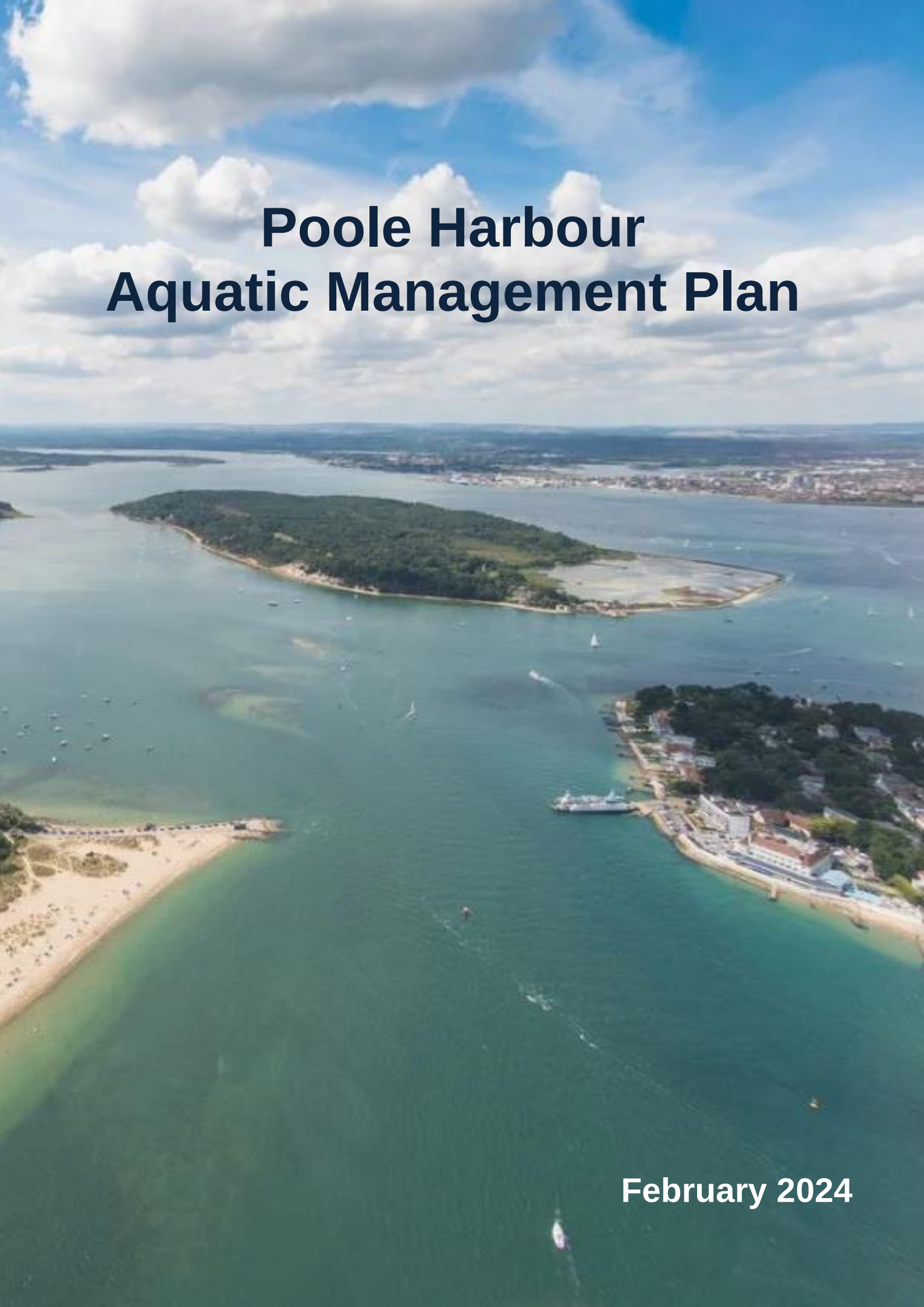
Poole Harbour Aquatic Management Plan



February 2024

Produced by the Poole Harbour Steering Group

Bournemouth, Christchurch and Poole Council

Dorset Council

Environment Agency

Marine Management Organisation

Natural England

Poole Harbour Commissioners

Southern Inshore Fisheries and Conservation Authority

Wessex Water Services Ltd

The financial assistance of the following organisations is also recognised:

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Executive Summary

Management

The need to manage the Harbour with its multitude of activities has long been recognised and this plan aims to do that, by promoting its safe and sustainable use, whilst balancing the demands on its natural resources, minimising risk, and resolving conflicts of interest. As a non-statutory plan, it seeks to guide the current and future management of the Harbour and act as a vehicle for communication between the key statutory organisations that make up the Poole Harbour Steering Group, as well as other stakeholders. The Steering Group is a voluntary partnership, and its members work under a Memorandum of Agreement to promote the sustainable use of the Harbour whilst securing the long-term nature conservation importance of this site. The plan itself, consolidates and updates its previous iterations (1994, 2006 and 2011), and the 1998 Poole Harbour Management Policies, as well as drawing on many other current planning and guidance documents.

Assets and Activities

The ecological importance of the Harbour is internationally recognised with its designation as a Ramsar wetland site, whilst nationally it was designated as a Site of Special Scientific Interest (SSSI) in 1991 to protect its valuable intertidal and coastal habitats. In 1999 it was also classified as a Special Protection Area (SPA) under the European Birds Directive due to its internationally important assemblages of waterfowl and populations of certain regularly occurring resident and migratory species. The SSSI and SPA was further extended in 2019 and 2017 respectively to include an additional 1,832 hectares of land and sea brought within the site to help protect the entire harbour, an increase of 40 percent.

Under UK legislation The Conservation of Habitats and Species Regulations (the Habitats Regulations) form the basis for protecting and managing the SPA. The part of the SPA which covers the intertidal zone of the Harbour forms part of the National Site Network. The Aquatic Management Plan serves as a management scheme for this area to provide a framework for relevant authorities to ensure their functions have regard to the nature conservation interests of this part of the site. Much of the Harbour lies within the Dorset Area of Outstanding Natural Beauty (AONB), which was designated under the National Parks and Access to the Countryside Act (1949) to conserve and enhance its natural beauty. The archaeological importance of the Harbour was recognised in 2003 when it was identified as a Wetland of National Importance by Historic England.

Whilst recognising the environmental importance of the Harbour, management initiatives also need to balance the requirements of many other commercial and recreational activities as well as the challenges of its setting surrounded by an extensive urbanised area. Poole is a busy commercial trust port, which makes a significant contribution to the economy of the local

area. As well as handling bulk cargo imports and roll on, roll off freight, some 600,000 passengers also pass through the port each year. Luxury motor yachts are built in the area whilst other marine industries include boatyards, marinas, and chandleries. The Harbour is home to Europe's largest onshore oil field and Poole is the National Headquarters for the RNLI.

To ensure the commercial viability of the Port and the local economy, there needs to be a robust supporting transport network. Local plans acknowledge and address the need to renew and develop the road and rail links of the region whilst channel deepening works have safeguarded the short-term future of sea transportation, supporting local and Government policies.

Maintaining the Harbour for the safety of navigation of all vessels is the responsibility of PHC within their area of responsibility. As well as regularly surveying the Harbour and maintaining navigation aids, PHC monitor and manage shipping movements and provide a pilotage and towage service as required. They also work with other marine agencies to enforce international, national, and local legislation ensuring that PHC's Enforcement and Prosecution Policy is adhered to.

Marine management of certain recreational waterborne activities is achieved by zoning. This was introduced as part of the original Aquatic Management Plan. The purpose of these zones is to improve navigational safety and minimise the detrimental impact in environmentally sensitive areas. Zoning has been introduced for water-skiing, personal watercraft, windsurfing and kitesurfing, with the south of the Harbour being designated as a quiet zone. As well as zoning, personal watercraft activity, water-skiing and kitesurfing are regulated by either a byelaw or general direction. All three require a permit with associated terms and conditions in place. Motor boating and sailing however are by far the most popular recreational activities in the Harbour with many owners keeping their boats in marinas or on swinging moorings. All moorings within the Harbour are managed and regulated by PHC, with the Environment Agency being responsible for a small number in the Wareham Channel.

Along with the commercial and recreational activities that take place, the Harbour also sustains a significant fisheries resource. Many different species of finfish, shellfish and crustacean are harvested from its waters, while the extensive mudflats are home to several bait species. The fishery of the Harbour is primarily regulated by the Southern Inshore Fisheries and Conservation Authority (SIFCA) who work to keep all stocks at sustainable levels through byelaws and enforcement. The management for eels and migratory species is overseen by the Environment Agency who also have enforcement powers.

All activities have the capacity to impact the natural environment. The water quality of the Harbour is regularly monitored by the Environment Agency who are responsible for ensuring standards set by UK law are met. The maintenance and improvement of water quality in the UK was previously controlled by the European Water Framework Directive which has been fully transposed into UK law post Brexit. Initiatives to reduce nutrient inputs to the Harbour

focus on the improvement of sewage treatment works and changes to farming practices, while new legislation has helped to regulate the input of chemicals from antifouling paints and industry into the marine environment. As well as ongoing monitoring, the PHC Oil Spill Contingency Plan provides a contingency plan to outline the management, control, and communications structure for dealing with oil or other hazardous substance release within the Harbour. This response plan is regularly exercised and audited by the Maritime and Coastguard Agency (MCA).

The extensive marine historic assets found at this site need to be taken account of as part of the management of the Harbour. The plan also needs to consider the future impact of climate change and sea level rise. A Shoreline Management Plan (SMP) sets-out the long-term vision for sustainable coastal flood and erosion risk management and defines the policies for achieving that vision for different sections of the Harbour shoreline over the next 100 years. The SMP was adopted in 2011 and is kept up to date as new evidence and information comes to light by the SMP Management Group (led by BCP Council). In 2014, the Poole Bay, Poole Harbour and Wareham Flood and Coastal Erosion Risk Management (FCERM) Strategy was produced; this assessed in further detail the options for how best to implement the SMP policies in the Harbour, and schemes such as the Poole Bridge to Hunger Hill Tidal Defence Scheme and Arne Moors Coastal Change Project are now being progressed to implement the SMP policy and FCERM strategy.

Structure of the Plan

The plan is split into two parts; the main document; and the Management Matrix. The main document highlights the strategic aims, objectives and key themes embedded throughout the document. It discusses in detail the activities and issues associated with the Harbour. Where appropriate each chapter ends with a list of management objectives relevant to that activity or issue and these feed into the Management Matrix where a commentary on these management objectives is provided by the relevant lead authorities.

Introduction 1

1.1 The Poole Harbour Aquatic Management Plan

The Poole Harbour Aquatic Management Plan (referred to as “The Plan” hereafter) provides a framework for the effective, co-ordinated management of the Harbour and the Poole Harbour SPA and serves as a management scheme for the area as set out in the Habitats Regulations. It also covers the present and future needs of nature conservation, recreation and commercial use and other legitimate interests of the Harbour. The focus of the plan is the Harbour’s aquatic environment, however in following the principles of a more integrated approach to coastal management, it takes a holistic view, which considers the impact of shore-based activities and those of the surrounding areas. It therefore supports Government's vision for the marine environment, which is for clean, healthy, safe, productive, and biologically diverse oceans and seas.

Government created the Marine Management Organisation (MMO) in 2009 under the Marine and Coastal Access Act, which aims to put in place a better system for delivering sustainable development of the marine and coastal environment by addressing both the use and protection of our marine resources. As a result, the South Inshore and South Offshore Marine Plan (The South Marine Plan) was published in July 2018. The South Marine Plan introduces a strategic approach to planning within the inshore and offshore waters between Folkestone in Kent and the river Dart in Devon. It provides a clear, evidence-based approach to inform decision-making by marine users and regulators on where activities might take place within the marine plan area.

The Plan looks at ways of delivering the aims and objectives of the Marine and Coastal Access Act and the South Marine Plan at a local level, in allowing sustainable levels of economic and social activity within the Harbour and its hinterland, while protecting the coastal environment. It considers the activities of all those involved in the development, management, and use of the Harbour within a framework that facilitates the integration of their interests and responsibilities.

The Plan contains guidance designed to inform, advise, and guide current and future management. It is not a statutory plan for the Harbour and adjoining area, nor is it designed to dictate detailed management actions or set complex new working arrangements. It does however draw its principles from many of the statutory and non-statutory policies applying to the Harbour. It aims to build on established partnerships and be a vehicle for communication, providing a framework within which decisions can be made and appropriate action taken.

1.2 Strategic Aim and Objectives

The Strategic Aim of the plan is to promote the safe and sustainable use of the Harbour, balancing the demands on its natural resources, minimising risk, and resolving conflicts of interest. This aim is to be achieved through the following objectives:

- To provide a framework for the co-ordinated management of the Harbour.
- To improve communications between Harbour users and regulators.
- To promote the safe use of the Harbour for all.
- To educate and promote amongst Harbour users the sustainable and wise use of the Harbour for commerce, recreation, and amenity.
- To protect and maintain the special natural features of the Harbour.
- To create a culture of openness and an awareness of other users.

1.3 Key Themes

Background

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The expansion of the Port of Poole in the 1980s highlighted the number of different interest groups that use the Harbour and the need for an overall management strategy. In 1988 a steering group of officers from the relevant Local Authorities, PHC, Natural England and other statutory bodies produced the Poole Harbour Management Policies (PHMP). These agreed guidelines for the Harbour and its environs recognised, and as far as possible, protected local interests by providing advice for the planning and management of the area. The document set out policies to be implemented through local plans and other statutory mechanisms and was last amended in 1998, following the need for integrated management of the whole harbour, including the water body and the areas below the low water mark.

The first Poole Harbour Aquatic Management Plan was published in 1994, with updated versions published in 2006 and 2011. It was designed to be a strategy for the water area itself and was an attempt to provide uniformity of approach to the entire harbour, including the regulation of activities on and in the water column. It provided a framework for the coordinated management of the Harbour, having regard to the present and future needs of nature conservation, recreation, commercial use, and other legitimate interests. This revision consolidates the work of the Plan and the Harbour Policies to provide a vehicle to guide the management of operational matters on the water and planning matters on the shore.

