ensuring coastal development does not affect water quality

#### Justification

Nearly all sewage treatment facilities within the Marine Plan area discharge into the marine environment either directly or via streams and rivers close the sea. Under several pieces of European and UK legislation, all discharges are consented and must adhere to strict numeric conditions. Further consented, intermittent, discharges occur via storm drains and combined sewer and emergency overflows.

However, these systems have a finite capacity and it is possible that increased water volume in times of peak rainfall could lead to untreated sewage being discharged into the marine environment through a combined sewer overflow. Diffuse runoff from urban areas can also be a problem during heavy rain. Climate change predictions include an increase in storm events, and this could put more pressure on systems already close to capacity.

Untreated sewage discharging straight into the marine environment creates serious human health problems; directly through exposure to coliform bacteria at bathing beaches and indirectly via shellfish contamination. Additional economic impacts result from loss of tourism, health care costs and additional depuration requirements for shellfish producers. Whilst some marine species and habitats thrive on increased nutrients in the water, eutrophication can also occur following heavy sewage discharges, leading to losses in biodiversity, ecosystem degradation, harmful algae blooms and oxygen deficiency in bottom waters.

It is therefore essential that developers and local authority planners liaise closely to ensure any development within the catchments of systems discharging into, or close to, the sea will not overload existing sewage discharge systems and/or that provisions are made to improve capacity.

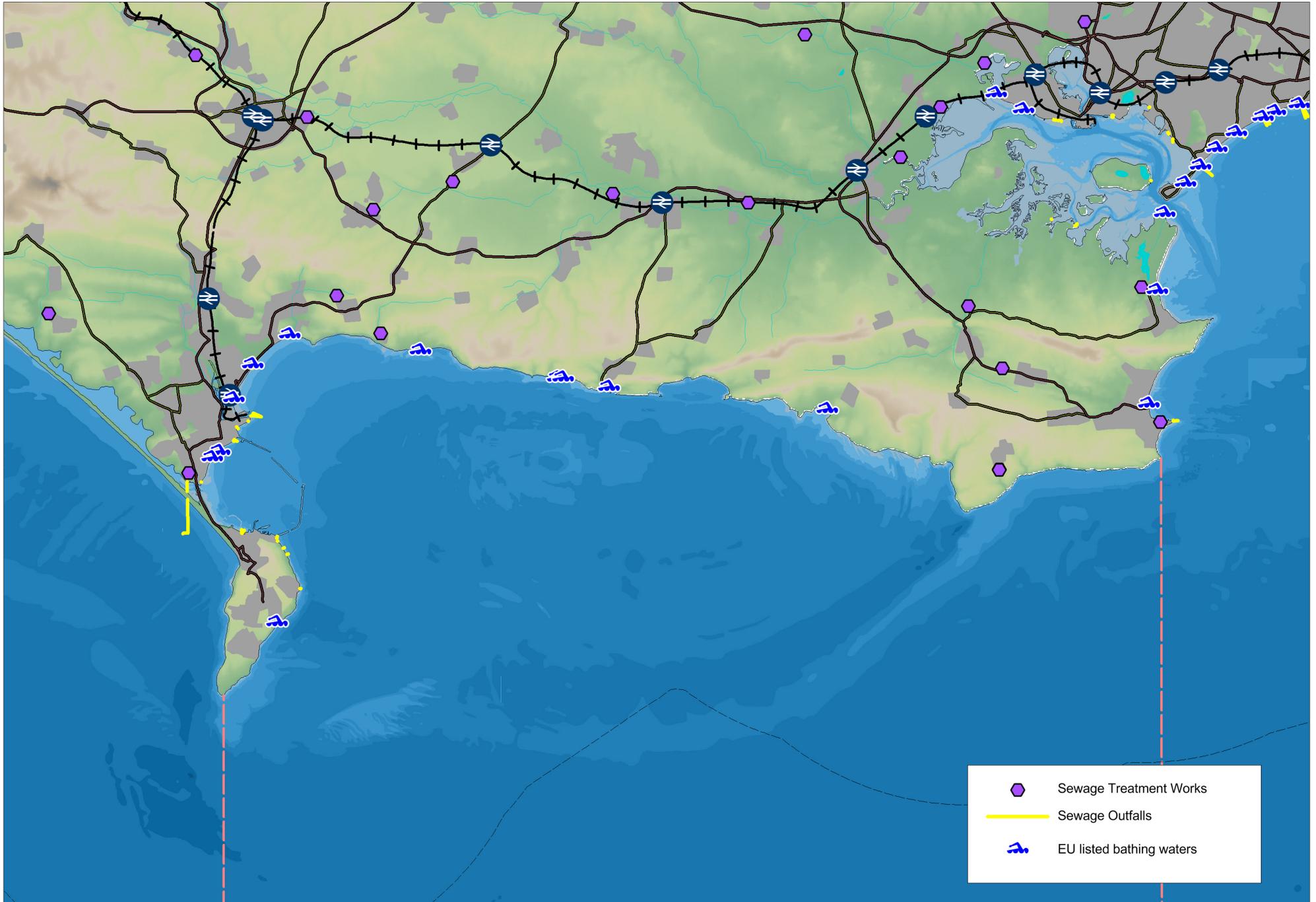
**HME 8:** Developments near the coast must consider the capacity of emergency/ storm drains, combined (surface and sewer) systems and sewage treatment facilities with a view to minimising potential impacts on the marine environment and human health via short and long-sea outfalls. Terrestrial development plans should seek to ensure that development will be expected to take such issues into account and ensure appropriate measures, such as sustainable drainage systems, are put in place.

### This policy complies with:

- Water Framework Directive (2000/60/EC)
- EC Marine Strategy Framework Directive (2008/56/EC)
- Urban Waste Water Treatment Directive (91/271/EEC)
- Bathing Water Directive (2006/7/EC)
- Shellfish Waters Directive (79/923/EEC)
- Water Resources Act (1991)
- Dorset Coast Strategy (2011-2021)



Figure 35: HME 8 Current outfalls and sewage treatments, bathing waters



## Minimising the risk of pollution by hazardous and organic substances

### Justification

The coastline within the Marine Plan area and its surrounding waters is known for its outstanding environmental quality, with a wide range of designations including SSSIs, SACs, SPAs and a future possible SAC and recommended MCZs. During the assessment to identify Marine Environmental High Risk Areas (MEHRAs) the Portland cell was also identified as the second highest ranking area in the UK, in terms of having high environmental sensitivity and being at risk from shipping activity. The Purbeck coast was also rated as high risk.

Land-based coastal industries (e.g. boat building), ship-to-ship transfer, oil and gas exploration and production and other offshore developments all have the potential to release hazardous substances into this high risk environment. As well as having immediate catastrophic environmental effects, chemicals, hydrocarbons, and heavy metals can remain locked in sediments for many years, whilst bioaccumulation and biomagnification not only impact on marine species, but also has human health implications if species are used as a food source. A major oil spill within the Marine Plan area would also impact on tourism, which could have a severe effect on the local economy.

Some of these developments and activities will most likely require an Environmental Impact Assessment (EIA) before they are granted consent. This policy encourages developers and decision makers to identify those seabed habitats that are most sensitive to hazardous substances prior to the EIA and licensing process, ensuring developments are directed to the most appropriate location within the Marine Plan area.

Ship-to-ship transfer is of particular concern in Dorset and the Marine Plan area, Lyme Bay having been proposed as one of two regulated transfer areas in the UK. The Merchant Shipping (Ship-to-Ship Transfers) Regulations 2010 makes provision that ship-to-ship transfer must take place within harbour authority areas, and it is now proposed that outside of harbour authority areas it is restricted to just one location off the Suffolk coast. However, the Regulations have recently been delayed for a third time and the end result is not certain.

The Winfrith nuclear facility is in the process of being decommissioned, but the discharge pipelines are still in use. The two inner pipelines discharge approximately 4km from Arish Mell into Weymouth Bay and carry the main radioactive liquid

wastes. In 2008, the discharges were assessed to result in doses to the critical group of people (a group or representative individual who receive the largest dose from artificially produced radionuclides due to their habits, diet and where they spend their time) of less than 0.005 mSv/y or less than 0.5% of the public dose limit. However, it is important that these discharges continue to be monitored. Additional pollution risks include the input of organic substances, including carbon, nitrogen and phosphorus, through sewage discharge systems, storm drains and combined sewer and emergency overflows. Policy [HME 8](#) addresses this issue. Urban run-off from roads and buildings can be a problem in Weymouth and Portland Harbours, and surface agricultural runoff is a major concern in The Fleet and Poole Harbour; there are numerous terrestrial plans including the South West River Basin Management Plan (SWRBMP) and the Poole Harbour Aquatic Management Plan which address this problem. The SWRBMP, prepared under the Water Framework Directive by the Environment Agency, has jurisdiction out to one nautical mile and it is essential that this Plan is taken into account in conjunction with policies [HME 8](#).

**HME 9:** Developments or activities which present risk of systematic and or accidental release of hazardous or organic substances should only take place under licensed conditions with appropriate safety measures and contingency plans in place. New developments should refer to [Appendix 5](#), FOCI Habitat Maps and Sensitivity Tables, and avoid seabed areas highly sensitive to these pressures wherever possible.

### This policy complies with:

- United Nations Convention on the Law of the Sea (UNCLOS) (1994)
- Marine Pollution Convention/Protocol (1974) as amended
- EC Marine Strategy Framework Directive (2008/56/EC)
- Water Pollution by Discharges of Certain Dangerous Substances EC Directive (76/464/EEC)
- The Pollution Prevention and Control Act (1999)
- Portland Harbour Management Plan (2006)
- Dorset Coast Strategy (2011-2021)

## Minimising adverse-effects of habitat removal

### Justification

Any development which takes place on the seabed will cause unavoidable removal of benthic habitats and animals. For developments with a small footprint, such as sub-sea cabling, this may be minimal whereas marine aggregate extraction or capital

dredging can lead to the removal of large areas of habitat. Such developments will be subject to strict licensing conditions, and will most likely require an Environmental Impact Assessment (EIA) before they are granted development consent. Policy HME10 encourages developers and decision makers to identify those seabed habitats that are most sensitive to removal prior to the EIA and licensing process, ensuring developments are directed to the most appropriate location within the Marine Plan area.

Secondary impacts from development construction, capital and maintenance dredging and marine aggregate extraction include the deposition of sand, silt or clay on the seabed from sediment plumes which can temporarily, or permanently, affect seabed habitats and species by a number of means. The footprint is generally more extensive than that associated with direct impacts of removal. The Marine Plan area contains large areas of Annex I Rocky Reef habitat, consisting of many species highly sensitive to smothering by sedimentation. Directing developers to use established and appropriate techniques which are proven to create the least impact will help to protect these sensitive species and habitats.

Benthic fishing trawls can penetrate the seabed by up to 30 mm, depending on the substrate, and the impact is important in almost any substrate which biogenically develops a detailed and elaborate three-dimensional structure. Increased turbidity from suspended sediments can also have negative impacts on pelagic and benthic communities. In the UK fisheries are controlled by EU Common Fisheries Policy (CFP), national quotas and controlled areas as well as IFCA byelaws. The 2012 reform of the CFP may enable new approaches to the integration of fisheries control into marine plans, but at present benthic fishermen can only be asked to avoid highly sensitive areas.

**HME 10:** Developments or activities which have the potential to physically damage or smother habitat should refer to [Appendix 5](#), FOCI Habitat Maps and Sensitivity Tables, and avoid seabed areas highly sensitive to these pressures wherever possible. Such developments should use Best Available Technique during survey and construction and a Best Practicable Environmental Options assessment should be conducted for the operating phase.

#### This policy complies with:

- EC Marine Strategy Framework Directive (2008/56/EC)
- European legislation Council Directive (92/43/EEC) on the Conservation of natural habitats and of wild fauna and flora (Habitats Directive)

- Marine & Coastal Access Act (2009)
- Wildlife and Countryside Act (1981)
- Dorset Coast Strategy (2011-2021)

## Minimising construction and operational effects of development

### Justification

Construction and operating phases of coastal and offshore developments have the potential to produce a wide range of emissions which are damaging to both marine species and humans.

Man-made sound and vibrations emitted within the marine environment are known to affect many marine species, particularly marine mammals. Impacts are thought to range from minor behavioural changes through to death in the case of sonar activity. Noise pollution has risen significantly in the last few decades, and sources include explosions, shipping, seismic surveys, offshore construction and offshore industrial activities. With the exception of ships, most commercial activities which generate high levels of sound and affect relatively broad areas are executed under regulated conditions and subject to the issuing of a licence. By following JNCC guidance and protocols, developers can minimise sound and vibration impacts.

Within the Marine Plan area, the Purbeck coast is valued for its areas of tranquillity, and it is important that operational noise does not affect this perception. Policy REA 9 addresses the issue of tranquillity in more detail. Operational noise can also damage human physiological and psychological health.

Sub-sea cabling, particularly power transmitting cables associated with offshore renewable energy production, is known to produce electromagnetic fields (EMF). There is strong evidence that EMF can disrupt some marine species, particularly elasmobranchs, affecting feeding patterns and altering behaviour. COWRIE has conducted extensive research on the effects of EMF in the marine environment, and measures to reduce impacts and mitigation solutions. It is believed that the impact on sensitive species is not significant if cables are buried more than 1m below the seabed.

Poor air quality is acknowledged as a major impact on human health and can seriously affect vulnerable individuals. Air quality is less likely to be affected by offshore developments, but the cumulative effect of developments and activities in

the coastal zone, particularly around ports and harbours, has the potential to add to already severe air quality problems caused by traffic congestion on busy roads around Weymouth and Portland. It is therefore essential that developers ensure air emissions are not considered in isolation and levels remain within Defra's standards and objectives.

**HME 11:** Developments or activities which have the potential to generate noise, vibration, and electromagnetism, or affect air quality during construction or operation should aim to minimise impacts to levels which do not cause permanent or long term harm on both the environment and people. Developers should adopt Best Available Technique during construction, in line with Joint Nature Conservation Committee (JNCC) guidance<sup>12</sup>.

#### This policy complies with:

- EC Marine Strategy Framework Directive (2008/56/EC)
- European legislation Council Directive (92/43/EEC) on the Conservation of natural habitats and of wild fauna and flora (Habitats Directive)
- Marine & Coastal Access Act (2009)
- Wildlife and Countryside Act (1981)
- Dorset Coast Strategy (2011-2021)

## Sustainable waste management and marine litter

### Justification

Marine litter is a global issue, with both terrestrial and marine sources, making reduction a difficult challenge. Marine litter mainly consists of material that degrades slowly, if at all, so a continuous input of large quantities of these items results in a gradual build-up in the marine and coastal environment. There are clear indications of a negative trend, confirmed by a number of studies<sup>13</sup>.

12 Including "Statutory nature conservation agency protocol for minimising the risk of injury to marine mammals from piling noise" and "JNCC guidelines for minimising the risk of injury and disturbance to marine mammals from seismic surveys."

13 United Nations Environmental Programme Marine Litter webpages: <http://www.unep.org/regionalseas/marinelitter/default.asp>, Charting Progress 2, UNEP/IOC Guidelines on Survey and Monitoring of Marine Litter. Regional Seas Reports and Studies No. 186 IOC Technical Series No. 83.

Marine litter impacts not just on marine habitats and species, but also has serious implications for human health, the local economy and coastal communities. Research has shown that some local councils in Dorset are spending up to £800,000 per year to keep beaches clean and the emergency services are commonly called out to fouled propellers; costing up to £5,300 per incident<sup>14</sup>. Responses to an interactions matrix conducted for the Plan revealed that marine litter was seen by almost every sector as a major problem.

In Dorset and East Devon the general public are the main source of marine litter, with plastic accounting for almost 70% of all marine litter found<sup>15</sup>. However, industrial waste and fly tipping is also a problem in the area. The most effective way of dealing with waste and marine litter is to reduce it at source, which is why

appropriate recycling and disposal sites are so essential. Recreational developments should ensure that public bins are in keeping with the setting.

As marine litter has no boundaries, a coordinated approach at local, national and even international level is the only way that marine-sourced litter can be reduced. Sectoral engagement with initiatives such as KIMO's Fishing for Litter, the RYA's Green Blue and the MCS' Beachwatch campaigns should be encouraged wherever possible.

**HME 12:** All new developments should aim to minimise waste production, and will be expected to include appropriate facilities for the sustainable disposal and recycling of waste and litter.

**HME 13:** The volume and impacts of marine litter should be reduced through local initiatives, and national and international action to address the issues at source.

- EC Marine Strategy Framework Directive (2008/56/EC)
- European legislation Council Directive (92/43/EEC) on the Conservation of natural habitats and of wild fauna and flora (Habitats Directive)
- Marine & Coastal Access Act (2009)
- Dorset Coast Strategy (2011-2021)
- Purbeck Heritage Strategy (2010-2015)
- Dorset and East Devon Coast World Heritage Site Management Plan 2009-2014
- Dorset Area of Outstanding Natural Beauty Management Plan 2009-1014

14 Dorset and East Devon Litter Group webpages: <http://www.dorsetforyou.com/marineandbeachlitter>, KIMO International report –Economic Impacts of Marine Litter

15 Dorset and East Devon Litter Group webpages: <http://www.dorsetforyou.com/marineandbeachlitter>

## Preventing and reducing the introduction and spread of invasive non-native species

### Justification

The effects of non-native species<sup>16</sup> on marine ecosystems may range from almost undetectable to catastrophic. Invasive non-native species are those considered to damage the environment, economy or human health and this can include the displacement of native species, genetic pollution, habitat alteration, changes in food webs, fouling of ships, marinas, moorings and mariculture structures and the introduction of new disease vectors.

Non-native species can be introduced by various means including the transport and discharge of ballast water, which is regulated by the 2004 Convention for the Control and Management of Ships Ballast Water & Sediments, the transport of fouling organisms on hulls or through mariculture, deliberate or unintentional release of species by scientists and the public, deliberate commercial introductions and transport on wet fishing nets. The increasing popularity of recreational sailing and associated expansion of marinas are also adding to the problem

Of particular concern in Dorset is the carpet sea squirt, *Didemnum vexillum*, which can blanket mooring chains, pontoons and aquaculture equipment, and can even smother areas of the sea bed, forcing out native plants and animals. The GB Non-Native Species Secretariat (NNSS) assesses that this organism presents a high risk to the UK. Populations were detected in the Dart estuary and the Solent in 2009, and recent modelling predicts further spread in the Solent/Isle of Wight area. Furthermore, the NNSS risk assessment identified Weymouth mariculture businesses to be of medium risk from *D. vexillum* and Weymouth shellfish fisheries to be at medium-low risk. All mariculture production businesses are obliged to have bio-security plans under the new Aquatic Animal Health directive and disease control measures are in place for serious diseases. Regular marina surveys have proved

invaluable in the early detection of invasive marine species. It is a relatively cheap solution which could save the local economy significant money in the future.

<sup>16</sup> Non-native species refers to a species, subspecies or lower taxon, introduced (i.e. by human action) outside its natural past or present distribution and includes any part, gametes, seeds, eggs, or propagules of such species that might survive and subsequently reproduce. An invasive non-native species is any non-native animal or plant that has the ability to spread causing damage to the environment, the economy, our health and the way we live (source, GB non-native species secretariat)

**HME 14:** New developments and activities which could potentially introduce or spread invasive non-native species will be expected to take appropriate measures to minimise this risk. Marinas, mariculture developments and port operators are encouraged to set up early detection systems for known threats.

### This policy complies with:

- EC Marine Strategy Framework Directive (2008/56/EC)
- European legislation Council Directive (92/43/EEC) on the Conservation of natural habitats and of wild fauna and flora (Habitats Directive)
- Marine & Coastal Access Act (2009)
- Aquatic Animal Health Directive (EC/88/2006)
- Dorset Coast Strategy (2011-2021)





*Objective 2: thriving, resilient coastal communities*

*Coastal communities that have a high quality of life, that can thrive and prosper in harmony with a healthy marine environment.*

## Tackling deprivation in coastal towns and communities

### Justification

Throughout the UK, seaside towns generally have a lower-than-average employment rate, an above average share of working age adults on benefits, lower average earnings and are more affected by seasonal unemployment than the rest of England<sup>17</sup>. Whilst the majority of the Marine Plan area is relatively wealthy, parts of Weymouth, Portland and Swanage display many of these national characteristics. Weymouth Town Centre is one of the most deprived areas of Dorset, and within the urban borough of Weymouth and Portland there are areas of significant deprivation. Five Lower Super Output Areas (LSOA) are within the top 20% most deprived areas nationally for indices of multiple deprivation. Five further areas fall into the top 40% most deprived nationally within the borough<sup>18</sup>.

For people without easy access to private transport such as older people, low income households, young people and those with mobility problems, poor access to services can have a significant impact on their quality of life. Within the indices of deprivation, geographical access measures distances to a range of important services including post offices, schools, shops and GPs. Ten of the LSOAs within the Marine Plan area fall within the top 20% most deprived nationally for this measurement.

Encouraging developments in sectors such as offshore renewable energy, ports and shipping and mariculture offers great potential to create jobs, increase skill levels and reduce the area's reliance on seasonal employment. Redevelopment of disused or run-down waterfront areas, providing it does not exclude those on lower incomes, also has the potential to create jobs and better living environments for deprived communities. Close liaison with local authorities will need to be maintained to ensure that the benefits from any potential coastal or offshore developments are directed at local communities and businesses and are not out-sourced.

**TCC 1:** Developments which provide opportunities to help tackle deprivation in coastal towns and communities and to drive community regeneration will be supported where consistent with the other policies in this plan.

17 England's Seaside Towns: A 'benchmarking' study, 2008. Department for Communities and Local Government, Crown Copyright.

18 A socio-economic Study of the C-SCOPE Marine Plan Area. Dorset County Council Research Team. 2011.

### This policy complies with:

- Sustainable Development Strategy (EU SDS 2006)
- National Planning Policy Framework (2012)
- Dorset Sustainable Community Strategy (2010-2020)
- Weymouth & Portland Borough Council Local Plan (2005)
- West Dorset District Council Local Plan (2006)
- Purbeck District Council Local Plan (2004)

## Supporting developments which provide skilled, year-round employment

### Justification

Two key issues related to deprivation within coastal towns are the seasonal nature of many jobs, and a lack of skills amongst workers. In Weymouth and Portland 14% of 16-64 year old residents have no qualifications, compared to the England & Wales average of 12%. This is reflected in workplace based earnings which are just 80% of the England & Wales average. A report in 2007 showed Weymouth men to have one of the lowest hourly income rates of England's principle seaside towns. Younger age groups of 16-24 years and 25-34 years within the Marine Plan area show a higher proportion of benefits claimants than the national average, and those moving into government supported training is just 8% compared to a national average of 11%<sup>19</sup>.

Potential developments within the Marine Plan area include the Portland Gas Project which, subject to funding, is due to commence construction shortly. It is anticipated to take seven years to build, employing up to 300 skilled and semi-skilled workers and offering 24 permanent jobs on completion. Subject to the relevant planning permissions, the proposed West of Wight offshore windfarm offers major opportunities for skilled labour, particularly in the construction phase as well as maintenance and associated supply chains.

However, a 2009 report by the Mair Partnership highlights a shortage of skilled labour in the supply chain in terms of wind turbine suppliers and offshore installation vessels, and advises that the offshore renewables industry is having difficulty in meeting demand in Dorset. Osprey Quay in Portland is aiming to be a centre of excellence for specialist marine industries to support yachting and other sporting activities, but again a lack of specialist boat and equipment building skills is a concern.

19 A socio-economic Study of the C-SCOPE Marine Plan Area. Dorset County Council Research Team. 2011.

Developments which offer skills training as part of their employment policy, especially in the form of apprenticeships that will bring younger people into industry, will therefore be particularly supported, as will those that aim to employ and retain local graduates.

**TCC 2:** Developments which can demonstrate benefits to the local population through skills development and training, and which contribute positively to the economy of coastal areas through job creation will be supported.

**This policy complies with:**

- Sustainable Development Strategy (EU SDS 2006)
- National Planning Policy Framework (2012)
- Dorset Sustainable Community Strategy (2010-2020)
- Weymouth & Portland Borough Council Local Plan (2005)
- West Dorset District Council Local Plan (2006)
- Purbeck District Council Local Plan (2004)

## Supporting year-round employment and the Green Knowledge Economy

### Justification

Like many of the UK's seaside towns, Weymouth & Portland relies heavily on tourism for employment; a sector which is highly seasonal in nature. Within the Marine Plan area as a whole, 13% of employees work within the leisure and tourism sector, and more than a third of employment in the area is within the broader sector of distribution, hotels and restaurants; considerably more than national levels. In addition to this, the Marine Plan area has an above average proportion of part time employees; 45% compared with 31% in England & Wales, and in Weymouth & Portland this figure rises to 48%. In 2010 the five wards within the Marine Plan area with the highest average benefits claimant rates were in the Weymouth & Portland borough<sup>20</sup>.

If the economy within the Marine Plan area is to develop and grow, it is essential that the area reduces its reliance on tourism, and continues to diversify and develop opportunities in other sectors. This policy works alongside [TCC 1](#) and [TCC 2](#) in encouraging developments which help people in the area to move away from

seasonal, low-skilled employment into skilled full-time employment, particularly in low-carbon and other 'green' sectors. With developments such as the proposed Navitus Bay offshore windfarm, and the potential tidal resource off Portland Bill, the future offers major opportunities for a 'green knowledge economy' in the area. It is important that marine planners and local authorities work closely to maximise these opportunities.

**TCC 3:** Developments or activities which provide employment opportunities in coastal areas outside the existing seasonal market should be promoted, particularly where these support the Dorset, Bournemouth & Poole Local Enterprise Partnership (LEP) vision for a 'green knowledge economy'.

