



Combining Sea and Coastal
Planning in Europe
Marine Plan
Sustainability Appraisal
Report

Prepared for:

**Dorset Coast Forum
Dorchester**

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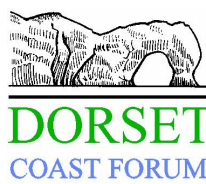
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Date:

December 2011



Project or Issue Number:

UK18-16802



ENVIRON



Contract/Proposal No:	UK18-16802
Issue:	2
Author (signature):	Alex White / Vicky Pearson/Jo Curran 
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Date:	December 2011

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Version Control Record				
Issue	Description of Status	Date	Reviewer Initials	Author Initials
A	First Draft	28/11/11	JC	JC/AW
1	Draft to client	30/11/11	JC	JC/AW/VP
2	Final	06/12/11	JC	JC/AW/VP

Contents

1	Introduction	1
1.1	The Marine Plan	1
1.2	The Sustainability Appraisal Process	2
1.3	Habitats Regulations Assessment	3
2	SA Methodology	4
2.6	Consultation	7
3	What is the policy context?	10
3.1	How sustainability objectives have been taken into account	11
4	What is the situation now?	12
4.1	Biodiversity, Flora and Fauna	12
4.2	Landscape and Seascape	12
4.3	Geology and the Seabed (Soils)	13
4.4	Fisheries and Mariculture	13
4.5	Recreation and Tourism	14
4.6	Waste and Water Quality	15
4.7	Renewable Energy and Natural Resources	15
4.8	Defence	15
4.9	Economy and Material Assets	15
4.10	Air and Climatic Factors	17
4.11	Archaeology and Cultural Heritage	17
4.12	Community and Human Health	17
5	What do we want to achieve?	18
6	What will be the situation without the plan?	19
6.1.1	Biodiversity, Flora and Fauna	19
6.1.2	Landscape and Seascape	19
6.1.3	Geology and the Seabed (Soils)	19
6.1.4	Fisheries and Mariculture	20
6.1.5	Recreation and Tourism	20
6.1.6	Waste and Water Quality	20
6.1.7	Renewable Energy and Natural Resources	21
6.1.8	Defence	21
6.1.9	Economy and Material Assets	21
6.1.10	Air and Climatic Factors	22
6.1.11	Archaeology and Cultural Heritage	23
6.1.12	Community and Human Health	24

7	What are the alternatives under consideration?	26
8	What will the situation be with the plan including any alternatives?	30
8.1	Social	30
8.2	Economic	31
8.3	Environmental	33
9	Cumulative effects	35
10	How can we mitigate / enhance effects?	38
11	Significant Residual Effects and Monitoring?	42
11.1	Residual effects	42
11.2	Monitoring	42
12	Ecosystems Services and SEA	45
13	Next Steps and how to comment on this report	49

List of Figures in report

Figure 1.1: C-SCOPE Marine Plan Area Boundary

Figure 2.1: SA process in marine planning

Figure 2.2: Steps in SA

Figure 7.1: Types of marine spatial plan structures analysed by the C-SCOPE Marine Plan Area Task & Finish Group

List of Tables in Report

Table 2.1: Scoping Assessment significant effects assessment key

Table 2.2: Scoping Report Consultees

Table 2.3: Meeting the requirements of the SEA Directive

Table 7.1: Strengths and weaknesses of Marine Plan approaches

Table 8.1: Assessment of significance

Table 9.1: Cumulative impact Assessment matrix

Table 11.1: Significant residual effects

Table 11.2: Marine Plan Monitoring Framework

Table 12.1: Example ecosystem service assessment key

Table 12.2: Ecosystem Services Framework

Annex A: SA Framework

Annex B: Assessment Tables

1 Introduction

1.1 The Marine Plan

Combining Sea and Coastal Planning in Europe (C-SCOPE) is a €1.8 million European partner project between the Dorset Coast Forum (DCF) and The Coordination Centre on Integrated Coastal Zone Management in Belgium. Its main aim is to achieve a seamless, integrated approach to land and sea planning and management. Both partners are focusing on three elements which will link together to provide a comprehensive plan and information resource to underpin sustainable coastal management:

- Developing a framework for integrating terrestrial and marine planning;
- Tools for achieving sustainable coastal economies and environments; and
- Achieving commitment to ICZM through stakeholder engagement.

Integrating terrestrial and marine planning will primarily be achieved by producing a Marine Plan (MP) for the C-SCOPE Marine Plan area, which lies between Durlston Head and Portland Bill (out to 12 nautical miles) and covers an area of 953 km².

The uses of the area are as varied as its habitats – commercial fishing, military use, recreational use (diving, angling, sailing etc), shipping and ports, to name but a few and it is directly adjacent to the Jurassic Coast World Heritage Site. It is also the location of the 2012 Olympic Games. The C-SCOPE Marine Plan area boundary is shown in **Figure 1.1**.

The Marine Plan itself is an output of a wider research project. This means it has no statutory standing. However, the marine planning agenda has taken on renewed momentum with the Marine and Coastal Access Act 2009 and the publication of the Marine Planning Statement (MPS) and the commencement of the first round of marine plans (East Inshore and Offshore). Therefore, whilst this is a research project, it has germane links to the current marine planning debate and marine planning in the South West.

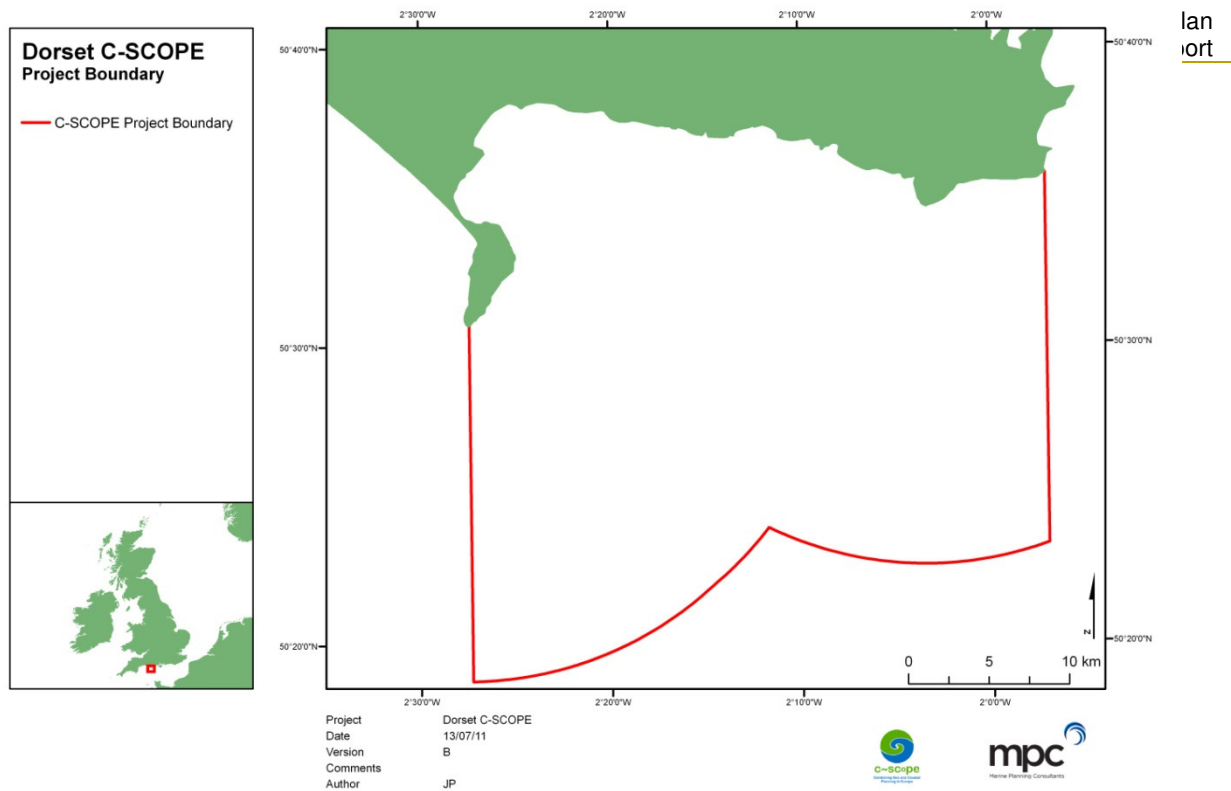


Figure 1.1: C-SCOPE Marine Plan Area Boundary

1.2 The Sustainability Appraisal Process

The preparation of the Marine Plan has been subject to a Sustainability Appraisal (SA) which integrates the requirements of Strategic Environmental Assessment (SEA). The requirements of SEA are set out in Statutory Instrument 2004 No. 1633: The Environmental Assessment of Plans and Programmes Regulations 2004 (the ‘SEA Regulations’) which require an environmental assessment to be carried out on certain plans and programmes prepared by public authorities that are likely to have a significant effect upon the environment).

The purpose of SA is to ensure that plans achieve sustainable development through the simultaneous integration of social, economic and environmental objectives into plan preparation and adoption. This differs from the requirements of the SEA Regulations which place greater emphasis on environmental objectives.

Although the C-SCOPE Marine Plan will be a non-statutory plan, and therefore there is no obligation to carry out a formal SEA or SA, the DCF project team understands the importance of SA as part of the marine plan process, ensuring full integration of environmental, social and economic factors.

Therefore, the main tasks and outputs are:

- Development of an SA Scoping Report;
- To conduct individual policy assessments on the draft Marine Plan against an SA Framework and to produce a Sustainability Appraisal Report (incorporating an Environmental Report required by the SEA Regulations).

The SA has been mainly carried out by ENVIRON using a team of consultants experienced in SA and SEA of spatial planning documents. The assessment of draft policies has been undertaken through a stakeholder workshop. Further information on the methodology of the SA can be found in Section 3.

1.3 Habitats Regulations Assessment

The C-SCOPE Marine Plan has been subject to a Habitats Regulation Assessment (HRA). The Marine Plan and the area surrounding it (including the terrestrial environment) include a number of European sites^[1] designated for their wildlife value which might be affected by the Marine Plan activities. A HRA screening assessment has been undertaken alongside the development of the Marine Plan in order to identify whether it could result in any significant effects on any European sites (referred to as 'Likely Significant Effects' (LSEs)). The findings of HRA should be integrated with the Marine Plan and the parallel SA. In this situation, the HRA screening assessment has not identified any LSEs and therefore no potential effects have been identified for incorporation in the SA assessment of options and policies.

The outputs of this process are:

- A Habitats Regulations Screening Assessment Report of the policies set out within the Marine Plan which concludes that no LSEs of the Marine Plan on European sites have been identified.

2 SA Methodology

The SA process should run right through the process of developing the plan – see **Figure 2.1** and consists of five main stages– see **Figure 2.2**.



Figure 2.1: SA process in marine planning¹

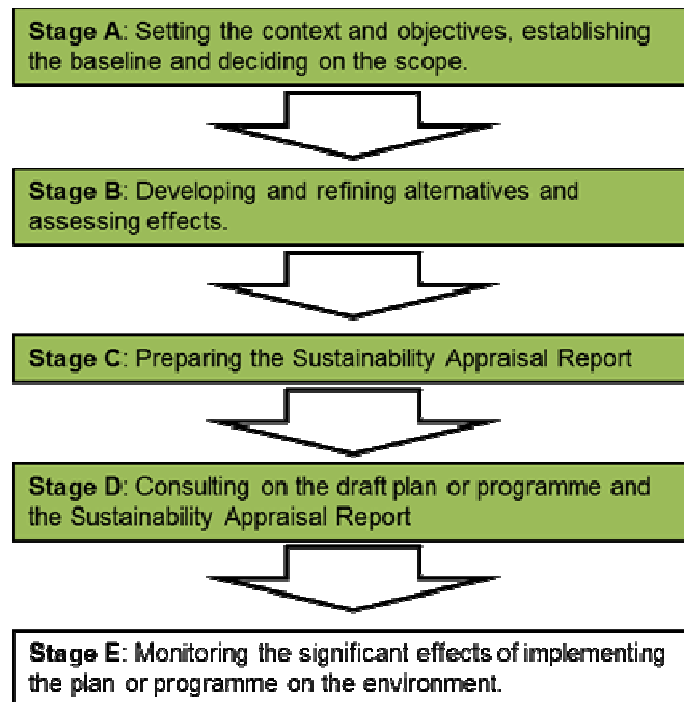


Figure 2.2: :

¹ See: <http://marj>

2.1 Stage A

Stage A has been completed. A scoping report was produced in May 2011. For the scoping report, data was collected for each topic under in order to answer the following questions:

- What's the policy context? - Review of other plans, policies, programmes and objectives to identify key messages;
- What's the situation now? – review of baseline data including sources of data, data gaps and trends; and
- What will the situation be without the plan? – information about trends and how the situation could change without the Marine Plan.