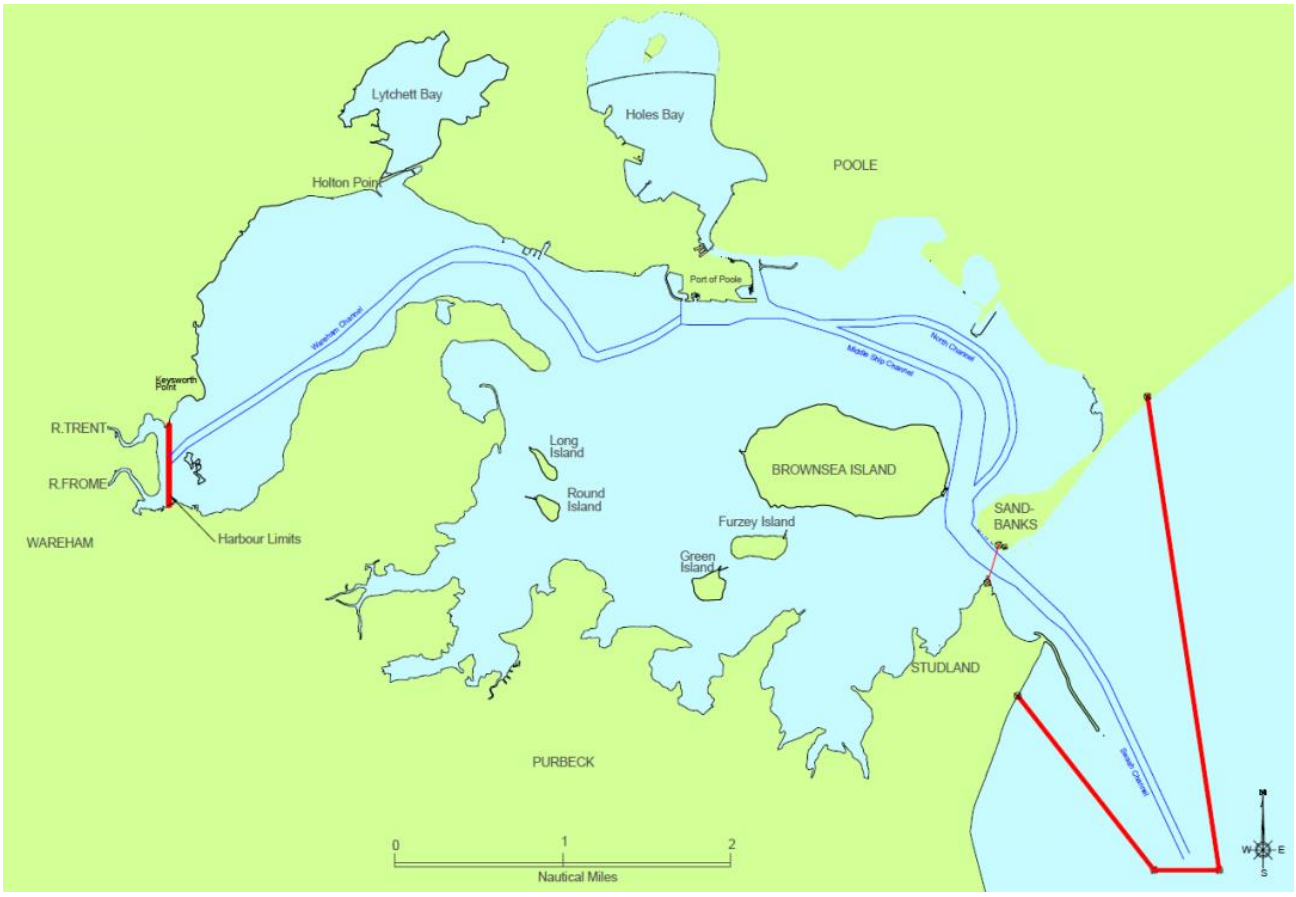


Figure 1: Map showing the area of jurisdiction of the Plan

Management Framework 3

The Plan is a non-statutory document with no legal powers to ensure that all the guidance in the Plan is implemented or adhered to. However, where appropriate the Plan highlights relevant legislation such as national directives and the existence of byelaws and general directions. This document can itself give no permission for any development or activity to be carried out. Where permission, licence or permits are required they must be sought from the appropriate authority who will deal with them in the normal way. As members of the Poole Harbour Steering Group, these authorities in reaching their decisions will do so against the background of the guidance contained in this document.

3.1 Poole Harbour Steering Group

The Poole Harbour Steering Group is a voluntary partnership that provides a framework for coordination between statutory bodies with responsibilities in the Harbour. Its members work together to review, prepare, and implement common plans and policies, with a view to promoting the sustainable use of the Harbour, securing the long-term conservation of its internationally important wildlife and natural habitats.

Its main roles are:

- To co-operate and consult in the exercising of statutory powers and functions.
- To oversee and facilitate the implementation of this management plan.
- To improve co-ordination between users and information flow between users with different interests in the Harbour.
- To ensure that users' points of view on issues that arise, and solutions raised, are circulated.
- To act as an advisory group for the Poole Harbour SPA.
- To improve access to high quality, up to date and relevant data for decision making.

The Poole Harbour Steering Group members, listed below, have all signed up to a Memorandum of Agreement (*see Appendix 1*). It acknowledges the importance of working together for the management of the Poole Harbour SPA and implementing best practice through the implementation of the Habitats Regulations. It also demonstrates their support to the guidance laid out in this Plan. Appendix 2 outlines the responsibilities of the Steering Group members as well as some other local and national bodies involved in the management of the Harbour and who were involved in the consultation for this plan.

- BCP Council.
- Dorset Council.
- Environment Agency.

- Marine Management Organisation.
- Natural England.
- Poole Harbour Commissioners.
- Southern Inshore Fisheries and Conservation Authority.
- Wessex Water Services Ltd.

3.2 Background Documents and Plans

This Plan updates and consolidates the relevant information and policies contained within the 1994, 2006, and 2011 versions of the Plan and the 1998 Poole Harbour Management Policies, as well as drawing from current planning and guidance documents. All these documents are relevant to the management of the Harbour and apply the principles of sustainable development and focus on their areas of interest. Background documents and plans are referred to throughout this plan with live links provided for each of these where possible.

3.3 Plan Review

To verify the validity and relevance of this plan the Steering Group recognises the need for current data on which to base a management strategy for the Harbour. There is also a need for:

- Effective monitoring.
- Re-assessing management as external factors change.
- Addressing long-term issues of planning, landscape, and climate change.

The Plan addresses a variety of issues but recognises that the level of control and policies required will probably need to change in the face of changing recreational and commercial demands, and as our understanding of the environmental resource becomes clearer.

The Poole Harbour Steering Group will review the Plan on an annual basis by assessing how the management objectives in the Management Matrix are progressing. Updates on actions and projects will be disseminated to the public through the individual Steering Group members.

Those who use the Harbour for recreation, commerce or who have an interest in the area's environmental resources are encouraged to discuss and provide input into the implementation of the Plan. The Poole Harbour Steering Group meet every six months to discuss the ongoing management of the Harbour and its members can present issues raised with them by the public or other interested parties. In this way areas of concern or forthcoming initiatives can be communicated and topics for future research identified. It is anticipated that as major plans or projects arise that may have a significant impact on the Harbour, additional focus meetings will be set up to engage the thoughts of all stakeholders.

Nature Conservation and Landscape 4

4.1 Overview

The Harbour is the largest microtidal estuary in Britain and is recognised nationally and internationally for its ecological value. It is one of the largest examples of an estuary with an enclosed lagoonal character in the world with over 100km of enclosed coastline. The Harbour is mostly shallow and contains a high proportion of intertidal saltmarshes and mudflats. These give way to freshwater marshes, reed beds and wet grasslands on low, poorly drained land above the tidal level, and transitions to heathland on higher sandy ground and heathland mires in small tributary valleys. Figure 2 shows the approximate extent of and the location of these aquatic habitats within the Harbour.

Figure 2: Approximate extent and location of the intertidal habitats of Poole Harbour

Four rivers drain into the Harbour, the largest being the River Frome, which flows from the west through Dorchester and Wareham. The others are the River Piddle, the Corfe River and the Sherford River. This connectivity with, and influence from, the freshwater environment is particularly important in terms of pollutant imports to the Harbour (especially nutrients) and the migratory passage of fish through the Harbour in both directions.

The wetland habitats fringing the Harbour support large numbers of wintering, migrating, and breeding birds along with many rare and uncommon plants and invertebrates. The Harbour bed is important for marine invertebrates such as sponges, tube worms, sea squirts and sea mats, including some that are rare around Britain's shoreline. In particular, the channels around Brownsea Island support the dense peacock worm beds *Sabella pavonina* and the rare sponge *Suberites massa*. Areas of heathland support further rare and uncommon birds, invertebrates, and reptiles, while pine woodland on some of the Harbour's islands are of national importance for some of England's last surviving populations of red squirrel.

This range of estuarine, wetland and heathland habitats, their large extent and the rare plants and animals they support, together with the large variety and number of birds, means the Harbour is recognised as being of national and international importance and the area holds several statutory designations which serve to protect the natural environment. The Harbour is designated a Site of Special Scientific Interest SSSI, Special Protection Area SPA, and Ramsar site. The heathlands surrounding the Harbour have been designated a Special Area of Conservation (SAC).

The Harbour also contains a few small Sites of Nature Conservation Interest (SNCI) which although non-statutory do enjoy some planning protection. Some areas of the Harbour have also been declared Local and National Nature Reserves.

Holes Bay was designated a Nature Park in March 2015. Figure 3 shows the extent of the 286 ha protected area. The Nature Park is intended to bring landowners, local communities, and local businesses closer to nature and ensure the habitat is managed for the benefit of the wildlife found within it with the salt marshes and mudflats attracting a wide variety of wetland birds. The bay is divided into northern and southern areas by the South West Main Train Line from London to Weymouth which crosses it on an embankment. The northern area is particularly sensitive due to the number of birds that use it to feed and roost. The Nature Park includes Upton Country Park, with Upton House and Pergins Island, as well as trails that run around the bay. These include the Castleman Trailway, Walk No. 6 of the Poole Harbour Trails and the Poole Heritage Cycle Route. South of the marina in the southwest corner of the bay is the Hamworthy Creeks Nature Reserve.

There are three Regionally Important Geological Sites within the Harbour; two on Brownsea Island and the third at Shipstal Point. The Harbour is also within an area recognised for its landscape value and part of the Purbeck Heritage Coast and part of an AONB which includes all the islands of the Harbour as well as much of the water area. The AONB has a statutory management plan, and it is hoped that future initiatives will draw on objectives from both plans to promote a more integrated approach to the management of the Harbour and its hinterland. The sections of the Frome, Piddle and other waterbodies in the tributary network are highly designated which provides additional protection for the Harbour both in maintaining and driving improvement in condition in those waterbodies and therefore all water downstream of them.

Figure 3: Holes Bay Nature Park

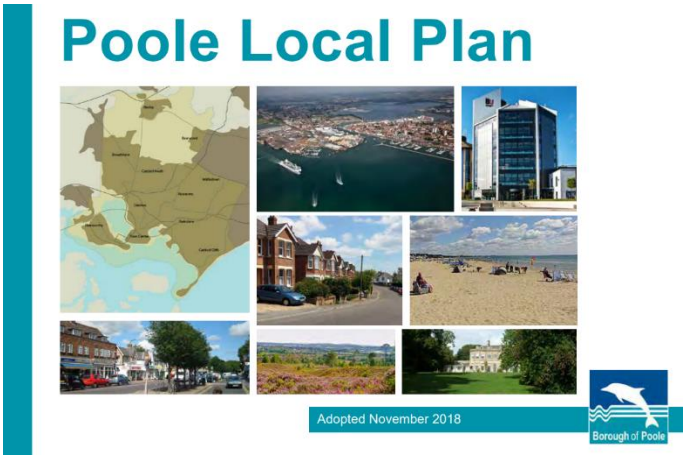
Definitions for the designations are given in Appendix 3 with further information regarding the SSSI, SPA and Ramsar site available on the [Natural England designated sites website](#).

4.2 Local Plans and Policies

The National Planning Policy Framework (updated 2023) states that planning policies and decisions should contribute to and enhance the natural and local environment by protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils. They should also minimise impacts on and provide net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures.

Poole Local Plan

The Poole Local Plan (2018) follows these principles specifically with the implementation of policies PP31 – Poole's coast and countryside, PP32 – Poole's nationally, European and internationally important sites and PP33 – Biodiversity and geodiversity.



Policy PP31(3) states that any proposals for additional marina, jetty, slipway and boatyard developments will be permitted provided they do not fall within one of the Harbour Edge Protection Zones, visually detract from the shoreline character, or cause harm to European and internationally important sites unless this can be satisfactory mitigated. The Harbour Edge Protection Zones are derived from Natural England's advice on small developments (jetties and slipways) in the Harbour (*see Appendix 4*).

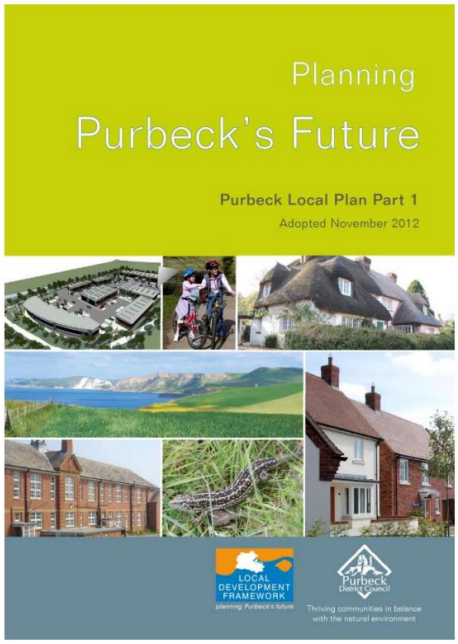
Policy PP32 states development will only be permitted where it would not lead to an adverse effect upon the integrity, either alone or in-combination, directly or indirectly, on nationally, European, and internationally important sites. From these policies key initiatives have been implemented to ensure these sites are not harmed. Local planning authorities are also required to consult with Natural England over applications in consultation areas defined by Natural England around sites of national or international importance.

Policy PP32 (2) states development proposals for any net increase in homes, tourist accommodation or a tourist attraction, will provide mitigation in accordance with the advice set out in the Nitrogen Reduction in Poole Harbour SPD (2017) if they are connected to Poole Sewage Treatment Works or within the catchment of the Harbour. Development proposals for any net increase in homes or tourist accommodation will provide a SAMM contribution for wardening, education and monitoring, to mitigate the adverse effects of recreation related pressures within Poole Harbour in accordance with the Poole Harbour Recreation 2019-2024 SPD (2020). Development proposals may be required to contribute to the implementation of the Poole Harbour SPA Management Scheme where the identified effects can be best addressed.

Policy PP33 (1) requires proposals for development that affects biodiversity must:

- demonstrate how any features of nature conservation and biodiversity interest are to be protected and managed to prevent any adverse impact,
- incorporate measures to avoid, reduce or mitigate disturbance of sensitive wildlife habitats throughout the lifetime of the development, and
- seek opportunities to enhance biodiversity through the restoration, improvement, or creation of habitats and/or ecological networks.

Removal or damage of features of nature conservation/biodiversity interest will only be acceptable in exceptional circumstances. Where relevant, new development should seek to incorporate ecologically sensitive design features to secure a net gain in biodiversity as appropriate.



Purbeck Local Plan Part 1

The Purbeck Local Plan Part 1 (2012), which relates to the south side of the Harbour in the Dorset Council area, also reflects the aims of the NPPF with particular regard to Policy BIO: Biodiversity and Geodiversity and Policy PH: Poole Harbour

Policy BIO highlights the importance of protecting, managing, and enhancing biodiversity and geodiversity in the area covered by the local plan. The policy stresses that any new development will need to ensure that there are no adverse effects upon the integrity of European protected sites as well as other environmental designations such as SSSIs and SNCIs.