**This policy complies with:**

- Sustainable Development Strategy (EU SDS 2006)
- National Planning Policy Framework (2012)
- Dorset Sustainable Community Strategy (2010-2020)
- Weymouth & Portland Borough Council Local Plan (2005)
- West Dorset District Council Local Plan (2006)
- Purbeck District Council Local Plan (2004)

## Protecting and enhancing the historic character of coastal areas

### Justification

Coastal villages and towns within the Marine Plan area have been shaped over centuries by the way in which the sea and the coast have provided jobs, wealth and enjoyment, either through trade, industry or leisure. There is no coast road in Dorset, and many of the Marine Plan area's coastal villages lie at the end of narrow, single track lanes giving them a remote, tranquil setting. Fishing has always played an important role in the area, and there are families which have fished the same marine ledges for many generations. Weymouth, renowned for its Georgian seafront, has a strong maritime history going back to Roman times, whilst Portland is famous world-wide for its quarrying heritage (see [Chapter 4](#) for more detailed description of the Marine Plan area).

The whole area has a unique and distinctive character which is one of its greatest assets. It is a major attraction for tourism and has inspired, and continues to inspire, scientists, artists and writers. It draws people to the area, to live and work by the sea

<sup>20</sup> A socio-economic Study of the C-SCOPE Marine Plan Area. Dorset County Council Research Team. 2011.

or visit for leisure. Developments which are detrimental to the character of the area could have a significant impact on quality of life which communities currently enjoy and the tourism on which many of them rely. [VEU 1](#) and [VEU 3](#) provide more guidance on the design and scale of developments within the Marine Plan Area, and [VEU 4](#) must also be considered when developing coastal villages and towns.

**TCC 4:** Development will be expected to respect the historic character of coastal villages and towns and the maritime occupations that exist there.

#### **This policy complies with:**

- Sustainable Development Strategy (EU SDS 2006)
- National Planning Policy Framework (2012)
- Dorset Sustainable Community Strategy (2010-2020)
- Weymouth & Portland Borough Council Local Plan (2005)
- West Dorset District Council Local Plan (2006)
- Purbeck District Council Local Plan (2004)

### **Promoting local fisheries and mariculture**

#### **Justification**

Shellfish are the dominant catch within the Marine Plan area, primarily made up of mussels, crab, whelks and scallops. Weymouth is the main landings port, and in 2009 a total catch of 1,952 tonnes worth £2,153,000 was recorded. There is also a mussel farm within Portland Harbour which produces up to 800kg of mussels a week. However, the main markets for much of Dorset's fishing catch are abroad. There are a number of successful local outlets within the area, but the overall profile of locally produced fish is low.

There is a growing movement in the country which supports the promotion of locally produced seasonal food products and, with the advent of campaigns such as 'Hugh's Fish Fight', consumers are starting to expect fish to be caught in a more environmentally responsible way. There is also evidence that people are willing to try different types of fish.

Initiatives to improve investment in the local marketing and use of fish, both in service industries and in the home, will provide a direct social, cultural and economic benefit to coastal communities. Fishermen will be able to be more responsive to local demand and command and get higher prices for their catch, whilst it will be

easier for local businesses to demonstrate that the fish and shellfish they are using are safe as well as legally and sustainably caught.

**TCC 5:** Initiatives which promote locally caught or farmed sustainable seafood will be supported.

#### **This policy complies with:**

- Marine & Coastal Access Act (2009)
- Sustainable Development Strategy (EU SDS 2006)
- National Planning Policy Framework (2012)
- Dorset Coast Strategy (2011 - 2021)

### **Encouraging communities to re-engage with the marine environment**

#### **Justification**

Throughout more rural areas within the Marine Plan area there has been a shift in community structure. Many local people have moved away from traditional maritime occupations, and in recent years there has been an influx of new inhabitants employed in non-maritime occupations. This has led to some communities having less connection with the marine and coastal environment than there might have been in the past.

There are, however, significant opportunities for people to re-engage with their coastal environment and maritime heritage. Developments or activities, such as local heritage centres or community beach cleans, which enable people to become more knowledgeable about the marine environment and the rich heritage of the area will help to engender a sense of ownership and a desire to safeguard these valuable assets. The communication of scientific research, such as the visualisation of the DORIS seabed map, is also a valuable way to enable communities to become more familiar with the marine environment. This policy also helps to support local authority objectives to improve health, education and social inclusion.

**TCC 6:** Developments and activities which encourage sensitive use of the coast and marine environment, promote community involvement and increase awareness of the value of the cultural and natural environment will be supported.

### This policy complies with:

- National Planning Policy Framework (2012)
- Dorset Sustainable Community Strategy (2010-2020)
- Weymouth & Portland Borough Council Local Plan (2005)
- West Dorset District Council Local Plan (2006)
- Purbeck District Council Local Plan (2004)
- Dorset Coast Strategy (2011–2021)

### Promoting marine and coastal recreational activities which enhance health and well-being

#### Justification

As a nation, the UK is becoming less active, which is resulting in increasing levels of obesity and other health problems<sup>21</sup>. Within the Marine Plan Area, eleven LSOAs in the Borough of Weymouth and Portland fall into the top 10% most deprived nationally for the Health and Disability Deprivation Domain<sup>22</sup>. This has knock-on effects on the locally economy as fewer people are able to work, and local health services become more stretched.

Participation in sport and recreation is central to improving the quality of life and wellbeing in all communities, and the coastal and marine environment offers opportunities to get local people involved in new activities. Initiatives such as SailLaser Weymouth's OnBoard and Race Clubs, which have been developed to get children from the local community sailing – including Sail for £5 weeks – and C-Waves diving which received funding to provide free snorkelling lessons to the local community are good examples of how this can be achieved.

The local marketing and promotion of [iCoast](#) another output of the C-SCOPE project which acts as a portal to a wealth of information on coastal recreation, will also allow people to discover new activities and facilitate easier access to the marine environment.

<sup>21</sup> Department of Health. Healthy Lives, Healthy People White Paper. 2011.

<sup>22</sup> A socio-economic Study of the C-SCOPE Marine Plan Area. Dorset County Council Research Team. 2011.

**TCC 7:** Developments and activities which will enable and encourage local communities to use the marine and coastal environment to become more physically active, and increase health and well-being, will be supported.

### This policy complies with:

- National Planning Policy Framework (2012)
- Dorset Sustainable Community Strategy (2010-2020)
- Weymouth & Portland Borough Council Local Plan (2005)
- West Dorset District Council Local Plan (2006)
- Purbeck District Council Local Plan (2004)
- Dorset Coast Strategy (2011-2021)





***Objective 3: successful, sustainable marine economy***

*Successful, efficient marine enterprises that operate safely and responsibly, making innovative and sustainable use of the environment on which they depend while respecting the limits of that environment to accommodate change and development.*

## Supporting sustainable economic development in the marine and coastal environment

### Justification

To deliver the Dorset LEP Prospectus and vision of a green economy, this policy helps to define the kind of economic development which should be supported and promoted.

**SME 1:** Sustainable economic development in the coastal and marine environment will be supported. Sustainable marine industries will be defined as those which:

- Respect and where possible enhance the environment in which they operate, and on which they depend for their existence
- support the coastal communities in which they operate through high quality employment and training opportunities and
- make efficient, equitable use of natural and human resources available to them.

### This policy complies with:

- Sustainable Development Strategy (EU SDS 2006)
- National Planning Policy Framework (2012)

## Identifying the social, environmental and economic impacts and benefits of a development

### Justification

The criteria in Box A have been identified as a 'check-list' for developers and decision makers to ensure the potential benefits and anticipated adverse impacts (which may be economic, environmental and/or social) of proposals have been identified and taken into account. The criteria have been selected either because they are statutory requirements, material planning consideration in terrestrial planning, regulatory matters and/or agreed as being important in a Dorset context by the C-SCOPE MSP Task and Finish Group.

**SME 2:** In addition to complying with the other policies in this plan, major<sup>23</sup> development in the marine and coastal environment should be tested for its contribution to, and impact on, the criteria presented in Box A (below).

## Mitigation and compensation

### Justification

Development will inevitably have an impact on at least one or more of the criteria laid out in Box A. The precise nature of these impacts will depend on a number of factors, including the type of development or activity under consideration, compatibility with other activities, and the multiple and cumulative impacts of proposals when viewed with other projects and activities. The criteria laid out in this policy support the screening and formal scoping of projects as required by Marine Works (EIA) Regulations (Amendment) 2011 and the Town & Country Planning (EIA) Regulations 1999.

Many of these impacts can be mitigated for and developers must work with relevant licensing bodies and statutory consultees to ensure appropriate and practicable mitigation measures are in place. Where there is unavoidable habitat loss, compensatory habitat creation and developer contributions must be considered. If suitable mitigation or compensation measures cannot be made, the impacts will be considered adverse, and the development should be avoided in its proposed location.

**SME 3:** Development which would have an adverse impact, directly, indirectly or cumulatively on the criteria laid out in Box A, and which can not be satisfactorily mitigated or compensated for, should be avoided.

### This policy complies with:

- Sustainable Development Strategy (EU SDS 2006)
- National Planning Policy Framework (2012)
- EC Marine Strategy Framework Directive (2008/56/EC)
- European legislation Council Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora (Habitats Directive)
- Marine & Coastal Access Act (2009)
- Dorset Coast Strategy (2011-2021)

<sup>23</sup> Major being defined as any development which could affect an International, European or nationally designated site and/or requires an Environmental Impact Assessment.

## Box A – see accompanying figures

### Existing activities

- Tourism and Recreation interests (Figures 24 and 25)
- Mariculture sites (Figure 23)
- Commercial inshore fishing (Figure 36)
- Shipping routes and navigational interests (Figures 37 & 43)

### Natural Environment

- Designated sites including Special Protected Areas, Special Areas of Conservation, Marine Conservation Zones, Sites of Special Scientific Interest (Figure 33)
- Species with statutory protection (Figure 38)
- UK and Local Biodiversity Action Plan species and habitats (Figure 39)
- Other sensitive species and habitats (Figure 34)
- Migratory bird routes, important breeding and over-wintering areas (Figure 40)
- Wider ecosystem functions and the goods and services they provide
- Water quality (Figure 21)
- Air quality
- Geological features, geomorphology and geodiversity (Figure 41 and Appendix 6)
- Greenhouse gas emissions

### Cultural Heritage

- Landscape and Seascape Character (Figures 18a and 18b)
- Heritage Assets (Figures 19 and 20)
- Other historic or archaeological sites
- Protected landscapes (Figure 17)

### Infrastructure

- Cables and pipelines (Figure 42)
- Buoys and navigational aids (Figure 43)
- Moorings and coastal infrastructure and access to these (Figure 44)
- Local transport network (Figure 52)

### Communities

- Communities and settlements (Figure 45)
- Public health and safety
- Navigational safety implications