This information was then used to propose a SA Framework of objectives, appraisal questions and monitoring indicators for each topic.

At the scoping stage an initial scoping assessment was undertaken to determine where the key *significant effects* of the Marine Plan might be and which elements of the SA Framework the plan should be assessed against. A table detailing the results of this assessment can be found within Annex 2 of the Scoping Report² (<http://www.cscope.eu/en/results/marine-mgmt-plan/dorset>) This provides a detailed account of the scores allocated to the links between activities and SA Objectives.

The assessment was undertaken on a three point scale, illustrated in **Table 2.1**. It should be noted that this is not an assessment of effects and therefore provides no indication of whether the link is positive or negative, rather whether it is significant or not:

Description	Score	Included within SA?
There are likely to be significant effects of this activity and policies relating to it. It is considered likely that the receptors are sensitive and the impact is likely to be high in magnitude.	***	Y
Either the policy is likely to have a large impact or the receptors are likely to be particularly sensitive. Therefore the potential for a significant effect is less.	**	Y (with a more limited scope)
Neither the plan or the receptors are particularly large or sensitive	*	N

Key issues that arose in the scoping assessment are covered below:

- **Pollution** – many of the activities undertaken in the C-SCOPE Marine Plan area provide a risk of pollution incidents. These should be controlled by legislative and regulatory instruments such as IPPC, however, pollution incidents could have significant effects on a range of objectives;
- **Management activities** – management of the C-SCOPE Marine Plan area for conservation will have direct effects
- **Direct impacts on receptors** – activities such as dredging, trawling and some forms of recreation will have direct impacts on environmental receptors (e.g. soil and biodiversity). Where these have been identified they have been marked as significant.

² ENVIRON (2011) C-SCOPE SA Scoping Report – consultation draft.

- **Recreation** – this has both positive and negative significance for a range of objectives. It will be important to assess the relative significance of the positives and negatives in the Marine Plan e.g. what are the economic trade-offs of less tourism / recreation and what are the biodiversity / energy impacts of encouraging tourism?
- **Archaeology and heritage assets** – we have assumed in many incidents that due to the relative inaccessibility of archaeological and heritage assets that only industrial scale i.e. large, and direct activities will have a significant impact on these areas.

The scoping report was sent to statutory consultees and others for consultation. After consultation, feedback from those who responded was used to update the evidence base set out in the Scoping Report (<http://www.cscope.eu/en/results/marine-mgmt-plan/dorset>). The updated evidence is summarised within this SA Report.

Further information on the consultation undertaken through the SA Process can be found in Section 2.6.

2.2 Stage B

Section 7 of this report sets out the approach to the consideration of options.

The assessment of a set of draft policies for the Marine Plan was assessed in a one-day stakeholder workshop on 12th October 2011. The workshop involved assessing the plan to establish whether and how well the SA questions in the SA Framework are being addressed by the draft policies. Rather than using a conventional scoring system (e.g. ++ / -- etc), a more descriptive approach was used. This provided an indication of the importance of the impact, some sense of scale and an idea of the likely sensitive receptors. This is how the significance of potential impacts was described and identified. Wherever possible, baseline data, references and evidence were provided to support the assessment.

A proforma containing a set of assessment questions was provided to the workshop participants to ensure that each participant considered a range of factors including:

- The impact – what is the link between the policy and the SA Framework and what is the actual impact?;
- The effect – what will be the result of this impact occurring? (e.g. the impact is increased sedimentation through dredging activities, the effect is a reduction in ecological integrity of a site);
- What is the nature of the effect? The SEA Directive provides a range of dimensions that can be used to describe the impact
 - Secondary ;
 - Cumulative ;
 - Synergistic ;
 - short, medium and long-term;
 - permanent and temporary; and
 - positive and negative effects
- The identification of mitigation and enhancement; and
- The consideration of alternatives.

The findings of the assessment of the draft policies can be found in Section 8. The policies were then amended to take account of the mitigation and enhancement measures identified in the assessment. The changes that were made to the policies in response to the SA can be found within Annex B. Any residual effects that have not been mitigated are identified within Section 11.

2.3 Stage C

This document is the SA report. It outlines the significant effects on the environment, social and economic factors of the Marine Plan.

2.4 Stage D

The SA report has been produced for comment alongside the Marine Plan. Information about consultation can be found in Section 2.6.

2.5 Stage E

A proposed strategy for monitoring the significant effects of the Marine Plan is presented in Section 11.

2.6 Consultation

This scoping report was consulted on alongside the draft Marine Plan for five weeks as specified by the SEA Regulations³. Comments were received from the Statutory Consultees (Natural England, the Environment Agency and English Heritage) and the scoping report was updated in December 2011 to address these comments. The following organisations were consulted at the scoping stage and were also involved in the assessment of the draft Marine Plan (**Table 2.2**). The assessment was undertaken on 12th October 2011. The purpose of this assessment workshop was to:

- a) Complete the Sustainability Appraisal which involves:
 - Identifying impacts;
 - Identifying significant effects;
 - Proposing mitigation / recommendations where required; and
 - Identifying, describing and evaluating alternatives.
- b) Obtain feedback on the policies.

The workshop was structured into three groups around the three themes of sustainable development:

1. Environment;
2. Economy; and
3. Socio-economics.

The three groups examined all of the policies (whole plan) in three sessions, using the SA Framework and questions to check whether the policies in the plan are adequately addressing the SA objectives. The outputs of the workshop are described in sections 8 -11.

³ Environmental Assessment of Plans and Programmes Regulations 2004 12 (6)

Statutory	Non-statutory (Dorset Coast Forum)
Environment Agency	National Trust
Natural England	The Crown Estate
English Heritage	Dorset Wildlife Trust
	Weymouth & Portland Borough Council
	Purbeck District Council
	The Lulworth Estate
	Dorset County Council
	Portland Harbour Authority Ltd
	Dorset AONB Partnership
	Jurassic Coast Trust
	South Coast Fisherman's Council
	Jurassic Coast World Heritage Team
	Purbeck Heritage Committee
	Plymouth University
	Weymouth Lunar Society
	Southern Inshore Fisheries and Conservation Authority
	Halcrow
	Marine Management Organisation (MMO)

We have set out below the requirements of the SEA Directive, presented as straight forward questions that address these requirements. The following chapters are structured to reflect these questions. The chapters dealing with the scoping stage are summaries of the detailed information presented within the scoping report. For the detailed information please see the scoping report (<http://www.cscope.eu/en/results/marine-mgmt-plan/dorset>).

SA Questions⁴	Key requirements	Chapter reference
<i>Scoping</i>		
What's the policy context?	<i>"an outline of the contents, main objectives of the plan or programme and relationship with other relevant plans and programmes" (Annex 1(a))</i>	Chapter 3
What's the situation now?	<i>"the relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan or programme" (Annex 1(b)) <i>"the environmental characteristics of areas likely to be</i></i>	Chapter 4

4 CLG (2010) Towards a more efficient and effective use of Strategic Environmental Assessment and Sustainability Appraisal in spatial planning. See: <http://www.communities.gov.uk/documents/planningandbuilding/pdf/1513010.pdf>

Table 2.3: Meeting the requirements of the SEA Directive

SA Questions ⁴	Key requirements	Chapter reference
	<p><i>significantly affected</i>" (Annex I(c))</p> <p>"any existing environmental problems which are relevant to the plan or programme including, in particular, those relating to any areas of a particular environmental importance, such as areas designated pursuant to Directives 79/409/EEC and 92/43/EEC" [NB problems relating to European sites are addressed through Habitats Regulations Assessment] (Annex I(d))</p>	
What do we want to achieve?	<p><i>"the environmental protection objectives, established at international, Community or Member State level, which are relevant to the plan or programme and the way those objectives and any environmental considerations have been taken into account during its preparation"</i> (Annex I(e)) [the latter relates to the overall assessment methodology]</p>	Chapter 5
What will be the situation <i>without</i> the plan?	<p><i>"the relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan or programme"</i> (Annex I(b))</p>	Chapter 6
What are the alternatives under consideration?	<p><i>"Where an environmental assessment is required... an environmental report shall be prepared in which the likely significant effects on the environment of implementing the plan or programme, and reasonable alternatives taking into account the objectives and the geographical scope of the plan or programme, are identified, described and evaluated" (Article 5(1))</i></p> <p><i>"an outline of the reasons for selecting the alternatives dealt with, and a description of how the assessment was undertaken including any difficulties (such as technical deficiencies or lack of know-how) encountered in compiling the required information" (Annex I(h))</i> [the latter relates to the overall assessment methodology]</p>	Chapter 7
Assessment		
What will be the situation <i>with</i> the plan including any alternatives?	<p><i>"the likely significant effects (1) on the environment, including on issues <u>such as</u> biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between the above factors [our emphasis]</i></p> <p><i>(1) These effects should include secondary, cumulative, synergistic, short, medium and long-term permanent and temporary, positive and negative effects"</i> (Annex I(f))</p>	Chapter 8 and 9
How can we mitigate / enhance effects? (aka recommendations)	<p><i>"the measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the plan or programme"</i> (Annex I(g))</p>	Chapter 10
What should we monitor?	<p><i>"a description of the measures envisaged concerning monitoring..."</i> (Annex I(i))</p>	Chapter 11

3 What is the policy context?

A review has been undertaken of other relevant plans, policies, programmes (PPPs) and objectives that can affect the Marine Plan. Detailed reviews are included within the scoping report (<http://www.cscope.eu/en/results/marine-mgmt-plan/dorset>). A summary of the review can be found below.

International legislation and policy sets a number of targets, objectives and obligations which planning documents should address / help to achieve, including:

- Air quality standards;
- Guideline values for noise levels;
- Provisions for the identification and protection of archaeological heritage;
- Measures to avoid pollution;
- Measures to maintain / restore habitats and species' populations (including measures to maintain SPAs and SACs at favourable status);
- Guidelines for an integrated approach to address maritime affairs covering economic, social, cultural and environmental contexts and encouragement of the ecosystem approach to marine management;
- Requirements to assess the risk of flooding for all water courses and coastlines;
- Standards for the construction, equipment and operation of ships in accordance with their safety; provisions regarding navigation and control of ships in ports;
- Targets for the protection of Underwater Cultural Heritage (UCH) and the protection of archaeological heritage;
- Targets for restoring depleted fish stocks;
- Climate change emissions targets;
- Renewable energy targets; and
- Targets to achieve 'good ecological status' of inland water bodies and to achieve or maintain 'good environmental status' of marine waters.

National legislation and policy outlines measures to achieve many of these obligations through setting regional and local targets for public bodies to achieve and by outlining principles which planning policies and decisions needs to adhere to. Examples include:

- Requirements for planners to have regard to conservation in all functions and embed biodiversity in all public policy;
- Requirement for proactive biodiversity and geological conservation interest enhancements through planning;
- Targets on climate change emissions;
- Renewable energy targets and climate change adaptation principles;
- Respecting the character of all landscapes including coasts;
- Delivering healthy sustainable communities which adapt to and are resilient to climate change;
- Promoting an ecosystem-based approach for the maritime environment;
- Integrating coastal planning to ensure the reconciliation of development requirements with landscape, environmental quality, wildlife habitats and recreational opportunities of the coast;
- Protection of designated shipwrecks, the wreckage of military aircraft and designated military vessels, underwater archaeology, ancient monuments and heritage coasts;

- Targets for developing on previously developed land; and
- Policies on sequential tests for flood prone areas of land.

Local and regional policy sets out more specific local targets and local actions needed to achieve them. Examples include:

- Key biodiversity actions reflecting the local BAP species and habitats and the need to link habitats;
- Regional climate change and renewable energy targets;
- Objectives for protecting and enhancing local landscapes such as the Dorset Area of Outstanding Natural Beauty (AONB) and the functions they provide;
- Strategy for managing the Dorset Coast, including conservation, economic development, recreation, shoreline management and use of resources;
- Aims to manage the Jurassic Coast World Heritage Site;
- Long term planning of coastal defences and locating development in areas of lower flood risk in preference to higher flood risk;
- Managing the potentially conflicting uses of harbour waters;
- Controlling dredging activities in sensitive areas;
- Providing sustainable solutions to waste management and planning while safeguarding the environmental quality of the area;
- Policies for housing, economic development and environmental protection in Weymouth and Portland, West Dorset and Purbeck; and
- A business strategy and action plan for attracting future investment towards achieving sustainable development in Weymouth Harbour.