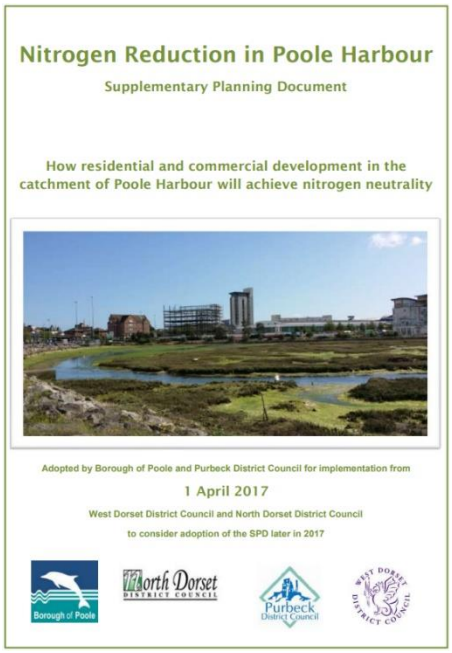
Policy PH with regards to water quality states that new development may be required to incorporate measures to secure effective avoidance and mitigation of the potential adverse effects of nutrient loading on the ecological integrity of the Harbour's internationally designated sites. Partnership working will secure effective and deliverable mitigation, and mechanisms that will fund and enable implementation of these measures. Regarding recreational pressures, partnership working will also allow the management of shoreline access to Poole Harbour and manage water-based activities.

Emerging Local Plans

Following the creation of the new Council's on 1 April 2019 work is underway on an emerging BCP Local Plan and Dorset Council Local Plan (as well as the emerging Purbeck Local Plan which is currently addressing outstanding issues from the public examination). These will

reflect the positions outlined in the existing local plans to ensure the continued protection and enhancement of the natural environment.

Nitrogen Reduction in Poole Harbour SPD



Increasing nitrogen levels from sewage and agriculture are contributing to the growth of algal mats in the Harbour, restricting the growth, distribution, and variety of important food available for wading birds protected under European law and smothering estuarine habitats. Most of the nitrogen is generated from agriculture, but a proportion is generated from human sewage.

To conform to the requirements of the Habitats Regulations and the Water Framework Directive, the Council's planning for a growth in population must be certain that development has either avoided harm to European protected sites or mitigated the impact to ensure that there is no adverse effect. Avoidance is not possible in this case as the population will continue to grow. Therefore, the additional nitrogen generated through sewage from new housing in the catchment of Poole Harbour will have to be mitigated.

The Nitrogen Reduction in Poole Harbour SPD (2017) only covers how the Councils will ensure that new development is nitrogen neutral. The agricultural sector has also prepared a plan for reducing nitrogen leaching from farming. Clearly there is a need to coordinate the two implementation plans, working with landowners on joint projects that have the potential for wider benefits, such as biodiversity, water management and green infrastructure.

Poole Harbour Recreation 2019-2024 SPD

The Poole Harbour Recreation 2019-2024 SPD (2020) was prepared jointly by BCP Council and Dorset Council with the advice of Natural England. The purpose of this SPD is to set out the approach to avoid or mitigate harm arising from increased levels of leisure activities on the SPA and Ramsar Site, specifically addressing how both authorities are mitigating recreational disturbance to overwintering birds. The avoidance and mitigation measures set out in this SPD enable the two Councils to grant permission for residential and tourism development planned in the local plans. The SPD provides guidance and advice to developers, landowners, and the wider community on matters to avoid or mitigate the adverse recreational effects of urban development on Poole Harbour. The Bird and Recreation Initiative (BARI) is the public facing delivery of the SPD with further information available in Section 4.8.

4.3 Site of Special Scientific Interest (SSSI)

The Harbour was notified on 6th September 1991 under the Wildlife & Countryside Act 1981 as a SSSI and is now protected by the provisions of Part II of the Wildlife and Countryside Act 1981 as substituted by Schedule 9 to the Countryside & Rights of Way Act 2000. The SSSI was further extended in 2019 to include an additional 1,832 hectares of land and sea brought within the site to help protect the entire harbour, an increase of 40 percent.

The site is of importance for its range of estuarine habitats, coastal grazing marsh and lowland heathland. The extension of the SSSI in 2019 meant habitats which extended beyond the mean low water mark are now protected. It also protects subtidal and open water areas that support tern populations; water birds such as red breasted mergansers and golden eye and wintering water birds that forage on mud exposed at low spring tides. Coastal and marine geomorphological processes occur over the entire harbour and are essential for the maintenance of the estuarine habitats. The extension of the SSSI therefore also protects areas where these key supporting natural processes occur.

Protecting and managing the species and habitats for which a SSSI was designated is a shared responsibility and Natural England work closely with landowners and other statutory and non-statutory organisations to ensure their condition is maintained or restored.

All public bodies are required to take reasonable steps, consistent with the proper exercise of their functions, to further the conservation and enhancement of the features for which an SSSI has been notified. The legislation also places legal obligations on owners and occupiers of land within the SSSI and on any person in relation to activities that may cause damage to the special interest features of the SSSI, or recklessly disturb any animal which is notified as being of special interest. Section 28 of the Countryside and Rights of Way Act (2000) outlines the responsibilities and obligations of public and statutory bodies when carrying out activities or authorizing works within an SSSI. There is a list of operations and activities likely to damage the features of special interest of Poole Harbour SSSI, which can be obtained from Natural England. The owner or occupier of a SSSI can only allow these activities to occur on their land with the consent of Natural England.

4.4 Special Protection Area (SPA)

The Harbour was designated a SPA in 1999 due to the nationally and internationally important numbers of waterfowl and waders that its habitats support. The SPA was originally designated through the European Birds Directive which required member states to designate SPAs where an area supports significant numbers of wild birds and their habitats. The Conservation of Habitats and Species Regulations (2017) then transposed these European Directives into UK law with the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations (2019) allowing these to be operable from 1st January 2021.

Poole Harbour SPA includes both marine areas and land which is not subject to tidal influence. The marine part of the SPA, the intertidal zone, between mean low water and highest astronomical tide, defines the EMS. The SPA was reclassified in December 2017 to include an additional 1,832 hectares of land and sea brought within the site to help protect the entire harbour, an increase of 40 percent.

The Harbour was designated a SPA as it supports:

- Internationally important populations of regularly occurring species of birds classified as being in danger of extinction, rare or vulnerable and are the subject of special conservation measures concerning their habitat. These species in the Harbour are the avocet, little egret, Eurasian spoonbill, Mediterranean gull, sandwich tern, and the common tern.
- Internationally important populations of regularly occurring migratory black-tailed godwit and shelduck.
- An internationally important assemblage of waterfowl.

SPAs and SACs make up the national site network through the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations (2019). The network objectives are to:

- maintain or, where appropriate, restore habitats and species listed in Annexes I and II of the Habitats Directive to a favourable conservation status (FCS).
- contribute to ensuring, in their area of distribution, the survival and reproduction of wild birds and securing compliance with the overarching aims of the Wild Birds Directive.

4.5 Ramsar site

Under the Convention on Wetlands of International Importance, (signed at Ramsar in Iran, in 1971) the UK Government is committed to the conservation and wise use of wetlands of international importance. The UK ratified the Convention in 1976 and underpins the designation of its Ramsar sites through prior notification of these areas as statutory protected SSSIs. Ramsar sites do not form part of the national site network but remain protected in the same way as SACs and SPAs as in most instances they are defined by the same area, as is the case for the Harbour.

The Harbour was designated as a Ramsar site because it:

- regularly supports 20,000 waterfowl.
- regularly supports over 1% of the Great Britain population of avocet, black tailed godwit, common tern, Mediterranean gull and shelduck.
- supports an appreciable assemblage of rare, vulnerable, or endangered species including a nationally scarce hydroid species *Hartlaubella gelatinosa* and nationally rare sponge *Suberites massa.*

- is of special value for maintaining the genetic and ecological diversity of a region because of the quality and peculiarities of its flora and fauna including supporting the nationally scarce plants, narrow leaved eelgrass *Zostera marina* and dwarf eelgrass *Zostera noltii*.

4.6 Management of SPAs and Ramsar sites – Habitat Regulations

Good management and good governance are important if marine protected areas are to achieve their conservation objectives. The UK is committed to delivering a well-managed network of MPAs through the Government's 25-year Environment Plan and as a signatory to international agreements such as the OSPAR Convention and the UN Convention on Biological Diversity.

Many Ramsar sites in the UK, including the Harbour, are also SPAs and are therefore afforded protection under the Habitats Regulations. Under UK legislation the Habitats Regulations form the basis for establishing, protecting, and managing SPAs.

Relevant authorities (i.e., those with powers or functions that have or could have an impact on a SPA) must, within their jurisdiction, have regard to both direct and indirect effects of their statutory functions on the nature conservation interests of Poole Harbour SPA as well as cumulative effects. They may need to modify the way in which they exercise their functions to maintain the favourable condition of interest features concerned in the long term. There is no requirement for relevant authorities to take any actions outside their statutory functions.

Appropriate Assessment

The Habitats Regulations state that a competent authority must make an Appropriate Assessment before proceeding with, or give any consent, permission, or other authorisation for, a plan or project which:

- Either alone or in combination with other plans or projects would be likely to have a significant effect on a European site, and
- Is not directly connected with the management of the site for nature conservation.

4.7 Management of the European Marine Site

In terms of the Harbour, Regulation 37 and 38 of the Habitats Regulations are important as they relate specifically to the European Marine Site (EMS) which refer to the marine areas of the statutory protected SACs and SPAs.

Under Regulation 37(3) of the Habitats Regulations, Natural England has a duty to advise other relevant authorities as to the conservation objectives for the site, and any operations which may cause deterioration of natural habitats or the habitats of species, or disturbance of species, for which the site has been designated.

SPA Nature Conservation Objectives

Natural England has produced conservation objectives for the SPA for the qualifying bird features that are subject to natural change. The integrity of the site must be maintained or restored as appropriate, ensuring that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring:

- The extent and distribution of the habitats of the qualifying features.
- The structure and function of the habitats of the qualifying features.
- The supporting processes on which the habitats of the qualifying features rely.
- The population of each of the qualifying features.
- The distribution of the qualifying features within the site.

Natural England's Regulation 37 Conservation Advice

As part of the SPA is also a European Marine Site more detailed advice and information has been produced to enable the application and achievement of the conservation objectives. The purpose of Natural England's Regulation 37 Conservation advice is to:

- Define the conservation objectives of a site in more detail.
- Provide a framework for assessing development proposals.
- Inform management plans and measures by setting out site sensitivities.
- Identify gaps in evidence and inform our monitoring programme.

The components of Conservation Advice can be used to inform environmental assessments by providing a framework for assessing developments and activities. Using the packages ensures that the overarching conservation objectives are considered in a consistent way and should provide confidence that the assessments are compliant with underlying legislation. Of particular importance within the Poole Harbour Regulation 37 Conservation Advice is the Supplementary Advice on Conservation Objectives (SACOs) and the advice on operations.

The SACOs present attributes which are ecological characteristics or requirements of the classified species within a site. The listed attributes are those which best describe the site's ecological integrity and which if safeguarded will enable achievement of the Conservation Objectives. This advice on operations identifies pressures associated with the most commonly occurring marine activities and provides a detailed assessment of the feature or supporting habitat sensitivity to these pressures, and how these operations may cause deterioration of natural habitats or the habitats of species, or disturbance of species. Natural

England have also published Guidance on how to use their Conservation Advice Packages in Environmental Assessments.

Regulation 38 – Management Scheme

Regulation 38 provides for the establishment of an agreed management scheme for the EMS component of Poole Harbour SPA. The management scheme needs to provide the framework through which relevant authorities exercise their functions to secure compliance and must be based on Natural England's advice given under Regulation 37(3) of the Habitats Regulations. It should provide a mechanism for resolving management issues and to set a framework in which activities that occur within a site are managed either voluntarily or through regulation, to achieve the conservation objectives of the EMS.

Natural Capital – the benefits to people derived from the natural world

The DEFRA Environment Improvement Plan 2023 for England is the first revision of the 25 Year Environment Plan (25YEP). It builds on the 25YEP vision with a new plan setting out how government will work with landowners, communities, and businesses to deliver each of the goals for improving the environment, matched with interim targets to measure progress. Taking these actions will help to restore nature, reduce environmental pollution, and increase the prosperity of the country.

Natural capital is the part of nature which directly or indirectly underpins value to people, including ecosystems, species, freshwater, soils, minerals, the air and oceans, as well as natural processes and functions. Protection of this natural capital and enhancement of the services which they provide (ecosystem services) is of increasing concern in coastal management to ensure the natural systems that are helping to sustain us are protected and restored. Well managed coastal habitats can:

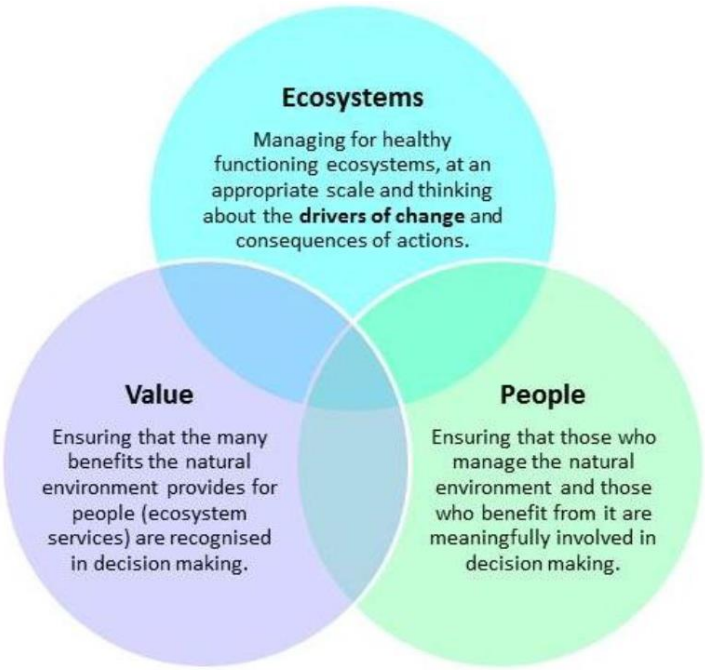
- improve water quality.
- act as carbon sinks and mitigate against climate change.
- provide a place for recreation that improves health and wellbeing.
- improve the value of a place as a tourist attraction or a place to live.
- support a rich source of seafood.
- provide natural flood protection.

Natural Capital plans can help by identifying natural capital assets, consider who benefits, and the ecosystem services other stakeholders care about. This can help as a communication tool through working with new stakeholders, who benefit from these services, and identifying actions for multiple benefits and mapping opportunities. Funding to undertake these actions can then look to existing mechanisms but could also enable new investment channels including the new stakeholders who benefit (Rice et al., 2021).

An example of how critical it is to consider these benefits to people are the recent reports that have highlighted the importance of marine habitats (blue carbon) to tackle climate change. This is through the contribution they play, if they are well managed, to act as carbon sinks and the part they play towards achieving UKs target by 2050 of Net Zero (Gregg et al., 2021; Stafford et al., 2021).