Figure 36: SME 2 & SME 3 Commercial inshore fishing

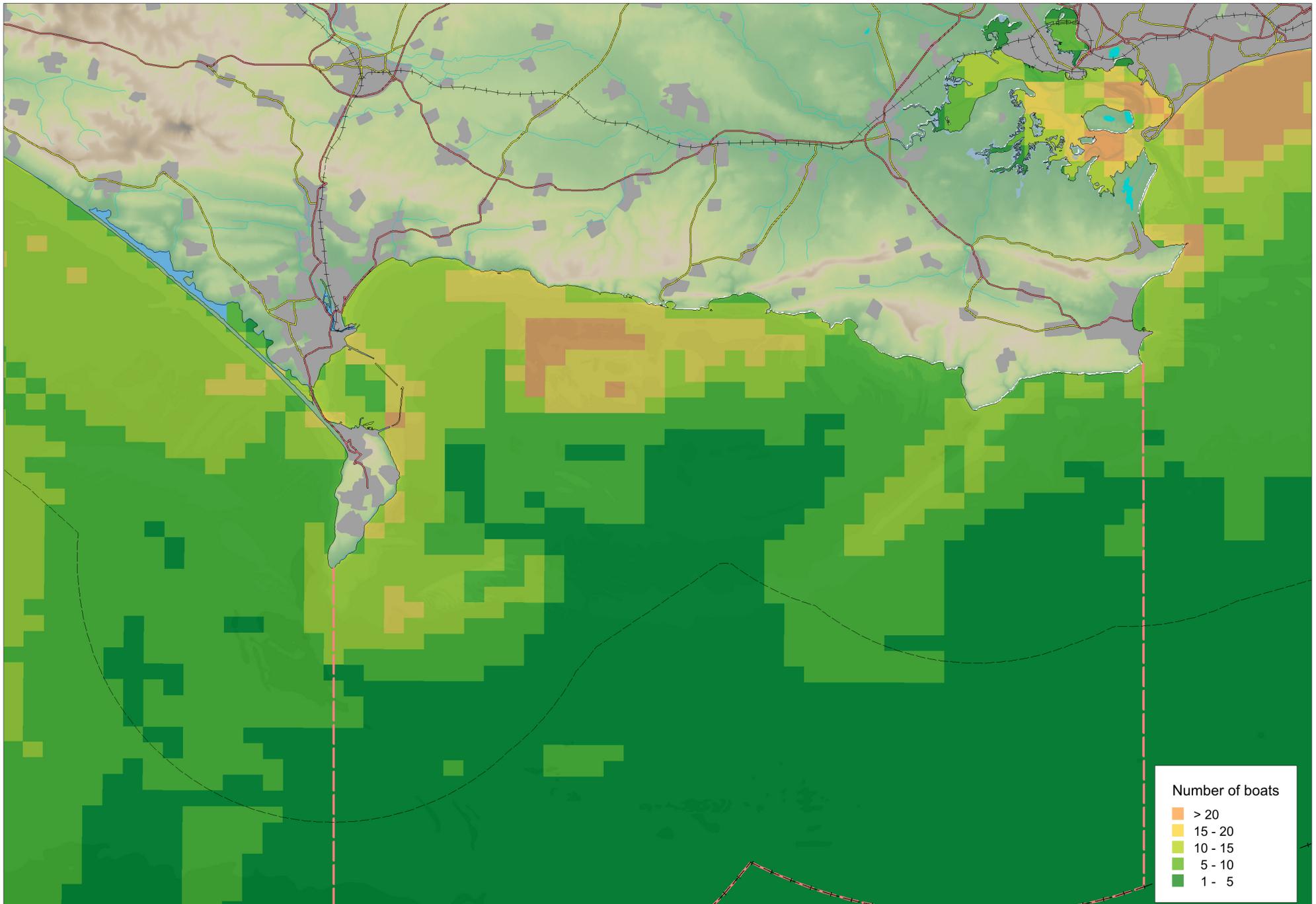


Figure 37: SME 2 & SME 3 Shipping routes

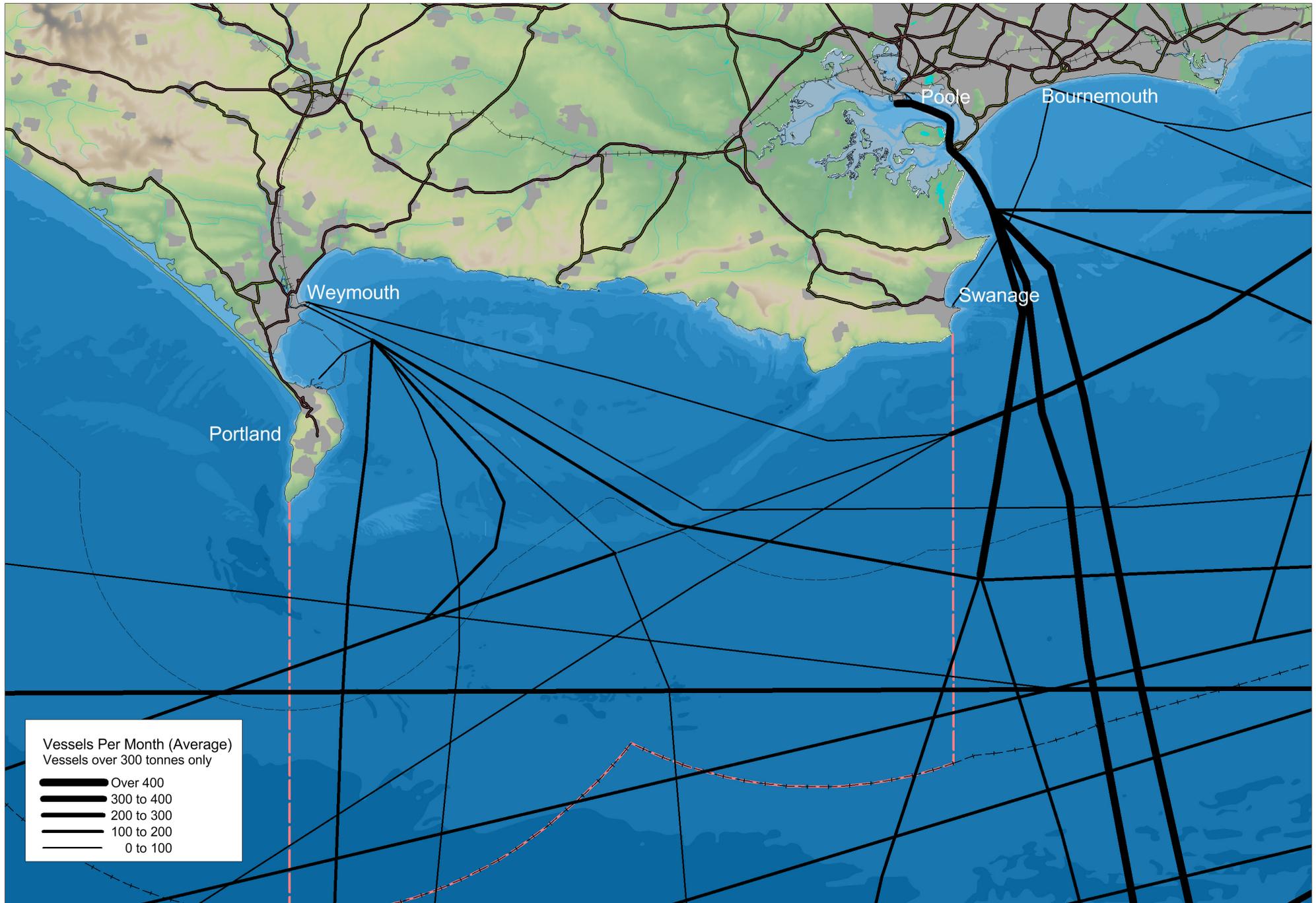


Figure 38: SME 2 & SME 3 Designated species

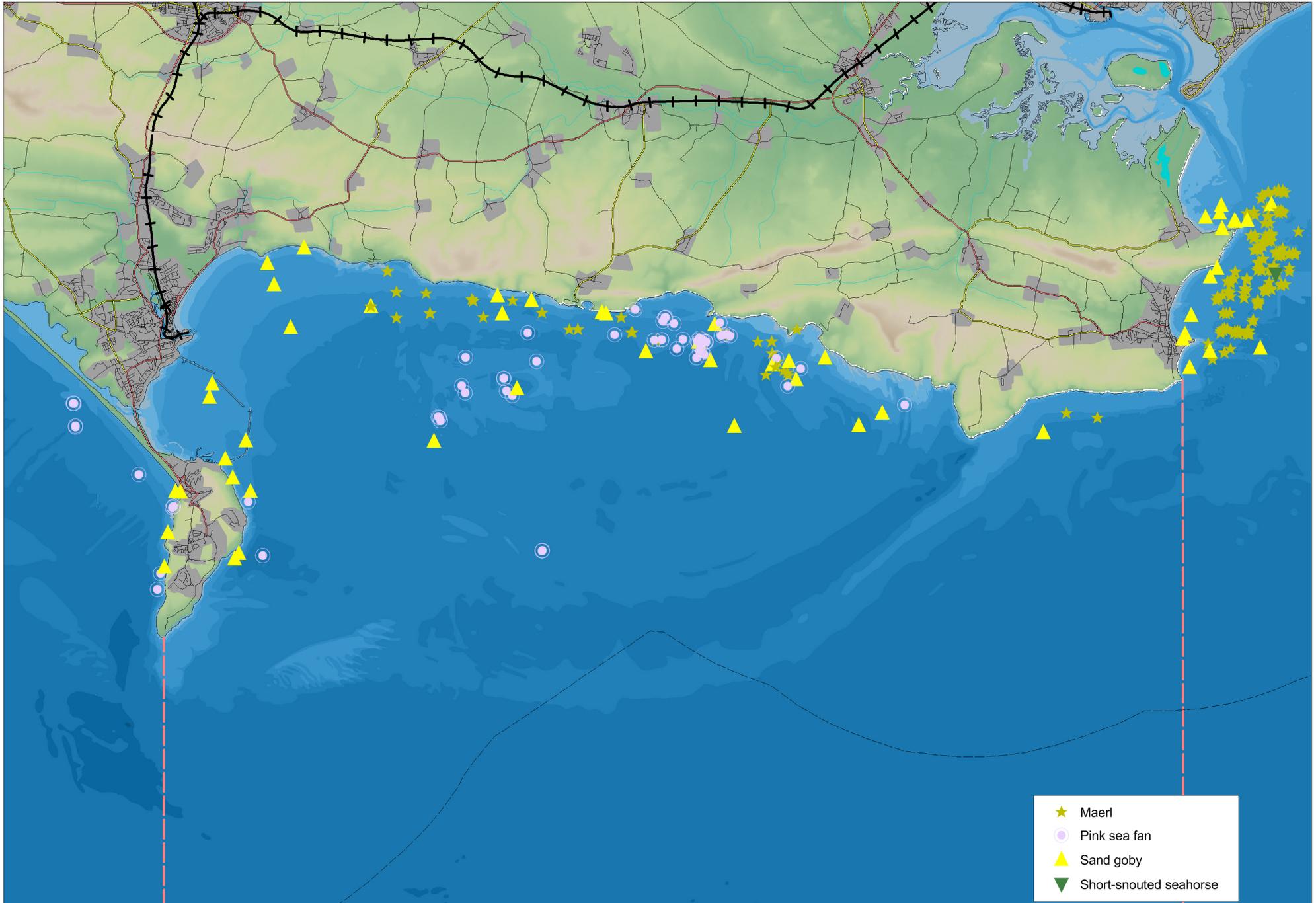


Figure 39: SME 2 & SME 3 UK Marine Biodiversity Action Plan species

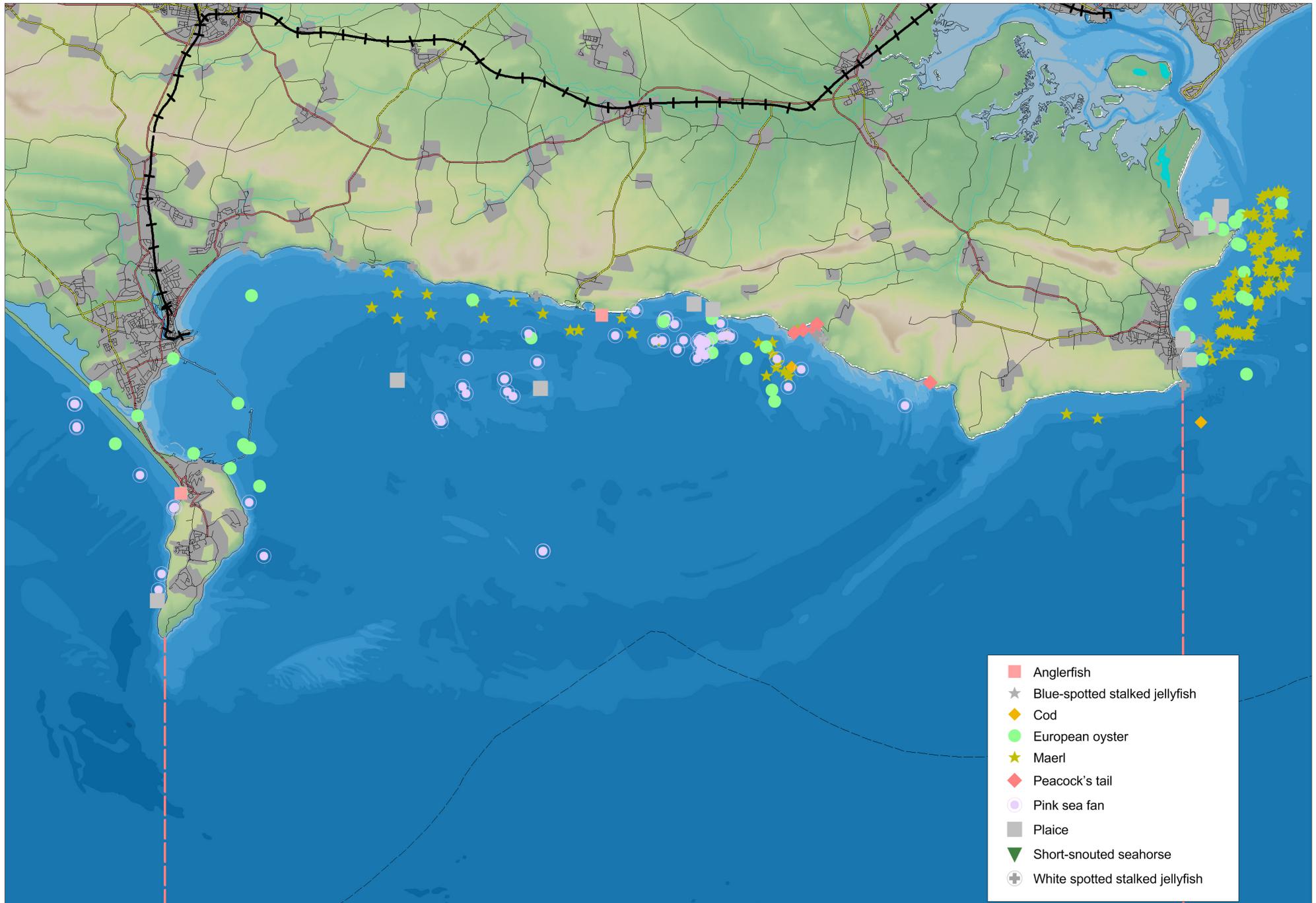


Figure 40: SME 2 & SME 3 Over-wintering birds



Figure 41: SME 2 & SME 3 Geological features

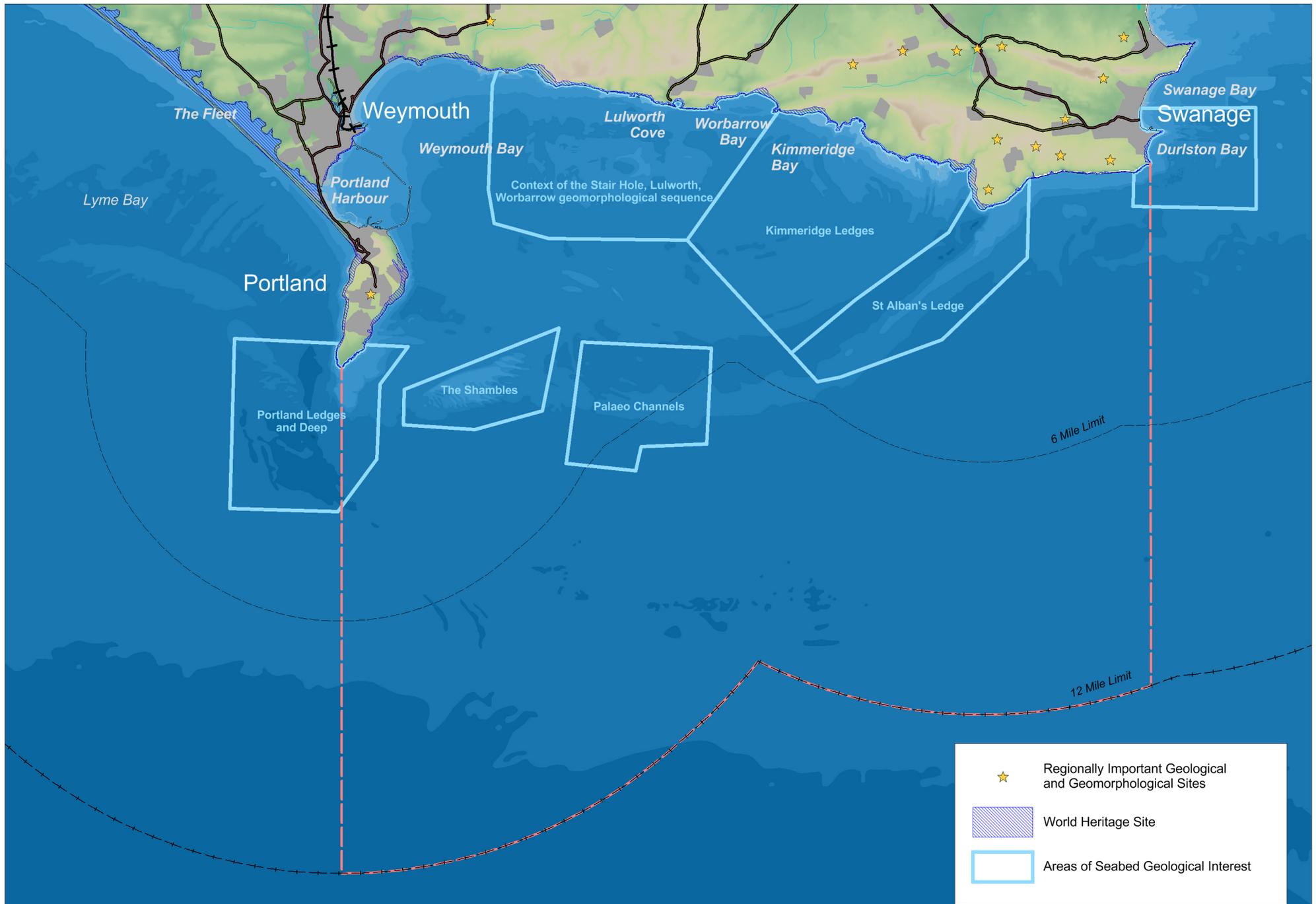


Figure 42: SME 2 & SME 3 Cables and pipelines

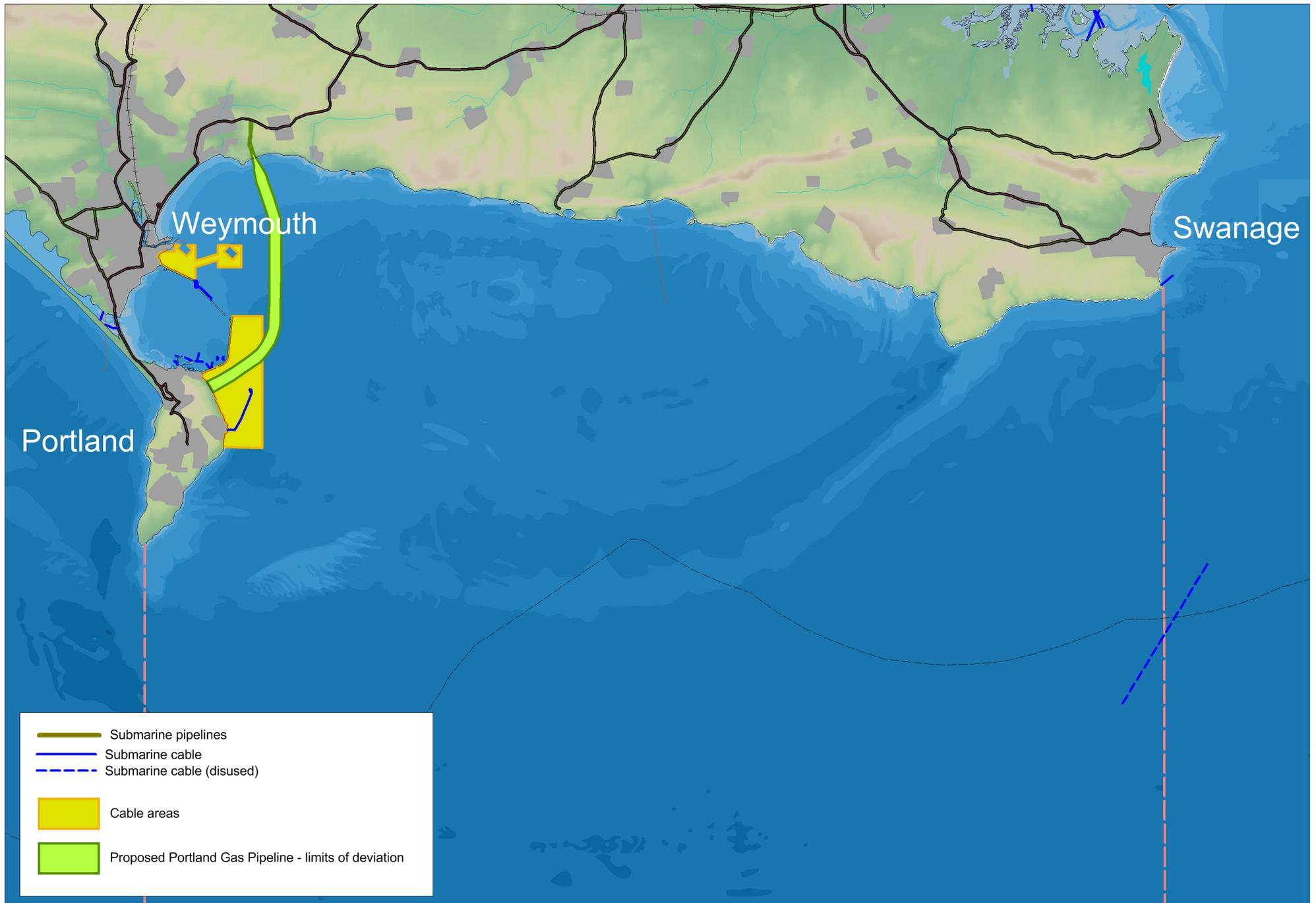


Figure 43: SME 2 & SME 3 Buoys and navigation aids

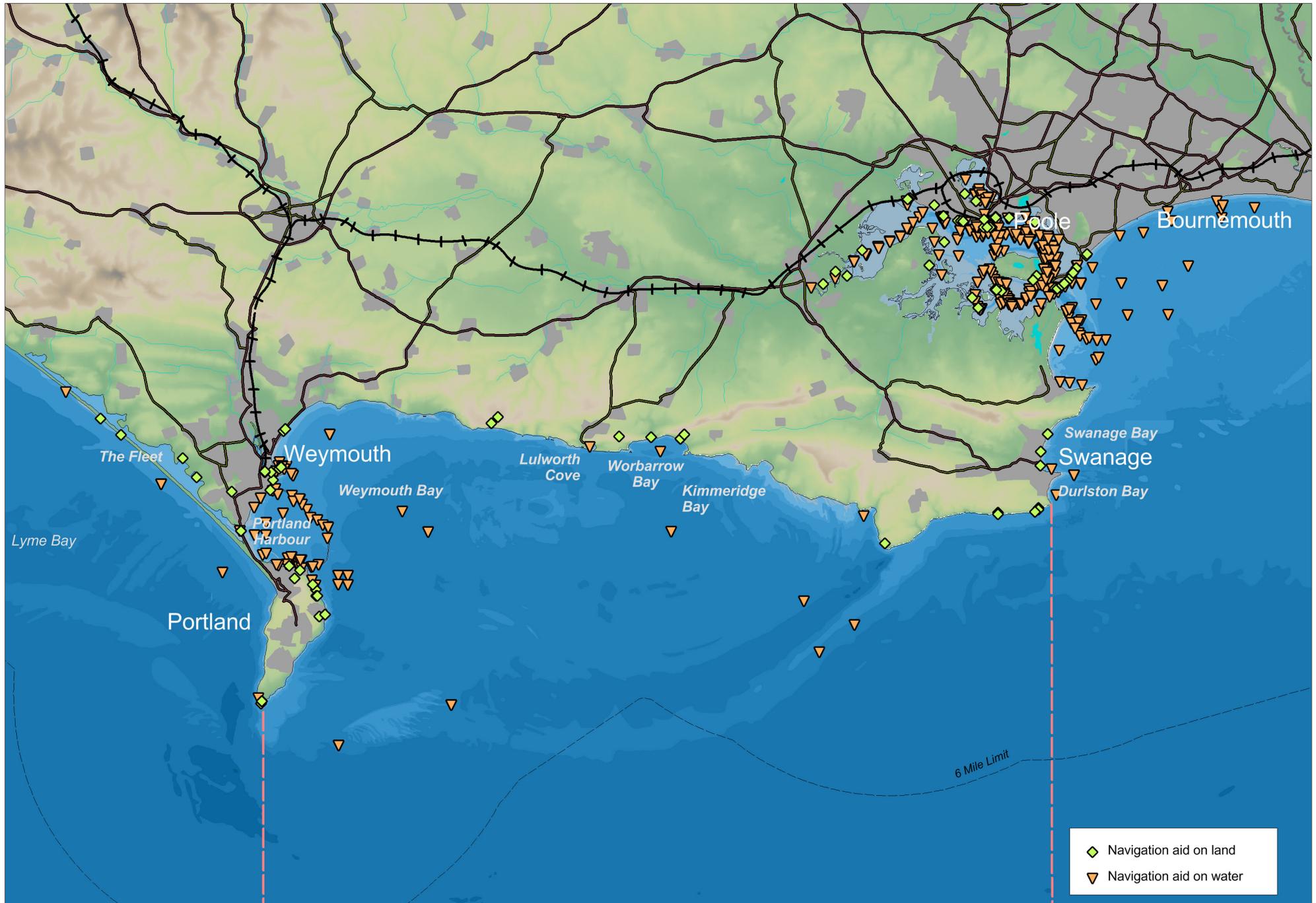


Figure 44: SME 2 & SME 3 Moorings and coastal infrastructure

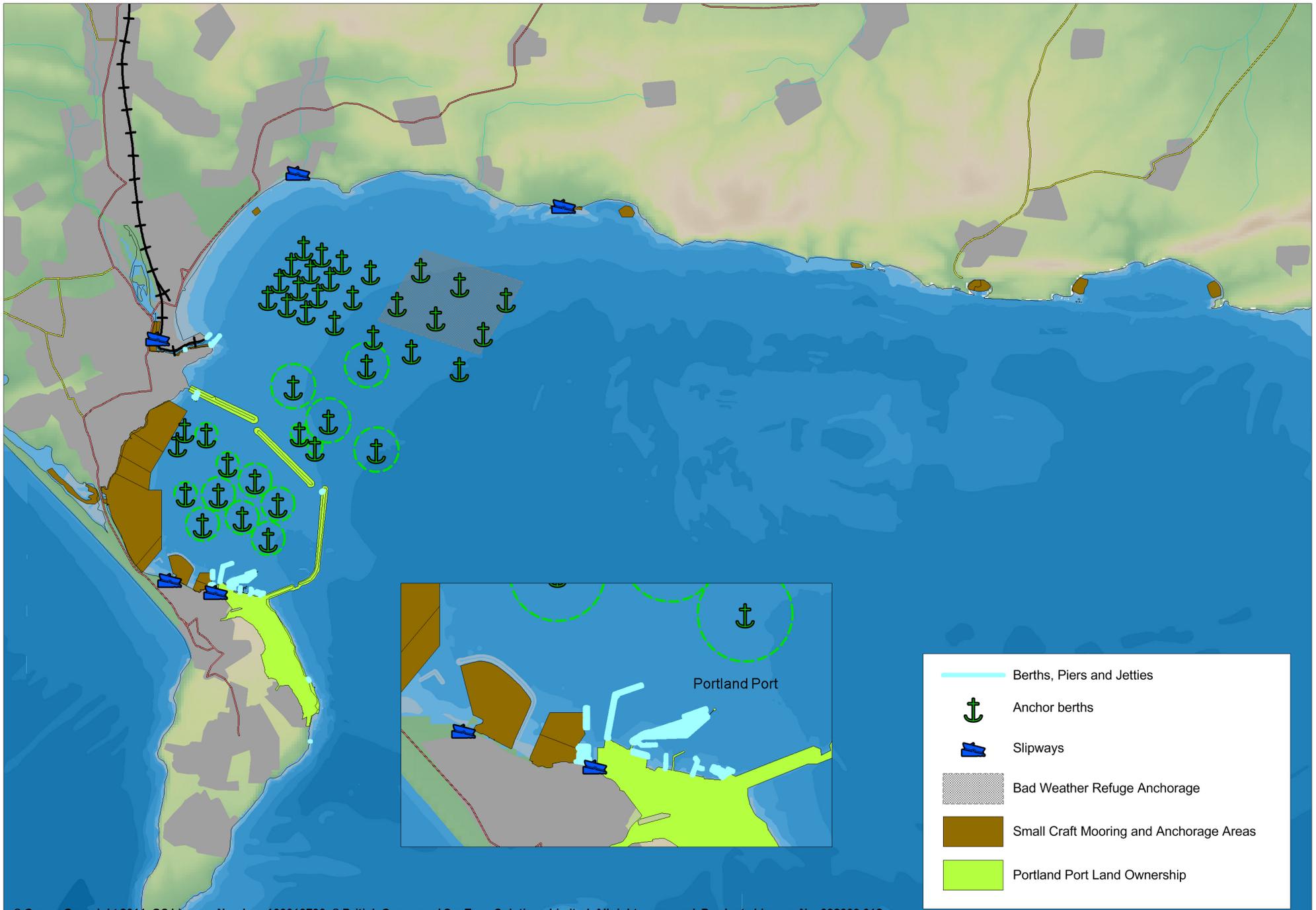
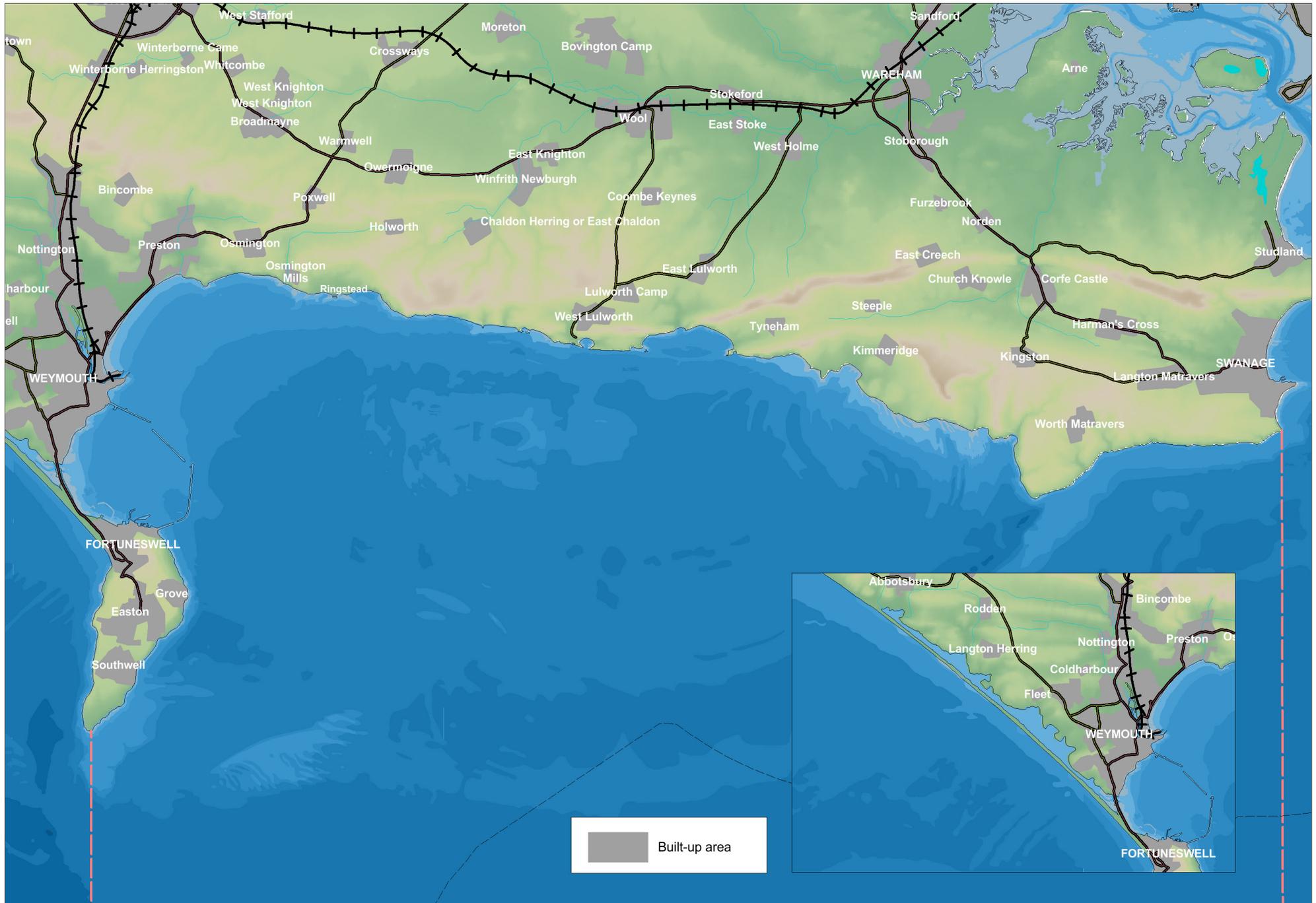


Figure 45: SME 2 & SME 3 Communities and settlements



## Encouraging compatibility with existing sectors, coastal plans and policies

### Justification

There is a strong inter-relationship between terrestrial and marine environments. Off-shore developments such as windfarms must land their power cables to connect to the national grid and they require construction and service ports as well as adequate infrastructure to support those ports. Parts of the Marine Plan area coastline are subject to rapid change and others susceptible to coastal flooding. Local authorities have their own targets for renewable energy, employment and economic growth. It is therefore essential that developers and decision makers are aware of the connection between offshore activities and resource use and the onshore communities that are dependent on them. They must ensure that proposals have considered existing plans, policies and programmes, and that they are not going to conflict with them as far as possible. By doing so, they may also identify opportunities to strengthen their own proposals. Once complete, the Coastal Explorer Planning tool will detail all plans, policies and programmes which are relevant to the C-SCOPE Marine Plan area.

Equally, developers must consider the effects of their proposals on other marine and coastal users. A full sectoral interactions matrix can be found in [Appendix 7](#). Spatial analysis of the interactions matrix reveals that in general most existing interests within the Marine Plan area co-exist with minimum competition and incompatibility. New developments or activities could disrupt this balance, so where a development may impact on other sectors, early dialogue will help all parties to understand each other's position and agree satisfactory mitigation measures before proposals become too advanced. Potential consultees with interests in the Marine Plan area are listed in [Appendix 8](#).

**SME 4:** Development proposals must demonstrate that:

- a) Be compatible with existing plans, policies and programmes (PPP), especially Shoreline Management Plans, coastal change management areas, Local Development Frameworks/Local Plans and Local Transport Plans.
- b) Consider any complementary or negative interactions with other sectors, negotiate with these sectors accordingly, and agree mitigation where necessary.

### This policy complies with:

- National Planning Policy Framework (2012)
- Marine & Coastal Access Act (2009)
- Dorset Sustainable Community Strategy (2010-2020)
- Weymouth & Portland Borough Council Local Plan (2005)
- West Dorset District Council Local Plan (2006)
- Purbeck District Council Local Plan (2004)
- Dorset Coast Strategy (2011-2021)

### Provision for essential public services

There are certain public services, including the provision of electricity, gas and fresh water, and sewage removal and treatment, which are essential to the health and well-being of local communities. Appropriate waste water and sewage treatment is also essential to ensure healthy marine environments, as set out in policy [HME 8](#). Population growth, housing developments and changing demands are putting increasing pressure on these services and there is a need for new facilities and upgrading of ageing infrastructure. It is therefore important that such work is supported.

Additionally, access for emergencies and engineering or maintenance work is also necessary, and this may involve work in areas of conservation interest. When this occurs, it is important that public service providers liaise with relevant environmental organisations to ensure that appropriate working methods and restoration techniques are undertaken to minimise and mitigate any impact.

**SME 5:** Applications for new sites, extensions or development to existing sites required to deliver essential public services will be supported providing that they do not give rise to significant adverse affect to marine or other environmental features, local amenity or landscape. The need for access to existing infrastructure for emergency repairs and statutory maintenance should be recognised.

### This policy complies with:

- Water Framework Directive (2000/60/EC)
- EC Marine Strategy Framework Directive (2008/56/EC)
- Urban Waste Water Treatment Directive (91/271/EEC)
- Bathing Water Directive Bathing Water Directive (2006/7/EC)

- Water Resources Act (1991)
- Dorset Sustainable Community Strategy (2010-2020)
- Dorset Coast Strategy (2011-2021)

## Infrastructure to support sustainable development of marine industries

### Justification

Marine industry cannot function in isolation and needs suitable supporting infrastructure for it to succeed; for most marine industries, ports and harbours provide the primary interface between land and sea. Ships need anchorages, berths, re-supply and cargo-handling facilities. The fishing industry requires berths, landing and handling facilities, slipways and boat repair yards whilst any future shellfish farms will require depuration and packaging facilities.

Ports are also essential to offshore developments such as the proposed Navitus Bay windfarm, which will require a large construction area and ongoing maintenance facilities as well as access to supporting marine services usually found in larger ports. Policies [SME 9](#) and [SS 3](#) focus more specifically on ports and harbours within the Marine Plan area. Beyond ports and harbours, efficient terrestrial transport links are essential to facilitate movement of goods and people to and from them. Integration with terrestrial development plans and cooperation with local authorities and local transport partnerships will be needed to ensure sustainable marine industry is successfully supported and the full economic benefits can be realised.

**SME 6:** Infrastructure necessary to support the sustainable development of marine industry, and associated transport infrastructure, will be supported where consistent with the other policies in this plan.

### This policy complies with:

- Sustainable Development Strategy (EU SDS 2006)
- National Planning Policy Framework (2012)
- Marine & Coastal Access Act (2009)
- Department for Transport National Policy Statement for Ports (2011)
- Bournemouth, Poole and Dorset Local Transport Plan (2011-2026)
- Dorset Coast Strategy (2011-2021)

## Co-location and sharing of infrastructure

### Justification

As pressure on the marine environment continues to grow, space will increasingly become a limiting factor on development. Although currently most interests within the Marine Plan area occur together with minimum competition and incompatibility, this may change in the future. The co-location and sharing of infrastructure can help to alleviate potential spatial conflicts, minimise cumulative environmental impacts and even offer many benefits.

Examples include the co-location of offshore windfarms and Marine Protected Areas, which reduce the potential socio-economic impacts caused by displacement on fishermen. In turn, by building-in beneficial features such as artificial shelters for juvenile fish, windfarms could enhance local fish stocks, thus benefiting fishermen and local communities. There is also potential for shoreline wave technologies within the Marine Plan area. These operate at low tidal ranges of less than 2m and can be fixed or embedded into structures such as breakwaters.

Mariculture could also benefit from co-location with offshore windfarms; research has been conducted into mussel cultivation within wind-farms in German Bight. The wind-farm acts as a shelter in offshore conditions where cultivation might be more difficult, and it has been shown that shifting production of mussels offshore can increase the health of mussels. Seaweed has also been successfully grown in similar conditions.

Within the Marine Plan area, the ‘wreck to reef’ project is a small-scale example of co-location. It has been granted permission to create an artificial lobster reef which will benefit local fishermen and sink two ships – one of which will be for divers and the other for sea-anglers. This policy is supported by [SME 4](#) which encourages early dialogue with other sectors.

**SME 7:** Offshore development will be expected to consider complementary opportunities for co-location and sharing of infrastructure.