3.1 How sustainability objectives have been taken into account

Environmental/sustainability objectives presented within the plans and programmes reviewed have been used to develop the sustainability appraisal framework which has been used to test the Marine Plan. The framework contains objectives which have also been informed by the baseline data review. The SA framework is presented in Annex A.

4 What is the situation now?

4.1 Biodiversity, Flora and Fauna

The coast within the C-SCOPE Marine Plan area is protected by one or more international, European, or national designations with certain exceptions being at Weymouth and Portland.

Internationally protected sites include the following:

- Ramsar:
 - Chesil Beach and The Fleet
- Special Areas of Conservation (SACs):
 - Chesil and The Fleet
 - Isle of Portland to Studland Cliffs
 - St Albans Head to Durlston Head

- Special Protection Area (SPAs):

Chesil Beach and The Fleet

Nationally Protected sites include the following Sites of Special Scientific Interest (SSSIs):

- Isle of Portland
- Lodmoor
- Portland Harbour Shore
- Chesil Beach and The Fleet
- South Dorset Coast.

Other regional and local designations include the following:

- Durlston County Park National Nature Reserve (NNR);
- Portland Harbour (Protected Area for Overwintering Birds);
- Peveril point to Durlston Head (nominated as European important plant areas and UK IPAs for marine algae); and
- Kimmeridge Ledges and Weymouth are nominated as UK Important Plant Area (IPAs) for marine algae

The Marine Nature Reserve (MNR) around Purbeck and Kimmeridge is vulnerable to issues directly and indirectly related to development as there is no statutory protection for the reserve.

There are several overwintering bird sites within and immediately east of the C-SCOPE Marine Plan area as follows: Portland Bill/Harbour; Weymouth Bay; and The Fleet.

4.2 Landscape and Seascape

The coast within the C-SCOPE Marine Plan area is designated as a UNESCO World Heritage Site, Heritage Coast and an Area of Outstanding Natural Beauty (AONB).

Habitats given special legal protection under EU Directives and domestic legislation important to the Dorset Coast include: sand dunes, saline lagoons, shallow inlets and bays, caves, salt marsh, mud in deep water, sheltered muddy gravel and mudflats.

With regard to Seascape, “Dorset’s coastal environment is subjected to a variety of competing pressures all of which have potential to re-shape the character of the landscape and seascape”⁵. These pressures include natural and human activities.

4.3 Geology and the Seabed (Soils)

The Dorset coast has one of the most important geological histories in the world and is designated as a site of international importance; the C-SCOPE Marine Plan area forms part of a UNESCO World Heritage Site. It is perceived as providing great benefit to geological heritage and tourism.

Land is generally Non-Agricultural, urban or grade 3 (Moderate limitations due to soil, relief, climate or combinations; range of cropping is restricted compared to grade 1 and 2).

There is one closed dredging disposal site to the east of Portland, and an active one outside the C-SCOPE Marine Plan area to the east of Swanage.

There is no regular maintenance dredging activity within the C-SCOPE Marine Plan area. The Outer Harbour at Weymouth was last dredged 15-20 years ago.

The South Coast aggregate region has 19 production licences, two of which lie to the east of the C-SCOPE Marine Plan area. There are currently no licensed areas within the C-SCOPE Marine Plan area.

4.4 Fisheries and Mariculture

Dorset’s fishing fleet is primarily composed of inshore multi-purpose vessels which can use several methods of fishing to take advantage of seasonal fisheries. Approximately 90% of boats registered within the C-SCOPE 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.

The Southern Inshore Fisheries Conservation Authority (S IFCA) is responsible for the sustainable management of inshore fisheries and to support the conservation objectives of designated sites within the IFCA district.

It is currently estimated that there are 6000 crab and lobster pots around the Weymouth and Portland areas alone.

Scallop dredging, by a small number of boats, mainly occurs to the west of the C-SCOPE Marine Plan area in Lyme Bay, but commercial divers gather scallops from the rough grounds on Lulworth Bank during the summer months. Landings into Weymouth have been decreasing since 2005, although the value of those landings has remained relatively stable.

Three areas within the C-SCOPE Marine Plan area - Portland Harbour East, Portland Harbour West and the Shambles Bank – are designated shellfish waters, under the EC Shellfish Waters Directive

Within Portland Harbour there are two mussel farms and the deep water off Portland Bill is an important natural source of seed Mussels.

⁵ LDA Design (2010) *Dorset Coast Landscape and Seascape Assessment*. Available at: <http://www.dorsetforyou.com/c-scopelandandseascape>

The Fleet Oyster Farm lies at the southern end of The Fleet covering approximately two hectares.

4.5 Recreation and Tourism

Tourism is one of Dorset's predominant industries, as well as traditional beach holidays, walking, angling, scuba diving, sailing and other watersports are all popular attractions. The leisure and tourism sector accounts for 10% of workplaces within the C-SCOPE Marine Plan area, which equates to approximately 13,500 jobs. In 2008, the total visitor related spend in Dorset was £1.5 billion, with tourism adding approximately £361.4 million to GVA within the C-SCOPE Marine Plan area.

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.

Weymouth & Portland is one of the most popular diving locations in the UK, supporting 35,000 diver days per year. Based on a 2005 Weymouth & Portland survey, it is estimated today that diving tourism contributes about £8 million in demand for goods and services within Dorset (excluding Poole and Bournemouth), adding about £2 million to the GVA and supporting about 76 jobs in the local economy. However, diving operations are currently experiencing a downturn – partly due to the 2008 recession and also the availability of low-cost foreign dive trips.

Angling is widespread in Dorset, from both shore and boat and it is acknowledged as one of the best bass angling locations in the country. Weymouth has the UK's largest charter angling boat fleet.

Sailing is more popular than ever in Dorset, with the development of the Weymouth and Portland National Sailing Academy (WPNSA) and announcement that it would host the 2012 London Olympic and Paralympic Games sailing events. Since opening, WPNSA has created demand in service and marine industries worth in the region of £10 million, and it is predicted that it will be adding something in the region of £6m each year to the local economy.

Weymouth also provides the shortest crossing to France west of Folkestone, which makes it a popular berthing location. Weymouth Marina, which sits just beyond the town's lifting bridge, offers over 300 fully serviced berths. Portland Marina currently has 300 berths.

The last ten years has seen an increase in both established and new watersports within the C-SCOPE Marine Plan area. Portland Harbour provides a safe environment for many types of watersport; with windsurfing and kitesurfing being particularly popular. There are several training schools that cater for windsurfers, powerboating, waterskiing and kitesurfing in the area.

With an increase in availability of water sports this has led to further pressures in urban coastal areas. As Dorset has a very exposed coastline this limits access to beaches and harbours. Environmental pressures as a result of recreational use are difficult to quantify due to lack of spatial and temporal information. Pressures may include removal of marine fauna and flora, and physical or visual disturbances of wildlife.

4.6 Waste and Water Quality

Water resources are important for oil and gas infrastructure, commercial fishing, aquaculture and recreation, as well as facilitating the potential for marine renewables.

In 2009, there were 8 bathing water tests along the Weymouth & Portland Coast, all passed the 'stricter guidelines'. 100% of river water in Weymouth & Portland is rated as good in terms of water biology and 100% in terms of chemistry.

In 2009, there were 7 bathing water tests along the Purbeck Coast, all 7 passed of which 6 passed the 'stricter guidelines'. 100% of river water is rated as good in terms of water biology and 95% in terms of chemistry.

The urban area of Weymouth immediately behind the beach is served by a combined (surface and sewer) system. Sewage from the Weymouth and Portland area is treated at Weymouth Sewage Treatment Works and discharges to the sea one kilometre offshore, west of Portland Harbour.

4.7 Renewable Energy and Natural Resources

The Portland Project, a 1,000 million cubic metres salt cavern, is a planned natural gas storage facility, commencing construction at the end of 2010.

The C-SCOPE Marine Plan area has potential for offshore renewable energy technologies.

The West of Wight Round 3 wind farm development zone straddles the C-SCOPE Marine Plan area. The total zone area equates to 723.7km², but only 197km² of this will be developed just outside the Plan area. The developer (Eneco), believes the wind farm will produce up to 900 MW capacity, which equates to the supply of 2.87 TWh/year for circa. 587,000 homes. The scheme is expected to be in operation by 2018, subject to planning permissions.

Constraints mapping by DCF has identified Portland as a potential tidal stream resource, and two further areas that have suitable conditions for offshore wind development within the C-SCOPE Marine Plan area.

There are also some further issues in regard to the setting of the World Heritage Site. There is debate currently as to whether wind farms will affect the setting.

4.8 Defence

There is restricted public access to the coast and adjacent marine area to recreational boating and fishing at Lulworth, due to the presence of the Lulworth Ranges.

There is also seabed litter caused by munitions training.

4.9 Economy and Material Assets

The Dorset Coast is an important navigational route for ferries, fishing vessels, freight and oil/gas traffic. The main shipping routes operate from Portland and Weymouth Harbour. Future development includes: Osprey Quay which will provide up to 50,000 sq. metres (535,000 sq. feet) of development; the Portland Marina development will add a further 300 new berths; a proposed urban extension to Weymouth of 700 homes by 2026.

A Local Economic Forecasting model shows that increased employment is most likely to be in education and health, public administration and defence, business services and distribution.

There is currently one active power cable which runs from the beach at Grove Point, Portland, out to the Noise Range. There are currently no telecoms cables within the C-SCOPE Marine Plan area.

The Eastern coast of Dorset has four significant oil fields; Wareham, Wytch Farm, Beacon and Kimmeridge. Wareham produces 300-400 barrels of oil a day which is taken by small diameter pipeline to the main gathering station about 10 kilometres away and processed with oil from the Wytch Farm well sites.

Wytch Farm itself is Western Europe's largest onshore oilfield, and comprises of three separate oil reservoirs that lie under Poole Harbour and Poole Bay.

Small quantities of oil (about 65 barrels a day) are still being produced from a well site on the cliffs at Kimmeridge a few miles west of Swanage.

Shipping is mainly transitory through the C-SCOPE Marine Plan area, with higher density around the ports. Bunkering is available at Portland Port, and there is a rough weather anchorage within Weymouth Bay which is sheltered from the prevailing westerlies. The major Channel shipping lanes lie just to the South of the C-SCOPE Marine Plan area, and this includes a traffic separation scheme. Navy vessels, particularly the Royal Fleet Auxiliary, can often be seen anchored within Weymouth Bay, waiting to enter Portland Harbour.

There are two main ports, Portland Port and Weymouth Harbour, within the C-SCOPE Marine Plan area, with Poole Harbour to the east of the area.

Weymouth Harbour, owned by Weymouth & Portland Borough Council, provides services predominantly for local businesses and industries. It benefits from a greater diversity of business streams than many small harbours; principle sources of income are the Condor Ferry, inner harbour mooring holders, commercial boat operators and visiting yachts. The Weymouth Harbour Board's Annual Report 2009/2010 showed that the Harbour had an overall turnover for the year of £1,960,000.

Following closure of the navy base at Portland Harbour, 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.

There are seventeen designated anchorages, as well as 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, and it is also able to accommodate cruise liners in the port up to a length of 250 metres.

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. Osprey Quay also sits within Portland Harbour and hosts a number of businesses including the Royal Yachting Association (RYA), O'Three, Sunseeker and Portland Marina.

Although Poole Harbour is not within the C-SCOPE Marine Plan area, it serves as a home port for much of the local fishing fleet and many of the 6,000 registered leisure craft located there travel through the C-SCOPE Marine Plan area.

4.10 Air and Climatic Factors

Coastal erosion already affects the Dorset coast, impacting archaeological interest and community wellbeing.

The entire coastline of South Dorset has been identified as being at risk of coastal flooding. However, as much of the coast rises steeply from the sea, flood risk is limited, mainly posing threats to Weymouth and Portland, and other relatively small areas of low lying land.

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.

4.11 Archaeology and Cultural Heritage

The Dorset marine environment benefits from a wide range of sites of cultural significance, including nationally and locally protected ship wrecks. There are 18 significant wrecks off the Dorset Coast, four with protection and the remainder adopted by amateur groups under a scheme by the Nautical Archaeological Society.

The region has a high level of archaeological sites on the coast which is of value as a resource to the area in terms of tourism.