These benefits can be increased through the restoration of the habitats but also there is evidence that pressures such as eutrophication and physical pressures can reduce or even reverse coastal habitats capabilities to store carbon and contribute towards Net Zero (Gregg et al., 2021). Freshwater habitats, in addition to helping improve water quality, can also act as carbon sinks where this capability has not been compromised by the effects of eutrophication (Gregg et al., 2021). Working towards the restoration of healthy coastal and freshwater habitats throughout the Poole Harbour catchment will therefore lead to a more resilient landscape and sea for the benefit of not just wildlife but also people.

Valuing the benefits that the natural environment provides for nature is part of the ecosystem approach. In addition, the ecosystem approach highlights the importance of involving people in the decision-making process when managing the environment and the importance of working towards the objective of a resilient multi-functional ecosystem. Examples of how positive partnership and good stakeholder engagement have helped to achieve environmental outcomes in Poole Harbour are given in Burton (2020).



4.8 Birds of the Harbour

Importance of the Harbour

The Harbour supports a very large number of wintering birds, including many individual species of duck, grebe and wading bird which occur in numbers of national or international importance. The site is also important as a feeding stop for birds on migration in spring and autumn. Additionally, there is a large assemblage of breeding birds, including sandwich tern, common tern and Mediterranean gulls which are features of the SPA. The designation of the Harbour as a Ramsar site and SPA demonstrates its importance as a site for wildfowl and wading birds.

Monitoring

Populations of bird species within the Harbour are closely monitored and good historical records allow the tracking of trends over several decades. Every month from September to March, Wetland Birds Survey (WeBS) counts are carried out at several locations co-ordinated by the British Trust for Ornithology. These are supported by additional survey work undertaken by RSPB, Dorset Wildlife Trust, and the Birds of Poole Harbour charity. Overall trends in all bird populations need to be monitored and reasons for changes understood. Further information on populations can be found in various reports including those published by the Poole Harbour Study Group and Birds of Poole Harbour.

Notable Species

Black-tailed godwit – Source: Canva

Annually the Harbour supports over 20,000 wildfowl and waders of around 60 different species, 17 being of national or international importance. The avocet, Mediterranean gull, sandwich tern, little egret, spoonbill, and the common tern along with the black-tailed godwit and shelduck were recognised as important through the SPA designation.

The numbers of black-tailed godwit have steadily increased in recent years with annual peaks of over 2,000 being recorded. Flocks tend to congregate in one bay to feed for several days or weeks before moving on to another bay or creek. Their roost attendance is therefore limited to the area in which they are feeding (Morrison, 2003). Except for Brownsea Lagoon, observations show that preferred feeding sites were in areas of fine silt that had a medium to high biomass of ragworm (Pickess, 2008). As well as feeding at low tide on the intertidal mudflats, black tailed godwit also feed during wet winters on wet grassland as far afield as the lower Avon Valley (Pickess, 2008).

Avocet numbers have also dramatically increased over the last two decades leading to it being the third most important site for this species in the UK. Within the Harbour, wintering pied avocet mainly roost at Brownsea Lagoon, towards the ends of Wytch and Middlebere channels (Pickess, 2008) and on the *Spartina* saltmarsh in north Holes Bay (Hopper, 2008). Pied avocet appear to have a

Pied avocet – Source: Canva

localised distribution with respect to feeding areas which may be associated with their preferred prey items e.g. amphipods (Herbert, 2010). The main feeding areas between 1998 and 2004 were Wytch and Middlebere channels, Brownsea Lagoon and East Fitzworth. However, with the rise in the numbers of pied avocet in the Harbour, small numbers have been recorded feeding throughout the Harbour (Pickess, 2008).

Little egret and spoonbill have also increased substantially in recent years leading to these bird species qualifying as features of the SPA. Little egret is a very mobile species which, in addition to feeding within the Harbour, is observed beside streams, ditches and fields surrounding the Harbour. As well as roosting in *Spartina* saltmarsh, birds are known to roost in trees around Littlesea (the dune slack lake on Studland) and in plantation trees in Arne (Pickess, 2008; Hopper, 2008).

Little egret – Source: Canva

Populations of the Mediterranean gull are thought to be stable or slightly increasing, as are populations of common and sandwich terns. The main current breeding colony for Mediterranean gulls in the Harbour is on the saltmarsh islands off Holton Heath where the species nests in a mixed colony with black-headed gulls. Common and sandwich terns nest within Brownsea Island lagoon.

The peak numbers of wintering shelduck have more than halved since the 1990s and a comparison of regional and national trends for this species indicates a steeper decline at this site and therefore it is likely site-specific pressures are at least contributing in part to this decline. Other species that have shown declines, which are likely to be at least in part due to site-specific reasons as the site trend is at variance with regional or national trends, are curlew, redshank, red-breasted mergansers, goldeneye, pochard and lapwing (Cook et al., 2013; Redshaw and Birds of Poole Harbour, 2021). A decline in the numbers of redshank, however, is thought to be linked to habitat change and disturbance during nesting, due to grazing and trampling by sika deer.

Shelduck – Source: Canva

Current Threats

There have been changes in the composition of wintering birds with significant declines and increases in many different individual species which is only partly explained by national

trends. The proliferation of dense algal mats is likely to have had an influence with shelduck, for example, avoiding foraging in affected areas which has been evidenced in other cases too (Tubbs, 1977; Raffaelli et al., 1989). Meanwhile three species that have shown a big increase are Brent goose, wigeon and teal which may be attributed to the increase in the macroalgae that they feed on.

Recreational activities can cause disturbance especially in the winter months. During the breeding season disturbance to nesting common terns and Mediterranean gulls increases the risk of eggs or chicks to be abandoned and increases the risk of predation. Specific recreational threats which may result in disturbance include:

- Watercraft going close to the breeding gull colony to the west of Rockley.
- Windsurfing and kitesurfing at Whitley Lake in the winter may also displace some bird species to other feeding grounds to the south of the Harbour.
- Paddle sports such as kayaking and paddleboarding allow close access to the foreshore in bird sensitive areas of the Harbour.
- Proposals for increasing access for people, and their dogs, to the Harbour from the landward side increasing access to important roosting, breeding, and feeding sites.
- More housing resulting in more people living in closer proximity to the Harbour is likely to cause a rise in the frequency, intensity, duration, and extent of recreational activities.
- Increase in jetties and slipways with the area close to these structures unavailable for bird feeding as birds usually only feed where they have clear view lines.
- Hovercraft usage, though Harbour Master permission is required for this.
- Overflying of military, coastguard, and private helicopters.

The activities of shellfish fishermen and bait collectors may also affect birds, by resulting in a reduction in prey items, a physical change to the substrate that interferes with the foraging behaviour of birds and through direct noise and visual disturbance. A particular concern is when these activities occur in areas of the Harbour that are in or adjacent to prime feeding and roosting sites for overwintering wildfowl and waders. Such activities reduce the available feeding time for birds, which could be critical during periods of severe winter weather. The impact of unlawful egg collecting on all species is also a concern especially on black-headed and Mediterranean gull colonies.

Milder winters due to climate change may have the effect of attracting different species to the Harbour and may also affect the numbers and types of prey species. Rising sea levels can result in changes or loss of the habitat that the birds use to feed and roost. Toxic contaminants such as heavy metals could also affect palatability and the abundance of prey items while seabirds are subject to the accumulation of toxins through the food chain. Both seabirds and wildfowl also have the potential to become entangled in litter or fishing gear and a fuller assessment of the significance of this threat is required.

The Poole Harbour Disturbance Study (2020) produced by Footprint Ecology reports on the findings of a large-scale bird disturbance study carried out in Poole Harbour between December 2019 and February 2020. A similar study was carried out in the Harbour in the winter of 2011/12.

The data suggests a clear increase in recreational use since the previous study and consequently increased pressure from recreation on the Harbour's wintering bird interest. The increase in use in certain activities, such as dog walking, walking, and jogging, are likely linked to increases in the local population. These findings highlight the importance of implementing effective measures which carefully manage and promote recreation.

Site Improvement Plans (SIPs) have also been developed for each European Marine Site (EMS). European Marine Sites are the combined term for sites designated as SACs and SPAs. The Poole Harbour SIP provides a high-level overview of the issues affecting the condition of the EMS features on the site and outlines the measures required to improve the condition of the features. Particular attention can be drawn to section 5 Public Access/Disturbance with the actions reflected within the Management Matrix of this Plan. The Poole Harbour SIP 2023 Update is available in Appendix 6.

More research needs to be carried out to better establish the impacts of human activities, sea level rise and climate change on the bird populations, their habitats, and prey. Through better understanding it will be possible to manage potentially detrimental activities and balance human interests with the need to protect the ornithology of the Harbour.

Bird Sensitive Areas

The 1994 Plan focussed on conflicts between users and birds over the summer, however there is concern that some of these activities are now occurring all year. There is the potential for cumulative impacts on overwintering birds from disturbance from recreational and commercial activities of the Harbour. For example, there is nothing to prevent potentially disturbing activities such as bait digging, wildfowling and sailing occurring in all the southern bays at the same time. The Quiet Zone to the south of Brownsea Island is already seen as an important area for birds who feed and roost in and around the secluded bays and inlets where speed limits are restricted.

Although the whole of the Harbour should be recognised as important for its overwintering and breeding bird populations, Figure 6 in Chapter 7 shows the Bird Sensitive Areas which have been identified as being of particular importance. During the winter, principally between 1st November and 31st March, it is essential that disturbance in the overwintering bird sensitive areas are kept to a minimum to ensure these migratory birds have every opportunity to feed and rest. During the spring, between mid-April and the end of June, Mediterranean

gulls and common terns breed at Gull Island and Brownsea Lagoon and disturbance at these breeding bird sensitive areas needs to be kept to a minimum to ensure the successful hatching of eggs and rearing of chicks of these rare bird species.

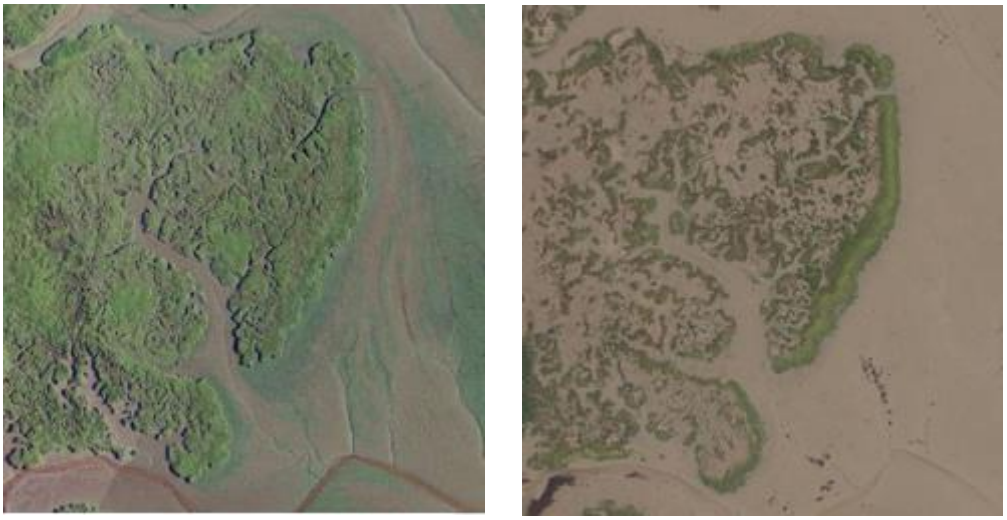
The recognition of these bird sensitive areas is a positive and proactive step to further protecting the important bird life of the Harbour against increasing levels of human activities and it is hoped harbour users will modify their activities during the particularly sensitive times of year. There are still other potential conflicts between users and the bird life at other times of the year and in other parts of the Harbour which will need to be addressed through measures such as codes of conduct and management initiatives.

The Poole Harbour Bird and Recreation Initiative (BARI) was set up to mitigate the broad spectrum of recreational disturbance to SPA protected overwintering bird species in the Harbour. This BCP Council and Dorset Council partnership project is hosted by Urban Heath Partnerships and advised by Natural England. The Initiative directly addresses disturbance from increased recreation associated with urban development and delivers mitigation through public engagement, infrastructure improvements and strategic access management.

4.9 Saltmarsh

Habitat

Saltmarsh extent in the Harbour has been in decline for several years. Green et al. (2020) estimated the historic extent of saltmarsh (including intertidal reedbed extent) in c1860, prior to the invasion of the hybrid cord grass *Spartina anglica,* at 976.4 ha, indicating a 55% loss of saltmarsh in 2014 from the historic extent. 28 ha of saltmarsh were estimated to have been lost in the 6 years between 2008 to 2014 alone. An Environment Agency geomatic survey comparing 2011 findings and 2014 findings found that mid-low marsh and pioneer marsh had been lost with an 18% and 57% reduction respectively.



Loss of saltmarsh in part of Holes Bay between 2002 (left) and 2013 (right)

Source: Natural England

Natural gullies and creeks enable the marsh to maintain wet, saline conditions and provide preferred nesting, roosting, and feeding sites for waders and wildfowl. Saltmarsh improves water quality by locking up nutrients and facilitating denitrification (Deegan et al., 2007). Saltmarsh also acts as a sediment trap and in the past has been used to stabilise mudflats and halt erosion of the foreshore, but its current decline has seen the release of substantial quantities of sediment back into the aquatic system. The creek systems also play an important role in absorbing tidal energy and reducing pressure on sea defences and any management needs to ensure the natural drainage system of the marsh is maintained.