### This policy complies with:

- Sustainable Development Strategy (EU SDS 2006)
- National Planning Policy Framework (2012)
- Marine & Coastal Access Act (2009)
- Dorset Coast Strategy (2011-2021)

## Minimising the footprint of cables and pipelines

### Justification

Whilst the footprint of cables and pipelines is relatively small, they nevertheless have both an environmental and socio-economic impact. The laying of cables and pipelines involves some removal of habitat as well as secondary impacts caused by re-settlement of suspended sediments post-lay and, particularly with pipelines, potential seabed scour. Although there are strong safety procedures in place and good dialogue between fishermen and the industry, cables and pipelines remain a safety hazard for fishermen using mobile gears, and there are real risks to both fishermen and the environment if their gear gets caught. Safety buffer zones also mean fishermen may lose some of their fishing grounds. Depending on the type and size of the cable or pipeline and the seabed geology, it can cost from £600,000 to £1.3 million per km to lay. By using existing cable corridors, developers will benefit from reduced EIA costs and have more confidence that they will not have to re-route at great cost. Environmental impacts will be contained within a discrete area, and fishermen will have fewer sites to monitor and avoid.

**SME 8:** New cables and pipelines in the marine environment should seek to follow existing corridors wherever physically and technically possible.

### This policy complies with:

- Marine & Coastal Access Act (2009)
- Dorset Coast Strategy (2011-2021)

## Using appropriately sourced materials for beach replenishment

### Justification

Mixed sand and shingle beaches are a common component of coastal defences throughout the UK, helping to dissipate wave energy and therefore prevent flooding. Within the Marine Plan area there are several beaches which perform this function. Sandy beaches also provide a valuable recreational resource within the area, most notably those at Weymouth. However, most of these beaches are eroding and replenishment schemes have become more common to maintain adequate sea defences and protect the economic interests of seaside resorts.

The Durlston Head to Rame Head SMP2 divides the coast into smaller 'policy units' and for each unit sets out preferred policies for managing the risks of coastal change over three epochs. The SMP2 identifies several policy units where there could be provision or replenishment of beaches in the short term to mid-term; the Furzy Cliff to Preston Beach unit 5g15 and Bowlease 5g12 in particular.

However, unless appropriate resources are used in these replenishment works, there is the potential for adverse changes to the geomorphology, ecology and hydrology. This could not only result in increased costs to resolve ensuing problems, but also impact on the Outstanding Universal Value of the Jurassic Coast World Heritage Site, as set out in its Management Plan. A recent example is the use of angular gravel at Ringstead Bay which caused concern as it is very unlike the rounded chert and flint of the local beach and has behaved differently to the natural environment.

It is therefore essential that any future beach replenishment works use appropriate resources which are as similar as possible to the existing sediments as well as having regard to the hydrological regime in which it will take place.

**SME 9:** Beach replenishment works should ensure use of appropriate resources which match that which already exist in the natural environment. Works must also have regard to the hydrographical regime of the area.

### This policy complies with:

- Circular on the Protection of World Heritage Sites (07/2009)
- EC Marine Strategy Framework Directive (2008/56/EC)
- National Planning Policy Framework (2012)
- Marine & Coastal Access Act (2009)
- The Dorset and East Devon Coast World Heritage Site Management Plan (2009-2014)
- Dorset Coast Strategy (2011-2021)

## Supporting local ports and harbours

### Justification

Portland Port is a privately owned commercial port, operating as Portland Harbour Authority Ltd (PHAL), which also has statutory powers under the Portland Harbour Revision Order 1997. The Port supports significant employment and economic activity both locally and regionally. The Port employs a number of management plans and tools including byelaws, statutory notices, a Harbour Management Plan, Oil Spill Contingency Plan and Waste Management Plan. It also produced a Marine Spatial Plan in 2008 and is currently producing an Environmental Management Plan.

The Port offers additional economic opportunities for the future, and the Harbour Revision Order 2010 authorises the Port to construct a number of works which will enable it to expand to cope with extra demand on service and shipping trends. In its 2007 HRO application, PHAL estimated that these works could increase employment by approximately 579 jobs. The Port additionally offers solutions to current energy issues including security of supply and meeting renewable targets. It is looking to become a centre of excellence for offshore renewables, and it hopes to provide both construction and service facilities for the proposed Navitus Bay wind farm if it receives the relevant permissions.

On a smaller scale, Weymouth Harbour, a municipal port run by Weymouth and Portland Borough Council, provides services predominantly for local businesses and industries. The Harbour's principal sources of income are the Condor Ferry, inner harbour mooring holders, commercial boat operators and visiting yachts. It too has statutory powers which cover the operations and safe passage within its jurisdiction. There are a number of byelaws, permit requirements for recreational users, and a recreational safety management plan.

Although it is outside of the Marine Plan area, activities at Poole Harbour impact on its eastern boundary. Poole Harbour Commissioners have recently published a draft Poole Harbour Master Plan which includes the development of a £20m Marine Centre creating 120 jobs and composing a 950-berth marina at Hamworthy, a cruise ship berth and a marine business park.

This policy supports these important regulatory, economic and safety functions that both ports provide within the Marine Plan area.

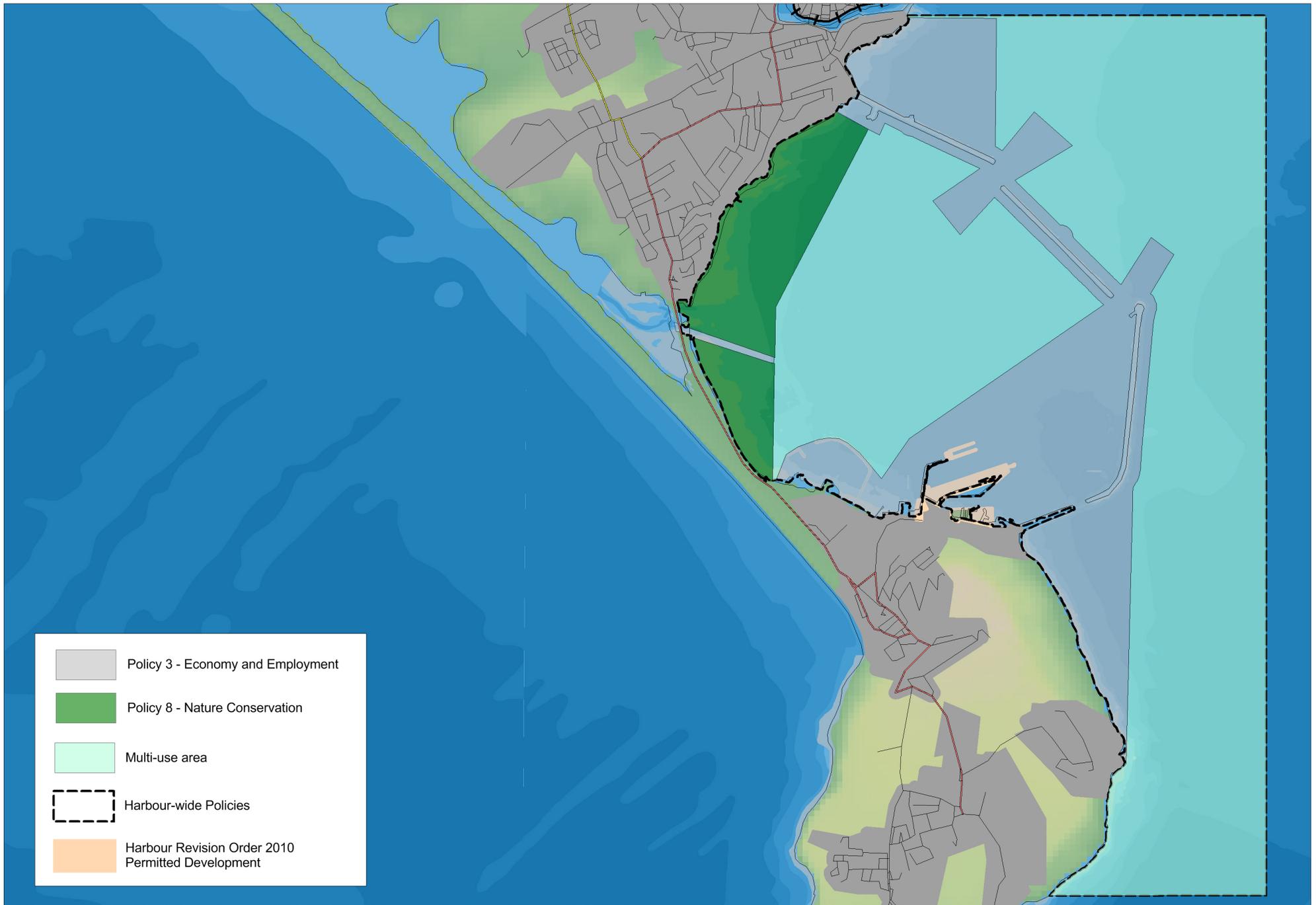
**SME 10:** The operational, management and development plans and other management tools employed by local Ports and Harbours will be supported where consistent with other policies in this plan unless or until this plan is superseded by any statutory marine plan.

### This policy complies with:

- Sustainable Development Strategy (EU SDS 2006)
- National Planning Policy Framework (2012)
- Marine & Coastal Access Act (2009)
- Department for Transport National Policy Statement for Ports (2011)
- Portland Harbour Management Plan (2006)
- Bournemouth, Poole and Dorset Local Transport Plan (2011-2026)
- Dorset Coast Strategy (2011-2021)



Figure 46: SME 10 Portland Harbour plans



## Supporting shipping, short-sea shipping and associated infrastructure

### Justification

With rising fuel costs and worsening road congestion, cross-country container transport is becoming increasingly expensive. Equally important, there is a growing need to cut greenhouse gas emissions at a local and national level. Shipping, and in particular short-sea shipping, is at the forefront of the EU's transportation policy and is becoming an increasingly viable option within the UK. One 4000dwt<sup>24</sup> vessel can carry the equivalent of between 100-200 trucks. Typical cargoes include grain, fertilisers, minerals, stone, scrap, containers and passengers. It offers to alleviate road congestion, decrease air pollution and CO<sub>2</sub> emissions, and provide overall cost savings for shippers and government. However, for short-sea shipping to grow there needs to be further development in ports across the UK to accommodate boats ranging between 1,000dwt and 15,000dwt and the handling services that they require.

By supporting the development of infrastructure to support short sea shipping within the Marine Plan Area, this policy aims to contribute to national and local commitments to reduce carbon emissions, and will potentially help to provide employment opportunities in the area. It also supports policies [SME 5](#) and [SME 9](#).

**SME 11:** Development of infrastructure to support shipping and in particular short-sea shipping as an alternative to road transport will be encouraged and supported where consistent with the other policies in this plan.

### This policy complies with:

- Sustainable Development Strategy (EU SDS 2006)
- National Planning Policy Framework (2012)
- Marine & Coastal Access Act (2009)
- Department for Transport National Policy Statement for Ports (2011)
- Portland Harbour Management Plan (2006)
- Bournemouth, Poole and Dorset Local Transport Plan (2011-2026)
- Dorset Coast Strategy (2011-2021)

<sup>24</sup> dwt – Deadweight tonnes

## Opportunity areas for mariculture

### Justification

Aquaculture is the fastest growing area of food production globally and is likely to play an increasingly important role in the future. In the UK, aquaculture increased by 132% between 2000 and 2006 and, despite some recent decreases, the long-term trend is for continued growth, particularly in England and Wales.

The UK population is forecast to grow to almost 71 million by 2035. This is forecast to lead to an increased demand of 1.5 seafood meals per week, which would see total seafood requirement grow from 1.1 million tonnes whole fish equivalent (2006) to approximately 1.9 million tonnes by 2035. To keep up with this demand, aquaculture production in the UK has been projected to increase by 116% compared to current levels in the next decade. Aquaculture in the UK is at a critical point as space on land and inshore sites become increasingly limited.

The waters within the Marine Plan area are generally of high quality and offer perfect conditions for growing shellfish; a mussel farm already exists within Portland Harbour and Oysters are grown in The Fleet. The Crown Estate has recently granted a lease for a pilot scale offshore mussel farm development in the north west area of Lyme Bay. If demand for mussels continues to grow and the Lyme Bay farm proves successful, Weymouth Bay could be targeted for future development. Further mariculture development, particularly on the larger scale of offshore sites, would not only provide full-time employment for local people, but also help food security within the Marine Plan area and beyond. Constraints mapping was used to identify the most suitable operational and environmental locations for shellfish production within the Marine Plan area; a full description of criteria and methods can be found in [Appendix 9](#). However, it must be noted that seabed substrates and habitats were not part of the criteria, and any potential development will have to go through due process to identify the most suitable location within the opportunity areas.

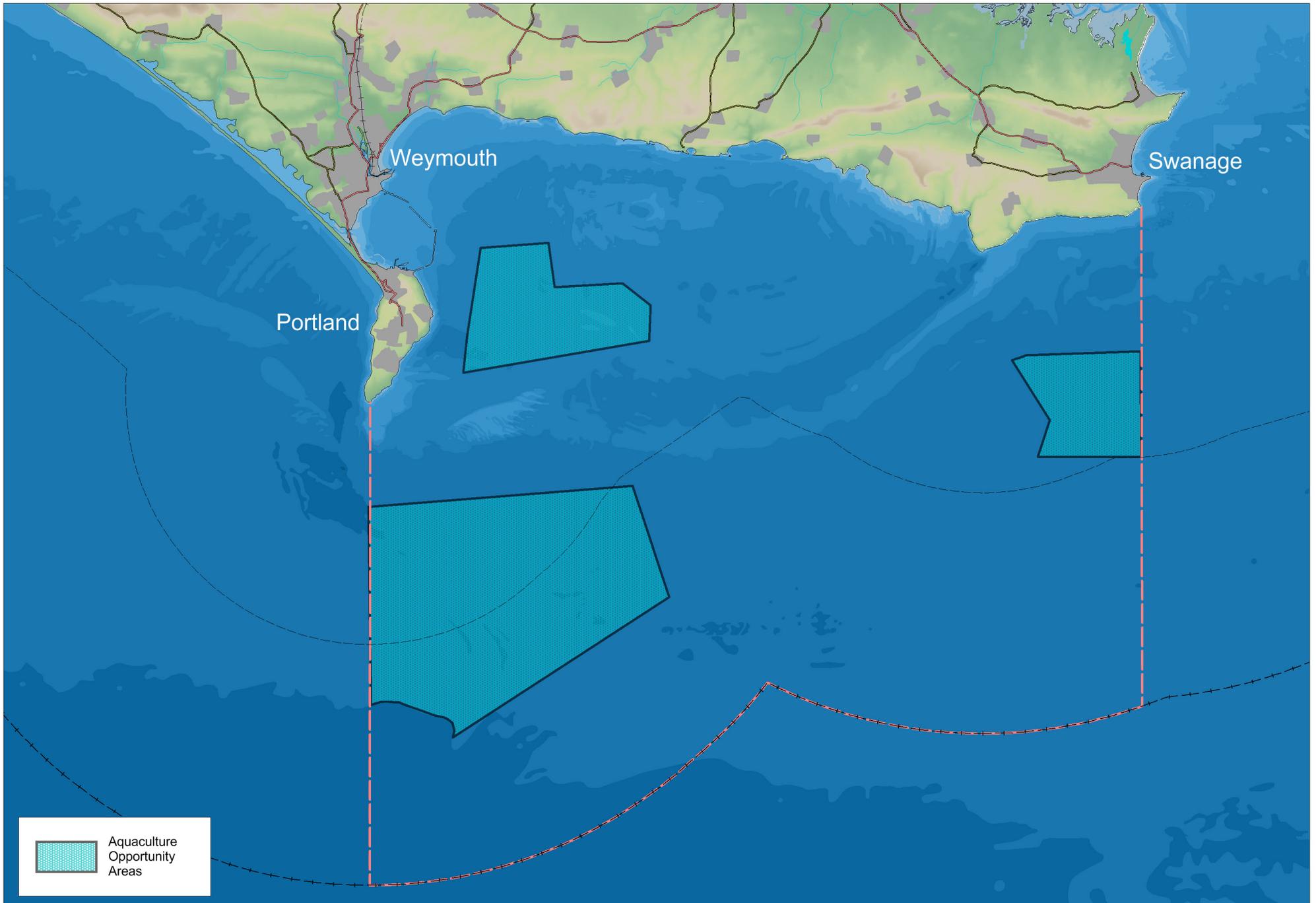
**SME 12:** Development of mussel and scallop cultivation will be encouraged in the areas shown in Figure 49. However, this does not preclude other development which would otherwise be acceptable and the opportunities identified are indicative, subject to obtaining the required consents, and do not preclude development applications and activities elsewhere.

**This policy complies with:**

- EC Marine Strategy Framework Directive (2008/56/EC)
- EU Common Fisheries Policy (2003)
- Marine and Coastal Access Act (2009)
- National Planning Policy Framework (2012)
- Dorset Coast Strategy (2011-2021)



Figure 47: SME 12 Mariculture opportunity areas



A woman with a backpack is seen from behind, looking at an informational sign. The sign features a map of a coastal area with various colored zones and text. In the background, there is a scenic view of a bay with several boats, green hills, and a blue sky with scattered clouds. The woman is wearing a blue tank top and a dark backpack with reflective stripes. The sign she is looking at has a map with green, blue, and orange areas, and some text that is partially obscured. The overall scene is a coastal landscape with a focus on environmental or recreational information.

***Objective 4: responsible, equitable and safe access***

*Opportunities to experience the marine environment responsibly, enjoyably and safely are made available to all, managed at a level the environment can sustain and in a way which is compatible with commercial and other strategic uses.*

## Ensuring compliance with port and local authority recreational management plans

### Justification

As highlighted by spatial analysis of the interactions matrix, most recreational activities take place close to the shore and in sheltered areas. Weymouth Bay and Portland Harbour are widely recognised as some of the best small-boat sailing waters in the UK. Heavily used RYA yacht cruising routes run parallel to the shore, and there are several less heavily used routes passing through the Marine Plan area. Portland Harbour also provides a safe environment for newer watersports with wind-surfing and kitesurfing being particularly popular.

However, this area is also one of the busiest for commercial boats and shipping, so it is essential that recreational activities are carefully managed to avoid accidents both between non-compatible recreational activities such as personal watercraft (PWCs) and swimming, and recreational and commercial activities.

Both Portland Harbour and Weymouth Harbour use a number of management tools to ensure recreational safety. Within Portland Harbour, certain byelaws apply, and permits are required for most watersports, including waterskiing, wakeboarding, windsurfing, kitesurfing and personal water craft. Within the inner harbour, PWCs must keep to a designated channel/fairway. These activities are also subject to the General Directions or the Local Notices to Mariners.

There is a similar permit scheme within the limits of Weymouth Harbour Authority. Weymouth and Portland Borough Council also operates a zoned watersport area within Weymouth Bay, which separates activities away from bathing areas. This includes a PWC channel at Bowleaze Cove.

This policy supports all existing management plans for recreational activities within the Marine Plan area and encourages developers to have regard to them when considering any future proposals.

**REA 1:** Recreational activities should conform to existing and future recreational management plans, as identified in Figures 50 and 51.

### This policy complies with:

- National Planning Policy Framework (2012)
- Portland Harbour Management Plan (2006)
- Weymouth & Portland Borough Council Local Plan (2005)
- Dorset Coast Strategy (2011-2021)

## Ensuring recreational management plans adapt to changing uses

### Justification

Whilst growth and stability of the recreation and tourism industry is heavily dependent on the general health of the UK economy, and therefore forecasting is difficult, it is nevertheless anticipated that there will be steady growth in this sector. Watersports are becoming increasingly popular in Dorset; surfing, kayaking and open water swimming have all increased dramatically. Factors such as increasingly active lifestyles, leisure time and affluence, have led to these increases, while ongoing technological improvements have extended the season for many recreational activities. Marine wildlife tourism is also continuing to increase – for example, cetacean watching is estimated to be growing at 10% a year.

Tourism and recreation is expected to increase even more following the 2012 Olympic sailing events in Weymouth and Portland and, in the longer term, warmer and longer summers due to climate change are likely to attract more recreational watersport participants to the area. Newer watersports such as coasteering, kitesurfing and the rise of PWCs have brought new management challenges, and it is likely that there will be more innovations in the next five to ten years. It is essential that the relevant authorities, most notably Portland Harbour Authority and Weymouth and Portland Borough Council, continue to monitor these changes and adapt their management strategies accordingly. Regular liaison with the MCA and RNLI is encouraged to ensure activities are managed and coordinated at both the coastal zone and further out to sea.

**REA 2:** New recreational activities and changes in patterns of use should be monitored and plans adapted accordingly, or new management strategies introduced where necessary, in line with the principles of responsible and safe use.

Figure 48: REA 1 Weymouth Beach management plan

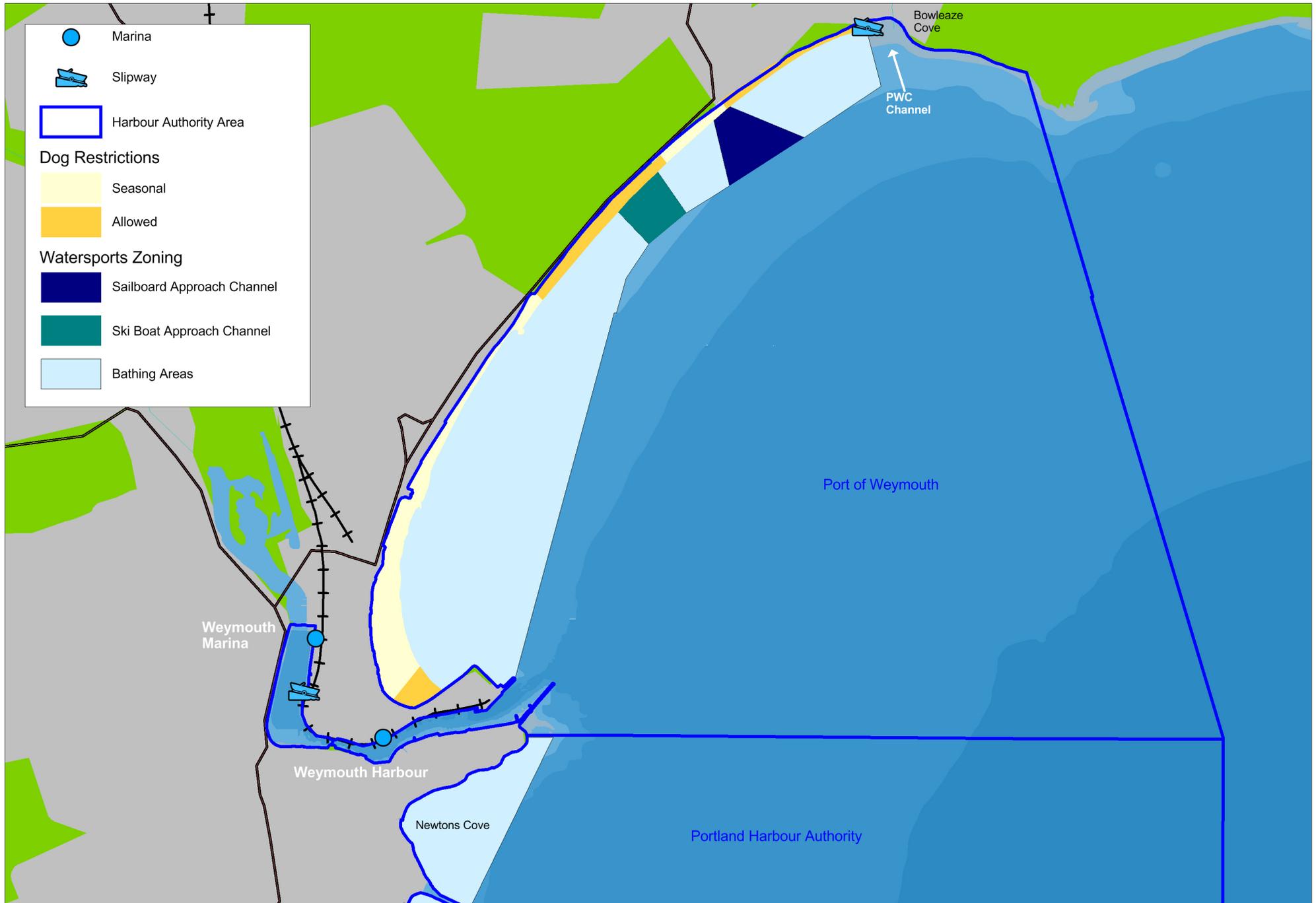
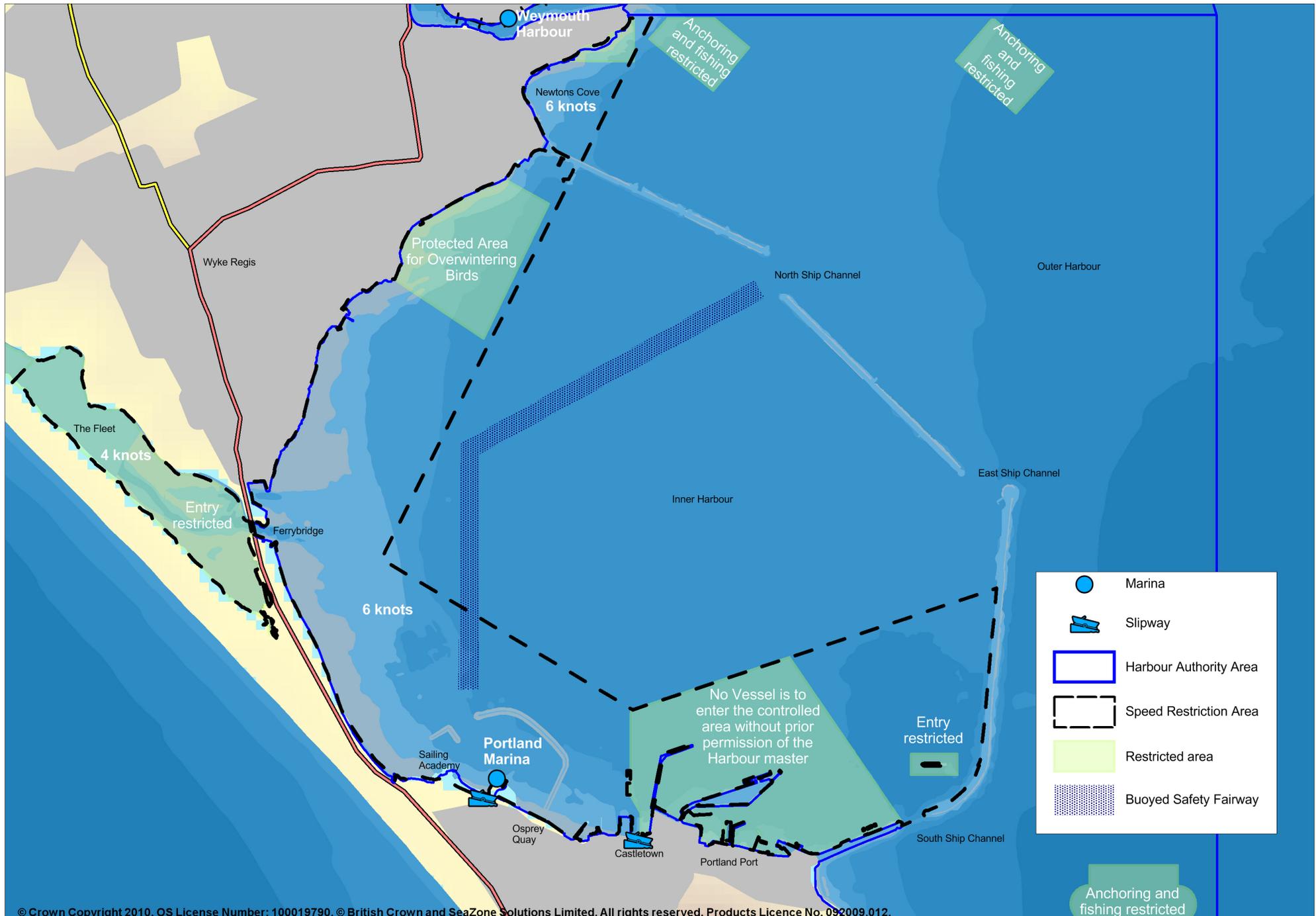


Figure 49: REA 1 Portland Harbour recreational management plan



### This policy complies with:

- Portland Harbour Management Plan (2006)
- Weymouth & Portland Borough Council Local Plan (2005)
- Dorset Area of Outstanding Natural Beauty Management Plan (2009-2014)
- Dorset Coast Strategy (2011-2021)

### Supporting suitably designed and maintained public moorings in sensitive areas

#### Justification

Dorset has a very high number of sailing boats and motor-cruisers, thanks to its exceptional sailing waters, good climate and pockets of high affluence. Less experienced boat owners, or those who do not know the waters particularly well, can unintentionally ground their boats in shallow coastal areas. In the summer months popular locations such as Studland Bay, Poole Harbour, Lulworth Cove and Weymouth Bay become very busy. Competition for prime anchoring and mooring locations leads to boats anchoring in areas which contain sensitive seabed features such as seagrass beds or heritage sites. Analysis of three years' of aerial photography has confirmed this problem<sup>25</sup>.