4.12 Community and Human Health

Data gathered as part of the 2006 MYE census shows that Dorset has a total resident population of 403,000. Cumulative resident populations of Weymouth/Portland and Purbeck, as gathered from 2008 census show an overall population of 109,025.

Unemployment is lower than the national average. However, there are pockets of deprivation and inequality due to low economic growth in Weymouth and Portland. This could be caused by disproportionately high concentrations of housing.

Between 1995 and 2005 the number of people in Dorset aged 50-59 years has increased by over 14,000. This represents a growth rate of 32.5%. Over the same period a decrease in the number of people aged 20-34 years was recorded. The number of people in this age group fell from over 65,000 to less than 50,000. This is a decline of over 24%. Over 27% of Dorset's population was over retirement age (estimates for 2005) with a national average of 18.7%.

5 What do we want to achieve?

The C-Scope Marine Plan sets out a series of objectives which lay out what the Dorset Coast Forum (DCF) would like to achieve through the plan. These are set out below:

- Objective 1: Healthy Marine Environment (HME)
- Objective 2: Thriving Coastal Communities (TCC)
- Objective 3: Successful and Sustainable Marine Economy (SME)
- Objective 4: Responsible, Equitable and Safe Access (REA)
- Objective 5: Coastal and Climate Change Adaptation and Mitigation (CAM)
- Objective 6: Strategic Significance of the Marine Environment (SS)
- Objective 7: Valuing, Enjoying and Understanding (VEU)
- Objective 8: Using Sound Science and Data (SD)

These objectives are supported by a range of policies that are there to deliver the desired outcomes of the planning process.

In the context of the SEA Directive, these plan objectives should be derived in part from the “the environmental protection objectives, established at international, Community or Member State level, which are relevant to the plan”. The policy context section of the C-SCOPE Marine Plan sets out the range of legislation that has been considered in developing the plan. Furthermore, the SA Scoping Report (<http://www.cscope.eu/en/home/>) establishes the policy context and the subsequent SA Framework, informed by this legislation, and has assessed the plan against this. Both of these approaches ensure that environmental protection objectives have been integrated in the plan and SA.

6 What will be the situation without the plan?

6.1.1 Biodiversity, Flora and Fauna

Studland and Portland possible SAC (pSAC), formerly part of Poole Bay to Lyme Bay pSAC, is being consulted on in 2011. For Special Protection Areas (SPA) in English inshore waters, Natural England is conducting annual surveys of seabird (mainly terns, auks and gannets) breeding and foraging areas (the majority of which are already designated as SPA). Once these have been analysed, consideration will be given by Natural England and the JNCC to bringing forward additional recommendations to extend the seaward boundaries to include important areas. Any potential designations resulting from this are likely to be some years in the future and will be subject to the same consultation procedures (Natural England no date). These will be designated by late 2012.

Marine Conservation Zones

Finding Sanctuary, the south west regional MCZ project, has recently released its Draft Final Recommendations, which include a number of recommended MCZs within and close to the C-SCOPE Marine Plan area. To the South East of Portland Bill is the South Dorset rMCZ containing the smaller South Dorset reference area; this site contains one of very few areas of sub-tidal chalk in the South West. A second rMCZ runs along the coast from Broad Bench to Kimmeridge Bay to protect inter-tidal rock habitats, whilst the proposed 'South of Portland' rMCZ based around the geological feature of Portland Deep is on the western most edge of the C-SCOPE Marine Plan area. These are likely to be in place by the end of 2012. It may be necessary to amend or review existing rMCZs or even designate new conservation areas depending on new data on conditions of habitats and species, whether this is due to natural change, climate change or human activities. Because there are variations in the dispersal distances of species, some species will successfully establish links between the MCZs but others will not (Natural England).

6.1.2 Landscape and Seascape

The Landscape and Seascape Character Assessment undertaken for C-SCOPE⁶ provides a picture of the competing pressures on the coastal environment and enables an extrapolation of future trends. It indicated that *"Dorset's coastal environment is subjected to a variety of competing pressures all of which have potential to re-shape the character of the landscape and seascape"*. These pressures include natural and human activities. The Marine Plan is unlikely to be able to shape natural processes but activities such as climate change, tourism, recreation, agriculture and fisheries can be adapted or mitigated for. This is also applicable to other activities such as minerals extraction, oil and gas and energy generation, military and shipping activity.

6.1.3 Geology and the Seabed (Soils)

The PHAL Marine Spatial Plan (2008) sets out designated dredging areas. Most of the locations of commercially viable sand and gravel deposits are fairly well known and studied.

⁶ LDA Design (2010) *Dorset Coast Landscape and Seascape Assessment*. Available at: <http://www.dorsetforyou.com/c-scopelandandseascape>

The South West and more specifically the Dorset area have a lower priority for extraction due to less market demand from the housing sector. The exception to 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.

6.1.4 Fisheries and Mariculture

The likely designation of new Special Areas of Conservation (SACs) and Marine Conservation Zones (MCZs) (collectively Marine Protected Areas (MPAs)) will have the biggest future impact on the fishing industry. Management measures are uncertain at present, but it is likely that benthic and demersal trawling will be banned from all sites. It is probable that fishermen will still be able to use static gears within both SACs and MCZs except for MCZ reference areas, where all *“extraction, deposition or human-derived disturbance will be removed or prevented”*.

Dorset fishermen played an active role in identifying recommended MCZs which should help to improve compliance and minimise impacts on livelihoods in these areas, however there could be increased pressure on areas outside MPAs 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.

There is an increasing national and local demand for locally sourced produce and fish that has been caught in a more environmentally responsible way. This could see local fishermen start to deliberately target more diverse species, and encourage more sustainable fishing practices.

The Crown Estate has recently granted a lease for a pilot scale mussel farm development in the North West area of Lyme Bay. A constraints-mapping exercise has identified several areas within the C-SCOPE Marine Plan area as having suitable conditions for aquaculture development.

It is highly likely that the Navitus Bay windfarm will start its construction phase in 2016. In the short term it seems unlikely that any aquaculture co-location will take place but, as technology improves in both industries, it could be a possibility in the next 20-30 years.

6.1.5 Recreation and Tourism

Tourism is one of Dorset's predominant industries, and the coast is arguably Dorset's most important single tourism asset. It is highly probable that marine and coastal leisure will continue to grow within the C-SCOPE Marine Plan area.

6.1.6 Waste and Water Quality

Bathing water, water quality and waste are regulated through a range of mechanisms. However, there will be greater pressure placed on existing Drainage Area Networks (DAN) and waste water treatment sites as terrestrial development takes place.

The Marine Plan will need to take into account the impacts of the 2012 Olympics and also plan for any legacy activities created by the provision of more infrastructure and associated increase in use.

The continued activity of the port, albeit regulated, poses a risk of pollution incidents and impacts on water quality.

6.1.7 Renewable Energy and Natural Resources

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. Eneco hope to be awarded permissions in 2013 with construction completion in 2018-19. The total zone area equates to 723.7km², but only 197km² of this will be developed just outside the Plan area. At its closest turbines will be sited 8.2 miles from Peveril Point, Swanage and its Northern most boundary will be located 10.2 miles from Bournemouth and 8.4 miles South West of the Needles. The type, height and number of turbines will be determined following further research and consultation.

The Dorset Offshore Renewable Energy Capacity Study identified two further Potential Development Areas, but this study imposed fewer hard constraints and listed development considerations. Both areas lie within 12nm of the coast.

There are several recent studies exploring future offshore renewable capacity, and all identify the area south of Portland Bill as a tidal stream resource. 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 Albans ledge may also be suitable in the future should technology progress to enable commercialisation in slightly lower resource areas.

Using the industry standard Minimum Feasible Operating Standards for wave technologies, the Dorset Offshore Renewables Capacity Report did not identify any offshore wave potential.

The SWRDA Technical Report identifies a 58km section of coastline from near Overcombe, to the Dorset/Hampshire border as suitable for shoreline wave device deployment. Not all of this area will be available for deployment due to existing coastal constraints.

6.1.8 Defence

Restrictions are likely to continue and the C-SCOPE Marine Plan has no legal remit to alter this.

6.1.9 Economy and Material Assets

It is anticipated that the Noise Range power cable will continue to be used for defence research. Inter-array cabling will be used to connect individual turbines to offshore substations or transformer platforms for the proposed Zone 7, West of Wight wind farm.

Crude oil from the Wytch Farm and Wareham oil fields is exported via terrestrial pipeline to the BP Oil terminal at Hamble for oil storage and export by sea. Unless economically viable new fields are discovered, it therefore seems unlikely that undersea pipelines will be installed either within the C-SCOPE Marine Plan area or just outside it.

The Portland Gas Project (a 1000 million cubic metres salt cavern natural gas storage facility), was granted planning approval by Weymouth & Portland Borough Council in May 2008 and is scheduled to take approximately seven years to become fully operational.

The Wytch Farm oilfield facilities are considered to have actual and potential adverse impacts on the designated interests, including the potential for significant pollution incidents. The presence of the facilities and the tree screening around them has the effect of delaying the restoration and management of parts of European sites to 'favourable condition'. Conditions require that the oilfield facilities are removed and the sites restored at the end of

the development, and this will itself have environmental impacts. The site has recently been sold and the intention is to apply to extend the life of the permissions for a further 25 years. An EIA will be required as part of the process.

At Weymouth, the condition of some of the main harbour structures such as harbour walls, jetties and accommodation is poor in parts. Funding is in place to enhance the facilities located in and around the harbor, improve the ferry terminal and repair and maintain the harbour walls.

The Portland Harbour Revision Order 2010 authorises Portland Harbour Authority Limited (PHAL) to construct works at the harbour including quay walls, reclamation of land and facilitates, and permanent mooring of a floating dry-dock. This will enable the Port to expand to cope with extra demand on service, accommodate large cruise liners and take advantage of the significant opportunities that the Navitus Bay windfarm should offer. In its 2007 HRO application, PHAL estimated that these works could increase employment by approximately 579 jobs.

Other development plans within Portland Harbour include the W4BUK liquid biomass power station at a brownfield site at Balaclava Bay.

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 PHAL will temporarily become the Harbour Authority for Weymouth outer harbour and an additional area of open water between 16th July 2012 to 9th September 2012. There will be navigational and access restrictions during this time.

An area of 969km² to the east of the C-SCOPE Marine Plan area, with an estimated resource value of £5.95 million per km², has been identified by The Crown Estate as of high interest for future prospecting in the medium to long term. There are currently no prospective areas within the C-SCOPE Marine Plan area.

6.1.10 Air and Climatic Factors

Rising sea levels will affect coastal areas throughout the area, causing problems including coastal erosion. This could also have an adverse impact on water quality. Climate change is predicted to produce more severe weather, including storms and consequent flooding. Possible disruptions to current flow caused by climate change could lead to ineffective and unexpected directional disposal of sewage by longfall pipelines. Similarly, changes to flow regimes in estuaries and rivers could result in reduced dilution of pollutants and consequently more pollution of the marine environment. The release of contaminants from seabed sediments could be affected by changes in salinity, wave regimes or currents.

There is a need to recognise that future developments could be affected by climate change i.e. increased storm frequency and magnitude and changes in weather patterns, with possible storm surges. Increased frequency and magnitude of coastal flooding will have to be factored into new developments to ensure they are best suited to mitigate the effects of climate change as far as is practicable. Climate change may increase the demand for protection against coastal flooding, which in turn may call for more soft engineered defences which use marine sand and gravels. There may also be more demand for marine aggregates in the manufacture of products that will be used for inland drainage infrastructure.

Increased storminess may impact on offshore wind and wave farms if structures are unable to cope with the increase in wave size and also storm surges. Changes to currents could result in changes to scour around the legs and supports of offshore installations and array and export cables, whilst increases in the occurrence of bad weather could also result in operation and maintenance issues.

There could potentially be smaller weather windows to install transmission and telecoms cables if there is an increase in the frequency and severity of storms. Changes in current regime could also lead to increased scour, resulting in cables becoming uncovered. An increase in storminess at sea may reduce the windows of opportunity to lay pipelines.

Climate change has already started to alter the abundance and distribution of fish stocks in EU waters. Predictions indicate that many of the UK commercially important fish species will decline and possibly disappear if Sea Surface Temperature (SST) continues to increase, however opportunities may also open up to fishermen as new, warmer-water species arrive. Increased storminess could lead to fewer days at sea for fishermen, and greater risks of getting into difficulties.