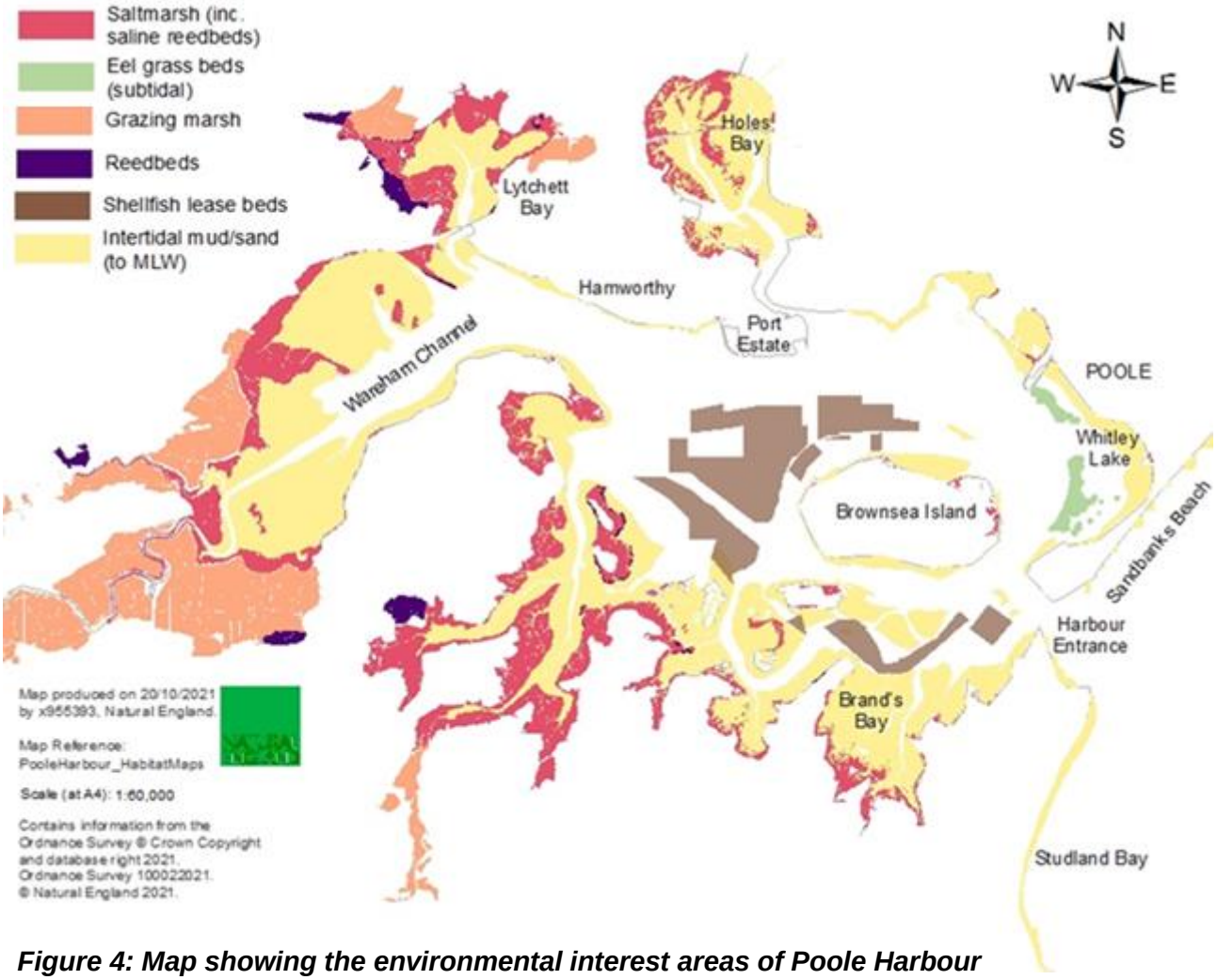


Figure 4: Map showing the environmental interest areas of Poole Harbour

Figure 4 shows the areas of saltmarsh within the Harbour as well as other environmental interest areas. Anchorage Sensitive Zones correspond to the known areas of eel grass beds on the map. There is a public right of navigation within these areas and initiatives need to focus on raising awareness of the importance and location of them and the potential to cause damage by anchoring within them. The shellfish lease beds shown on the map are areas where mussels and oysters are commercially farmed.

Current Threats

In the Harbour several pressures are likely to be involved in saltmarsh loss with the most recent concern around nutrient related pressures. Smothering by macroalgal mats is evident within the outer edge of the Harbour with the pioneer zone particularly vulnerable. Experimental work in North America that applied nitrogen loadings of 150-600 kg/ha/yr which are of the same order or significantly lower than that currently occurring in Poole Harbour nitrogen loading (approx. 640 kg/ha/yr from landward catchment) found an increase in the above ground leaf biomass of *Spartina alterniflora*; decrease in below ground root biomass and an increase in microbial composition of organic matter. This reduced substrate stability resulting in creek bank collapse with significant areas of saltmarsh converted to unvegetated mud (Deegan et al., 2012). Higher nutrient levels can also favour a lower species diversity of some saltmarsh communities (Penk et al., 2020).

Decomposing opportunistic macroalgae or wrack smothering vegetation and intertidal sediment in Brands Bay (2020) – Source: Natural England

Another cause attributed to saltmarsh loss has been the die-back of the saltmarsh building cord-grass species *Spartina anglica*. This has been however also linked to erosion and root

loss from highly anaerobic sediment (Raybould, 2005). Sea level rise has been identified to be a minor direct cause of saltmarsh loss in recent past decades (about 4% of loss in second half of 20th century) but is predicted to be under much greater pressure during the first half of the 21st century (Born, 2005).

Rates of natural decline may also be accelerated by increased wash from passing vessels, eroding the substrate. The impact of Sika deer has also been investigated. Studies show that over grazing and trampling can have a severe detrimental effect on the marsh habitat and the other fauna and flora it supports. However, controlled grazing may in fact have some conservation benefits by modifying marsh vegetation to attract different species and there is evidence that bare mud exposed through over grazing supports increased numbers of some snail species, which in turn attract higher numbers of birds such as Shelduck.

4.10 Reedbed

Habitat

The reedbeds of the Harbour cover around 174 ha, which is about 30% of the total reedbed coverage for the south-west of England. All are designated as SSSIs and are noted for their importance to a range of specialised species, several limited solely to reedbeds. The Harbour reedbeds are used by marsh harrier, cetti's warbler and the bearded tit, while other threatened species such as the bittern and water vole are also occasionally seen, and the habitat is important for several species of wainscot moth. The reedbed habitat is dominated by the common reed *Phragmites australis* which can exist on permanently wet or frequently inundated freshwater or tidal land.

In recent years the loss of saltmarsh extent in the Harbour has occurred alongside an expansion of reedbeds into saltmarsh and mudflat (Gardiner, 2015). More recently notable expansion of reed has been observed in the inner harbour, Lytchett Bay and Holes Bay with reed fronts advancing rapidly at the expense of saltmarsh. Reed can be indicative of relatively high nitrogen, eutrophic situations (Rodwell, 1995; Hill et al., 1999), thus, at Poole Harbour nutrient enrichment is likely to be playing a role in its expansion.

Current Threats

As with saltmarsh, increasing damage due to overgrazing and trampling by deer is seen as a major concern and was evident throughout most of the Harbour. Locally uncontrolled grazing by cattle has also been shown to have a detrimental effect on the habitat. Sea level rise is also expected to change the size and quality of the beds and it is important that reedbeds are given space to migrate landwards as the existing habitat becomes inundated. Other potential threats include the general drying out of reedbeds and scrub encroachment in freshwater beds.

While some of the reedbed areas, such as at Brownsea Island and Holtons Heath, have management and wildlife monitoring plans in place, many do not. The work for the Purbeck Biodiversity Reedbed Working Group recommends that management plans be drawn up for all reedbeds within the Harbour with more detailed surveying and ongoing monitoring to take place. Future work should seek to increase areas of reedbed whilst gaining a better understanding of activities likely to cause it to decline. Initiatives by the RSPB have already seen the expansion of reedbeds in some areas and other landowners need to be made aware of and encouraged to protect this valuable habitat.

4.11 Littoral Sediment (Intertidal Mudflats)

Habitat

The intertidal mudflats of the Harbour support rich populations of invertebrate species (annelid worms, molluscs and crustacea), which in turn provide a food source for the abundant waders, wildfowl, and fish. Macroalgae mats maybe influencing the distribution of invertebrate species with higher abundances of smaller invertebrate assemblages recorded in the sheltered embayments where coverage of macroalgal mats were higher in the summer and autumn while species poor assemblages found south of Brownsea island and in the vicinity of Brands Bay may also be in response to the cover of macroalgal mats (Herbert et al., 2018). The copepod *Corophium volutator,* an important prey species of avocet, appears to have declined in recent years but no other change was detected.

Current Threats

Large areas of mudflats are considered unfavourable given the spread of dense macroalgae mats due to elevated nutrients entering the Harbour. These algae mats can create anoxic conditions to the detriment of the invertebrate species and prevent some bird species from accessing the mudflats to feed. The impact of the mats on benthic assemblages and bird feeding behaviour in the Harbour was investigated between 2013 and 2016 (Thornton, 2016). Smaller invertebrate species increased when algal mat biomass increased, and mat coverage was the main predictor of variation in overall invertebrate community assemblage.

Some non-native species may also pose a threat by changing the nature of the sediment and the invertebrate community. The red algae *Agarophyton vermiculophylla* is potentially increasing where it is established in Brownsea Lagoon and has also been recorded in Holes Bay. Pacific oyster settlement may also be increasing with significant settlement being recorded at the entrance to Blue Lagoon (Herbert et al., 2018).

Physical disturbance due to shellfish dredging and bait collection can also alter the invertebrate community within the mudflats. The impact of the pump-scoop dredging was investigated in 2015 (Clarke et al., 2017). A site newly opened to dredging in the Wytch area experienced an increase in the abundance of annelid worms species yet a significant reduction in some bivalve mollusc species.

Coastal squeeze, where intertidal habitat is lost where it is unable to roll back inland as sea levels rise is predicted to also lead to a future reduction in mudflat extent. Removal of sediment from estuarine systems through dredging may also have a detrimental effect upon mudflats.

Some mudflats have elevated levels of heavy metal contamination with highest values found in northern Holes Bay, Holes Bay, Arne Bay, and Wareham Channel (Oaten et al., 2017). However, the level of metal pollution is not severe according to EC Regulation 1881/2006, as the highest concentrations of cadmium found in clams were below safe human consumption limits. Tributyltin (TBT) was still found in the waters of Lytchett Bay, Brands Bay, Wytch Farm and by the power station in recent decades (Langston et al., 2015).

4.12 Subtidal channels

Habitat

The subtidal fine sands of the central Harbour are species-rich communities dominated by beds of the tube worm *Sabella pavonina.* These beds exhibit a high species richness and diversity, with the tubes colonised by seaweeds, sponges (including the rare *Suberites massa*), bryozoans and ascidians, while crabs and fish (including commercial species such as bass) are associated with them. The most well developed stands of tube worm recorded during a survey in 2016 were in Middle South Deep to the west of the Goathorn Peninsula (Baldock, 2017). A very unusual community of silt tolerant sponge species was also recorded during this survey in Middle South Deep to the west of Goathorn Point and in Blood Alley Lake.

***Sabella pavonina* in the Harbour**
Source: Lin Baldock

Current threats

A survey of the distribution of dense *Sabella pavonina* in 2016 found it had changed little since a survey in 1984. Increases in causal anchoring and mooring were identified as a potential threat with dislodged *Sabella* tubes observed especially in South Deep that may be due to casual anchoring. Many non-native species have also been recorded within this habitat (Baldock, 2017). In addition, the survey recorded opportunistic macroalgae to be frequent in its presence in some locations. Future surveys should assess any changes using this survey as a baseline.

4.13 Shallow Inshore Water

Habitat

Deepwater channels and open water only comprise approximately 20% of the Harbour area and are generally given less environmental importance than the surrounding intertidal and fringe habitats. However, they do support some important fish and crustacean species which play a vital role in maintaining a balanced ecosystem. Many bird species such as terns, ducks, grebes, and cormorants also rely on open water as either feeding or roosting areas.

Current Threats

Overwintering wildfowl, such as mergansers and grebes, feed and roost over the water column, while breeding terns hunt over the water column for fish species. There is potential for these birds to be disturbed by human recreational activities. Brownsea lagoon supports most of the avocet population in the winter and breeding terns in the summer, however the location of the lagoon is unsustainable and is likely to be lost with predicted sea level rises.

4.14 Seagrass Meadows

Habitat

Seagrass in the Harbour – Source: Kevan Cook

The extent of seagrass beds are restricted mainly to two swaths of eelgrass (*Zostera* spp.) in the Whitley Lake area. In addition, there have been some intermittent records of *Zostera* species in other locations (such as between the jetties at Brownsea Island) and *Ruppia* species of seagrass in the southern bays.

Eelgrass beds are an important resource for marine, aquatic, and bird species. They are used as nursery areas for spawning and juvenile fish, providing protection for these and many invertebrates. They provide a valuable food resource for grazing wildfowl such as brent geese which overwinter in the Harbour while grebes and mergansers gather over the seagrass to feed on the fish. Eelgrass is also an important habitat for seahorses with the spiny seahorse and short snouted seahorse identified and evidence suggests that the populations are stable and possibly breeding.

Ruppia species are considered a less valuable habitat than eelgrass exhibiting seasonal and annual fluctuations and a lower biomass (Fourqurean et al., 2003). *Ruppia* are however considered of value in re-establishing seagrass meadows where eelgrass no longer occurs due to water quality and environmental change has prevented its re-establishment (Orth et al., 1986; Cho et al., 2009).

Seagrass habitat can provide ecosystem services such as improving water quality and regulating the climate by storing greenhouse gases and buffering the coast from flooding; provision of food by providing a nursery area for commercial fish species; and cultural services such as the enjoyment derived from the images of wildlife within this habitat.

Current threats

A goal should be to restore some of the seagrass that has been lost historically. Studies have established that eelgrass is highly sensitive to poor water quality (higher turbidity and eutrophication) causing light limitation on its growth and survival (Bertelli & Unsworth, 2018). Restoration of seagrass more widely, other than in the vicinity of the main seagrass beds, is likely to require a large reduction in phosphorous and nitrogen, with seagrass being of greater sensitivity than intertidal mudflats to increased nitrogen loading. Also, phosphorus limitation to reduce opportunistic macroalgae without nitrogen limitation could increase summer nitrogen availability due to the role opportunistic macroalgae has in nitrogen uptake.

Bottom tow fishing is now prohibited over the main eelgrass beds and efforts have been made to exclude moorings from the main beds and highlight it as an anchorage sensitive zone. However, widening buffer zones around the main seagrass beds and excluding physical pressure from seagrass sites may allow more of this habitat to establish. Restoring the Harbour to closer to its previous state is likely to provide ecosystem services such as increased biodiversity, improvements to water quality, a nursery area for commercial fish species while potentially contributing as a carbon sink to offset the effects of climate change.

4.15 Mammals of the Harbour

The Harbour is considered as an ideal habitat for otters, which were once a common sight. Today sightings are rare and although there is some evidence to suggest numbers are increasing more work is needed to establish to what extent. Potential problems for otters include pollution, loss of reedbed habitat, disturbance from increased boat traffic and being caught in illegal fyke nets used to trap eels. Overall, regular surveys need to be carried out and habitats need to be managed to restore the otters to a viable breeding population.

Despite culling initiatives populations of sika deer have recently increased significantly. It is thought that the deer, native to Japan and East Asia, were first released on Brownsea Island around 1900 and more escaped from private estates around Wareham. The Isle of Purbeck is now believed to have the largest population of wild sika deer in England and it is important that an effective deer management strategy is established to protect the intertidal habitats.

Grey Seals are occasionally observed in the Harbour and cetaceans such as bottle nosed dolphins and harbour porpoises are also seen infrequently in or just outside the Harbour.

Sika Deer on Brownsea Island – Source: Canva

4.16 Lagoon

Habitat

The lagoon at Brownsea Island is of considerable nature conservation interest. The densities of invertebrate species were found to be much higher than large areas of the Harbour, and the lagoon is therefore an important food resource for waterfowl including the black-tailed godwit and avocet. The abundance of the lagoon amphipod *Corophium insidiosum* may be of particular importance to avocets, as this bird species is known to feed in areas of the Harbour where *Corophium volotator* is common. The site has very high abundances of typical lagoonal species, that are either of international importance, nationally scarce or uncommon such as the starlet sea anemone *Nematostella vectensis*. As a typical saline lagoon assemblage, it is at least of equal conservation status to other similar lagoons within the Solent Saline Lagoons SAC and should be recognised more widely.

Current Threats

The location of the lagoon is unsustainable and likely to be lost to predicted sea level rise. As the lagoon becomes more saline, the rare lagoonal species will disappear while over time an important bird feeding, roosting, and breeding site for terns may be lost. An understanding of the function that the lagoon serves to the waterfowl of the Harbour and where appropriate replacement habitat could be recreated to safeguard the SPA is needed.