Seagrass beds help trap sediments, act as a nursery area for young fish and shellfish, provides a habitat for many other plants and animals, as well as acting as a carbon trap. There is growing evidence that anchoring and the scouring actions of chains used in traditional moorings can impact seagrass health and The Crown Estate and Natural England are currently funding an independent study at Studland Bay to assess these impacts. Anchoring can also potentially damage sensitive heritage features such as wrecks.

'Eco-moorings', with a screw-in anchor and spring-loaded riser system or mid-line float, can reduce scouring effects and have been developed in the USA to withstand hurricane force conditions. Although these are relatively untested for reliability in the UK, they are well demonstrated and commonly used in other countries, and could provide a solution to seagrass damage in popular mooring sites within the Marine Plan area.

<sup>25</sup> C-SCOPE project team analysis, using Dorset County Council aerial photography from 2002, 2005, 2009 and DERC seagrass data.

This policy actively encourages the installation of such moorings in the areas identified as having the highest density of boats anchoring in seagrass areas, or where more traditional anchors appear to be causing damage to the seabed.

**REA 3:** Sensitive seabed features should be protected from the impact of grounding or anchoring by the provision of moorings which minimise detrimental impacts on the seabed.

**REA 4:** Installation of new moorings and anchorages which minimise detrimental impacts on the seabed will be encouraged in the areas shown in Figure 52.

#### These policies comply with:

- European legislation Council Directive (92/43/EEC) on the Conservation of natural habitats and of wild fauna and flora (Habitats Directive)
- EC Marine Strategy Framework Directive (2008/56/EC)
- Council of Europe European Landscape Convention (2000)
- Marine & Coastal Access Act (2009)
- Wildlife and Countryside Act (1981)
- The Conservation of Habitats and Species Regulations (2010)
- Dorset Coast Strategy (2011-2021)

### Protecting nesting and over-wintering birds

#### Justification

The Marine Plan area is an important location for many water birds. Birds which breed on the cliffs include fulmar and shag, whilst breeding populations of puffin, guillemot and razorbill are located on the limestone cliffs west of Swanage. Wading birds are abundant in tidal mudflats, including those at Poole Harbour, Portland Harbour, and most significantly The Fleet. The Chesil and Fleet SPA, which is also a Ramsar site, supports large numbers of wintering waterbirds and has been designated for amongst other species its over-wintering populations of the dark-bellied brent goose, which constitutes 1.1% of the Western Siberia/Western Europe population.

Human recreational disturbance on over-wintering birds has been shown to cause behavioural changes and interruptions to foraging and roosting which, over time, can lead to them leaving a site permanently. This is particularly significant if there

are few suitable alternative sites to roost or feed. There is also evidence that just one disturbance event an hour could cause a significant effect on bird condition and mortality. Human trampling of mud-flats and sand can also impact on the birds' invertebrate food sources. Although different species react to different pressures, the recreational activities which have been shown to cause the most disturbances include dog walking, kite surfing, canoeing, dinghy sailing, yachts/motorboats and other waterborne visitors.

This policy tasks the competent and relevant authorities with ensuring that recreational users avoid known over-wintering bird areas, particularly those with European designation, to protect populations and ensure continued compliance with European management targets. It also encourages recreational users themselves to avoid disturbance. Evidence suggests that dog walkers cause fewer disturbances when they follow a predictable route, and the provision of suitable footpaths in the more popular areas close to over-wintering bird areas should perhaps be considered. Existing designated footpaths and cycle-ways should consider shared use where possible and provide clear signage to discourage wandering from route. Additionally, this policy encourages recreational organisations to educate their members to conduct their activities with respect to over-wintering birds and other resident wildlife.

**REA 5:** Recreational activities which cause disturbance should be avoided in areas important for nesting and over-wintering birds, particularly Special Protection Areas.

- Birds Directive (79/409/EEC)
- The Convention on Wetlands of International Importance 1971 (Ramsar Convention) as amended in 1982 and 1987
- EC Marine Strategy Framework Directive (2008/56/EC)
- Council of Europe European Landscape Convention (2000)
- Marine & Coastal Access Act (2009)
- Wildlife and Countryside Act (1981)
- The Conservation of Habitats and Species Regulations (2010)
- Dorset Coast Strategy (2011-2021)

## Improving facilities for waterborne transport and other sea users

### Justification

Dorset attracted over 3,700,000 visitors in 2008, approximately 1,700,000 of which visited Purbeck, West Dorset and Weymouth & Portland. The coastline is a big draw, and features such as Lulworth Cove, Stair Hole and Durdle Door attract up to 750,000 visitors a year. In 2008 Purbeck District attracted 744,000 day visits to the coast, equating to a total spend of £29 million<sup>26</sup>.

Tourism is expected to increase even more following the 2012 Olympic sailing events in Weymouth and Portland and, in the future, longer, warmer summers due to climate change are likely to attract more visitors. Certain routes within the Marine Plan area can become heavily congested during the busy summer months and although schemes to encourage more use of public transport are in place, it is possible that the roads and related infrastructure will not cope should traffic grow in the future. Impacts to the landscape and communities living there could be significant. However, capacity cannot be expanded to cope without significant degradation of the Coast itself and could even be reduced due to loss of facilities arising from coastal erosion.

In the future, therefore, alternatives to the car may become not just desirable but essential, not only as an added attraction for tourists but also for the thousands of local residents who commute to work between coastal towns. A feasibility report commissioned by the Dorset AONB and Jurassic Coast Transport Working Group has confirmed that there is great potential for waterborne transport within the area, identifying three pilot routes including one between Weymouth and Portland which could extend to Bowleaze Cove and Lulworth Cove. The report estimates that a service could carry 137,000 passengers making 223,000 trips a year between Weymouth and Portland alone .

Waterborne transport will require new supporting infrastructure, which would also benefit local communities and other sea-users. There are several suitable piers and jetties in existence in Weymouth and Portland, but these would need to be developed at Bowleaze and Lulworth Coves. The report suggests seasonal, low-impact pontoons with floating walkways offer a potential solution in Studland Bay, and this approach would be supported by this policy.

26

Value of Tourism 2008, Dorset. South West Tourism.

Figure 50: REA 4 Potential eco-sensitive mooring areas



**REA 6:** Development of infrastructure to support waterborne transport, particularly as an alternative to road transport, will be supported where consistent with the other policies in this plan.

**This policy complies with:**

- National Planning Policy Framework (2012)
- Bournemouth, Poole and Dorset Local Transport Plan (2011 - 2026)
- The Dorset and East Devon Coast World Heritage Site Management Plan (2009-2014)
- Dorset Area of Outstanding Natural Beauty Management Plan (2009-2014)
- Dorset Coast Strategy (2011-2021)

## Improving coastal access infrastructure

### Justification

Due to the absence of a coast road, and the presence of rugged cliffs throughout Purbeck, much of the coastline of the Marine Plan area is inaccessible except by foot or sea. There are a limited number of sites that give access to the sea for recreation, and this can cause congestion on sometimes narrow roads during the summer months. Over recent years many new watersports have emerged and more traditional ones have become increasingly popular which is leading to even more pressure on existing recreational access points.

Currently there are six public slipways within the Marine Plan area, and all but one of these charge a fee for their use. Other access facilities to be found within the Marine Plan area include boat storage yards, car parking, easements to the waterfront, wharves and piers. Some of these facilities are in poor repair, and this policy encourages developments which will seek to improve them. Further proposals to enhance access are encouraged provided that they take full account of policies [REA 10](#) and [REA 11](#). In enhancing coastal access, this policy could also encourage economic growth and increase well-being as tourists and communities are able to make more use of the marine environment.

**REA 7:** Improvements to existing marine and coastal access points and the development of appropriately<sup>27</sup> located new ones will be encouraged where consistent with other policies in this plan and compatible with existing terrestrial plans.

27

In this instance, appropriate is defined as not placing an extra burden on existing roads, avoiding designated sites, and not impacting on local amenities.

**This policy complies with:**

- National Planning Policy Framework (2012)
- Weymouth & Portland Borough Council Local Plan (2005)
- Dorset Coast Strategy (2011-2021)

## Improving access to the coast and marine environment, including that for under-represented groups

### Justification

People come to the Dorset coast for many reasons; to swim, sunbathe, walk, sail, eat, dive, fish, or simply to contemplate its beauty. Having access to the coast and marine environment improves people's quality of life and well-being and helps them to appreciate the rich heritage of the area, which in turn helps to engender a sense of ownership and a desire to safeguard their environment.

Policies [TCC 6](#) and [TCC 7](#) encourage more community participation, however it is harder for some people to access and enjoy the coast than others, either due to physical ability or psychological barriers. This is particularly compounded in parts of the Marine Plan area, due to its remote and rugged nature - many of the rocky beaches in Purbeck can only be accessed on foot via steep coastal paths. Whilst in many parts of the Marine Plan area, improving physical access is not practicable, there are ways in which these barriers can be removed.

The Weymouth and Portland National Sailing Academy was designed to provide some of the best disabled water sports facilities in the UK, and through the delivery of the 2012 sailing events it is hoped that there will be a better understanding of the diversity of local communities and improved disabled access and facilities for local people and visitors. This policy also encourages marine educators to engage with under-represented groups to help break down some of the psychological barriers that may prevent them enjoying the coast.

**REA 8:** Developments which remove the physical and psychological barriers that prevent people, including under-represented groups, from accessing and enjoying the coast and marine environment will be supported where consistent with the other policies in this plan.

### **This policy complies with:**

- Equality Act (2010)
- Dorset Sustainable Community Strategy (2010-2020)
- Weymouth & Portland Borough Council Local Plan (2005)
- West Dorset District Council Local Plan (2006)
- Purbeck District Council Local Plan (2004)
- Dorset Coast Strategy (2011-2021)

## **Maintaining perceived tranquillity and remoteness**

### **Justification**

The Marine Plan area coastline is a contrast between busy seaside towns and remote, rural landscapes. Within the 'Coastal Waters' seascape character area, there is a sense of tranquillity and remoteness with views to land being dominated by relatively unspoilt and undeveloped agricultural land. Whilst many people flock to Weymouth and Swanage to enjoy the high quality beaches, shops and arcades, there are as many who greatly value the sense of tranquillity provided by walking on the south west coast path or sitting quietly at a remote, rocky beach.

These tranquil areas bring economic prosperity to the Marine Plan area from tourism, and also contribute to the wellbeing of local communities. Upgrading of access and infrastructure, which has the potential to open up areas to tourism and recreation activities, should therefore be carefully evaluated to ensure that the intrinsic qualities of these coastal waters and associated coastal land areas are protected.

With reference to Figure 53, St Alban's Head is identified by the Dorset AONB team as being particularly remote, due to a lack of roads, car parks and other access routes to the promontory. The stretch of coast from Osmington Mills to Chapmans Pool, with the exception of Lulworth Cove, is also identified for its lack of road access from the A352 at the western end (except by tracks or PROWs), limited parking and relatively low impact from visitors. At the eastern end, access to the coast is even more limited, and developments linked to access and recreation here would particularly impact on, and reduce, those rare qualities.

The area to the west of Osmington Mills has also been selected because it is close to the urban fringe of Weymouth and provides a tranquil area for Weymouth people to

enjoy. Development here could impact on the health and wellbeing of communities in the area and the Urban Fringe Management Plans relating to The Fleet also state that inappropriate development and expansion into surrounding more rural landscapes should be controlled.

The Fleet is renowned for its sense of tranquillity and remoteness, and the AONB Management Plan has highlighted the need to conserve these perceptions.

**REA 9:** New developments which would threaten the tranquillity and remoteness of the areas highlighted in figure 20 should be avoided. New and existing operations that are necessary to provide essential services should consider mitigation measures to reduce the impact of development, and are encouraged to consider noise emissions when replacing old equipment.

### **This policy complies with:**

- Council of Europe European Landscape Convention (2000)
- Marine & Coastal Access Act (2009)
- Dorset AONB Management Plan (2009-2014)
- Dorset and East Devon Coast World Heritage Site Management Plan (2009-2014)
- Dorset and East Devon Coastal Corridor Action Plan (2010)
- Purbeck Heritage Strategy (2010-2015)
- Dorset Coast Strategy (2011-2021)

## **Ensuring visitor attractions are appropriately located**

### **Justification**

Policy REA 9 highlights remote and tranquil coastal areas within the Marine Plan area and why these areas are important to the economy, health and wellbeing of surrounding communities. In addition, these are often areas of high biodiversity and ecological sensitivity. Therefore, whilst it is important to promote access in some areas of the coast, it is important for other areas to remain inaccessible to protect, and remove pressure on, the environment.

Both the AONB and Jurassic Coast World Heritage Site (JCWHS) Management Plans identify the challenges of providing and encouraging access to the coast, whilst minimising the impacts on the environment and local communities. Of particular concern is the increasing number of visitors to small coastal villages, causing

traffic congestion, inflated house prices and a reduced quality of life for the residents. Equally, the coastal margin can suffer from erosion and habitat damage caused by thousands of people trampling the same paths.

By directing developments and activities towards areas that already have the capacity and facilities to accommodate a large number of visitors in one place – this policy helps to protect the Marine Plan area’s sensitive and tranquil coastal areas whilst ensuring the needs of visitors are met. Care must be taken to ensure such areas do not become overcrowded, which in itself can lead to increased strain on facilities and transport networks. This carrying capacity is addressed in policy REA 11.

**REA 10:** New developments or activities which may increase visitor numbers should consider their effect on remote, tranquil and ecologically sensitive coastal areas and preferably target locations in established ‘honeypot’ areas as outlined in the AONB and JCWHS management plans.

#### **This policy complies with:**

- Council of Europe European Landscape Convention (2000)
- Marine & Coastal Access Act (2009)
- Dorset AONB Management Plan (2009-2014)
- Dorset and East Devon Coast World Heritage Site Management Plan (2009-2014)
- Dorset and East Devon Coastal Corridor Action Plan (2010)
- Purbeck Heritage Strategy (2010-2015)
- Dorset Coast Strategy (2011-2021)

### **Cumulative effects of promoting coastal and marine tourism on terrestrial infrastructure**

#### **Justification**

Recreation and tourism is an essential part of the Marine Plan area’s economy, with day visits bringing £32 million to Weymouth and Portland and £29 million to Purbeck in 2008 alone. However, the terrestrial infrastructure to support the high number of visitors to popular locations such as Lulworth Cove which receives up to 750,000 visitors a year, is already struggling to cope.

Despite innovative public transport schemes, the vast majority of visitors to the Marine Plan area still travel by car, and the road network is of primary concern.

Research shows that people and businesses are dissatisfied with the congestion and delays experienced on major routes leading to the Marine Plan area. This has an impact on the local economy in addition to having social and environmental cost. Relating to this, car parks in many of the popular tourist locations are at full capacity on hot days at peak holiday season, and at such times illegally or inappropriately parked cars can block emergency vehicle access, cause inconvenience and damage the roadside environment. Increased visitor numbers can also put a strain on the existing sewerage facilities, particularly when there is heavy rainfall. Policy [HME 8](#) covers this issue in more detail. Litter is a major problem, particularly on popular beaches, and developments must consider the provision of adequate waste disposal sites as set out in policy [HME 12](#).

Suitable mitigation measures to alleviate pressure on terrestrial infrastructure should therefore be identified at the early stages of development proposals. Measures could include improved public transport facilities, the provision of walking and cycling routes which connect developments to the bus or rail network, bike parking facilities, innovative park and ride schemes and sympathetically designed car parking. Reference should be made to the Bournemouth, Poole and Dorset Local Transport Plan 2011 – 2026.

**REA 11:** Developments which are likely to increase visitation to the Marine Plan area, or could potentially increase local recreational use of the area, should consider the capacity of existing terrestrial infrastructure, particularly that set out in Figure 54, and the installation of Sustainable Drainage Schemes (SDS) in proposed developments to minimise impacts both to the sewerage system and via surface runoff direct to streams. Where satisfactory mitigation cannot be achieved, such developments should be avoided.

#### **This policy complies with:**

- Urban Waste Water Treatment Directive (91/271/EEC)
- Bathing Water Directive (2006/7/EC)
- National Planning Policy Framework (2012)
- Marine & Coastal Access Act (2009)
- Dorset AONB Management Plan (2009-2014)
- Dorset and East Devon Coast World Heritage Site Management Plan (2009-2014)
- Dorset and East Devon Coastal Corridor Action Plan (2010)
- Purbeck Heritage Strategy (2010-2015)
- Dorset Coast Strategy (2011-2021)
- Bournemouth, Poole and Dorset Local Transport Plan (2011-2026)

Figure 51: REA 9 Remote and quiet coastal areas

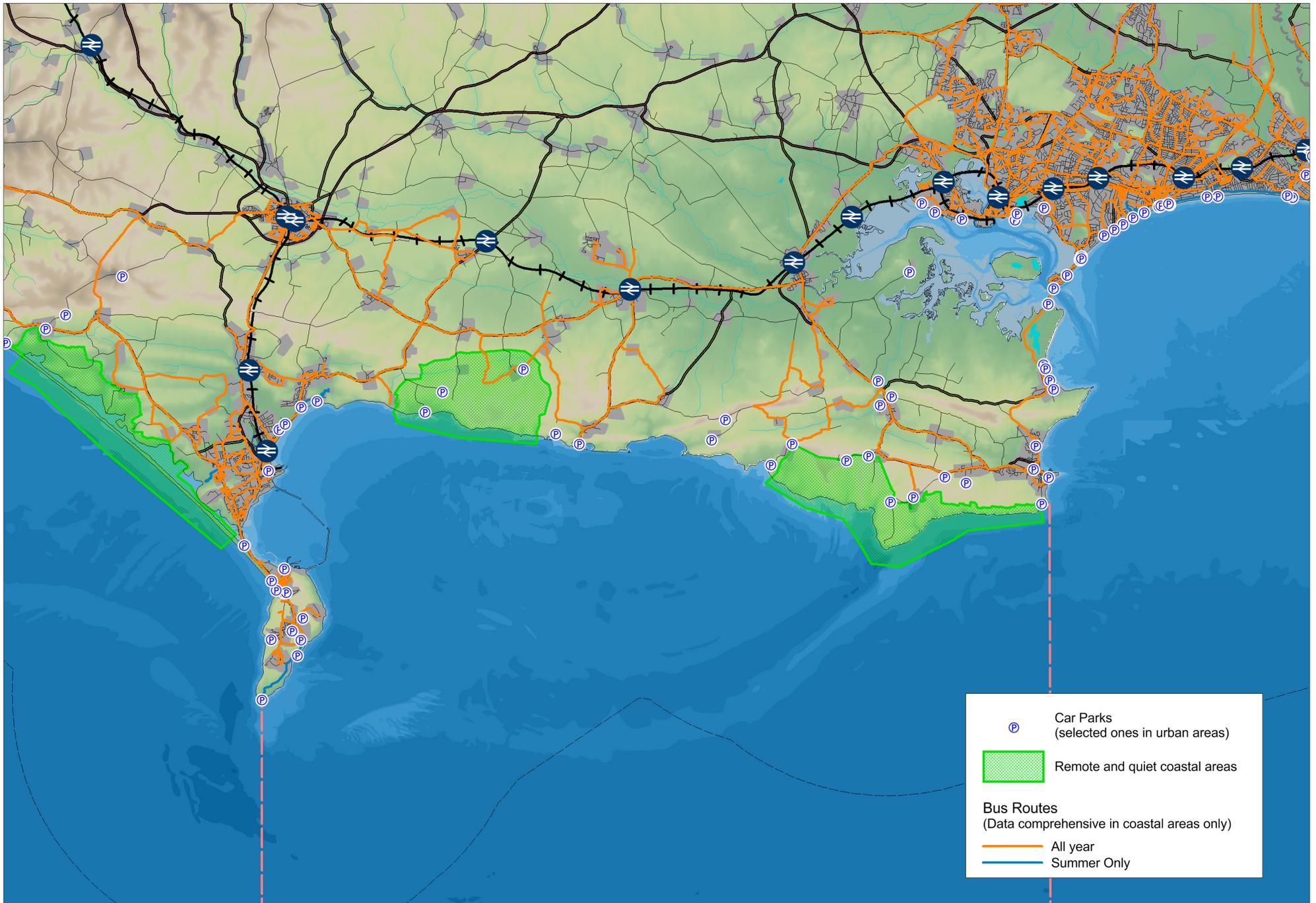
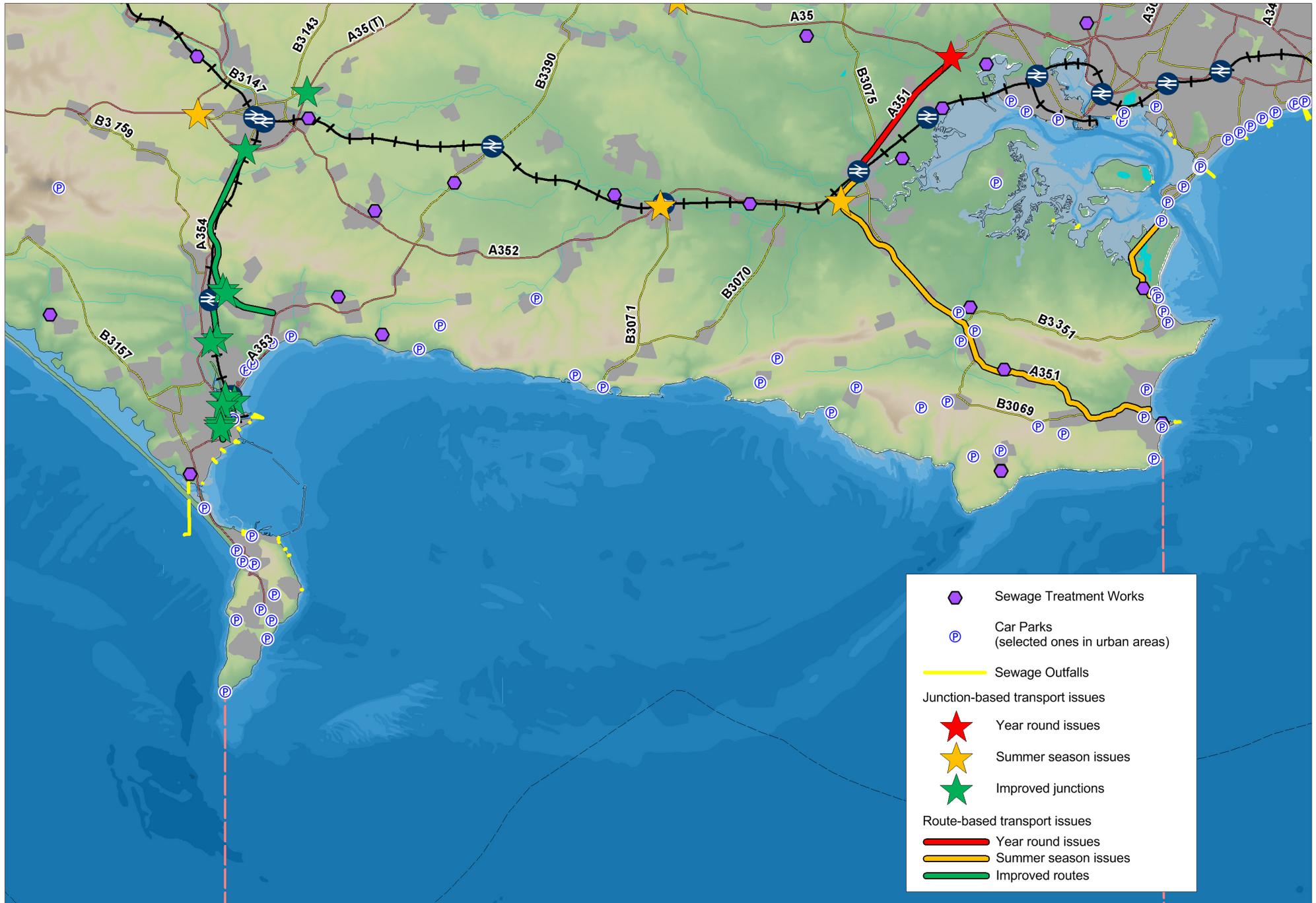


Figure 52: REA 11 Existing terrestrial infrastructure





***Objective 5: adaptation and mitigation for coastal and climate change***

*Maritime communities and businesses are well prepared for the physical, economic and management challenges they face, and well placed to take advantage of the opportunities presented by coastal and climate change, particularly where they benefit the local economy.*

## Reducing greenhouse gas emissions

### Justification

Over the 20th Century, the Earth's temperature has warmed by approximately 0.6°C. The scientific consensus is that this global warming is caused by increased atmospheric concentration of greenhouse gases, in particular, carbon dioxide (CO<sub>2</sub>) and methane. Without action to reduce emissions of these greenhouse gases, the Earth's temperature is likely to rise at an even faster rate. The implications are rising sea levels, more extreme weather events such as floods and droughts, ocean warming and acidification and even the risk of large scale changes such as a shut down of the Gulf Stream. The costs to the environment, economy, human health and communities are potentially devastating.