Shifting species range boundaries will have implications for MPAs as designated boundaries in the past have been static. The MCZ Project Ecological Network Guidance states *“Where features protected by MCZs have altered due to natural processes or climate change, it will be possible to revise the features listed for a site, de-designate MCZs, amend the MCZ conservation objectives, or modify the boundaries if such actions are deemed appropriate by Defra and the SNCBs.”*

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 such as Atlantic salmon, mussels and oysters yet cause cultivation difficulties of other species such as Atlantic halibut. It may also be possible to cultivate new species such as sea bass and bream.

Climate Change and Carbon emission controls have been highlighted as a key area for ports to work with. Short sea shipping has been identified as way of reducing road transport and therefore a potential solution to reducing carbon emissions. Projected increases suggest that emissions from shipping in 2050 will account for 15-30% of all UK CO₂ emissions. Currently much of shipping is fossil fuel based but advances in renewable technologies could potentially see this changed. Little has been studied on the impacts of climate change and ports themselves.

Climate change is likely to have a big influence on tourism and recreation and the resulting issues including increased visitor numbers and increased traffic as well as ‘coastal capacity’ should be taken into account for future planning.

Climate change is also currently driving government policy on renewable energy which may, in the future, lead to less reliance on fossil fuels.

6.1.11 Archaeology and Cultural Heritage

The Jurassic Coast and archaeological sites such as wrecks will come under more pressure in the future through the delivery of development and associated increases in recreation use in addition to the impacts of tourism brought by the Olympics in 2012.

This asset is sensitive to unregulated use and is irreplaceable. The Marine Plan should ensure adequate protection in terms of spatial development for these resources whilst at the same time providing for their sustainable access.

6.1.12 Community and Human Health

At the national level, the Government will introduce an annual limit on the number of non-EU economic migrants admitted into the UK to live and work.

At the local level, the number of people aged 65+ in Dorset is projected to increase by over 66 % between 2003 and 2028. This is highest in the east of the county; in East Dorset District over 30% of the population is over retirement age.

7 What are the alternatives under consideration?

Marine Planning is an emerging and evolving concept:

“Analysis shows a clear evolution from early spatial plans designed to establish and manage marine protected areas (Australia and USA), to multiple-use marine spatial management (Northwest Europe and China), to more recent, systematic efforts to underpin the design of multiple-use marine spatial management with an ecosystem approach (Australia, New Zealand and Canada).”⁷

However, there is still no single, readily applicable best practice of marine spatial management in existence, and it is becoming increasingly clear that each marine spatial plan is unique to the objectives for the plan, and governance structures in place.

As part of the C-SCOPE marine planning process, the Marine Plan Task and Finish Group analysed the approach of a range of marine plans⁸ (**Figure 7.1**), assessing the strengths and weaknesses of each approach and how they might be applied to the C-SCOPE area. This analysis was an iterative process and, as the collective understanding of marine planning developed, the Group moved from an early preference for a zoning approach to the idea of a flexible policy framework. They agreed that the Plan should be hierarchical where necessary, expressed spatially where possible (including opportunity areas) and criteria-based for specific development where appropriate.

⁷ Douvère Fanny. 2010. *Marine spatial planning: Concepts, current practice and linkages to other management approaches*. Ghent University, Belgium.

⁸ Scottish Sustainable Marine Environment Initiative Projects, available online at:

<http://www.scotland.gov.uk/Topics/Environment/Wildlife-Habitats/protectedareas/SSMEI>

Massachusetts Ocean Plan, available online at:

http://www.mass.gov/?pageID=eoeeamodulechunk&L=3&L0=Home&L1=Ocean+%26+Coastal+Management&L2=Massachusetts+Ocean+Plan&sid=Eoeea&b=terminalcontent&f=eea_oceans_mop_draft&csid=Eoeea

Integrated Management Plan for the North Sea 2015, available online at: <http://www.unesco-ioc-marinesp.be/uploads/documentenbank/4cf76ef0978d9e21b00ffa0460eb0221.pdf>

Great Barrier Reef Marine Park management, available online at: http://www.gbrmpa.gov.au/corp_site/management/zoning

Towards Marine Spatial Planning, Balance Technical Summary Report, available online at:

http://www.baltseaplan.eu/downloads/Balance_MSP_Handbook.pdf

Coastal Plan for the Two Brooms Area, available online at:

<http://www.highland.gov.uk/yourenvironment/planning/coastalplanning/integratedcoastalzonemanagement/>

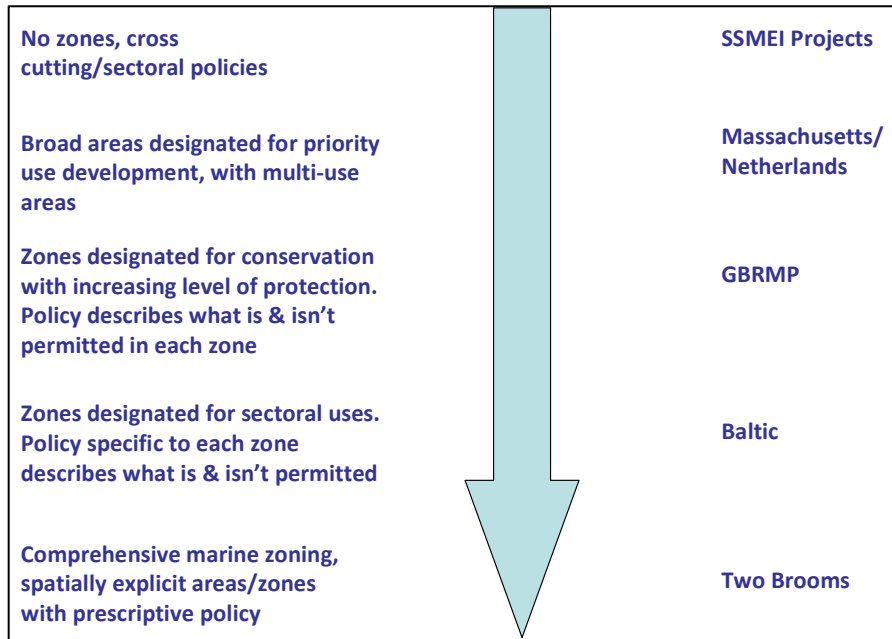


Figure 7.1: Types of marine spatial plan structures analysed by the C-SCOPE Marine Plan Area Task & Finish Group.

From this, a set of alternative approaches for the structure of the Marine Plan emerged (Table 7.1), and these were formally evaluated by the Task and Finish Group. Consensus was reached that Option 3, a policy framework which is expressed spatially where possible, was the best option for the Plan.

Option	Strengths	Weaknesses
1. Wait for Southern Inshore Plan	<ul style="list-style-type: none"> Statutory process, would have to have buy-in from everyone. 	<ul style="list-style-type: none"> Could be up to ten years before MMO plan this area Would have much broader remit than C-SCOPE plan, less local knowledge. Plans are likely to be at a low resolution Would lose research benefit of pilot project
2. No zones, cross cutting/sectoral policies	<ul style="list-style-type: none"> Easy to develop policy that everyone can sign up to 	<ul style="list-style-type: none"> Doesn't give decision makers any certainty Is not adding much above existing policy and strategies No guarantee that all stakeholders will engage if plan is non-statutory
3. Policy framework, spatially expressed where possible	<ul style="list-style-type: none"> Flexible Allows issues to be covered appropriately 	<ul style="list-style-type: none"> Could be confusing if the plan document isn't well structured

	<ul style="list-style-type: none"> • Terrestrial precedent • Provides some certainty for decision makers 	<ul style="list-style-type: none"> • May provide less certainty for decision makers than other methods • No guarantee that all stakeholders will engage if plan is non-statutory
4. Zoned by Seascape Character areas	<ul style="list-style-type: none"> • Robust analysis of existing data provides framework to create development policy for areas. • Has a terrestrial precedent • Zoning easier to understand • Provides more certainty for decision makers 	<ul style="list-style-type: none"> • Boundaries are transitional, would create uncertainty particularly further offshore • May be seen as too prescriptive • No guarantee that all stakeholders will engage if plan is non-statutory
5. Broad areas designated for priority use development, with multi-use areas	<ul style="list-style-type: none"> • Already have MCZs, SAC, easy to develop a zoning plan around this to include a large multi-use area • Zoning easier to understand • Provides more certainty for decision makers 	<ul style="list-style-type: none"> • May be seen as too prescriptive • No guarantee that all stakeholders will engage if plan is non-statutory

The assessment of alternatives has been considered from an early stage. Initially the approach was to assess the strategic approach of the Marine Plan i.e. to assess how the Marine Plan should be written and how it should be structured. The view was taken that this level of alternatives would result in no significant effects on the environment i.e. if the Marine Plan was to take a zoning approach or a policy framework approach it would have no bearing on the effects of the plan. This is primarily due to the fact that these alternatives are largely procedural in nature, focus on the structure of the Marine Plan and the approach to creating the document rather than material / significant policy or distributional decisions and therefore are unlikely to have any significant differences in regard to sustainability outcomes. Subsequently, ENVIRON and MPC drafted an alternatives paper⁹ that set out some recommendations for the development of alternatives and the assessment thereof.

As part of the SA Assessment workshop held on the 12th October the workshop participants were directed to identify further alternatives through specific questions:

1. Is there an alternative to this policy, either in its entirety or partially?
2. Is this alternative reasonable?
3. How does this alternative perform relative to the draft policy
4. Which should we be taking forward and why?

This approach yielded alternative wording to policies which was set out as mitigation and recommendations where applicable. The assessment of the residual effects effectively assesses these forms of alternatives.

⁹ ENVIRON UK Ltd. (2011) C-SCOPE Alternatives Report

With regard to the spatial strategy and the strategic objectives of the plan, the DCF considered the potential to develop strategic spatial alternatives at early stages of the preparation of the plan. At this point, it was determined that there were no key drivers and policy levers (e.g. off-shore wind development, oil and gas licensing or aggregates) that drove the spatial distribution of the Marine Plan. This being the case it was not considered 'reasonable' given the objectives of the plan to develop spatial alternatives, indeed it would be considered bad practice to develop alternatives purely for the sake of it. Spatial alternatives therefore have not been considered in the development of the Marine Plan and therefore are not covered in this SA Report. If, through the consultation on this Draft Marine Plan, any other reasonable alternatives given the geographic scope and objectives of the plan are identified, these will need to be assessed through the SA process.

8 What will the situation be with the plan including any alternatives?

This section presents the summary of the outputs of the one-day assessment workshop. The detailed assessment table from the workshop can be found within Annex B. The assessment has been grouped according to the three sustainable development categories, social, economic and environmental elements. Each section discusses four questions that were used to conduct the assessment:

- Is this [SA Objective] supported / conflicted in the plan?
- If not, should it be, and if so, where?
- What is the importance / nature of the impact?
- Do you have any suggestions of how it can be made better, including alternatives?

The identification of significant effects is defined by the magnitude of the effect and the sensitivity of the receptor the impact is on. In **table 8.1** we have set out the principle of significance used for this assessment:

		Scale		
		National	Regional	Local
Sensitivity	High ¹⁰	Major	Major	Major
	Medium ¹¹	Major	Moderate	Minor
	Low ¹²	Moderate	Minor	Minor

Note that where no impact is identified or where there is considered to be a negligible impact, these have not been documented.

8.1 Social

Is this [SA Objective] supported / conflicted in the plan?

The plan policies broadly support the criteria outlined for the social criterion. Specifically, TCC6, VEU1 and 2, HME 11, REA9, 10 and 11 were identified as supporting the health of coastal communities. TCC1, 2 and 3 and SME1 support the social elements of increasing accessibility to employment and decreasing deprivation. SME10 was identified as having a particular relevance for economic development around ports. The role of SD1 is important as much of the control over employment will come from terrestrial plans. It is noted that there is no 'explicit' policy on health, however, it is mentioned in the plan and can be inferred from some policies.

What is the importance / nature of the impact?

In terms of significant effects, a number were identified:

¹⁰ For example, a European site

¹¹ For example, an area of high multiple deprivation

¹² For example, an area at a long distance from any impact (coastal communities and fishing activities)

TCC6 will have the local impact of promoting community involvement and achievement will have a **minor positive** effect.

The plan containing as it does 'permissive' policies toward development. The impact of these is to allow 'sustainable' development to proceed and should therefore enhance the local economy and decrease deprivation, resulting in a **minor positive** effect

Reducing the seasonal nature of the economy and providing year round employment will have the impact of creating a more stable and resistant job market. The effect of which would be to create an overall **minor positive** effect on the local economy and reduced unemployment.