Management Objectives:

The following is a list of the principle management objectives identified. Whilst some are specific to the management of nature conservation and landscape, others may relate to activities and issues discussed in other chapters of this plan. All management objectives can be found in the Management Matrix where a commentary on progress is made by the lead authorities.

- To ensure that any development, plan, or project is sustainable and can demonstrate no adverse impact on the designated site and fully complies with the Habitats Regulations.
- To monitor the habitats in Poole Harbour and implement management initiatives to ensure their protection and enhancement for the biodiversity and other ecosystem services they provide.
- To reduce the concentration of water quality-nutrients entering the Harbour to improve the condition of habitats.
- To manage the shoreline including recreating coastal habitats to be lost due to sea level rise.
- To manage and monitor shore and water-based recreation pressure to avoid damage to habitats and significant disturbance to waders and wildfowl.
- To monitor and review measures that have been put in place to ensure that harvesting activities do not affect habitats and wildlife.
- To monitor and review measures that have been put in place to ensure that dredging activities do not affect habitats and wildlife.
- To continue deer management initiatives to alleviate damage to saltmarsh and reedbed habitats.
- To investigate the potential to restore habitats to enhance biodiversity and for other ecosystem services these habitats provide.
- To produce a natural capital plan: identifying assets, ecosystem services flowing from those assets and identify those that benefit from those assets to facilitate future stakeholder engagement and investment into habitat and wildlife protection and restoration.
- To monitor and review measures to prevent any invasive non-native species significantly impacting habitats and wildlife.
- To ensure litter does not affect the wildlife of the Harbour.
- To improve communication with all user groups and organisations to improve awareness of important habitats and wildlife in the Harbour and explain how they can reduce potential impacts on the wildlife of the Harbour.
- To promote more research into the impacts of human activities, sea level rise and climate change on biodiversity and the other ecosystems services the Harbour's habitats and wildlife provide.

Water Quality and Pollution 5

5.1 Overview

The Harbour's poor flushing characteristics make it very vulnerable to pollution. The increase in nutrients entering the Harbour waters over the last 50 years is the main cause of deterioration of Poole Harbour's marine ecology. Nitrogen and phosphorus have had the biggest impact. The amount of nitrogen entering the Harbour has more than doubled, from around 1,000 tonnes per year in the 1960s to around 2,300 tonnes per year now. The impact has been significant with examples of mudflats covered in green algae and the loss of some sea grass and saltmarsh habitats affecting wetland birds and other wildlife. Improving estuarine ecology through bringing nutrients to a level where these habitats are restored will also have wider economic and amenity benefits and help support human welfare. For example, saltmarsh and seagrass provide us with benefits in capturing carbon, as nursery grounds for commercial fish, and by providing better coastal protection against sea-level rise and improving water quality.

The combination of scientific research and environmental monitoring, together with modelling scenarios, shows that a large reduction in nitrogen entering the Harbour is necessary to restore the ecology to a condition that is not adversely shaped by nutrient over-enrichment. Taken together, the reviewed evidence from over 50 studies at Poole Harbour and at similar situations elsewhere Natural England's view is that an inorganic nitrogen limit in the region of 1,000 tonnes per year, or possibly less, is required. Modelling by the Environment Agency together with the reviewed evidence, also identifies that further reductions in phosphorus inputs would limit macroalgae abundance and assist with the re-establishment of eelgrass.

The Environment Agency is concerned as to the scale of land use change and associated socio-economic impacts required to achieve a 1,000 tonnes per year target and whether there is a risk of going beyond the actual target that could achieve the same objectives. Over time further evidence may refine the nutrient limits and thresholds for water quality indicators in the Harbour. However, given the long time lag through a predominantly chalk catchment before a reduction in nitrogen-nitrate loads on the Harbour environment will take effect, the release of past nutrient losses stored in soils and sediments and the importance of ensuring favourable nitrogen concentrations for nutrient filtering habitats such as seagrass and saltmarsh and the wider implications of maintaining and restoring estuarine ecology for human livelihoods and welfare, Natural England are of the view current evidence indicates measures should be put in place to reduce input nitrogen loads to the region of 1,000 tonnes per year.

The Environment Agency and Natural England recently reviewed the water quality targets and measures outlined in the publication "Strategy for managing nitrogen across the Poole Harbour catchment to 2035" to see if these will achieve SPA objectives. The findings of this work are summarised in the Poole Harbour Consent Order Technical Recommendations

(2021). This work identified the need to tighten the water quality target to achieve the ecological objectives across the Harbour. The new target was set in this report and identifies the need to reduce nitrogen discharges to the catchment to 1,500 tonnes of nitrogen year and 22 tonnes of phosphorous per year by 2030.

Ambitious nutrient reductions will be required across multiple sectors. The information below summarises the range of remedies across sectors that need to be put in place to address nutrient loads into Poole Harbour:

Diffuse agriculture

- Voluntary nutrient trading Poole Harbour Nutrient Management Scheme (PHNMS)
- Non-PHNMS Regulatory compliance
- Agri-environment support agreements/land use change projects

Water company wastewater discharges

- WRC overflow improvements
- Water company nitrogen and phosphorous offsetting
- Water company further regulatory investigations

Other point source discharges

- Non-water company wastewater discharges
- Small rural sewage discharges
- Aquaculture (fish farms and cress farms)
- Poole Harbour marinas, boats and shoreside facilities

Urban sources

- Development growth (nitrogen/phosphorus neutral offsetting)
- 'Greening' (SUDs) drainage infrastructure
- Misconnections and overflows

Aerial sources

- Pig and poultry expansion
- Slurry lagoon applications
- Dairy intensification (cattle numbers remaining constant but focussed in fewer areas)
- Urban especially commercial development plans

Catchment and harbour ecosystem services (denitrification primarily but also catchment sediment retention, Phosphorous recycling and carbon sequestration, harbour water cleansing etc)

- Wetland re-establishment
- River and floodplain rehabilitation, including Stage Zero, beavers, and natural flood management
- Poole Harbour restoration management – saltmarsh, seagrass
- Research effectiveness of bioremediation through removal of macroalgae and shellfish aquaculture

In addition, the nutrient input limits necessary to restore the ecology, especially that for nitrogen, will be influenced by measures to restore habitats and natural processes in the catchment and harbour that improve water quality, such as the buffering effects of saltmarsh and seagrass habitat through de-nitrification and sediment stabilisation. The effectiveness of bioremediation techniques such as the removal of macroalgae and shellfish aquaculture are also being explored.

Pollution of water, sediment and air can come from many sources and because of a range of activities such as agriculture, industry, and recreation. Many different EU Directives that have been transposed into UK law post-Brexit set standards for environmental quality and requirements for monitoring, while local plans recognise the need to address pollution from existing sources as well as proposed developments.

The EA and NE have produced a summary of the Poole Harbour Consent Order Technical Investigation and Recommendations entitled Restoring the water quality of Poole Harbour (2021).

5.2 Agriculture

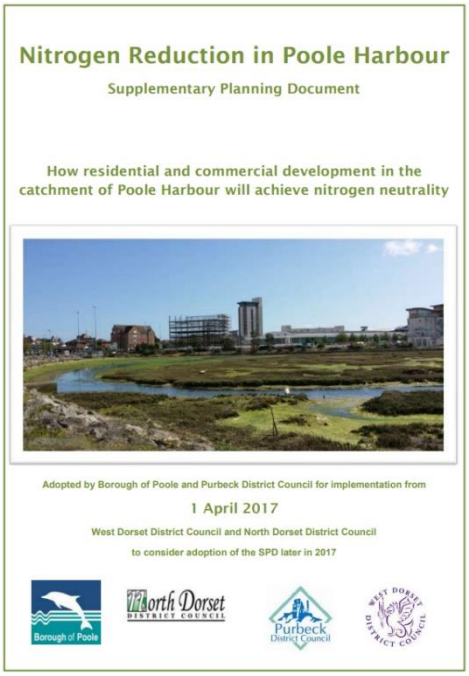
Diffuse pollution refers to contamination of watercourses by surface water runoff and leaching of nutrients and chemicals from soil. The rivers Frome, Piddle, Corfe and Sherford which discharge into the Harbour are subject to hypernutrification from nitrates and phosphates from agricultural sources.

Increased nutrient levels from fertilisers and slurry can result in algal blooms in the rivers and macroalgal (seaweed) blooms in the marine environment. This anthropogenic eutrophication can lead to deoxygenation of the water, which can result in fish and shellfish mortality while macroalgal blooms can result in a depletion of prey items and interfere with bird foraging behaviour. In addition, eutrophication can lead to the loss of marine habitats such as saltmarsh and seagrass. Soil loss from agricultural fields is also of concern as it can increase sediment levels in rivers and the Harbour hampering fish spawning grounds and shellfish beds.

To address the issues of pollution from agriculture DEFRA funded a Catchment Sensitive Farming initiative, which encouraged the use of best practice farm operations to reduce water pollution. The catchments of the Frome, Piddle, Sherford and Corfe Rivers have been designated Nitrate Vulnerable Zones since 2002. This means that farmers in the catchment are restricted in their management of and application of organic manure and inorganic fertilizer. These controls have been introduced to reduce inputs of nitrogen to the Harbour.

Leading on from the NMP, BCP Council have adopted the Nitrogen Reduction in Poole Harbour SPD (2017) which outlines how residential and commercial development in the catchment of Poole Harbour will achieve nitrogen neutrality. The Poole Harbour Consent Order Technical Investigation and Recommendations (2021) produced in partnership by the

EA and NE provides recommendations as to how sectors in the catchment of Poole Harbour will achieve nutrient reductions.



As a result of this the Poole Harbour Nutrient Management Scheme (PHNMS) has been created which is a whole catchment approach that brings together all the farmers in the Poole Harbour catchment under one entity. It will provide the tools and support for reducing nitrates and delivering additional environmental benefits for agriculture and other sectors especially the water company and new development. The scheme has support from many farmers in the area and was initially developed by the National Farmers Union (NFU) in 2018 as a response to the threat of a proposed Water Protection Zone for the whole of Poole Harbour. This is a unique scheme which has the backing of the NFU, Natural England, the EA, BCP Council, Dorset Council and Wessex Water.

The timeline for the PHNMS throughout the 2020's has seen the scheme commence in Spring 2021 with a small-scale trial of 15-20 farmers. These volunteer farmers road tested the scheme to allow it to be fine-tuned to make sure it is fit for purpose. Autumn 2021 saw the roll out of a larger pilot phase to a larger number of farmers and introducing buyers testing out the trading platform. In Spring 2023, a larger pilot phase will be open to all farmers in catchment but will not extend to third party trading, with the aim of launching this component in 2024. This is so members can complete a baseline year without requirement to reach a target, and then balance the following year.

In 2024, the Environment Agency will review the progress of the scheme in reducing nitrate losses from agriculture. If farms are still leaching too much nitrate, DEFRA will impose a Water Protection Zone. DEFRA's deadline for agriculture to reach their required reduction in nitrate leaching is 2030.

The Poole Harbour nitrogen offsetting project has also been implemented by Wessex Water to deliver nitrate reductions into the Harbour. The project uses catchment management to offset nitrate contained in the effluent discharged from Dorchester's water recycling centre (sewage treatment works). The aim was to reduce the amount of nitrogen entering Poole Harbour by 40 tonnes of nitrogen per year by 2020. The project has worked with the farmers in a targeted area of the Poole Harbour catchment to:

- identify and raise awareness of water quality issues.
- share the results of water, soil, crop, and manure testing.
- provide advice and information on ways to improve the efficient use of key inputs.

- compensate the farmer (where appropriate) for adopting alternative practices. An example of this is encouraging farmers to grow cover crops to reduce leaching whilst locking up nutrients that can be utilised by the subsequent crop.

Nitrogen removal is expensive and chemically/energy intensive. The delivery of the project provides a more sustainable alternative, working with farmers and landowners to deliver the targeted nitrogen reduction to offset some of the nitrogen load discharged from Dorchester water recycling centre. This is delivered through the EnTrade nutrient trading platform. Following a pilot auction in 2016, further auctions were held in 2017, 2018 and 2019. EnTrade has saved an estimated 275 tonnes of nitrogen from entering Poole Harbour by funding 65 farmers who have received £500,000 funding to change land management practices.

Following the success in meeting the 2020 target, 2020-2025 will increase the target to reduce 100 tonnes per year of nitrogen within the catchment through offsetting or treatment, comprising:

- Continuing the 40 tonnes per year offsetting the discharge from Dorchester water recycling centre.
- An additional 51 tonnes per year as a voluntary target across the wider catchment.
- An additional 9 tonnes per year which will be achieved from the new nitrogen removal plant at Wareham WRC.

DEFRA's new target for water quality in relation to agriculture is to reduce nitrogen, phosphorus, and sediment pollution from agriculture into the water environment by at least 40% by 2038, compared to a 2018 baseline. DEFRA have shifted the end date for the water targets from 2037 to 2038 to meet the legal requirement that the targets span a 15-year minimum duration, considering they are due to come into force in 2023 rather than 2022 as originally intended.

5.3 Urban Development

The National Planning Policy Framework (updated 2023) states that planning policies and decisions should contribute to and enhance the natural and local environment by preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, considering relevant information such as river basin management plans.

The increasing nitrogen levels from sewage and agriculture are contributing to the growth of algal mats in the Harbour, restricting the growth, distribution, and variety of important food available for wading birds protected under UK law and impacting estuarine habitats such as seagrass and saltmarsh. Most nitrogen is generated from agriculture, but a proportion is generated from human sewage. To conform to the requirements of the Habitats Regulations

and the Water Framework Directive transposed into UK law, areas planning for a growth in population must be certain that development has either avoided harm to European protected sites or mitigated the impact to ensure that there is no adverse effect.

Algal mats in Holes Bay – Source: Jez Martin

Avoidance is not possible in this case as the human population around the Harbour will continue to grow. Therefore, the additional nitrogen generated through sewage from new housing in the catchment of the Harbour will have to be mitigated. Mitigation can be 'direct' through upgrading sewage treatment works and through alternative technologies, e.g., wetlands or reedbeds; or 'indirect' by offsetting the nitrogen generated from new development by taking land out of a nitrogen intensive uses, e.g. where fertiliser is applied to crops. Mitigation measures will need to be secured over the duration over which the development is causing the effects, generally 80-125 years.

Algal mats at Hamworthy – Source: BCP Council

The Nitrogen Reduction in Poole Harbour SPD (2017) outlines how residential and commercial development in the catchment of the Harbour will achieve nitrogen neutrality through the implementation of these mitigation measures. Through this SPD BCP Council and Dorset Council have been working together in a catchment wide initiative since 2017 through the predecessor authorities to ensure development is nitrogen neutral. Natural England and the Environment Agency support this approach which ensures that new development is not putting additional nitrate loading on the Harbour. The BCP Council Green Infrastructure Strategy 2022-2031 also reinforces this stance with one of its aims being to support the Council's ambition to make best use of the areas green infrastructure, including the Harbour, to reverse biodiversity loss and nature recovery.

Meanwhile Natural England and the Environment Agency have been working with the agricultural sector and water treatment companies to reduce the overall amount of nitrate entering the Harbour to improve the overall condition of Poole Harbour SPA and Ramsar site to favourable conservation status.