At a national level, the Climate Change Act 2008 established a long-term framework to cut greenhouse gas emissions by at least 80% below 1990 levels by 2050. The burning of fossil fuels for energy to drive industry, transport and heating, is one of the major sources of greenhouse gas emissions, and the UK has a legally binding EU target for 15% of energy consumption to come from renewable sources by 2020. Other sources include poor use of land such as intensive animal production or deforestation, landfill disposal sites and cooling units containing HFCs.

In Dorset, the renewable electricity installed capacity has only increased by 500kW since 2007, and it would need approximately 40 times the total existing renewable energy capacity to be installed by 2020 in order to play an equal part in delivering the UK's legally binding share of the European renewable energy targets. Developments should aim to install renewable energy solutions wherever possible, and there are numerous grants available including the Low Carbon Buildings Programme which offers grants towards small scale biomass heating systems. Using locally sourced raw materials and reducing the distance employees must travel to work will also help to reduce overall emissions from development. The Carbon Trust provides specialist advice to businesses to help them cut emissions, and developers are encouraged to consult with them at an early stage.

**CAM 1:** Development proposals should aim to minimise greenhouse gas emissions over the lifetime of the development, with a view to achieving net reductions in emissions overall and in relation to specific developments wherever possible.

### This policy complies with:

- United Nations Framework Convention on Climate Change, Kyoto Protocol (1997)
- Energy Act (2011)
- Climate Change Act (2008)
- Climate Change and Sustainable Energy Act (2006)
- Draft Bournemouth, Dorset and Poole Renewable Energy Strategy (2011)
- Dorset Coast Strategy (2011-2021)

## Supporting renewable energy

### Justification

The UK has among the highest levels of exploitable renewable energy resources in the world, including wind, wave, tidal stream and tidal range. Through new legislation, including the Climate Change Act (2008) and Energy Act (2008), the UK Government is aiming to tackle climate change by achieving 15% renewable energy use by 2020, and it is looking to offshore renewables to help fulfil a major part of this target. In addition to the potential for significant broad-scale environmental benefits through mitigating greenhouse gas emissions, there are a number of potentially significant socio-economic benefits from the offshore renewable sector, including employment opportunities, export business and energy security.

The waters of the Marine Plan area offer significant offshore wind resources, and this is reflected in the recent lease to Eneco of Zone 7 (West of Wight) of the Round 3 offshore wind sites. The total zone area equates to 723.7km<sup>2</sup> (279 square miles), but only 197km<sup>2</sup> ( 76 square miles) just outside the Marine Plan area will be developed. This development offers significant opportunities for economic growth, with Portland Port offering facilities as both a construction and service port. Policy [SME 9](#) supports this ambition. There could be many more jobs created through the supply chain. Businesses which could benefit include project developers and services such as environmental consultants, construction and engineering firms, and those offering operation and maintenance skills.

Numerous studies, including a report commissioned for the C-SCOPE Project, identify the area south of Portland Bill provides a tidal stream resource, although it is not considered one of the UK's best tidal resource locations due to relatively shallow water depths and inconsistent tidal flows. It also lies within the Studland to Portland proposed SAC, and potential developments must have particular regard to policies [HME 1](#) and [HME 2](#). Further areas around St Alban's Ledges may be suitable in the

future should technology progress to enable commercialisation in slightly lower resource areas.

Wave resources within the Marine Plan area are insufficient for full scale technologies. However, there is potential for ¼ scale wave demonstration devices and, in line with Portland Port's ambition to become a centre for excellence in renewable energy, proposals for pilot schemes to utilise this resource will be supported.

Another potential small-scale renewable energy development which would be supported is the deployment of shoreline wave devices. These are fixed or embedded into structures such as breakwaters and operate at low tidal ranges of less than 2m. A SWRDA Technical Report identifies a 58km (36 miles) section of coastline, including parts of the Marine Plan area, as having suitable conditions for such devices<sup>28</sup>.

Although technologies are still being developed, marine biomass offers great potential for both fuel and electricity production. A Crown Estate report recommends pilot-scale macro algae farms to further explore viability in the UK, and these could be an ideal candidate for co-location with offshore windfarms, in line with policy [SME 6](#).

**CAM 2:** Renewable energy developments, including small-scale and pilot schemes, in the marine and coastal environment will be supported wherever consistent with the other policies in this plan.

#### **This policy complies with:**

- United Nations Framework Convention on Climate Change, Kyoto Protocol (1997)
- Climate Change Act (2008)
- Climate Change and Sustainable Energy Act (2006)
- Draft Bournemouth, Dorset and Poole Renewable Energy Strategy (2011)
- Dorset Coast Strategy (2011-2021)
- Marine and Coastal Access Act (2009)
- Dorset Coast Strategy (2011-2021)

## **Working with natural marine and geomorphological processes**

### **Justification**

The natural marine and geomorphological processes which take place across the inter-tidal zone are both complex and delicate. Small changes or disruptions to processes such as tidal patterns, wave height, wave direction and the movement of beach and seabed materials can have significant and wide-spread impacts. Developments likely to cause such disruption include coastal defence and protection works, dredging, piers and jetties, artificial reefs and landing points of offshore cables and pipelines.

Structures placed in moving water can disrupt the water's flow. Piling for piers, jetties and coastal defence and protection works may increase flow rates immediately around the structure which may produce scour and erosion, or increased deposition of sediments depending on the conditions and structure. Coastal defences such as rock armour deliberately set out to prevent natural erosion of dynamic coastal areas, and indirect changes to the coastline and seabed might also occur in response, such as localised or more widespread coastal erosion or accretion and changes to offshore features such as submerged banks and ridges.

Interruption or changes to water flow and the supply of sediment due to infrastructure has the potential to affect physical habitats along the coastline of the Marine Plan area. Plant and animal communities competing for space are adapted to survive in niche environments where even small changes can have a significant impact. Changes to natural processes caused by developments and activities can also affect the level of risk of coastal flooding and erosion to which coastal communities are exposed. This in turn has serious economic and health implications.

By aiming to work with natural processes and consulting relevant plans such as local authority strategic flood risk plans and SMPs, developers can reduce impacts on the environment and coastal communities. Where it is not possible, they should aim to minimise and mitigate any geomorphological changes that their development or activity will have on coastal processes. Policy [CAM 4](#) addresses relevant plans in more detail. Liaison with local authority planners and the Environment Agency and Natural England is essential to ensure inter-tidal developments cause minimum impact.

28 South West Regional Development Agency (SWRDA) Offshore Renewables Resource Assessment and Development Technical Report (2010).

**CAM 3:** Developments which span the inter-tidal zone, or have a terrestrial landing-point, will be expected to work with natural marine and geomorphological processes. Coastal flooding and erosion risk should be considered and relevant plans consulted.

**This policy complies with:**

- Circular on the Protection of World Heritage Sites (07/2009)
- EC Marine Strategy Framework Directive (2008/56/EC)
- Development and Coastal Change (PPS 25 Supplement: March, 2010)
- Development and Flood Risk (PPS25, 2010)
- National Planning Policy Framework (2012)
- Marine & Coastal Access Act (2009)
- The Dorset & East Devon Coast World Heritage Site Management Plan (2009-2014)
- Dorset Coast Strategy (2011 - 2021)
- Durlston Head to Rame Head Shoreline Management Plan (2011)

### Ensuring inter-tidal developments consider terrestrial plans

#### Justification

The inter-tidal and coastal zones within the Marine Plan area are not only subject to complex natural processes but they also have a complex set of, sometimes conflicting, management plans in place. It is essential that developments which occur within the inter-tidal or coastal zones should consult all relevant plans to ensure that they do not have any serious conflicts with existing policy.

Key amongst these is the Durlston Head to Rame Head SMP2 which assesses the large-scale risks associated with coastal processes and helps reduce these risks to people and the environment. The Plan is the basis for deciding and putting in place specific flood and erosion risk management schemes, coastal erosion monitoring and further research on how communities can best adapt to change.

Local Plans also address the issues of coastal change, flood and erosion risk and contain policies pertinent to development within the coastal zone. National guidance tasks local planning bodies to identify coastal change management areas and to direct development away from areas which are vulnerable to coastal change unless it is temporary development that has wider economic benefits, an acceptable coastal use and could be relocated when required. These have not so far been identified in Dorset. The Environment Agency has also developed a number of local beach management plans within the Marine Plan Area, which could have

implications for inter-tidal developments.

Any development which spans the inter-tidal or coastal zones within the Marine Plan area must have particular regard for the Outstanding Universal Value (OUV) of the JCWHS. Erosion is the key feature that maintains both geological and biological interests along the coast and forms part of its OUV description for World Heritage Status. The greatest threat to the Site therefore is through the development of coastal defences, either through the prevention of natural erosion or the use of inappropriate resources in beach replenishment works, and other inter-tidal developments which alter its setting. Policy CAM 3 emphasises the need to work with natural processes, which is in keeping with the JCWHS Management Plan. However there may be some instances where this conflicts with risk management strategies within the SMP 2, and developers must engage with all relevant authorities and management teams to address and resolve such conflicts<sup>29</sup>.

**CAM 4:** Developments which span the inter-tidal zone will be expected to take account of relevant coastal change policies as set out in Local Plans, Shoreline Management Plans and beach management plans. In addition, particular regard should be paid to the need to protect the Outstanding Universal Value of the Jurassic Coast World Heritage Site as set out in its Management Plan.

**This policy complies with:**

- Circular on the Protection of World Heritage Sites (07/2009)
- EC Marine Strategy Framework Directive (2008/56/EC)
- Development and Coastal Change (PPS 25 Supplement: March, 2010)
- Development and Flood Risk (PPS25, 2010)
- National Planning Policy Framework (2012)
- Marine & Coastal Access Act (2009)
- The Dorset and East Devon Coast World Heritage Site Management Plan (2009-2014)
- Dorset Coast Strategy (2011-2021)
- Durlston Head to Rame Head Shoreline Management Plan (2011)

29

The Defra funded Jurassic Coast Pathfinder project highlighted the benefits of early engagement with communities when planning to adapt to coastal change and commissioned a study on coastal change and spatial planning – reports of both can be found on the Jurassic Coast website.

## Encouraging communities and coastal businesses to adapt to natural and climate-induced coastal change

### Justification

Climate change is happening, and its effects are already impacting on the marine environment and coastal communities<sup>30</sup>. One of the more immediate and obvious changes is sea level rise, which in the western counties of Britain has been increasing at approximately 2.5mm per year during the 20th century but this rate is now accelerating rapidly. Predictions for the next 100 years suggest a rate of up to 1cm per annum (averaged over the whole period). It is also predicted that the frequency of extreme storm events will also increase, leading to, in the long-term, an increasing amount of property becoming subject to flood and erosion risk<sup>31</sup>.

More frequent storm events could also lead to untreated sewage being discharged into the marine environment through combined sewer overflows during times of peak rainfall, and diffuse runoff from agricultural and urban areas could also increase. Once these outfalls reach the sea by longfall pipelines, there could be ineffective and unexpected directional disposal of sewage due to possible disruptions in current flow. Disposal grounds for dredged material further offshore could also be disrupted by current changes, rendering them unsuitable.

Offshore developments could be affected by smaller weather windows for construction if there is an increase in the frequency and severity of storms, and they may also face operational and maintenance problems. However, opportunities may arise from predicted changes to waves, wind and tides which could provide an increased source of energy for the renewables industry. Changes in current regime could also lead to increased scour around legs and supports of installations or expose cabling and pipelines – making them more prone to damage by anchors and trawling.

For the fishing industry, climate change may cause some species to disappear from local waters, whilst opportunities may open up as new, warmer-water species arrive. Increased storminess could lead to fewer days at sea for fishermen, and greater risk of getting into difficulties. In the short term, climate change is unlikely to have a significant effect on aquaculture. However, rising sea temperatures could increase growth rates for some important species, yet cause cultivation difficulties for others. It may also be possible to cultivate new species within the Marine Plan area. As

temperatures increase, farmed species may become more susceptible to new diseases resulting in higher mortality rates, while toxic algal blooms associated with warm water could potentially decrease shellfish growth rates, and more significantly could build up to harmful levels within the food chain.

Ocean acidification is expected to have severe impacts on several economically important marine resources including fish stocks and aquaculture. The inhibition of shell growth is one major concern, and CO<sub>2</sub> increases may also cause shifts in tolerance ranges in growing and reproductive capabilities.

To survive and prosper in the long-term, developments should take these implications into account, and consider building adaptation strategies into their plans. For example, businesses in flood risk areas could make simple adaptations such as raising electrical points, removing plaster from walls in basement storage areas and installing impervious floor and wall surfaces. Water companies might be considering how they could increase capacity in sewerage systems, and offshore developments could ensure they use low-maintenance materials to ensure minimum hours at sea. Developers can find information and support on climate change adaptation from the Environment Agency, Defra and DECC.

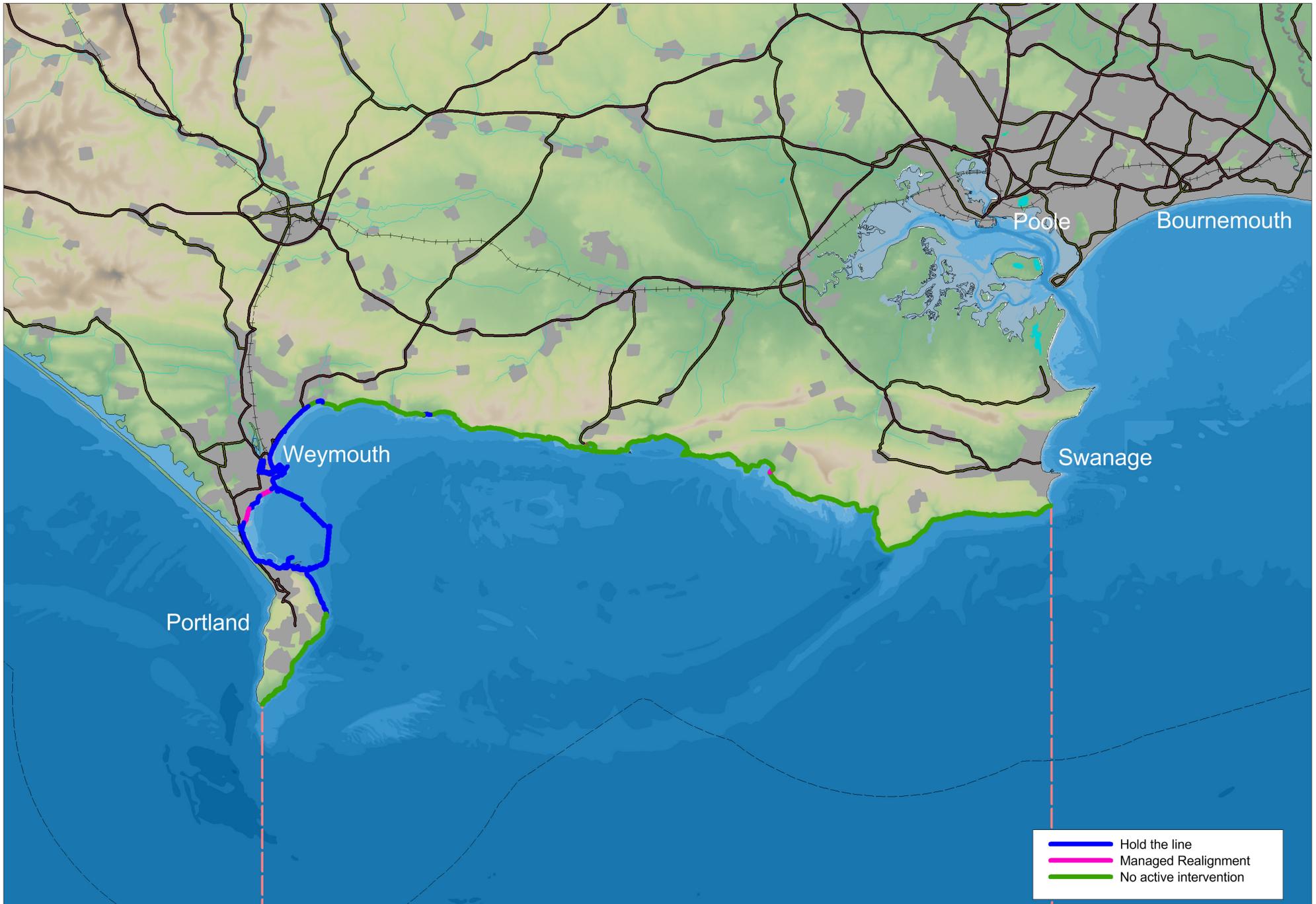
**CAM 5:** Coastal and offshore developments should consider the potential impacts of climate change and build long-term adaptation strategies into their plans.

### This policy complies with:

- Development and Coastal Change (PPS 25 Supplement: March, 2010)
- Development and Flood Risk (PPS25, 2010)
- Marine & Coastal Access Act (2009)
- National Planning Policy Framework (2012)
- Dorset Coast Strategy (2011 - 2021)
- Durlston Head to Rame Head Shoreline Management Plan (2011)

30 Marine Climate Change Impacts Partnership 2010-2011 Annual Report Card.  
31 <http://www.oursouthwest.com/climate/scopingstudy.htm>

Figure 53: CAM 4 Durlston Head to Rame Head SMP2 management policy 0-20 years



## Encouraging local communities to take advantage of coastal and climate change opportunities

### Justification

Whilst climate change will undoubtedly have mostly negative impacts, there will also be opportunities that communities and businesses within the Marine Plan area will be able to take advantage of. Warmer, longer summers could provide economic benefits as holiday makers stay at home rather than travel abroad. Additionally, the Mediterranean climate is predicted to become even warmer and drier, which could drive more European holiday makers to the UK. There is potential for innovative joint solutions to climate change. For example beach nourishment at Boscombe which was part of a major regeneration scheme, acts as a soft sea defence and has also provided more space for beach recreation, including a thriving beach volleyball business. Longer, warmer summers will also enable local communities to be more active in the marine environment for longer, increasing health and well-being. Developments which seek to increase recreation and tourism within the Marine Plan area should ensure they also have particular regard for policies [REA 9](#) and [REA 10](#)

Warming seas within the Marine Plan area could provide opportunities for the production of acceptable and commercially desirable fish and shellfish species. European sea bass are beginning to move northwards, and warmer waters could increase growth rates for some important species such as Atlantic salmon, mussels and oysters. Offshore windfarms, which are a government response to climate change, could also provide opportunities for co-location of mariculture. Co-location is addressed in policy [SME 6](#).

Offshore renewable energy is a major opportunity for local communities and businesses, particularly for ports and smaller businesses in the supply chain such as marine engineers, boat repairers, service boats, and accommodation providers. Policy [CAM 2](#) expands on these opportunities.

Communities can find it difficult to consider the implications of coastal and climate change, and how they might turn it to their advantage. The Jurassic Coast Pathfinder project worked with six communities, three of them within the Marine Plan area, to consider how they might adapt to predicted change. More information can be found on the Jurassic Coast website.

**CAM 6:** Developments or activities which enable communities and businesses to take advantage of opportunities that may arise from climate or coastal change will be supported where consistent with the other policies in this plan.

### This policy complies with:

- Development and Coastal Change (PPS 25 Supplement: March, 2010)
- Development and Flood Risk (PPS25, 2010)
- Marine & Coastal Access Act (2009)
- National Planning Policy Framework (2012)
- Dorset Sustainable Community Strategy (2010-2020)
- Weymouth & Portland Borough Council Local Plan (2005)
- West Dorset District Council Local Plan (2006)
- Purbeck District Council Local Plan (2004)
- Dorset Coast Strategy (2011-2021)





*Objective 6: strategic significance of the marine environment*

*Decisions about and uses of the marine environment recognise its strategic significance to the UK's national security and its social, economic and environmental well-being.*

## Accommodating strategic defence interests in Dorset's marine environment

### Justification

UK defence policy demands the maintenance of capable armed forces, under the responsibility of the Ministry of Defence (MOD). In meeting this requirement, the military require residential bases, and access to adequate facilities for exercise and training. Dorset continues to play its part in fulfilling the MOD's requirements by hosting three significant military establishments, which represent long-term commitments.

The most significant of these is the RAC Gunnery School at Lulworth, which lies entirely within the Marine Plan area. The Lulworth ranges have been a feature of the coast since the First World War and safety requirements mean that public access to the coast within the ranges is not permitted for much of the year. The sea danger areas extends out to six nautical miles, and restricts recreational boating and fishing during weekdays outside the main holiday periods, and during six weekends each year. Range safety boats patrol the area during firing, and times are sent monthly to local yacht clubs and fishermen, as well as broadcast on Radio Solent during the shipping and weather news. Fishing boats and recreational users which stray into the firing range can cause expensive delays to the MoD.

There is an additional small-arms range on the northern side of the Fleet with a safety area that extends across Chesil Beach and out to sea. The range is typically used for 150 days per year and sentries are posted when it is live to police the footpaths and offshore area. This causes little impact on other sectors.

Substantial offshore areas are marked on charts as Navy exercise areas. Dorset's coast has been used for naval training for many years but the closure of the Naval Base and relocation of the Navy's sea training unit has led to a substantial decrease in use. The Navy advises that surface use by warships is much reduced, and the main focus for exercise is now off South Devon and Cornwall extending out to the Atlantic. Ships will be found on passage and continue to conduct independent exercises off the Dorset coast. The Navy advise that submarine exercises are now extremely rare off the Dorset Coast and consider that this aspect can be discounted.

Portland Harbour is still used by the military. The Royal Fleet Auxiliary Service (RFA), a civilian manned fleet owned by the Ministry of Defence, supply warships of the Royal Navy at sea with fuel, food, stores and ammunition. The RFA Wave Ruler, RFA

Bayleaf and other ships are regularly berthed for maintenance and to collect supplies.

RFA Sir Tristram, an ex-navy warship support vessel, is now permanently moored in Portland Harbour and is used by the military for helicopter, diving and ordnance operations. Royal Naval Reserve (RNR) Divers Branch have used RFA Tristram for part of a course specialising in Underwater Force Protection (UWFP) & Search techniques, where they learnt how to lay and carry out underwater searches. The Noise and Magnetic / Degaussing Ranges are within the Harbour limits.

**SS 1:** Development and activities within the Marine Plan area will recognise and respect the strategic importance of the MoD firing ranges and training facilities.

### This policy complies with:

- Defence Act (1842)
- Land Powers (Defence) Act (1958)
- Lulworth Ranges Byelaws (1978)
- Portland Harbour Management Plan (2006)
- Dorset Coast Strategy (2011-2021)

## Seeking to find mutually beneficially use of space between the MoD and other sectors

### Justification

Whilst the Lulworth ranges and Sea Danger Area are clearly of strategic national importance, the area does cause spatial conflict with other sea users. Fishermen can only access fishing grounds within the area before and after firing during the week, when it may be dark in the winter, and during the weekends. Avoiding the area also places increased fuel costs to fishermen and other boat users, and this is particularly significant in the current climate.

Broad Bench is considered the best surfing break on the south coast, and lies just within the restricted area. Surfers are concerned that a change in firing position led to a ban on surfing this wave during firing times. In 2009 the local Access Broad Bench Association and Surfers Against Sewage called upon the Secretary of State for Defence to implement a change back to the original firing position which would allow surfers access all year round, to no success.

On land, military activity can restrict access to important geological sites, such as the Fossil Forest at Lulworth as well as recreational access to Tyneham village and the coast path. This policy encourages dialogue between the MoD and other sectors to seek resolve and identify mutually beneficial solutions to these spatial conflicts, whilst respecting the overall strategic significance of military operations.