Offshore renewables could make the local economy more buoyant, if it attracts larger developers / companies the extent of the impact could be regional. However, it is more likely this would have a **minor positive** effect in terms of employment and health.

8.2 Economic

Is this [SA Objective] supported / conflicted in the plan?

The Marine Plan broadly supports the economic objectives of the SA. Specifically, the Marine Plan addresses the need and demand for job opportunities and links to the necessary infrastructure to support economic development, this is mainly through policies TCC3, TCC6, SME1 and 5 and HME12. TCC 5, SME 5 and 11 and are all drivers of economic development. Growth is managed through conservation policies including HME 1, 3, 5, 6 and TCC1 and 2. SD3 is also important to increase the evidence available to make decisions. Concern was expressed that in some cases the Marine Plan might be overly conservative, that is not allowing the leeway for planning authorities and developers to enter into discussions that may result on the removal of destruction of valued natural resources in order for development to proceed and betterment of other resources to happen.

In terms of identified conflicts, SME8 may work against economic objectives as beach replenishment can introduce pollution / other problems and this can have an impact on fisheries if inappropriate material is used. HME 12 and 3 can be potentially restrictive to the fishing industry. REA10, REA11 and TCC4 address tranquility. Tranquil areas can be adversely affected by their own success, by encouraging the economic benefits of these areas, their reason for drawing visitors (tranquil setting) can be detrimentally affected i.e. more visitors makes the areas less tranquil. REA1, REA2, REA5, REA12 should ensure that any developments provide the least impact possible, however, this might conflict with commercial issues and economic development, specifically in regard to viability issues. REA9 is supportive to economic development in its support of developments that encourage access from underrepresented groups.

With regard to communities, SD1 and 2, TCC1, 2 and 3 address deprivation, skills and seasonality respectively. There is no overriding quality of life commentary or policy, however, it can be inferred that HME policies support quality of life as they address the environment.

There is generally a good amount of policy that relates to the integration with terrestrial policy, this is essential if the objectives of the Marine Plan are to be achieved. Policies SD1, SD2, SD3 and SD4 relate directly to improving and integrating marine planning throughout the Dorset coast.

There is a need to look at the access and egress to ports, harbours, piers, marinas and slipways. Access to these areas is essential to realizing any economic benefits. Policies SS3, SS4, SME1, SME5 SD1, TCC2, TCC3 and SD2 support this objective. In terms of shipping, the term 'unacceptable' in HME 9 needs to be defined to improve clarity.

SME10 only covers Portland not Weymouth. This policy is very focused on infrastructure works. It needs to cover port development generally (include operational activities and access and egress to ports). SME3, HME3 and HME12 are potentially restrictive with relation to port development.

With regard to coastal erosion, CAM policies are supportive as is SME4.

What is the importance / nature of the impact?

The policies of the Marine Plan taken together will be positive in relation to promoting aquaculture and fisheries. This impact has the potential to have an effect at the regional scale and occur over the long-term – providing an economic benefit for the South West region. However, as a proportion of total economic activity, fishing employment is not considered significant. HME7,8 ,9 ,10 and 11 also seek to improve water quality which will help fisheries and will have a positive impact. Overall this is considered to be a **minor positive** effect on the overall economy and a **potential moderate positive** effect on the local economy, given its regional scale but small proportion of overall economic activity.

Some of the policies seem restrictive in relation to safeguarding the environment – HME3 in particular might be too restrictive and might reign in the extent of the economic benefits. This will have a potential negative impact through the prevention of development. This is considered to be a **potential minor negative** effect at this stage, however it is uncertain whether this will materialize.

Tranquil places are an attraction to local residents and to those from outside the area. The tranquil areas are generally those that don't have car parks generating income as the car parks can detract from the very tranquility people value. The retention of tranquility means in some cases the exclusion of other users in order to maintain tranquility – that is the value of the area can be negatively affected by its popularity. There are therefore positive and negative implications of the Marine Plan in this context. Specifically the tradeoff between the economic benefits of maximising the tourism / recreation draw of the area and the potential indirect effect that these areas become less tranquil and therefore cease to attract visitors. This plan performs positively in regard to retaining tranquility and protecting tranquil spaces, thereby emphasising the importance of maintaining the attributes of these areas but perhaps not achieving the maximum economic benefits, this is therefore a **minor positive** effect on the local economy, where as it could be a moderate effect if economic benefits were prioritised.

There are questions over the long term sustainability with regard to potential breaching of the Portland Harbour causeway and breakwaters due to the impacts of rising sea levels and extreme weather events caused by climate change. It is uncertain whether the financial resources will be available to ensure that the breakwaters will be maintained. Over 20 year timescale of the Marine Plan, the Olympic Legacy will provide a **moderate positive** effect in economic terms but beyond that period it will be too difficult to predict.

8.3 Environmental

Is this [SA Objective] supported / conflicted in the plan?

HME 1, HME 2 and HME 3, HME 4 adequately cover and support the protection of European Sites, national sites and nature reserves. The plan also supports the marine protected area network, through HME 1, HME 2 and HME 3, HME 4 and HME 5. In terms of access to wildlife and natural resources, REA 7, 8, 9 and TCC 6 support this criterion. However policies REA5, REA 10 and REA 11 might be in conflict.

Landscape quality, Areas of Outstanding Natural Beauty (ANOB) and the protection of landscape / seascape resources are largely covered through VEU 1 and 2 and REA 10 and 11. The resilience of landscape and seascape is not explicitly covered in the Marine Plan.

The protection of the seabed and the effects on any sites designated for geology are addressed in CAM 1 and SD 1. CAM2 and HME2 address all designated sites for geology. Geology is also mentioned in Box A of policy SME 2.

The Marine Strategy Framework Directive and the Water Framework Directive are not directly referenced in the Marine Plan, however, some of the requirements of these directives are specifically addressed. The reduction in water pollution is addressed in a range of policies, specifically HME 7, 8, 9 and 10 support the limitation of water pollution. Seabed contamination and sediment quality maintenance are supported in REA 3 and REA 4, SME 8, HME 8, HME 10-11.

The minimisation of waste and the use of the waste hierarchy are supported through HME15 and 16. HME8 addresses liquid waste

Key ecological processes are supported through HME 4, 7, 8, CAM 1, SME 8, HME 10 although this covers maintenance and protection rather than restoration and enhancement.

In terms of co-location, SME 6 supports the co-location of uses with regard to renewable energy provision. In terms of resources for future generations, supportive policies include HME 6, 7, 15 and 16, SME 1 and SS 4.

With regard to air pollution, HME 14, HME 3, HME 9, HME10 are all supportive although they don't really address air pollution *per se*.

Although the plan may have limited scope in terms of what it can do spatially to reduce greenhouse gas (GHG) emissions, recent waterborne transport studies¹³ have focused on integrating waterborne passenger transport with public on land transport. CAM 5, CAM 6, REA 7 are supportive and HME15 with relation to waste disposal is also supportive.

SS 4, CAM 5 and 6 and ports policy (SME 10) are all supportive in terms of reducing the reliance on fossil fuels and promoting renewable energy technology / strategies. There is a potential conflict with the tranquility policies – REA 10 and 11 in relation to wind farms, SME 1 and 5 (landside components) and HME 14. SME 6 and 7 are supportive due to their encouragement of renewable energy projects. The link to terrestrial planning is important and SD 1 is supportive of this link.

Supporting those vulnerable to sea level rise is address in the Marine Plan, policies CAM3 and 4 and SME4.

13 Fisher Associates (2010) Waterborne Transport Study Phases 1 and 2. Available at: <http://www.dorsetaonb.org.uk/our-work/coastal-corridor/waterbornepassengertransportstudy.html>

With regard to the historic environment and other important heritage assets, the Marine Plan includes a range of policies that cover these areas, namely VEU 3, 4 and 5, TCC 4, CAM 2 and Box A of policy SME 2.

What is the importance / nature of the impact?

The Marine Plan's performance with regard to the environmental criteria, as would be expected from a range of conservation policies, performs **positively overall**. The impacts of the HME policies on biodiversity should be felt at a **local, regional, national** and **international** level in regard to the enhancement of these sites and supporting biodiversity resulting in a **major positive** effect.

The potential impact of the Marine Plan is to promote the right type of development in the right places including the co-location where possible of uses this is predominately a **minor positive** effect.

The plan should result in a largely positive impacts on water quality, natural resources and pollution locally through the relevant policies resulting in **minor positive** effects. However there are a number of clarifications that could improve the outcomes of these policies – these are discussed in the following section with relation to mitigation. Waterborne transport studies state that the network would achieve a net reduction in air pollution by transferring traffic (non-freight) to marine routes therefore a **minor positive** effect on the plan in terms of NO_x and PM₁₀ potentially, but also this also has the potential to have a limited contribution to a global target of GHG reduction.

The plan's impact will be largely dependent on the interface with terrestrial planning and the effect that coastal erosion and sea-level rise might have on development and specifically access to the marine areas. This does however assume that the terrestrial planning policies are in fact sustainable. Therefore there is a potential **positive** effect but the potential magnitude is unknown.

There will be a largely positive impact of the plan on the historic environment, although there is a concern that the plan might be too protective which might result in the failure to take advantage of planning gains to maximise the best elements of the heritage environment. This should result in **minor positive** effect due to the local impact of these policies.

9 Cumulative effects

Table 9.1 below sets out the *potential* linkages between effects identified and defines the potential for cumulative impacts, whether positive or negative. At this level of assessment we have not allocated a magnitude to the scores, only whether they are positive or negative. This provides us with a good level of accuracy without relying on too many assumptions or uncertainties.

The cumulative effects identified for the Marine Plan are largely positive, essentially focusing on the links between positive economic impacts and positive impacts relating to deprivation. There is a notable potential negative impact relating to the possible negative impact of restriction of growth caused by overly restrictive and conservative policies. However, it is a *potential* negative effect and by no means certain, it reflects the content of the SA workshop discussions. The ambiguity is essentially due to the uncertainty over the delivery of the policies and the reaction to the policies by developers, therefore we recommend that the plan includes metrics to monitor economic growth to ensure it is not stifled.

There are also potential negative cumulative effects resulting from the interaction between economic development policies and biodiversity policies. Essentially this highlights the ongoing conflict between encouraging development and preserving biodiversity. There are policies in place to mitigate this, essentially the HME suite of policies, so this should ensure that cumulative effect of the economic based policies does not impact on biodiversity and other environmental receptors. This is also applicable to recreation where there is an inherent tension between the recreation, economic and environmental policies, with the potential for negative cumulative effects on the sites used. Policies in tranquility should address this.

Predicted effect		Social				Economic			Environmental				
		Promote community involvement	Decrease deprivation	Reducing seasonality in workplace	Increased employment	Increased income and employment from fisheries	Restricting of growth	Increased recreation	Increased biodiversity	Maximising available area through co-located development	Reduction in pollution and increase in water quality	Reduction in air pollution and GHG	Protection of the historic environment.
Social	Promote community involvement		Positive	Positive	Positive	Positive	Potential negative	Positive	Positive	N/A	N/A	N/A	Positive
	Decrease deprivation			Positive	Positive	Positive	Potential negative	Positive	Positive	Positive	N/A	Positive	Positive
	Reducing seasonality in workplace				Positive	Positive	Potential negative	N/A	N/A	N/A	N/A	N/A	N/A
	Increased employment					Positive	Potential negative	Positive	Potential negative	Positive	N/A	Potential negative	Positive
Economic	Increased income and employment from fisheries						Potential negative	Positive	Potential negative	Positive	N/A	N/A	N/A
	Restricting of growth							Positive	Positive	N/A	N/A	Positive	Potential negative
	Increased recreation								Negative	Positive	N/A	Negative	Positive

Environmental	Increased biodiversity									Positive	Positive	Positive	N/A
	Maximising available area through co-located development										N/A	Positive	Positive
	Reduction in pollution and increase in water quality											N/A	N/A
	Reduction in air pollution and GHG												N/A
	Protection of the historic environment.												

10 How can we mitigate / enhance effects?

The following recommendations were made for enhancement of the C-SCOPE Marine Plan in regard to Social criteria:

1. Creation of new policy that explicitly addresses health and health inequality / deprivation;
2. TCC6 should be strengthened to promote activities that are positive for health rather than just raising awareness of health issues;
3. HME11 needs to clarify the significance / justification of one nautical mile;
4. There is the potential to include a policy that promotes local businesses which could have local impacts;
5. TCC1, 2, 3 and 4 all start with 'development' – this needs to be defined in a glossary as development means different things to different people;
6. There should be conditions in the plan regarding employing local residents and up-skilling the community where employment is not possible.