In March 2022, Natural England updated its advice for Poole Harbour. The advice confirmed the need to reduce both nitrogen and phosphates to return the Harbour to favourable status. Later that year in July 2022, a Written Ministerial Statement was made by the Secretary of State for the Department of Environment, Farming and Rural Affairs about a package of measures to address nutrient neutrality across England. The two main measures announced were:

- the intention to table an amendment to the Levelling-up and Regeneration Bill to require the upgrade of all Water Recycling Centres (WRCs) within the affected catchments.
- a nutrient mitigation scheme to be managed by Natural England aimed at delivering nutrient mitigation within the affected catchments.

Natural England advise that once the Levelling-up and Regeneration Bill is passed and the improvements of the WRCs have been secured in law, then phosphorus neutrality measures will no longer be a requirement for development in the Poole Harbour catchment. The duty will pass to the wastewater companies to upgrade works by 2030. The required improvements to the WRCs will reduce total phosphorus loads to a level that will no longer be detrimental to the recovery of the site. Note that the requirement for nitrogen neutrality will remain.

If the Levelling-up and Regeneration Bill becomes law in its current form, Natural England has confirmed that development will no longer be required to demonstrate phosphate neutrality. Phosphates arising from development between 2023 and 2030 will not be considered significant in terms of restoring the site.

Until the Bill becomes law the local authorities have agreed with Natural England to continue to grant planning permissions during this time. The local authorities will calculate the phosphorus budget of proposed developments, set aside the required amount of Community Infrastructure Levy (CIL) and continue to deliver nutrient mitigation through its established strategy. If the announced improvements at the WRCs is not forthcoming, or delayed, then the local authorities will ensure appropriate phosphorus offsetting measures are in place to ensure that nutrient neutrality is secured by the occupation of any permissions granted.

Urban developments also create diffuse pollution through increased surface run-off, which has the potential to contaminate watercourses with oil, silt, nutrients, and chemicals. Sustainable drainage is the practice of controlling surface water runoff as close to its origin as possible before it is discharged to a watercourse.

Policy PP38 – Managing flood risk, of the Poole Local Plan (2018), states that Sustainable Drainage Systems will be required for all major developments, unless the relevant Surface Water Management Plan (SWMP) indicates otherwise, or they are demonstrated to be impractical. Proposals should be appropriate to the location and designed to manage surface water run-off in accordance with the appropriate technical standards. Sewage Sector Guidance Appendix C (2021) gives further guidance on the design and construction of foul

and surface water sewers. Advice on Sustainable Drainage Systems is also provided in the form of Supplementary Planning Guidance (2003) to give further advice on the appropriate use of sustainable drainage in new developments.

The National Planning Policy Framework (updated 2023) also states planning policies and decisions should also ensure that new development is appropriate for its location considering the likely effects on the natural environment and potential sensitivity of the wider area. In doing so they should identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason and limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes, and nature conservation.

5.4 Industrial and Commercial Activities

Historic industrial activities have led to significant contamination of some of the north shore. Toxic discharges of industrial waste have left much of Holes Bay contaminated with heavy metals which have accumulated in the bed sediment. These metals can then accumulate in the organisms that live within the sediment and may be passed up the food chain, a process known as bioaccumulation. Many different metals have been identified but those of particular concern are cadmium, mercury, copper, and zinc. Discharges of these metals have largely been eliminated but they persist in the environment and their natural breakdown is slow. As well as bioaccumulation there is also the concern that heavy metals could remobilise when disturbed by activities such as dredging, and this is given due consideration by regulatory authorities when work and disposal licences are applied for. However, heavy metals can also be remobilised because of natural erosion of saltmarsh, and this is an area that requires further research especially considering rising sea levels.

BCP Council and Dorset Council continuously monitor air quality around the Harbour with particular focus placed on levels of Nitrogen Dioxide (NO2) and Carbon Monoxide (CO). Information on air quality in the area is sent to DEFRA annually, with a comprehensive report submitted every three years. There is currently no monitoring of emissions from ships, but some port-based industries require permits which regulate air pollution by such things as dust and solvent emissions. Another possible source of pollution is the discharge of wastewater from shellfish transhipping vehicles which may introduce pathogens and alien species into the aquatic environment.

One significant industry located in the south of the Harbour is the onshore oil field. However, there are no effluent outputs from the operation as discharges from the site are collected and returned to the oil-bearing strata to aid extraction.

5.5 Water Recycling Centres (WRCs)

In 2002 the Harbour was designated as a Sensitive Area (Eutrophic) and Polluted Waters (Eutrophic) under the Urban Wastewater and Nitrate Directives, respectively, which have since been transposed into UK law. This was due to elevated levels of nitrates and phosphates leading to problems of eutrophication in certain areas. Some nutrients were derived from agricultural sources and WRCs were identified as a source.

The Harbour receives treated sewage discharges from three main WRCs which serve the communities of Poole, Lytchett Minster and Wareham. These sites have all provided secondary treatment for many years and treat sewage to a high standard before discharge. Wessex Water Services Ltd run these WRCs and are also responsible for maintaining sewers and outfalls. They have a statutory duty to treat and discharge sewage, under consent from the Environment Agency, and to ensure that discharges do not adversely affect the waters of the Harbour in complying with UK law, such as in relation to bathing and shellfish waters.

All three WRCs are fitted with Ultraviolet (UV) disinfection to reduce the bacteriological impact of the discharges to receiving waters. Improvement schemes have also provided additional storm storage and settlement tank capacity to reduce discharges of storm sewage at times of heavy rainfall. To reduce nitrate discharges into the Harbour a nitrogen removal plant was constructed at Poole WRC and has been in operation since 2008, removing approximately 927 tonnes of nitrogen per year. A nitrogen removal plant has also been installed at Wareham WRC which can remove 9 tonnes of nitrogen per year from 2021.

The Poole Harbour Consent Order Technical Recommendations (2021) states that WRCs contribute the largest source of phosphorous emitted to the catchment and Wessex Water should reduce nitrogen and phosphorous emissions to 209 tonnes per year of nitrogen and 16.5 tonnes per year of phosphorous. Target reductions should be achieved by:

- reducing nitrogen and phosphorous discharges to the catchment and harbour to achieve their targets by 2030.
- improving treatment at Poole WRC or re-locate the discharge.
- local authorities reviewing their Supplementary Planning Document considering these recommendations to maintain Habitats Regulation compliance.
- achieving these reductions through the Asset Management Planning process, with key measures agreed as part of Periodic Review 24 (PR24).

Asset Management Plan (AMP) cycles highlight targets for WRCs and operate on a five-year basis with the most recent AMP7 commencing in April 2020. The extract below is taken from the Poole Harbour Catchment Factsheet (December 2020) produced by Wessex Water showing the investments completed to 2020 as part of AMP6 and the investments planning to 2025 as part of AMP7.

Investments completed to 2020

Five investigations completed 2010-2020

- Hydrology of the Devils Brook – evaluating the impact of our abstractions on the watercourse.
- Bere Stream – evaluating the impacts of our abstractions and discharges on the stream.
- River Frome Nutrients – understanding the influence of WRC discharges on nutrient levels in river.
- Poole Harbour Nutrients – understanding nitrogen levels entering Poole Harbour.
- Poole Harbour Shellfish – monitoring outputs from WRCs at Studland and Corfe Castle, and rivers for bacterial levels.

Poole Harbour catchment initiative

- We initiated and developed the pilot partnership in 2012.
- We continue to host the catchment partnership, now in conjunction with Dorset Wildlife Trust.
- We provide £75,000 annual funding, including funding, and hosting roles of the catchment co-ordinator and catchment partnership technician.

Environmental Investment

- Poole Harbour catchment biodiversity project (1,800 hectares of catchment mapped for biodiversity opportunities).
- Dorset biodiversity strategy (£58,000 funding through our biodiversity partners programme 2006-2010).
- Dorset Wild Rivers project with Dorset Wildlife Trust and FWAG SW (£200,000 funding through our Biodiversity Partners Programme 2010-2020).
- Dorset extended riverfly monitoring (£2,500 funding through our Biodiversity Partners Programme 2015-2020).
- Holt Heath (£2,500 funding through our Biodiversity Partners Programme 2015-2020).
- Devils Brook multi benefit project (£5,000 funding through our Biodiversity Partners Programme 2015-2020).
- Streamclean team – tackling sewerage misconnections around Poole.

Future investment 2020-2025

New phosphorus removal at WRCs

- Cerne Abbas WRC (removing 0.3 tonnes per annum by 2021).
- Corfe Castle WRC (0.48 tonnes per annum by 2021).
- Piddlehinton WRC (0.13 tonnes per annum removed by 2025).
- Dorchester WRC (tighten existing permit to remove 18.54 tonnes by 2025).

Nitrogen removal at WRCs and catchment offsetting

Target for removal of 100 tonnes of nitrogen/year through:

- new nitrogen removal process for Wareham WRC (to achieve 15mg/l total nitrogen), removing c. nine tonnes of nitrogen/year by 2021
- continuing nitrogen offsetting from Dorchester WRC – 40 tonnes per annum reduction to 2025
- additional nitrogen offsetting in line with our performance commitment – 51 tonnes/year to 2025.

Installation of ultraviolet treatment (UV) to reduce bacteria to improve shellfish waters

- Corfe Castle WRC (by 2021).

Environmental Investigations:

- Dewlish boreholes – implement abstraction licence change to reduce abstraction in the Devils Brook.
- Dorchester WRC seasonal permitting – investigate an innovative seasonal phosphorus permitting approach at Dorchester WRC.
- Dorset Frome SSSI water quality – assess the contribution our WRCs, SOs, water resources and catchment management have on water quality of the River Frome SSSI.
- Poole Harbour catchment WRCs – to understand the nitrogen and phosphorus contributions from WRCs.
- Poole Harbour shellfish waters – to assess our discharges and their impact on shellfish waters and climate change impacts.
- Poole WRC options appraisal – to assess improvements for discharge quality or outfall re-location.
- Holes Bay – investigation of nitrogen and phosphorus loads from our discharges to Holes Bay, Poole.

Biodiversity

- Briantspuddle and Litton Cheney DrWPA – biodiversity opportunity investigation and catchment nitrate reduction measures.
- Poole Harbour catchment biodiversity project – 72 hectares of habitat to be improved to enhance biodiversity and reduce nutrients to rivers.
- Five years funding for the Dorset Wild Rivers project with Dorset Wildlife Trust, FWAG SW & Dorset AONB (£100,000 total funding from our Partners Programme 2020-2025).

In the longer term, Wessex Water's Drainage and Wastewater Management Plan sets out how the company aims to deliver resilient drainage and wastewater infrastructure for the next 25 years and tackle the issues highlighted for the WRCs and sewerage systems in the Poole Harbour catchment. The production of a drainage and wastewater management plan is a requirement of the DEFRA Environmental Improvement Plan 2023.

DEFRA's new target for water quality in relation to WRCs is to reduce phosphorus loadings from treated wastewater by 80% by 2038 against a 2020 baseline. DEFRA have shifted the end date for the water targets from 2037 to 2038 to meet the legal requirement that the targets span a 15-year minimum duration, as they come into force in 2023 rather than 2022 as originally intended.

As previously highlighted on pages 37-38 of this Plan the Levelling-up and Regeneration Bill is before Parliament at the time of publication of this Plan. The Bill may apply a requirement on water and sewerage undertakers to meet the Technically Achievable Limits (TAL) on discharges from WRCs above 2000 (or 250) population equivalent within nutrient sensitive catchments. Poole Harbour has been identified as one of the nutrient sensitive catchments so upgrading the relevant WRCs within the catchment may be necessary. Wessex Water is costing these potential upgrades into its 2025-30 business plan should the Bill bring this forward.

5.6 Port and Shipping

Port operations and commercial shipping, including fishing, all have the potential to impact the Harbour in terms of disturbance, contamination from surface water runoff and diffuse pollution such as from antifouling paints, sacrificial anodes, and oil. Sediment of the north shore contains elevated levels of Tributyltin (TBT) which was heavily used in antifouling paints up until 1987 when it was banned for use on vessels under 25 metres. TBT was found to be having a severely damaging effect on marine organisms, particularly some shellfish and although it is now rarely used even on larger vessels, it persists in the environment. In 2008 TBT was banned by the International Convention on the Control of Harmful Anti-fouling Systems on Ships of the International Maritime Organisation, of which the United Kingdom has been a member state since 1949. Contemporary alternatives often contain copper which itself has some detrimental effects, but not in the magnitude of older tin-based products.

Sacrificial zinc anodes are used on sheet piling and commercial and recreational craft to counter the effects of electrolysis. Their true environmental effects are currently not fully understood but their use may be linked to occasional elevated levels of zinc contamination at points around the Harbour.

Disposal of sewage, garbage, and contaminated bilge water from ships within the Harbour also has a detrimental effect on the environment. There is a complete ban imposed on the dumping into the sea of all forms of plastic, while contaminated ballast water discharged from commercial ships can cause chemical pollution as well as having the potential to introduce alien species and pathogens into the Harbour.

Commercial ships are not allowed to discharge within the Harbour itself. Port facilities provide appropriate disposal routes for all forms of waste that legislation requires commercial cargo vessels and ferries to land; details of which are contained in the Port Waste Management Plan (2018).

5.7 Recreation

Pollution through recreational activities may not have the potential to be as great as from other sources but the number of recreational users in the Harbour mean that cumulative effects may be significant.

Diffuse pollution from antifouling paint and sacrificial anodes on yachts is similar to commercial operations as discussed above and although TBT based paints are no longer used by recreational craft the effects of copper-based alternatives need further investigation. Discharge of untreated sewage from marine toilets within the Harbour has the potential to cause problems both in terms of meeting water quality standards and the dangers it presents to public health and to marine species including shellfish. Sewage introduces harmful microbial pathogens to the water as well as lowering the amount of oxygen available to marine life.

There are currently no national regulations concerning such discharges although a local byelaw prohibits the emptying of marine toilets and holding tanks into Harbour waters. Best practice recommends that marine toilets should not be discharged where doing so would affect the water quality or harm the amenity value of local waters. The fitting of holding tanks is encouraged and these should be discharged at least three miles offshore or ideally through pump out facilities onshore. It is important that local marina and boatyard operators provide facilities for sewage disposal to discourage discharge within or just outside the Harbour. They also need to provide adequate facilities for the disposal of other waste such as oil and garbage. PHC have pump out facilities at their Poole Quay Boat Haven marina.

Marine litter not only reduces the amenity value of the Harbour but can also be potentially harmful to sea life such as birds, mammals, and fish. The Marine Conservation Society carries out national surveys of litter through its Beachwatch initiative, which includes the shores of the Harbour. The litter is collected, and the quantities and categories noted. Between 2013 and 2019, 18 litter surveys were carried out at various sites surrounding the Harbour with 2,260 metres of the Harbour's coastline surveyed over 31 hours by 372 volunteers. In total, approximately 11,000 items of litter were discovered filling 181 refuse sacks. Under Harbour byelaws it is an offence to deposit any form of waste or garbage into Harbour waters.