**SS 2:** Efforts to minimise potential spatial conflicts between military and other uses of the Marine Plan area, and finding mutually beneficial use of space, will be encouraged.

#### **This policy complies with:**

- Defence Act (1842)
- Land Powers (Defence) Act (1958)
- Lulworth Ranges Byelaws (1978)
- Dorset Coast Strategy (2011-2021)

#### **Maintaining access and navigational routes.**

##### **Justification**

Both Weymouth and Portland Harbours are significant employers within the area and facilitate economic activity throughout the region. In addition they are essential to support off-shore renewable energy development and to mitigate the effects of climate change by facilitating increased freight movement by sea rather than road. Portland also remains of strategic importance to the Royal Navy, most notably through the Royal Fleet Auxiliary.

The major Channel shipping lanes lie just to the south of the Marine Plan area, and include a traffic separation scheme. Commercial vessels and ships from the Royal Fleet Auxiliary often anchor within Weymouth Bay, waiting to enter Portland Harbour. Within Weymouth Bay there is also a rough weather anchorage which is sheltered from the prevailing Westerlies and fulfils a valuable safety role for ships passing through the Channel.

Portland and Weymouth Ports have a joint-pilotage area, which extends out beyond their jurisdictions. Pilotage is mandatory for large commercial vessels entering Portland Harbour, and is available 24 hours a day, seven days a week from its pilotage station to all anchorages and berths within the Harbour. There are

seventeen designated anchorages within the Harbour, as well as numerous berths, piers and jetties serving diverse traffic including cruise ships, cable ships and general cargo vessels. The Port also has four attested special constables to police the estate as well as full security measures under the UK Maritime and Aviation Security Act.

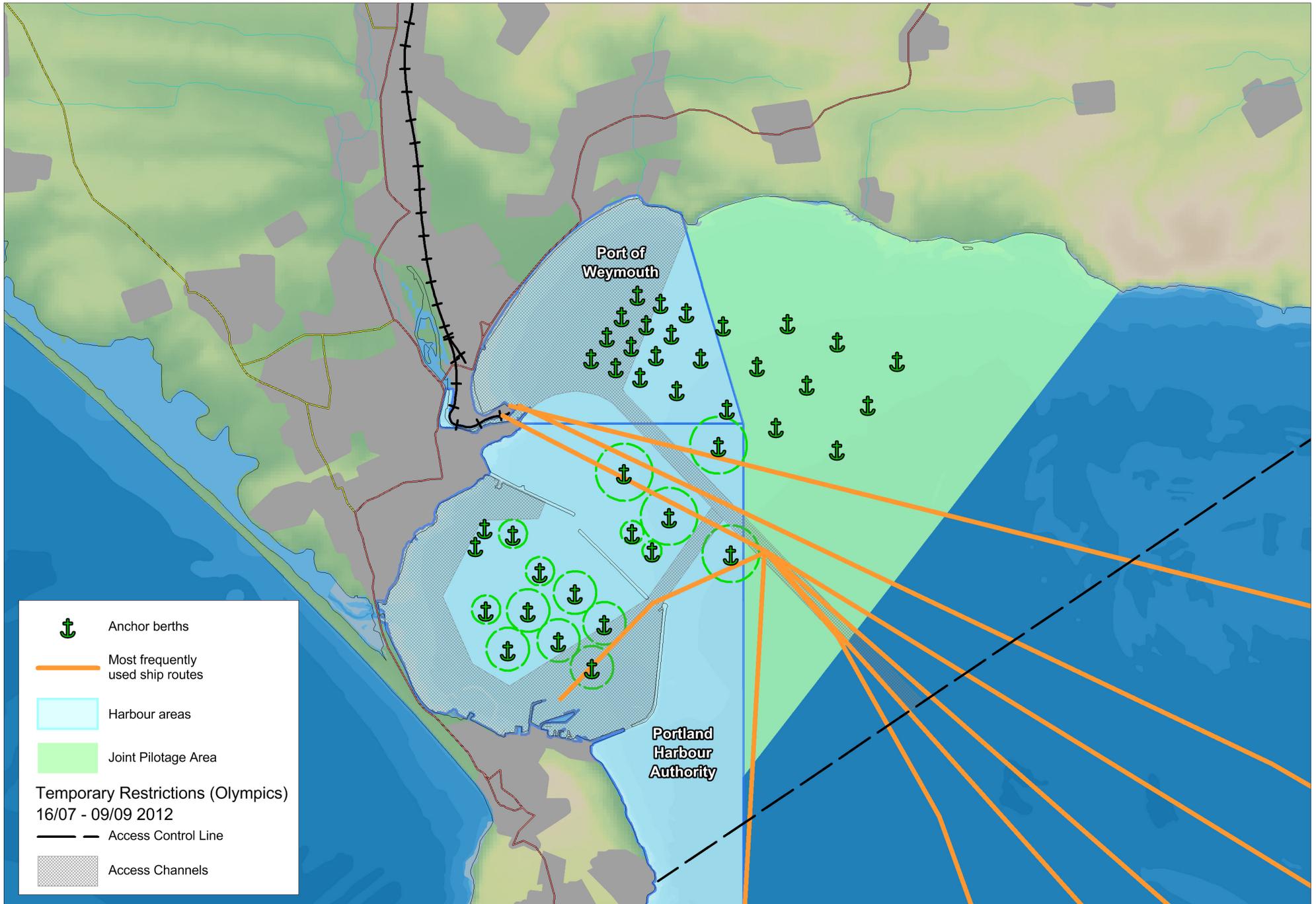
Weymouth Harbour has fewer commercial vessels, but Condor Ferries operates a seasonal cross-channel ferry service to Jersey, Guernsey and St. Malo out of the Harbour. The ferry transports both visitors and freight and is a valuable economic asset to the town. Weymouth is also the largest fish-landing port within the Marine Plan area, with a fleet of approximately 60 fishing vessels registered to the harbour, as well as one of the largest diving and angling charter fleets in the country.

Whilst only temporary, the area in which the competition events for the London 2012 Olympic Games sailing events are taking place extends over both Weymouth and Portland Harbours. To provide a unified management plan for these areas during the Games, The Weymouth and Portland (The London 2012 Olympics and Paralympic Games) Harbour Revision Order 2011 was granted in which, between 16th July 2012 to 9th September 2012, PHAL will become the Harbour Authority for Weymouth outer harbour and an additional area of open water. There will be navigational and access restrictions during this time.

This policy seeks to minimise any negative impacts that developments or activities might have on shipping activity, freedom of navigation and navigational safety within Portland and Weymouth Harbours and in doing so ensure that they are in compliance with international maritime law. It also ensures that the 2012 Olympic Sailing (and subsequent) events are able to run both effectively and safely. An agreement exists between PHAL and the WPNSA that future sailing activities will not be affected in the future.

**SS 3:** Developments or activities which impede major navigational routes to and from Weymouth and Portland Harbours, impact on port security or restrict access to, and use of, safe anchorage zones should be avoided.

Figure 54: SS 3 Portland Harbour operating areas



### This policy complies with:

- United Nations Convention on the Law of the Sea (UNCLOS)
- SOLAS
- Marine & Coastal Access Act (2009)
- Department for Transport National Policy Statement for Ports (2011)
- Portland Harbour Management Plan (2006)
- Bournemouth, Poole and Dorset Local Transport Plan (2011 - 2026)
- Dorset Coast Strategy (2011-2021)

### Securing energy supplies

#### Justification

The majority of oil and gas fields on the UKCS are located in the Northern and Southern regions of the North Sea. In 2009, the UK was the 16th largest oil and gas producer in the world satisfying almost all of domestic oil consumption and approximately 66% of UK gas demand. However, reserves of both oil and gas are declining; production peaked in 1999 and has been declining ever since. Over the next three decades, approximately 500 individual structures will be decommissioned.

In 2020 it is forecast that the proportion of UK energy supplied by oil and gas, whether produced by the UK or not, will have declined to around 70%. If current investment plans continue, overall oil and gas production is expected to decline at an average rate of 5% over the next five years as several larger fields reach the end of their life span. In the long term, production of both oil and gas will fall heavily by 2025, and the recovery of remaining reserves will require significant additional investment.

As a result of increasing dependence on imported fuels the UK will have a growing need for gas storage. The use of geological structures in the sub-sea marine environment for the storage of gas is therefore receiving increasing focus. The Portland Gas Storage development is a 1000 million cubic metres salt cavern natural gas storage facility to be built at Upper Osprey, which could satisfy 1% of the UK annual demand for gas. Sub-sea conditions within the Marine Plan area may also be considered suitable for such storage, and other such developments would be supported provided they comply with other policies in this Plan.

Broadening the mix of energy sources is essential to secure the UK's energy supply, and offshore renewable energy is seen as one way to achieve this. Policy [CAM 2](#) supports renewable energy developments within the Marine Plan area, which will help to fulfil the Government's target of achieving 15% renewable energy use by 2020 to mitigate climate change.

**SS 4:** Development that provides or enhances UK energy security will be supported where consistent with the other policies in this plan.

### This policy complies with:

- United Nations Framework Convention on Climate Change, Kyoto Protocol (1997)
- Energy Act (2010)
- Climate Change Act (2008)
- Climate Change and Sustainable Energy Act (2006)
- Draft Bournemouth, Dorset and Poole Renewable Energy Strategy (2011)
- Dorset Coast Strategy (2011-2021)
- Marine and Coastal Access Act (2009)
- Dorset Coast Strategy (2011-2021)



*Objective 7: valuing, enjoying and understanding the marine and historic environments, and wider cultural heritage*

*Organisations and individuals value, understand and conserve the character and diversity of the marine environment, including its significant natural and cultural heritage.*

## Safeguarding seascape, landscape and townscape assets and ensuring developments are in keeping with their environs and setting

### Justification

Landscape and seascape are not just about how an area looks; they are about the interrelationship between people, place and the environment. Landscapes and seascapes are the result of natural and human elements, including geology, soils or sediments, habitats, settlements, heritage, culture and development. However, not all elements of a landscape or seascape are tangible; they are how people perceive them, about a sense of place. They provide many goods and services and are essential to social wellbeing as well as an economically healthy society – helping to deliver health improvement, education, social inclusion and regeneration.

To make informed and responsible decisions on the management and planning of sustainable future landscapes and seascapes, it is important to have regard to their existing character. Landscape and Seascape Character Assessment is a factual and objective process to determine what makes one area unique from another. By understanding how places differ, either on land or at sea, it is possible to ensure that future development is well situated and sensitive to its location.

Inappropriate developments, or the cumulative effect of developments, can have significant impacts on the character of a landscape or seascape. For example views from the sea can be greatly impacted by coastal developments, spoiling the enjoyment of recreational users and affecting wellbeing and future economic success. Conversely developments which are in keeping with their setting, i.e. ones using sympathetic materials, at an appropriate scale, design and layout, can greatly enhance both character and visual amenity. It is therefore vital that developments do not detract from the character of the Marine Plan area, and that where possible they enhance it.

The Dorset Landscape and Seascape Character Assessment 2010 (DLSCA) identifies six terrestrial character types, five coastal character types and four marine character types within the Marine Plan area. It identifies forces for change and provides management guidance for each character area. This document can be found as a supporting document to the Plan, and a summary of management guidance for each character area can be found in [Appendix 10](#). Additionally, the Local Authorities within the Marine Plan area and the Dorset AONB have Landscape Character Assessments (LCAs) to describe their own distinctive local landscapes. The

DLSCA provides a seamless link with the Dorset County LCA, but these should nevertheless be consulted to ensure compatibility.

**VEU 1:** The design and scale of marine and coastal development should be appropriate to its setting and should not detract from the character of the area as defined within the Dorset Landscape and Seascape Character Assessment 2010.

### This policy complies with:

- European legislation Council Directive (92/43/EEC) on the Conservation of natural habitats and of wild fauna and flora (Habitats Directive)
- EC Marine Strategy Framework Directive (2008/56/EC)
- Council of Europe European Landscape Convention (2000)
- Marine & Coastal Access Act (2009)
- Wildlife and Countryside Act (1981)
- The Conservation of Habitats and Species Regulations (2010)
- The Dorset and East Devon Coast World Heritage Site Management Plan (2009-2014)
- Dorset Area of Outstanding Natural Beauty Management Plan (2009-2014)
- Dorset Coast Strategy (2011-2021)

## Maintaining character of the Coastal Waters Seascape Character Type

### Justification

The 'Coastal Waters' Seascape Character Type (SCT), as defined in the DLSCA, comprises two stretches of coastline associated with the rural, often inaccessible areas of the Dorset coast, within Lyme Bay to the west of Portland, and between White Nothe and Durlston Head, along the Purbeck coast, to the east of the Isle of Portland. These areas are strongly associated with the coastline which is noted for its scenic beauty and scientific value, recognised through its World Heritage Site status and designation as an Area of Outstanding Natural Beauty (AONB).

Most of the Coastal Waters SCT to the west of Portland, with the exception of The Fleet, is beyond the scope of this plan. However within the Marine Plan area the Coastal Waters SCT contains many distinctive and iconic landmarks which provide compelling images of the Dorset Coast. These include the sweeping lines of Chesil Beach and the circular bay at Lulworth Cove, the rock formations of Durdle Door and headlands of Portland Bill and its peninsula, St Alban's Head and Durlston Head.

The white chalk cliffs are highly visible from long distances and the vertical limestone cliffs of Purbeck and Portland are also prominent. Due to the largely rural nature of the adjacent coastline here, there is also a sense of tranquillity and remoteness.

Management guidance for future strategies for this SCT, and the views to the closely associated coastal land areas, advises that the significant coastal features should be protected and that coastal infrastructure should be managed to ensure any further development is appropriate to the design and scale of existing settlement patterns. It also advises to ensure that development does not detract from the numerous and iconic landmarks and panoramic views. Given the high economic and social values that are placed on the Coastal Waters SCT, this policy builds on the DLSCA guidance to ensure that infrastructure development is avoided here unless there is a lack of other sites, or it is of overriding national importance<sup>32</sup>. Policy delivery should be informed by determining local acceptance of change or how change might be considered acceptable, and further studies will be required to deliver this.

**VEU 2:** Offshore development within 'Coastal Waters' seascape character areas should be avoided unless there are reasons of overriding national importance for its location, and a lack of alternative sites.

**This policy complies with:**

- European legislation Council Directive (92/43/EEC) on the Conservation of natural habitats and of wild fauna and flora (Habitats Directive)
- EC Marine Strategy Framework Directive (2008/56/EC)
- Council of Europe European Landscape Convention (2000)
- Marine & Coastal Access Act (2009)
- Wildlife and Countryside Act (1981)
- The Conservation of Habitats and Species Regulations (2010)
- The Dorset and East Devon Coast World Heritage Site Management Plan (2009-2014)
- Dorset Area of Outstanding Natural Beauty Management Plan (2009-2014)
- Dorset Coast Strategy (2011-2021)

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32 As defined by the Major Infrastructure Planning Unit

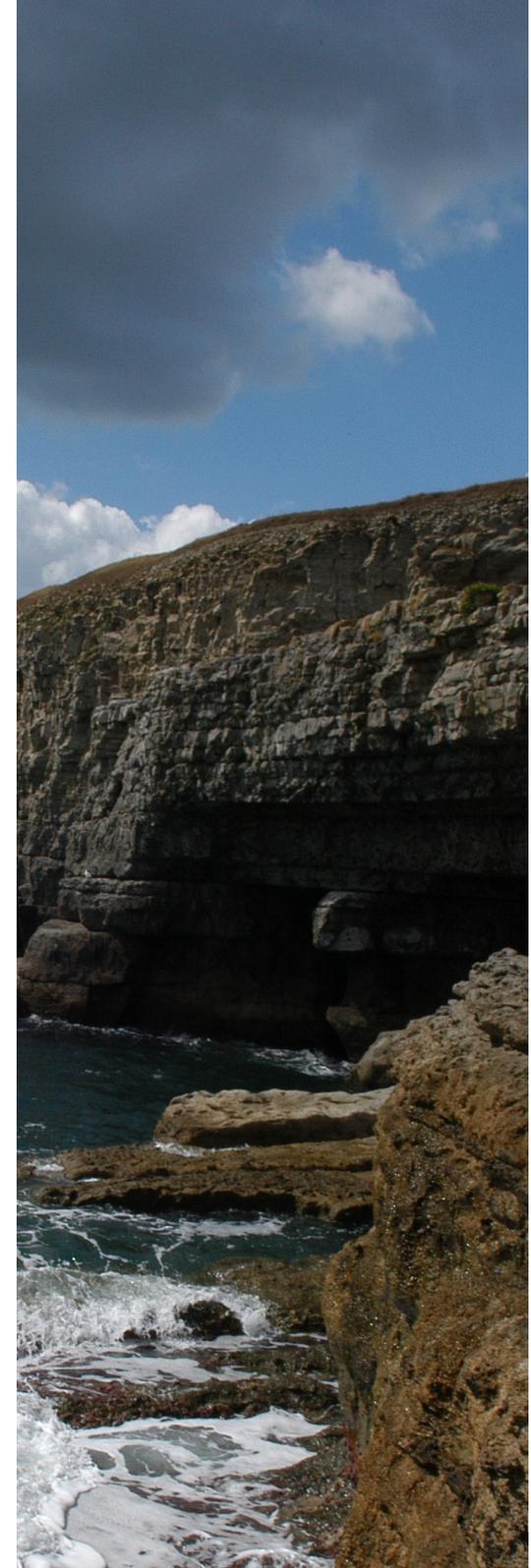


Figure 55: VEU 2 Seascape Character Areas

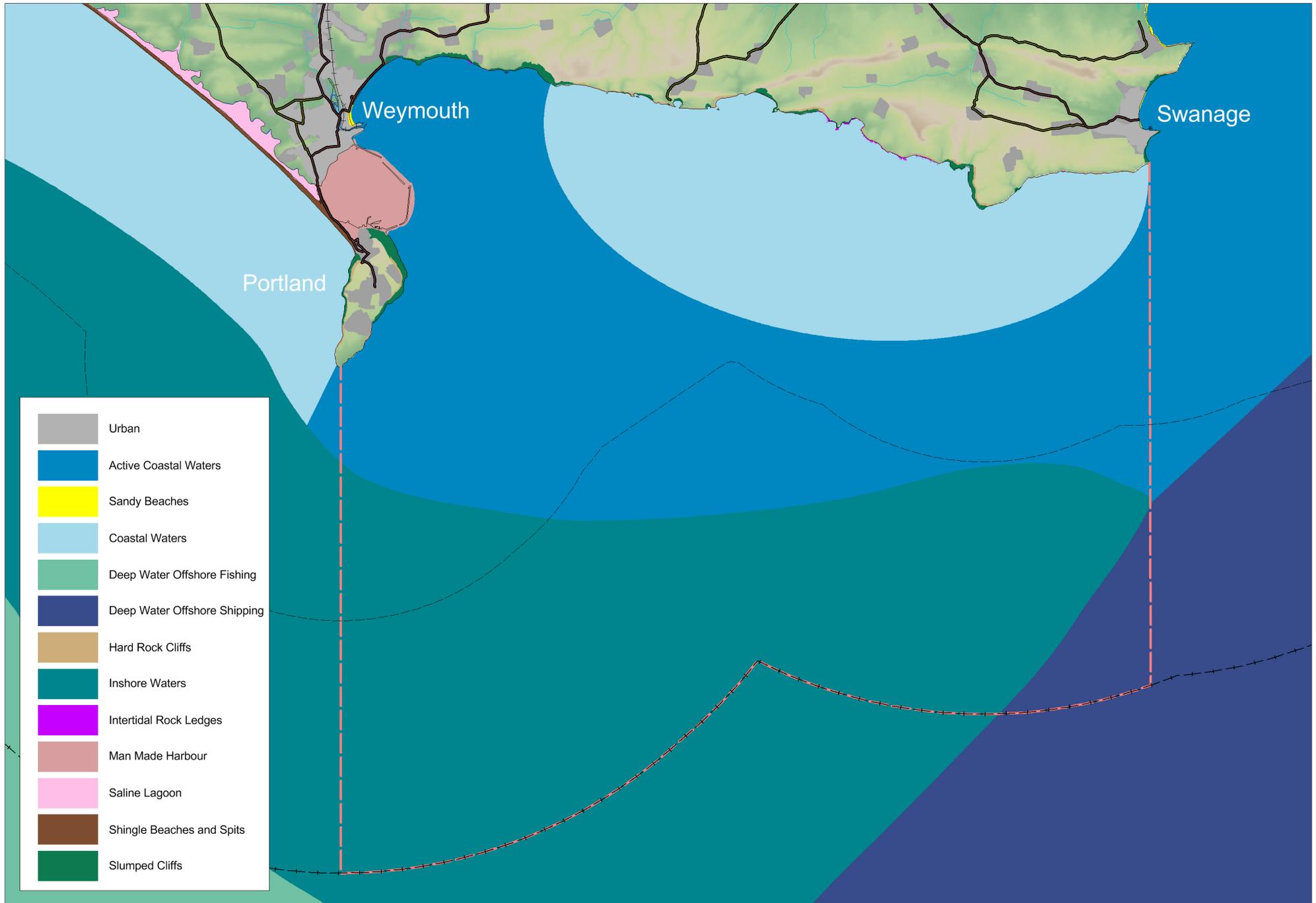


Figure 56: VEU 2 Seascape Character Areas



## Protecting designated cultural heritage sites and areas of archaeological potential

### Justification

Dorset as a whole is rich in historic areas, sites and structures of national, County and local importance which contribute to the distinctive character of the area. These include settlements and individual buildings as well as significant archaeological remains, monuments and historic landscapes. Within or close to the Marine Plan area there are many Scheduled Monuments (SMs), the only legal protection specifically for archaeological sites. These include earthworks, barrows, hillforts and Roman roads. In addition there are many registered Parks and Gardens Conservation Areas and Listed Buildings, with a significant number having Grade 1 listing. It is expected that the number of these will increase as further surveys are completed.

Dorset waters contain a prolific number of wrecks, including ships, aircraft, submarines and other vehicles. Data from the Rapid Coastal Zone Assessment shows that there are over 1,700 recorded wrecks between Lyme Regis and the mouth of Poole Harbour. Within the Marine Plan area there are no protected wrecks, although just outside it the Studland Bay and Swash Channel wrecks are designated under the Protection of Wrecks Act, 1973 for their archaeological value. Also outside the Marine Plan area, but within Dorset waters, there are six wrecks designated 'protected places' under the Protection of Military Remains Act, 1986. These are HMS Blackwood, HMS Boadicea, HMS Delight, HMS Fisgard II, HMS L24 and HMS M2. Any works, which include demolishing, destroying, damaging, removing, repairing, altering, adding to, flooding or tipping material onto a Scheduled Monument, either above or below ground level, require Scheduled Monument Consent from the Secretary of State for Culture, Media and Sport. Developments which will make any changes to a Listed Building which might affect its special interest require Listed Building Consent. In the marine environment, it is a criminal offence to tamper with, damage or remove any part of a protected wreck, carry out diving or salvage or deposit anything on it without a license granted by the Secretary of State. Similarly, it is illegal to interfere with, disturb or remove anything from a site protected by the Military Remains Act, 1986.

The World Heritage Convention was ratified by the UK in 1984, and the Department for Culture, Media and Sport (DCMS) is responsible for general compliance with the Convention. Under the Convention, The Dorset and East Devon Coast World Herit-

age Site was inscribed on the UNESCO World Heritage List as a Natural Site category for its *“outstanding (earth science) examples representing major stages of Earth’s history, including the record of life, significant on-going geological processes in the development of landforms, or significant geomorphic or physiographic features”*. The site has a comprehensive management plan which sets out proposals for the conservation of the site, and any development or activity which significantly endangers its Outstanding Universal Value, as set out in its inscription, could lead to the withdrawal of World Heritage Status. Policies [HME 2](#), [SME 2](#) and [CAM 4](#) also cover aspects of the WHS.

Designated heritage assets provide not just cultural value; they are also of great social, economic and environmental value. They can be a driver for economic growth, attracting investment and tourism and sustaining enjoyable and successful places in which to live and work. However, they are a finite and often irreplaceable resource and can be vulnerable to a wide range of human activities and natural processes. Substantial loss or harm will not be permitted unless it can be demonstrated that it is necessary in order to deliver social, economic or environmental benefits, both now and in the future, that outweigh the harm. Policy [VEU 5](#) explains the need for early engagement with relevant authorities if a development may disturb cultural heritage assets.

**VEU 3:** Development or activities must respect the purpose of international and national cultural heritage designations within the marine and coastal environment and contribute to their enhancement where possible.

### This policy complies with:

- UNESCO Convention on Protection of Underwater Cultural Heritage (2001)
- European Convention on the Protection of the Archaeological Heritage (revised) Valetta (19/92/33)
- Protection of Wrecks Act (1973)
- Protection of Military Remains Act (1986)
- Ancient Monuments and Archaeological Areas Act (1979)
- National Heritage (Act 2002)
- National Planning Policy Framework (2012)
- Dorset Coast Strategy (2011-2021)

## Protecting all other cultural heritage sites and areas of archaeological potential

### Justification

Whilst the Marine Plan area contains many designated heritage assets, as outlined in [VEU 3](#), there are many heritage assets that are not currently designated as scheduled monuments or protected wreck sites; these can be of at least equivalent importance to this and future generations, and should still be taken account of before any development or activity takes place. The setting of a heritage asset is of equal importance to its physical presence and historic fabric, and developments must also have consideration for their wider impacts. Enhancing heritage assets can create economic growth from tourism, improve wellbeing and have great educational value; therefore opportunities to do so should be taken wherever possible. Policy VEU 5 explains the need for early engagement with relevant authorities if a development may disturb cultural heritage assets.

**VEU 4:** Development in the marine and coastal environment will be expected to take account of cultural heritage sites and areas of archaeological interest as well as their settings. Opportunities should be taken to enhance these assets where possible.