The following recommendations were made for enhancement of the C-SCOPE Marine Plan in regard to Economic criteria:

1. Amend SME5 so that it is less specific, i.e. remove the direct references (delete the such as...);
2. Consider the inclusion of a specific infrastructure policy to ensure economic effects are realised;
3. Include a policy that encourages the diversification of the fishing fleet, this would work towards making the fleet more resilient to future economic shocks;
4. SME8 should be re-worded so that it leads to the provision of "an appropriate resource in terms of what already exists in the natural environment";
5. Does HME12 and 13 need to define the "areas defined" in the policy;
6. HME 3 used Habitats Directive language in regard to non-European designated sites. This should be reworded to avoid confusion (this applies to the plan as a whole);
7. It would be helpful if food security is mentioned more explicitly in the policies;
8. There is a test of significance within policy REA10 "...significantly threaten..." this needs to be defined in the supporting text or removed;
9. HME14 should clarify the "natural environment" – is this to include human receptors also?;
10. The perception of tranquility is relative and therefore the measure/definition of tranquility needs to be included within the supporting text of REA10;
11. REA2 - detail needs to be provided on how this is monitored and by whom, probably in the supporting text;
12. REA5 could be made more positive, for example encouraging activities that do not cause disturbance rather than discouraging those activities that do;
13. REA1 – needs to link to current plan processes, re-phrase to "...should conform to relevant recreational management / zoning plans...";

14. Remove figure 18 as these will change over time – just show the harbour jurisdictions instead. Fleet should also be included;
15. Consider deletion of REA 6 as this issue is covered in REA 5;
16. SME10 needs to be reviewed to ensure it is compatible with existing and planned activities;
17. The section including SME 10 should be re-named from “supporting sustainable development in Portland Harbour” to “Ports and Shipping” and needs to include both Portland and Weymouth Ports;
18. Potentially need to be less restrictive with relation to HME3 and HME9 - need to define what is acceptable within policy or supporting text;
19. Need to clarify where the reference to six nautical miles in HME 9 comes from;
20. Focus policy REA 11 on honeypot sites to preserve tranquility elsewhere. There is a need to make specific mention in the background text to the Jurassic Coast World Heritage Site (JCWHS) and Area of Outstanding Natural Beauty (AONB) policies which promote honeypot sites;
21. There should be an additional policy which links car parking to the provisions set out in the adjacent Local Development Frameworks;
22. TCC 3 should be expanded to include Green Infrastructure;
23. REA 9 should provide an example in the supporting text;
24. REA 8 shouldn't just mention slipways, this should be rephrased as “...existing access facilities...”;
25. The plan should present its own definition of sustainable development, or ‘resilient’ development;
26. SD4 should say “...quality data gathering”;
27. SME2 is potentially restrictive and needs to define “major development”;
28. Title of TCC 2 what is the definition of higher skills? This should be defined in the supporting text;
29. CAM1 should be extended to address coastal flooding and erosion risk;
30. SME4 and SME9 - more general policies needed recognising both Portland and Weymouth ports –possibly in supporting text;
31. There is a need to emphasise the agreement between the port and the sailing academy to ensure future use for sailing is not compromised;
32. For new species exploitability, the plan needs to provide for protection against ‘gold rush’ behaviour i.e. the rush to exploit a species that was otherwise absent needs to be managed / avoided;
33. Policies need to Invasive species policy need to make specific mention of aquaculture.

The following recommendations were made for enhancement of the C-SCOPE Marine Plan in regard to Environmental criteria:

1. REA9 should say “...including under-represented groups.”

2. There is a need to better illustrate how the plan goes beyond the statutory duties set out in legislation;
3. The plan should be clearer in regard to developer contributions;
4. Areas of Outstanding Natural Beauty (AONB) needs to be mentioned in the supporting text for HME1, 2, VEU1 and VEU2 – AONB and the Jurassic Coast’s world heritage status;
5. The plan should define the scales of development – what is considered large scale in a Marine Plan?;
6. There is a need to address the cumulative impacts of development on the seascape character – or at least recognise this in policy;
7. CAM 2 should refer also to Beach Management Plans;
8. There is a need to protect geological features such as the Shambles in addition to river beds;
9. Suggest a policy to include deep water processes as well as the inter tidal zone;
10. REA 3 – sensitive habitats could include wrecks – change to say “sensitive features”;
11. Change the title of HME 15/16 section to “reduction of litter to sustainable waste management and marine litter”;
12. CAM1 needs to have “wherever possible” removed;
13. HME14 – could be re-worded to state development should be consistent with Water Framework Directive and Marine Strategy Framework Directive. This policy could direct people to a planning checklist that DCC are looking to put on their website;
14. HME8 – rephrase to say “new developments”;
15. Water quality policies should apply to shell fish waters as well;
16. HME 11 is largely obsolete – suggest deleting as it is covered in HME 10 – providing HME 10 is amended to remove ‘point source’ and refers to pollution across the board;
17. There is a need to mention mooring of tankers and hazardous cargos anchoring in bays;
18. The use of the word “industrial” is superfluous in policies;
19. Include a policy that requires the re-use of dredged material;
20. Need to indicate in the supporting text that a renewables capacity study has been undertaken;
21. Need to state that offshore development is not just renewable energy but could also include artificial reefs, cabling etc.;
22. There should be provision for smaller off-shore renewable energy, including pilot schemes;
23. The co-location policy (SME 6) should be more general and inclusive;
24. HME 9 should pick up exhaust materials from shipping;

25. HME 14 – add air quality. There is a need to make sure that the impacts of cumulative developments are covered;
26. Recommendation to expand to include a discrete transport section, or suggest expanding SME 10 that focuses on shipping;
27. REA7 –the policy should refer to both commercial and passenger shipping or include a new policy on short sea shipping in SME policies;
28. HME14 – this policy is needed and wouldn't recommend removal or significant change.
29. TCC 1 refers to deprivation, although this could be altered to reflect dissatisfaction (although it is unclear how this could be influenced by the Marine Plan);
30. There is a need to support adaptation and diversification of coastal communities to sea level rise;
31. TCC 6 needs to include cultural as well as natural environment;
32. VEU 4 – look at wording to change to a positive slant. Early engagement is required for any development that is likely to disturb cultural heritage assets (define what is meant as an asset in supporting text);
33. VEU 3 to include reference to effects on settings as well – and seek opportunities to enhance them;
34. VEU 6 should say heritage of cultural assets not buildings. Cross check against PPS5 to check for wording consistency;
35. Need to ensure consistency between VE3 with HME1;
36. Plan should set out a positive and pro-active strategy for the conservation and enjoyment of the historic environment in the plan area; and
37. SD 2 – land sea interface used – clarification need – does this refer to coastal or just development that extends from land to sea e.g. a pier?

11 Significant Residual Effects and Monitoring¹⁴?

11.1 Residual effects

As discussed previously, subsequent to our assessment, DCF responded to our suggestions for improvements to the plan (see Annex B). We have provided a commentary below on the difference between the identified effects of the draft plan and the effects of the plan 'post-mitigation'.

Predicted effect	Pre-mitigation	Residual effect
Increased community involvement	Minor positive	No change
Decrease deprivation	Minor positive	No change
Reducing seasonality in workplace and greater resilience of fishing fleets	Minor positive	No change
Increased employment	Minor positive	No change
Increased income and employment from fisheries	Minor / moderate positive	Minor positive (note that DCF indicate that this is not within the remit of the C-SCOPE Marine Plan)
Restricting of growth	Minor negative (potential)	Minor negative (potential)
Increased recreation related jobs and income.	Minor / moderate positive	No change
Increased biodiversity	Major positive	No change
Maximising available area through co-located development	Minor positive	No change
Reduction in pollution and increase in water quality	Minor positive	No change
Reduction in air pollution and GHG	Minor positive	No change
Protection of the historic environment.	Minor positive	No change

11.2 Monitoring

The SEA Directive provides that the responsible authority “*monitor the significant environmental effects of the implementation of plans*” [our emphasis]. We have set out below a monitoring framework that links the predicted impacts, effects and monitoring indicators. Once implemented, this should enable the responsible authority to determine at the earliest opportunity if any adverse effects are occurring as a result of the implementation of the Marine Plan.

¹⁴ “a description of the measures envisaged concerning monitoring...” (Annex I(i))

Table 11.2: Marine Plan Monitoring Framework

	Impact	Effect	Monitoring Indicator
Social	Promote community involvement and achievement	Increased community involvement	Number of community led initiatives Number of community volunteer hours
	Increased development through permissive policies	Decrease deprivation	Index of Multiple Deprivation and sub-Domains
	Diversification of employment both in regard to seasons and infrastructure.	Reducing seasonality in workplace and greater resilience of fishing fleets	Year on year income from fisheries New business start-ups
	Increased development of renewable energy facilities	Increased employment	Un-employment claimants
Economic	Greater fishing activity	Increased income and employment from fisheries	Year on year income from fisheries New business start-ups
	Developers constrained by Marine Plan policies in regard to new development.	Restricting of growth	Gross Value Added (GVA)
	Tranquil places attracting tourism to the area.	Increased recreation related jobs and income.	New business start-ups Income Index of Deprivation
Environmental	Increased protection of the environment including European sites and non-European sites	Increased biodiversity	Condition of SSSIs Condition of SACs Conformity with Biodiversity Action Plan targets and objectives.
	The facilitation of the use of the same space for a range of uses.	Maximising available area through co-located development	Occurrence of co-locational development.
	The approval of development with low likelihood of pollution incidences	Reduction in pollution and increase in water quality	Biological and chemical water quality Pollution incidences
	Shift of transport to marine vehicles	Reduction in air pollution and GHG	Air quality relating to NO _x and PM ₁₀ GHG emissions
	Protection of the historic environment	Protection of the historic environment. Wider community	Number of significant wrecks Heritage at Risk

		support and visitor access to, enjoyment of and understanding about the historic environment	Programme
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12 Ecosystems Services and SEA

The Millennium Ecosystem Assessment (MA) defined ecosystem services as “*the benefits that people obtain from ecosystems*”.¹⁵ This definition has been further refined, in a UK context, through both the UK National Ecosystem Assessment (UKNEA) and the Natural Environment White Paper. The UKNEA defines ecosystem services as “*the **benefits** people obtain from ecosystems. These include **provisioning** services such as food and water; **regulating** services such as flood and disease control; **cultural** services such as spiritual, recreational and cultural benefits; and **supporting** services such as nutrient cycling that maintain the conditions for life on Earth*” [our emphasis].

The principal challenge in managing ecosystem services is that they are not independent of each other; attempts to optimise a single service often lead to reductions or losses of other services, i.e. there are trade-offs.¹⁶ This echoes the approach of SA in that the purpose is to highlight where trade-offs in different elements of sustainability might occur or be needed.

In 2005, the Millennium Ecosystem Assessment (MA) concluded that, on a global scale, the majority of ecosystem services had been degraded.¹⁷ The Economics of Ecosystems and Biodiversity (TEEB), a major international initiative, published a series of reports highlighting the growing costs of biodiversity loss and ecosystem degradation. More recently the UKNEA confirmed that many of the UK’s ecosystems services were being degraded (whilst some were prospering).

We have attempted to ‘start the discussion’ on the ecosystem approach within this SA. It is not within the remit of the assessment to undertake a full ecosystem services assessment; however it is worth attempting to link the topics in this report to potential services and benefits in order to extend the debate.

As part of the assessment of the Marine Plan, the intention is to provide a short commentary on the potential impacts on ecosystems services of the policies under each of the topics with a simple colour coded indicator of whether, in our professional judgment the ecosystem service is likely to be negatively, beneficially or not affected at all by the policies in the Marine Plan. Table 16.1 and 16.2 below provides an indication of how this scoring might work.

It should be noted that the Ecosystems Services, by their very nature, are holistic and cross boundary. We have therefore not tried to allocate SEA Directive topics to specific ecosystems services; rather we are treating ES as an overarching chapter. With regard to the assessment for each topic we have simply provided an expert view on what effects the impacts identified might have on the delivery of ES across the board. **Table 12.1** takes extracts from the UK NEA technical chapters on marine and coastal environments to try and

15 Millennium Ecosystem Assessment (2005). *Ecosystems and Human Well-being: Biodiversity Synthesis* [online] available at: <http://www.maweb.org/documents/document.354.aspx.pdf> (accessed 26 January 2011).