### This policy complies with:

- UNESCO Convention on Protection of Underwater Cultural Heritage (2001)
- European Convention on the Protection of the Archaeological Heritage (revised) Valetta (19/92/33)
- Protection of Wrecks Act (1973)
- Protection of Military Remains Act (1986)
- Ancient Monuments and Archaeological Areas Act (1979)
- National Heritage Act (2002)
- UK Marine Policy Statement
- National Planning Policy Framework (2012)
- Dorset Coast Strategy (2011-2021)

## Ensuring early engagement with relevant and competent authorities for heritage assets

### Justification

Policies [VEU 3](#) and VEU 4 outline the need to protect heritage assets within the Marine Plan area. Heritage assets include evidence for past environments, archaeological sites, historic buildings and the historic aspects of the wider landscape. These assets are unique, and once damaged or destroyed cannot recover or be re-created. For many coastal and offshore developments, there are likely to be known heritage assets as well as previously undiscovered ones which should, where possible and appropriate, be examined and recorded or excavated prior to development.

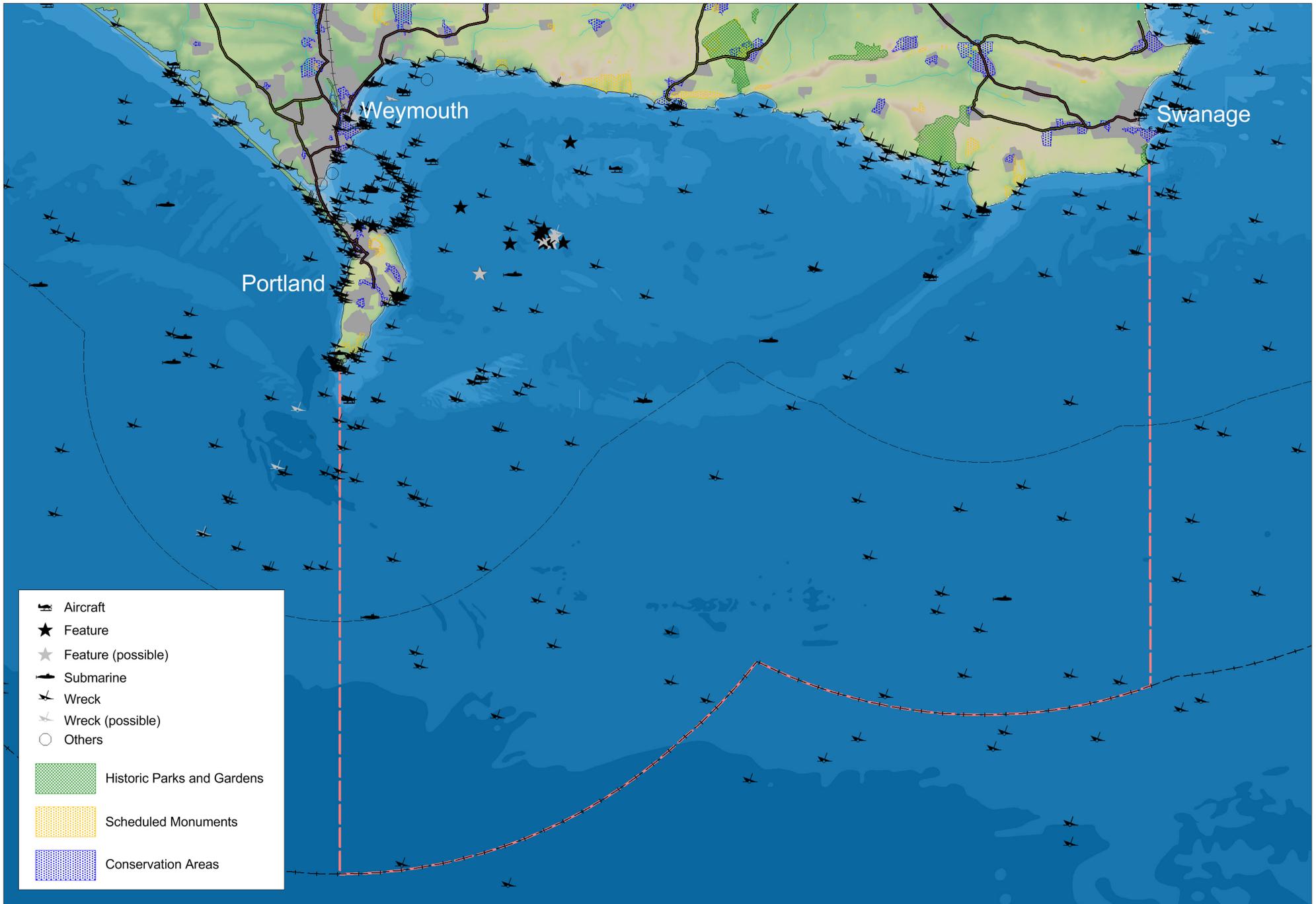
The 2004 Phase I Dorset Rapid Coastal Zone Assessment (RCZA) conducted a qualitative assessment to produce Areas of Archaeological Potential. Within the Marine Plan area, the study identified The Fleet as having high potential for archaeological components in the intertidal zone, whilst at Osmington, Lulworth and Kimmeridge, the presence of known monuments indicated high potential for buried components on land and high potential for derived material eroding from cliffs into the intertidal zone. Below Mean Low Water Springs shifting sediments and dredging works will continue to reveal previously undiscovered wrecks and other artefacts, whilst multi-beam data from the DORIS project clearly show underwater paleo-landscapes which have the potential to contain prehistoric artefacts. Additional heritage data can be found within the Solent and Isle of Wight Historical Seascape Characterisation conducted by English Heritage, which allows the historic landscape to be encompassed in a common framework and to stand alongside natural environment datasets.

Developers must therefore ensure early engagement with the relevant authorities in pre-application discussions and they may also wish to consult English Heritage's 'Conservation Principles Policies and Guidance for the Sustainable Management of the Historic Environment', so that all aspects of the historic environment and heritage assets are taken into account. This will enable a better understanding of the significance of a heritage asset and enable developers to take advantage of the assets significance, whilst also conserving it.

Figure 57: VEU 5 Terrestrial Designated Heritage Assets



Figure 58: VEU 5 Marine Heritage Assets



**VEU 5:** Early engagement with English Heritage the Dorset Historic Environment Record keepers, and JCWHS team is required for any development which may disturb heritage assets.

**This policy complies with:**

- UNESCO Convention on Protection of Underwater Cultural Heritage (2001)
- European Convention on the Protection of the Archaeological Heritage (revised) Valetta (19/92/33)
- Protection of Wrecks Act (1973)
- Protection of Military Remains Act (1986)
- Ancient Monuments and Archaeological Areas Act (1979)
- National Heritage Act (2002)
- National Planning Policy Framework (2012)
- Dorset Coast Strategy (2011-2021)

**Encouraging public understanding of heritage assets**

**Justification**

The Marine Plan area is rich in heritage assets, both on the coast and offshore, which tell the evolution of the landscape and the story of more than five thousand years of human activity. These assets are part of the area's identity and distinctiveness, and many of them already benefit from excellent public engagement initiatives which help visitors and local communities to better use, enjoy and understand them. Contemporary culture can also play a valuable role, and the restoration of Durlston Castle, which integrated nature, science and the arts, is a good example of enhancing public understanding. When people engage with their local heritage, it strengthens their sense of community, improves their quality of life and wellbeing and helps to engender a sense of ownership and a desire to safeguard their environment.

Opportunities for public engagement can start during the development phase, by providing viewing platforms and interpretation panels, holding open days, public talks and using the media for local coverage. At a later stage displays, exhibitions and articles can help to inform site design and even of public works of art. This is particularly important if a heritage asset is to be lost. Public interpretation is especially challenging for underwater heritage assets that are left in situ, where access is most likely restricted to scuba divers. However, innovative solutions through presentation and interpretation are possible; for example by using

underwater web-cams and trails.

Many heritage assets are still capable of continuing beneficial use; sensitive restoration of redundant and neglected buildings with maritime connections, particularly on historic waterfronts, can help to regenerate coastal communities, providing commercial and residential properties, communal space and educational or recreational opportunities. For example, the restoration of the historic terraces of the Esplanade at Weymouth has acted as a catalyst for further revitalisation of the town. Reference should also be made to policies [CAM 6](#) and [SD 2](#) when considering development of marine cultural assets.

**VEU 6:** Developments and activities which encourage public engagement in, and understanding of, the heritage assets of the Dorset coast and marine environment will be supported.

**VEU 7:** Developments which enhance the fabric, and public interpretation, of cultural assets with maritime connections will be supported.

**These policies conform to:**

- UNESCO Convention on Protection of Underwater Cultural Heritage (2001)
- European Convention on the Protection of the Archaeological Heritage (revised) Valetta (19/92/33)
- Protection of Wrecks Act (1973)
- Protection of Military Remains Act (1986)
- Ancient Monuments and Archaeological Areas Act (1979)
- National Heritage Act (2002)
- National Planning Policy Framework (2012)
- DCC Sustainable Community Strategy (2010-2020)
- Dorset Coast Strategy (2011-2021)

***Objective 8: Using sound science and data, and ensuring integration with existing plans and policies***

*Decisions should be made for the long-term on the basis of sound science and evidence, informed by local knowledge and priorities, or robust assessment of risk where evidence not available. The Plan should integrate with SMPs, terrestrial plans, LDFs and other relevant plans and policies.*



## Integrating terrestrial and marine planning

### Justification

The Marine Management Organisation was vested under the Marine and Coastal Access Act 2009, bringing together key marine decision-making powers and delivery mechanisms. One of their key strategic outcomes is that marine resources are managed effectively and regulated proportionately. One of the mechanisms they will use to deliver this outcome is the production of marine plans for the whole of England's territorial waters, including the Southern Inshore marine plan area.

There are many other competent and relevant authorities who play an equal or supporting role in helping to deliver the protection, enhancement and sustainable use of the marine environment within the Marine Plan area. These include statutory bodies such as Natural England, the Environment Agency and English Heritage, the Maritime and Coastguard Agency, Southern Inshore Fisheries and Conservation Authority, as well as Local Authorities. Collaboration between these bodies is strongly encouraged to ensure an integrated approach which will deliver economies of scale, enable the dissemination of research activities, as well as highlight any gaps in management.

Many policies within the Plan have implications that extend above Mean High Water Springs. Conversely many terrestrial policies have implications that impact on the marine environment. It is therefore essential that both marine planners and Local Authority planners maintain regular and on-going liaison to ensure developments which take place in the coastal zone are successfully implemented in line with both sets of policies. If the Plan is to succeed in delivering the benefits of sustainable development of the marine environment to communities living within the Marine Plan area, it is important that future iterations of both marine and terrestrial plans are closely aligned.

**SD 1:** Competent and relevant authorities should collaborate to provide an integrated approach to policy development and the protection, enhancement and sustainable use of the marine environment.

**SD 2:** Regular and on-going liaison will be encouraged between marine and terrestrial planners to ensure policy implementation is aligned for developments which take place in the coastal zone, particularly in the context of formal reviews of terrestrial and marine spatial plans.

### These policies comply with:

- Marine & Coastal Access Act (2009)
- Dorset Sustainable Community Strategy (2010-2020)
- Weymouth & Portland Borough Council Local Plan (2005)
- West Dorset District Council Local Plan (2006)
- Purbeck District Council Local Plan (2004)
- Dorset Coast Strategy (2011-2021)

## Improving the evidence base for sustainable management of the marine environment

### Justification

Marine planning requires the use of data and information from a wide range of sources. However, gathering this data in the marine environment is both complex and expensive; particular gaps and challenges include the production of accurate biotope maps for the entire Marine Plan area, determining routes of migratory species and the valuation of marine goods and services. Marine-related socio-economic data is equally challenging to obtain, and government socio-economic statistics do not currently differentiate marine industries from terrestrial ones.

Whilst this marine plan has used best available data, there is clearly a need for ongoing data gathering to fill the gaps identified above, both for future iterations of the Plan and for monitoring its effects. Additionally, marine science and environmental economics are advancing rapidly; new techniques are evolving which will accelerate data gathering, reduce costs and establish new best practice. Opportunities to obtain data based on these new techniques will make the evidence base more robust and enhance future marine plans.

**SD 3:** The collection of appropriate data necessary to provide a robust evidence base for future decisions affecting the marine environment, and further iterations of this marine plan, will be encouraged.

### This policy complies with:

- Marine & Coastal Access Act (2009)
- Dorset Coast Strategy 2011–2021

## Sharing knowledge and information

### Justification

There is a great wealth of marine data already in existence, both nationally and locally. Sources include scientific research institutions, government nature bodies, NGOs and the private sector; but a lack of communication between these organisations has led to data which is disparate, and often incompatible due to the use of different techniques and/or resolution.

Nationally, progress has been made to improve access to marine data through the MEDIN partnership. Over 30 partners so far have committed to the partnership, including the MCA, Defra, MMO, Crown Estate, JNCC, EA and UKHO. At a local level, the Dorset Environmental Records Centre Marine Biodiversity database holds over 40,000 individual species records and surveys dating from 1802 to the present. Data exchange agreements are established with Durlston Marine mammal project, Purbeck Marine Wildlife Reserve, Dorset Seasearch, Poole Harbour Study Group, Fleet Study Group, Dorset Wildlife Trust, Southampton Oceanography Centre, Natural England and the Dorset Coast Forum.

However, there is still a need for better collaboration between both national and local organisations. Further links should be made between other locally held and maintained data resources, including the Historic Environment Record maintained by Dorset County Council and the sharing of information resources with other key partners such as the local Inshore Fisheries and Conservation Authority (IFCA) should be established.

Early communication on future survey and research work will enable organisations to identify mutually beneficial opportunities, ensure they use common standards when data gathering so that data can be used for purposes other than those they were collected for, allow for collaboration or change in specification, and to make best use of limited resources. The collaboration between Dorset Wildlife Trust, Channel Coastal Observatory and the MCA, with external funding from the private sector (Viridor Credits Environmental Company), to create the Doris seabed map is a good example of how working together can give better quality results. Equally, there is a need to engage with private sector companies such as Eneco, Portland Gas Ltd and BP which all hold and commission the gathering of large amounts of marine data within the Marine Plan area. Collaboration on future survey work would ensure better integration, and wider dissemination, of data sets.

**SD 4:** Organisations working in the marine and coastal environment will be encouraged to work in partnership to ensure data are compatible and to maximise information-sharing between the private and public sector, with local expertise and knowledge being used wherever possible to contribute to quality data gathering and scientific studies.

### This policy complies with:

- Marine & Coastal Access Act (2009)
- Dorset Coast Strategy (2011-2021)



## Chapter 6: Indicators, monitoring and review

### Monitoring

Monitoring a set of key indicators is important to establish if the C-SCOPE Marine Plan is achieving its objectives and delivering the policies set out. Monitoring will also ensure that the Plan continues to be relevant and responsive to changing circumstances, identifying what amendments to the Plan may be necessary. Table 4 sets out suggested indicators and identifies current monitoring regimes and the organisations responsible for them. These indicators will be reviewed following consultation and further discussion with the C-SCOPE lead partner in Belgium. It is likely that the number will be reduced to approximately 40 key indicators. A relevant body will be required to review the outputs of these multiple monitoring programmes and assess how effective the C-SCOPE Marine Plan has been; it is suggested that DCF fulfil this role.

[Appendix 14](#) contains recommended indicators for the C-SCOPE Marine Plan Area.

### Review

The Plan is not static. To ensure that it is kept up to date and remains relevant, the C-SCOPE Marine Plan requires regular amendments to the policies and proposals contained in it, which reflect changes that have occurred both nationally and locally. It is proposed that it be reviewed on no more than a five year cycle and that opportunity be taken to synchronise reviews with Local Plans and national statutory Marine Plans where possible.



## Glossary

**Activity:** Existing or future use that is covered by a public right of use (e.g. navigation) and/or does not require a statutory consent to use a defined area from a competent authority to proceed (e.g. Crown Estate Lease, Planning Permission, Marine Licence).

**Beach replenishment:** The management practice of adding to the natural amount of sediment (such as sand) on a beach by using material from elsewhere.

**Benthic:** The ecological region at the lowest level of the ocean, including the sediment surface and some sub-surface layers. Organisms that live associated with the sea bottom are known as the Benthos.

**Best Available Technique:** most effective and advance stage in the development of an activity and its methods of operation, which indicate the practical suitability of particular techniques for providing, in principle, the basis for emission limit values designed to prevent or eliminate or, where that is not practicable, generally to reduce an emission and its impact on the environment as a whole.

**Best Practicable Environmental Option:** the outcome of a systematic consultative and decision making procedure which emphasises the protection and conservation of the environment across land, air and water. The BPEO procedure establishes for a given set of objectives, the option that provides the most benefits or the least damage to the environment, as a whole, at acceptable cost, in the long term as well as in the short term.

**Bioaccumulation:** An increase in concentration of a pollutant from the environment to the first organism in a food chain.

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

**Biomagnification:** An increase in concentration of a pollutant from one link in a food chain to another.

**Coastal Zone:** There is no one accepted definition of the coastal zone, particularly in terms of how far inland coastal zones reach. The coastal zone cannot be isolated as a defined 'coastal strip' and treated as entirely separate from the land mass or distinct from the management of territorial and international waters. For some issues, notably pollution, the whole of Dorset could be treated as the coastal zone. The boundary of the coastal zone is thus in practice a moveable one.

**Cumulative effects:** Effects that result from incremental changes caused by other past, present or reasonably foreseeable actions together with the project.

**Development:** A use that requires a statutory consent to utilise a defined area from a competent authority to proceed. This can include new developments or alterations, extensions or changes in material use to existing developments that require a statutory consent.

**Economic Efficiency:** A project, policy, or activity where the social benefit exceed its social costs, where benefits are defined as increases in human well-being and costs are defined as reductions in human well-being.

**Ecosystem Goods and Services:** A service people obtain from the environment. Ecosystem services are the transformation of natural assets (soil, plants and animals, air and water) into things that we value. They can be viewed as provisioning such as food and water; regulating, for example, flood and disease control; cultural such as spiritual, recreational, and cultural benefits; or supporting like nutrient cycling that maintain the conditions for life on Earth. Ecosystem 'goods' include food, medicinal plants, construction materials, tourism and recreation, and wild genes for domestic plants and animals.

**Elasmobranch:** Cartilaginous fish including sharks, rays and skates.

**Eutrophication:** An accelerated growth of algae on higher forms of plant life caused by the enrichment of water by nutrients, especially compounds of nitrogen and/or phosphorus and inducing an undesirable disturbance to the balance of organisms present in the water and to the quality of the water concerned.

**Green Knowledge Economy:** a model of sustainable economic development, devised by the Dorset Local Enterprise Partnership. It provides an integrated approach to the economy and the environment. A global transition to a low-carbon and sustainable economy will create large numbers of green jobs across many sectors of the economy, and can become an engine of development.

**Geological feature:** Rock and landscape formations, such as stacks, arches, fossils and landslides, which have been shaped by geological processes.

**Geomorphology:** The science of Earth's landforms, their description, classification, distribution, origin and significance

**Heritage Assets:** Those elements of the historic environment – buildings, monuments, sites or landscapes – that have been positively identified as holding a degree of significance meriting consideration are called 'heritage assets'.

**Heritage Setting:** The surroundings in which a heritage asset is experienced. Its extent is not fixed and may change as the asset and its surroundings evolve. Elements of a setting may make a positive or negative contribution to the significance of an asset, may affect the ability to appreciate that significance, or may be neutral.

**Hydrology:** The occurrence and character of water in rivers, streams, lakes, and on or below the land surface, and the cycle of water from precipitation to re-evaporation or return to the seas.

**Invasive alien species (IAS):** are a subset of established Non-native Invasive Species which have spread, are spreading or have demonstrated their potential to spread elsewhere, and have an adverse effect on biological diversity, ecosystem functioning, socio-economic values and/or human health in invaded regions. Species of unknown origin which can not be ascribed as being native or alien are termed cryptogenic species. They also may demonstrate invasive characteristics and should be included in IAS assessments.

**Lower Super Output Areas:** Census based geographies with an average population of 1,500 people.

**Marine litter:** Items that have been made or used by people and deliberately discarded into the sea or rivers or on beaches; brought indirectly into the sea by rivers, sewage, storm water or wind; accidentally lost, including material lost at sea in bad weather (fishing gear, cargo).

**Nautical mile:** A unit of length used at sea that is about one minute of arc of latitude along any meridian, but is approximately one minute of arc of longitude only at the equator. By international agreement it is exactly 1,852 metres.

**Non-indigenous species (NIS):** Species, subspecies or lower taxa introduced outside of their natural range (past or present) and outside of their natural dispersal potential. This includes any part, gamete or propagule of such species that might survive and subsequently reproduce. Their presence in the given region is due to intentional or unintentional introduction resulting from human activities. Natural shifts in distribution ranges (e.g. due to climate change or dispersal by ocean currents) do not qualify a species as a NIS.

**Precautionary principle:** An approach to environmental protection which maintains that where there are threats of serious or irreversible damage, lack of full scientific certainty will not be used as a reason for postponing cost-effective measures to prevent environmental degradation.

**Safe biological limits:** 'Safe biological limits' are defined by a minimum safe stock size and a maximum exploitation rate. These are known as reference points. The stock size is measured in terms of 'spawning stock biomass (SSB)' which represents the total weight of spawning fish each year. The exploitation rate is called the 'fishing mortality (F)' which measures the rate at which fish are removed from the stock by fishing. If the stock is either below the minimum safe SSB or above the maximum safe F, the stock is said to be outside safe biological limits.

**Seascape (and Landscape):** An area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors.

**Sustainable development:** Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

**Tranquillity:** A composite feature related to low levels of built development, traffic, noise and artificial lighting. The full range of criteria may be used to identify valued landscapes that merit some form of designation or recognition.

**Water Quality:** The physical, chemical and biological characteristics of water. It is a measure of the condition of water relative to the requirements of one or more biotic species and or to any human need or purpose. It is most frequently used by reference to a set of standards against which compliance can be assessed. The most common standards used to assess water quality relate to health of ecosystems, safety of human contact and drinking water.

## Appendices

Appendix 1: Organisations involved in the C-SCOPE Marine Planning process  
Appendix 2: Community Workshop Report  
Appendix 3: Data Confidence Assessment Methods  
Appendix 4: Spatial Analysis Methods  
Appendix 5: Sensitivity Maps  
Appendix 6: Areas of Seabed Geological Interest  
Appendix 7: Sectoral Interactions Matrix  
Appendix 8: Potential Consultees  
Appendix 9: Constraints Mapping Methods  
Appendix 10: Seascape Character Types Management Guidance Summary  
Appendix 11: Data used to inform the C-SCOPE Marine Plan  
Appendix 12: Bibliography  
Appendix 13: Seabed Mapping Methods and Data  
Appendix 14: Indicators

## Supporting Documents

Dorset Land and Seascape Character Assessment  
Dorset Offshore Renewables Capacity Report  
C-SCOPE Socio-economic Report  
Dorset Coast Topic Papers  
C-SCOPE Forecasting Document



## Acronyms

BAP	Biodiversity Action Plan	MLW	Mean Low Water
COWRIE	Collaborative Offshore Wind Energy Research into the Environment	MMA	Marine Management Area
CFP	Common Fisheries Policy	MMO	Marine Management Organisation
C-SCOPE	Combining Sea and Coastal Planning in Europe	MOD	Ministry of Defence
DCF	Dorset Coast Forum	MPA	Marine Protected Area
DCMS	Department for Culture, Media and Sport	MPS	Marine Policy Statement
DECC	Department of Energy and Climate Change	MSFD	Marine Strategy Framework Directive
DEFRA	Department for Environment, Food and Rural affairs	MSP	Marine Spatial Plan
DLSCA	Dorset Landscape and Seascape Character Assessment	NCN	National Cycle Network
DORIS	Dorset Integrated Seabed Study	NE	Natural England
EA	Environment Agency	NNSS	Non-native Species Secretariat
EH	English Heritage	OSPAR	Convention for the Protection of the Marine Environment of the North East Atlantic
EMF	Electro Magnetic Fields	OUV	Outstanding Universal Value
EUNIS	European Nature Information System	PHAL	Portland Harbour Authority Ltd
GES	Good Environmental Status (as required by the MSFD)	PPP	Plans, Policies and Programmes
HFC	Hydrofluorocarbon	PROW	Public Right of Way
HLMO	High Level Marine Objectives	PWC	Personal Watercraft (Jet-ski)
HRO	Harbour Revision Order	RCZA	Rapid Coastal Zone Assessment
ICZM	Integrated Coastal Zone Management	RNLI	Royal National Lifeboat Institute
IFCA	Inshore Fisheries and Conservation Authority	RYA	Royal Yachting Association
JTS	Joint Technical Secretariat	SAC	Special Areas of Conservation
JCWHS	Jurassic Coast World Heritage Site	SCT	Seascape Character Type
JNCC	Joint Nature Consultative Committee	SM	Scheduled Monument
LA	Local Authority	SMP	Shoreline Management Plan
LCA	Landscape Character Assessment	SPA	Special Protection Area
LDF	Local Development Framework	SSSI	Site of Special Scientific Interest
LEP	Local Enterprise Partnership	SOLAS	Convention on Safety of Life at Sea
LSOA	Local Super Output Area	UNCLOS	United Nations Convention on the Law of the Sea
LTC	Long Term Classification	WFD	Water Framework Directive
MARPOL	Convention for the Prevention of Pollution from Ships		
MCA	Maritime and Coastguard Agency		
MCS	Marine Conservation Society		
MCZ	Marine Conservation Zone		
MHWS	Mean High Water Spring		
MEDIN	Marine Environmental Data and Information Network		
MEHRA	Marine Environmental High Risk Area		