16 Rodríguez, J. P., Beard, T.D. Jr., Bennett, E.M., Cumming, G.S., Cork, S., Agard, J., Dobson, A.P. and Peterson, G.D. (2006). Trade-offs across space, time, and ecosystem services. *Ecology and Society* 11(1): 28 [online] available at: <http://www.ecologyandsociety.org/vol11/iss1/art28/>.

17 Millennium Ecosystem Assessment (2005). *Ecosystems and Human Well-being: Biodiversity Synthesis* [online] available at: <http://www.maweb.org/documents/document.354.aspx.pdf>.








establish a baseline from which we can make judgments regarding future decline or improvements on service provision.











Having undertaken the SA of the consultation draft Marine Plan, we have tried to provide a prediction of how each ecosystem will fair, given the impacts identified.



Table 12.1: Example ecosystem service assessment key

Description	ES Performance under the Marine Plan
Ecosystem service is likely to deteriorate under the Marine Plan.	
Ecosystem service is likely to improve under the Marine Plan.	
There will be effects, but these are uncertain or neutral	
No effects identified / no links	






Table 12.2: Ecosystem Services Framework

Broad ES Category	ES Category	Current trend		ES Performance under the MSP
		Coastal	Marine	
Provisioning	Crops			N/A
	Livestock / Aquaculture			This should further improve given the polices on sustainable fishing.
	Fish		±	This should further improve given the polices on sustainable fishing. However, climate change may have an effect in terms of the migration of warmer water species
	Trees / standing vegetation, peat			N/A
	Water Supply	~		N/A
Cultural	Wild species diversity			There is a great emphasis in the MSP on protecting biodiversity at all levels.

	Local Places		~	There is an emphasis on the involvement and engagement of local people in the economy and community. Additional policies relate to access.
	Landscapes / Seascapes		~	There is a great emphasis on the maintenance and enhancement of landscape and seascape character.
Regulating	Climate			The MSP has where possible contributed to reductions in GHG and encouragement of renewable energy.
	Hazard			In regard to hazards relating to climate change adaptation, the plan performs satisfactorily but is limited by the spatial extent of the plan.
	Disease and pests	±		Invasive species are not covered to a great enough extent. However, it may be more appropriate to address this issue through other processes.
	Pollination			N/A
	Noise			Covered in SME 2 Box 1 and policies should have a positive effect on this ecosystem service.
	Water Quality	~		Water quality should improve given the extent of conservation policies and policies on pollution.

	Soil Quality			There are policies in place to reduce the damage to the seabed and to ensure dredging and other activities are carried out in a sustainable manner.
	Air Quality		~	There are a range of policies relating to pollution, including transport, that should improve air quality.
Supporting	biologically mediated habitat			N/A
	Nutrient recycling			N/A

Key

Symbol	Explanation
	Some improvement
	Some deterioration
	No net change
	Deterioration
	Improving
±	Improvement and/or deterioration in different locations
~	Unknown

13 Next Steps and how to comment on this report

This SA Report will be consulted on for twelve weeks alongside the consultation draft Marine Plan. Once the consultation is completed, the comments will be considered and the report amended where necessary, this will then be published on the C-SCOPE website <http://www.cscope.eu/en/results/marine-mgmt-plan/dorset>.

To comment on this report, please contact Ness Smith:

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Dorchester. DT1 1XJ

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Annex A: SA Framework

C-SCOPE SA Framework

SA Topic	SA Objectives	Does the Dorset Marine Plan ...	Suggested SA Indicator or Monitoring
Biodiversity, Flora and Fauna	<ul style="list-style-type: none"> Maintain and, where appropriate, enhance designated and non-designated species and habitats of the Marine Plan, intertidal, water column and seabed; 	<ul style="list-style-type: none"> Have a positive impact upon any areas of environmental importance such as European sites. Nationally designated (Site of Special Scientific Interest (SSSI), National Nature Reserve (NNR) and the species which these habitats support Aim to decrease the fragmentation and promote the interconnectivity of marine and coastal waters where appropriate. Provide opportunities for people to come into contact with, and appreciate wildlife and natural areas 	<ul style="list-style-type: none"> Number of planning applications given consent on designated sites. Percentages of BAP species and habitats, which are identified as stable or increasing (although this is not measurable locally for all BAP species – may be possible to link with existing monitoring schemes). Proportion of required open space being natural/wild areas. Increase in the number of wildlife corridors (a method of monitoring this would have to be developed). Reported condition of designated sites from site monitoring reports Achievement of Biodiversity Action Plan targets Reported condition of nationally important wildlife sites, e.g. SACs. SSSIs etc. Number/area of Local Nature Reserves
Landscape and Seascape	<ul style="list-style-type: none"> Maintain and, where appropriate, enhance the quality and distinctiveness of the Marine Plan's associated landscape and seascape. 	<ul style="list-style-type: none"> Have a positive effect on the landscape quality and integrity of the Dorset Coast? Conserve and enhance the AONB and avoid conflicts with the AONB management plan or Heritage Coast Objectives? Policies protect and enhance the landscape/seascape resources? 	<ul style="list-style-type: none"> Reported condition of Dorset's coastal landscapes (non/designated) and townscapes, (including conservation areas). Reduction in the number of planning applications granted planning permission either as departures or against officers' recommendation. For example where: New developments

		<ul style="list-style-type: none"> • Ensure the resilience of landscapes and seascapes capacity? 	<p>individually or cumulatively adversely affect designated landscapes; and</p> <ul style="list-style-type: none"> • Reduction in the number of planning applications granted planning permission for enabling and that have adversely affect landscape characteristics (e.g. changing its landscape character type, not respecting local topography/contours), development. • Numbers of applications for development with potential impacts on seascape/landscape designations • Proximity of proposed developments i.e. any trends for clustering of developments.
Geology and the Seabed	<ul style="list-style-type: none"> • Maintain and, where appropriate, enhance the quality of the seabed and intertidal zones 	<ul style="list-style-type: none"> • Protect the seabed from inappropriate coastal use / development and erosion • Affect any designated sites for geology 	<ul style="list-style-type: none"> • Number of applications which would potentially have adverse and/or beneficial impacts on seabed condition/soils and/or designated sites. • Reduction in the likelihood of flooding from new development
Fisheries and Mariculture	<ul style="list-style-type: none"> • Enhance aquaculture and sustainable fisheries practices. • Take into account the effects of climate change on fisheries and mariculture. 	<ul style="list-style-type: none"> • Promote aquaculture and fisheries activities that increase job opportunities and food security using environmentally sound practices; • Reduce by-catch as a result of fishing activities 	<ul style="list-style-type: none"> • Total number of landings • Planning consents given for aquaculture • Fisheries environmental surveys
Recreation and Tourism	<ul style="list-style-type: none"> • Increase awareness, skills, accessibility, understanding and enjoyment of the environment 	<ul style="list-style-type: none"> • Protect or enhance the tranquility of the coast; • Improve accessibility to good quality marine areas and increase opportunities for outdoor recreation and exercise; • Promote prosperity and quality of life benefits for the people and 	<ul style="list-style-type: none"> • Increase in the number of regeneration schemes. • Proportion of tranquil areas • General resident perception surveys

		<p>communities of the Dorset Coast through appropriate levels of development surrounding the plan area;</p> <ul style="list-style-type: none"> • Improve and integrate marine planning throughout the Dorset coast and to take the importance of tourism and the economy into account. 	
Waste and Water Quality	<ul style="list-style-type: none"> • Maintain and, where appropriate, enhance water quality and good ecological status of coastal and transitional waters as set out in the WFD including marine, coastal and estuarine systems. 	<ul style="list-style-type: none"> • Take into account the requirements of the Water Framework Directive and the chemical, ecological and hydrological pressures on the water environment • Ensure sustainable use of natural resources and minimise the impact of waste disposal • Improve and support water efficient technologies • Limit water pollution to levels that do not damage natural systems • Reduce contamination, and safeguard seabed / sediment quality and quantity • Minimise waste, then re-use or recover it through recycling; and • Maintain and restore key ecological processes (e.g. hydrology, water quality, coastal processes) 	<ul style="list-style-type: none"> • Increase in the number and duration of bathing water areas passing Bathing water quality EC Guideline Standards. • Reduction in diffuse pollution (e.g. nitrates) within marine areas. • Reduction in point source pollution in watercourses. • Increase in the number of development schemes that incorporate water efficient technologies. • Number of developments planned or retrofitted with SUDS for existing water systems. • Water quality in designated areas • Number of applications which would potentially have adverse and/or beneficial impacts on water quality /status • Proportion of coastal water bodies achieving good ecological status by 2015 under the Water Framework Directive
Climatic factors and Material Assets	<ul style="list-style-type: none"> • Promote the sustainable delivery of renewable energy? • Utilise the Marine Plan's natural resources to their best effect? 	<ul style="list-style-type: none"> • Provide a sustainable strategy for mixed used development on potential renewable sites? • Contribute towards the national targets for greenhouse gas reduction? • Ensure adequate 	<ul style="list-style-type: none"> • Installed renewable capacity. • Increase in the number of renewable trial sites and technologies

		resources for future generations?	
Material Assets	<ul style="list-style-type: none"> None-proposed¹⁸ 	None Proposed	None proposed
Economy and Material Assets	<ul style="list-style-type: none"> Maintain or enhance efficient use of Dorset's existing infrastructure and support economic development within environmental limits. Promote sustainable development, transport, and access options while preventing loss of biodiversity and habitat fragmentation. 	<ul style="list-style-type: none"> Protect or enhance the efficient use the planned areas existing ports, harbours, piers, marinas or slipways. Promote economic development Promote the creation of fixed assets, including affordable housing and water and waste management facilities. Enhance and promote commercial and industrial assets. Avoid loss of property due to erosion and/or manage risk of flooding to people, residential, commercial and industrial property, recreational and amenity facilities 	<ul style="list-style-type: none"> Number of waste management facilities built that addresses the need identified in the Waste Treatment Directive Increase in the number of vacant buildings reused. Increase in the number of holiday homes built to meet predicted demand Decrease in the number of derelict and vacant land. Increase in the number of residential, industry, and commercial properties protected by flood defences. Increase in the use of sustainable materials in new build and retrofit in planning applications. Visitations to designated sites Areas achieving UKBAP targets Planning consents given to areas of ecological importance
Climatic Factors	<ul style="list-style-type: none"> Increase the resilience of Dorset coast and its marine environment to the effects of climate change (i.e. sea level rise, coastal erosion and flooding). Where possible, reduce <i>per capita</i> emissions of greenhouse gases 	<ul style="list-style-type: none"> Limit air pollution to levels that do not damage natural eco-systems or affect community health Have a neutral impact on or result in reduced greenhouse gas emissions Decrease the reliance upon fossil fuel resources and promote renewable energy technologies/strategies Reduce the number of 	<ul style="list-style-type: none"> Incidences of flooding of existing developments. Reduction in the number of properties at risk from flooding (either pluvial, fluvial or tidal). Reduction in Dorset's global energy footprint. Increase in electricity and heat generated from renewable energy sources located in the area. Increase in the use of energy efficient

¹⁸ There is limited access to the restricted areas and the Marine Plan is likely to have little to no effect in terms of planning for future use in this area. We have therefore not included any objectives for this area.

		individuals vulnerable to rising sea levels (i.e. through the improvement and building of new sea defences).	technologies.
Archaeology and Cultural Heritage	<ul style="list-style-type: none"> Contribute to the maintenance and, where appropriate, enhance the historic environment of the Dorset coast. 	<ul style="list-style-type: none"> Protect or enhance the cultural and archaeological historic environment, its features and/or setting Avoid loss of scheduled and other nationally and internationally important heritage assets and features 	<ul style="list-style-type: none"> Decline in the number of listed buildings and archaeological sites at risk from human (e.g. neglect or vandalism) or natural (e.g. coastal erosion) impacts. Number of applications where there are potential impacts on a site designated for the historical environment Condition of sites designated for the historical environment Monitoring, mapping, and recording of any new sites of historical importance discovered as part of any developments.
Population and Human Health	<ul style="list-style-type: none"> Improve human health and enhance quality of life 	<ul style="list-style-type: none"> Improve the health of coastal communities; Improve accessibility to employment, education, public services, and decrease deprivation/social exclusion; Create conditions to improve health and reduce health inequalities, i.e. by promoting marine recreation. 	<ul style="list-style-type: none"> Reduction in the number of letters of complaint to Environmental Health on noise, odours or air quality. Years of healthy life expectancy/ infant mortality rate Percentage of population living in most deprived areas/reliant on key benefits/ income deprive

Annex B: Assessment Tables