Powered recreational craft particularly powerboats and personal watercraft also have the capacity to cause considerable noise pollution. This can be a nuisance to other Harbour users and residents but can also cause considerable disturbance to wildlife. To some degree the problem has been addressed with the introduction of the speed limit, the zoning of motorised activities and the quiet zone, but users of all craft need to be aware of the impact of their activities on other users and the wildlife of the Harbour.

5.8 Monitoring

The EA is the competent authority for routine monitoring of water bodies such as the waters of the Harbour, its freshwater inputs and coastal waters. This monitoring is undertaken according to frequencies originally outlined in various EU Directives that have been retained in UK law post Brexit. The data collected is passed to DEFRA for consideration by government. Some sampling however, such as that for Bathing Waters, does not occur all year and with increasing recreational activity throughout the winter months there is a growing need to fill current public information gaps about water quality.

5.9 Water Framework Directive

The Water Framework Directive (WFD) originates from the EU but has been retained in UK law post Brexit. It updated and consolidated some of the existing piecemeal EU water legislation whilst establishing a new, integrated, ecosystem-based approach to water protection, improvement, and sustainable use.

The WFD aims to prevent deterioration of the water environment and improve water quality by managing water in natural river basin districts, rather than by administrative boundaries. It considers the water environment holistically and requires that improvements take account of economic aspects, including costs and benefits. Plans to improve the status of water bodies are set out in River Basin Management Plans (RBMPs).

These are statutory plans, which define the measures required to meet environmental objectives and provide the mechanism whereby water use and activities affecting water will be managed. The Harbour is included within the south west river basin district, which covers most of the south west of England but for planning purposes is subdivided into smaller catchment areas.

The objective of the WFD was to bring the standard of all European water bodies up to “good” by 2015. This timetable was highly ambitious and so two further six-year RBMPs are in place, taking implementation of the WFD’s objectives up to 2027.

The Part 1: South West river basin district - River basin management plan was updated in December 2015. The EA are working with its partners to review and update the south west and England’s other current river basin management plans. As part of this process in January 2021 the EA published its River Basin Management Plans 2021- Challenges and Choices consultation summary report which summarised responses to the October 2019 consultation which sought views on the challenges waters face and the choices we need to make to improve and protect this precious resource. This consultation was the second (and latest at the publication of this document) of three statutory consultations.

Management Objectives:

The following is a list of the management objectives identified. Whilst some are specific to the management of water quality and pollution, others may relate to activities and issues discussed in other chapters of this plan. All management objectives can be found in the Management Matrix where a commentary on progress is made by the lead authorities.

- To understand the potential effects of the transfer of ballast water to the marine environment.
- To ensure best practice is followed to minimise the impact of antifouling paints on marine fauna and flora.
- To ensure air quality in and around the Harbour meets agreed emission standards.
- To ensure discharges from industry meet emission standards.
- To ensure discharges from vessels are regulated and comply with legal requirements.
- To investigate the potential effects of sacrificial anodes.
- To ensure discharges of treated effluent meet emission standards.
- To ensure planned improvements are made to storm sewage and emergency overflows.
- To ensure litter does not affect the interest features of the European Marine Site.
- To seek to encourage the use of more environmentally sensitive farming techniques.

Managing the Shoreline 6

6.1 Climate Change and Sea Level Rise

Probably the most significant long-term issue which will affect the future of shoreline management is sea level rise. This is a natural occurrence for the coast, which of course includes the Harbour. However, recent studies suggest the rate of rise of the sea levels is expected to increase according to predicted climate change models.

The Level 1 and Level 2 Strategic Flood Risk Assessment (SFRA, 2017) for the Poole area was produced to support the Poole Local Plan (2018). The Level 1 SFRA (2018) for the Purbeck area excluding Swanage was produced to support the Purbeck Local Plan Partial Review. These SFRAs provide an assessment of the extent and nature of flood risk from all sources and considers sea level rise resulting from climate change. It identifies areas at risk of flooding and outlines methods to minimise and manage that risk. Figure 5 below shows these areas at risk of flooding around the Harbour with Flood Zone 3 highlighted in dark blue, Flood Zone 2 in light blue and all other areas not highlighted fall within Flood Zone 1. Flood Zone 3 is the area at highest risk with a greater than 1:100 chance of flooding, Flood Zone 2 is the area of medium risk with between 1:100 and 1:1000 chance, and Flood Zone 1 is the area of lowest risk with a less than 1:1000 chance.

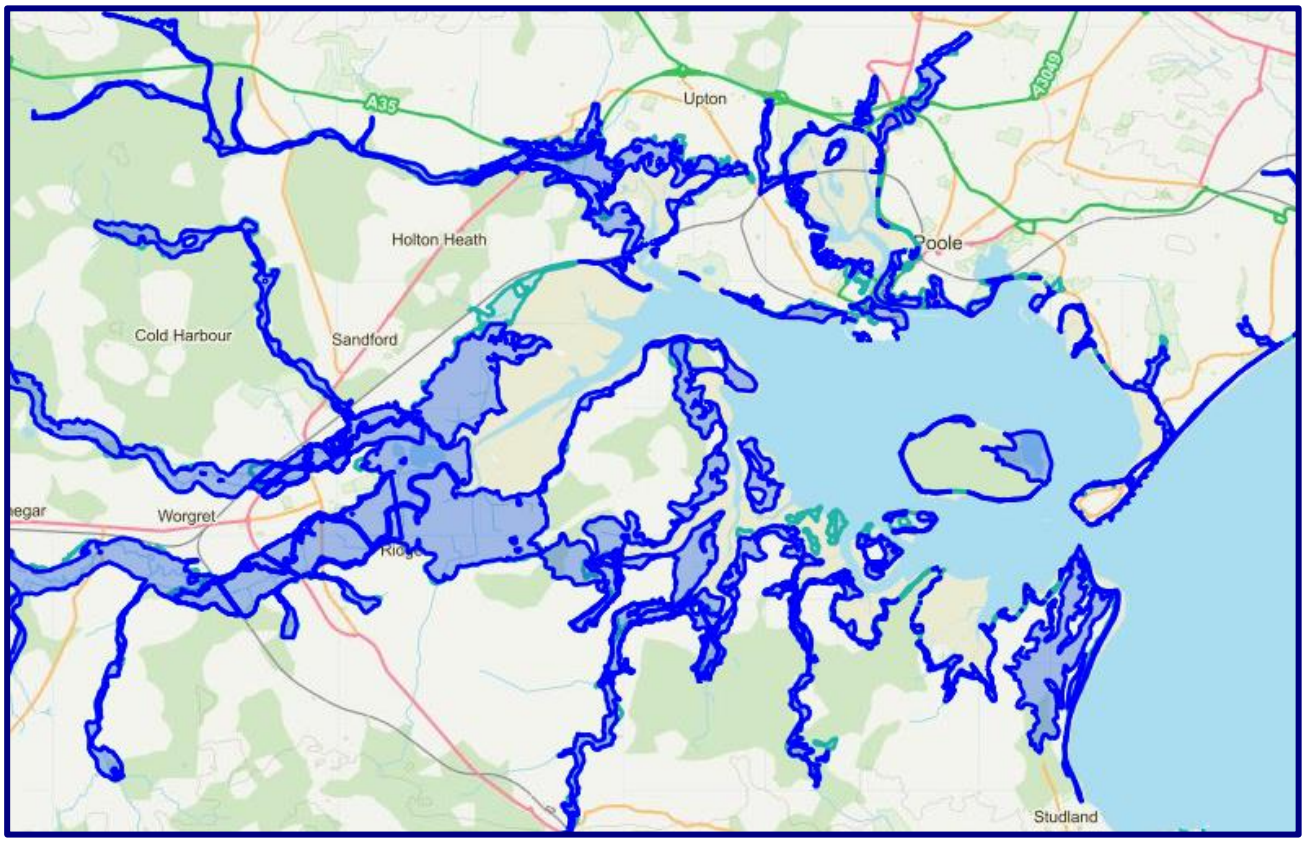


Figure 5: Areas surrounding the Harbour at risk of flooding

Guidance produced by the Environment Agency, which informed the SFRAs, sets out allowances by time period that should be used as the basis for calculating sea level rise for regions of the UK. These allowances were based on UKCP09 climate change projections for the south west which was the guidance at the time. These have since been updated following UKCP18 climate change projections and the current guidance on sea level rise allowances for the south west of England are shown in the table below. It should be noted that the UK climate change projections will be further updated at points in the future, and the most up-to-date climate change guidance should be used:

Allowance / Scenario	mm / year (total mm in period)				Cumulative rise 2000 - 2125 (metres)
	2000 - 2035	2036 - 2065	2066 - 2095	2096 - 2125	
Higher Central	5.8 (203)	8.8 (264)	11.7 (351)	13.1 (393)	1.21
Upper End	7.0 (245)	11.4 (342)	16.0 (480)	18.4 (552)	1.62
H++	-	-	-	-	1.90 (NB: to 2100)

Table 1: Sea level rise allowances for southwest England

It should be noted that a new BCP Council SFRA is in the process of being developed to support the new BCP Local Plan and will incorporate the latest climate change and sea level rise allowances. This will supersede the 2017 SFRA.

Increased extreme events, including increased storminess, are also associated with climate change. The FCERM teams at BCP Council and Dorset Council, the Environment Agency, Southern Coastal Group and SCOPAC (Standing Conference on Problems Associated with the Coastline) and the Dorset Coast Forum are all organisations whose work considers the issues of climate change and sea level rise. BCP Council, Dorset Council and the Environment Agency are the responsible authorities for managing the risks of flooding and coastal change in Poole Harbour.

Implications

Higher sea levels and a greater number of storm events will have implications for everyone around the Harbour. Climate change needs to be considered when undertaking Flood and Coastal Erosion Risk Management and trying to protect life and property. The planning process also needs to take account of the predicted changes when considering planning and development. Government guidance explains how flood and coastal change risk should be considered at all stages of the planning and development process. It sets out the importance of the management and reduction where possible of flood and coastal change risk in planning, acting on a precautionary basis and taking account of future climate change scenarios.

Coastal Flooding at Shore Road (February 2022) – Source: Steve Malpass

The Harbour is a SSSI, SPA and Ramsar site and the habitats and species for which it has been designated as important are also under threat from climate change. There is potential for a loss of intertidal habitats from natural processes and "squeeze" against hard defence structures with higher sea levels. Additionally, the flora and fauna will change with warmer air and water temperatures. Therefore, the possible effects of climate change in the Harbour are:

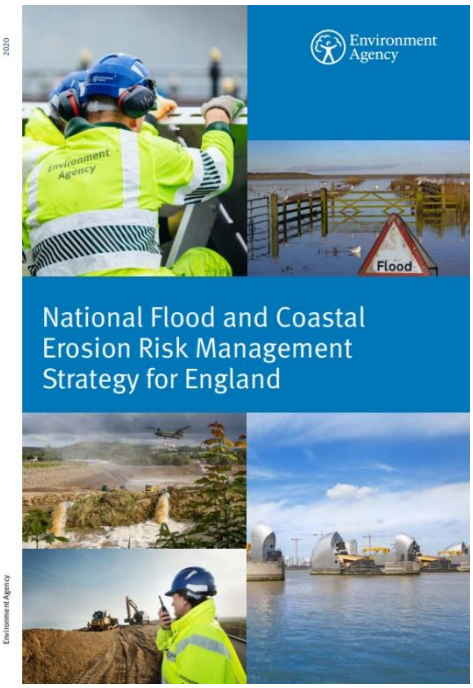
- Increased risks to life and property in the community from flood events can occur from the sea, the rivers and from surface water runoff.
- Increased risks to communities from coastal erosion and landslips (i.e., coastal change).
- Loss of intertidal habitats within the Harbour including mudflat, saltmarsh, and Brownsea Lagoon.
- Establishment of new intertidal habitats along the coast and up the rivers as they are flooded by rising sea levels.
- Increased air and water temperatures which may affect the flora and fauna found in the Harbour causing loss of some species and the introduction of new ones.

6.2 Flood and Coastal Erosion Risk Management

In England DEFRA has the overall policy responsibility for both Flood and Coastal Erosion Risk Management. The current DEFRA policy statement on Flood and Coastal Erosion Risk Management in England was adopted in July 2020. DEFRA has delegated the Strategic

Overview of Coastal Flood and Erosion Risk Management to the Environment Agency, whose role includes:

- setting the policy aims, objectives and targets for the operating authorities such as BCP Council and Dorset Council.
- providing guidance and funding for grant eligible works.
- running a capital research and development programme.



In July 2020, the Environment Agency published the current National FCERM Strategy for England. This is supported by an action plan to drive implementation of the FCERM Strategy.

Flood Risk Management

The Environment Agency (EA) is the principal flood risk management operating authority in England. They have a general supervisory role for all matters relating to flood risk which includes both river (main river) and tidal issues. The EA's Flood Risk Management includes:

- Maintaining and operating existing flood risk management schemes and associated structures to alleviate or reduce the risk of flooding. All new flood risk management schemes must be economically viable, technically sound, conserve or enhance the environment and contribute to sustainable development.
- Providing a flood warning detection and dissemination system capable of issuing flood warnings directly to the public and professional partners.
- Providing mapping of areas at risk of flooding.
- Providing, through the development management process, discouragement of inappropriate development in areas at risk of flooding. This is achieved as part of the planning consultation process and by Flood Defence Consents (formerly Land Drainage Consents).

Under the Flood & Water Management Act 2010, both BCP Council and Dorset Council are designated as Lead Local Flood Authorities (LLFAs) and have powers to undertake flood risk management works on the smaller streams known as Ordinary Watercourses, and to address flood risk from surface water and groundwater. The Flood & Water Management Act 2010 also places a duty to co-operate on all Risk Management Authorities (RMAs) on addressing flood risk, including the LLFAs, Environment Agency, Highways Authorities and Water Companies.

Breaching of the Sea Wall at Shore Road (February 2022) – Source: Steve Malpass

All operating authorities today realise that defence development may be more cost effective and enduring if, rather than fighting nature, they harness and enhance the natural coastal processes. Establishing a natural regime is thought to have the added advantage of retaining the wildlife of the area and enhancing the quality of the landscape.

Also, successful man-made defences in one area may have a damaging effect on neighbouring stretches of the coastline if they interfere with the natural movement of sediment. This must be considered when contemplating making any changes to the existing structures or when designing any additional flood risk management schemes.

Coastal Erosion Risk Management

Beach Replenishment – Source: PHC

Coastal Erosion Risk Management is where measures are taken to protect the shoreline against erosion. This can take the form of hard (sea walls, rock armour or groynes) or soft (dunes, marshes, and beach replenishment) engineering. The Environment Agency has a strategic overview of Coastal Erosion Risk Management. In the Harbour, the local authorities have the responsibility for these works under the Coast Protection Act 1949 (Coast Protection Authorities) and any non-statutory responsibilities in accordance with DEFRA's high-level targets.

6.3 Shoreline Management Plans

Shoreline Management Plans (SMPs) are non-statutory documents which set out strategic guidance for managing specific lengths of the coast, taking account of natural processes, human and environmental influences, and needs. Local authorities and the Environment Agency use SMP guidance when putting together planning strategies and policies relating to the shoreline.

Each SMP covers an area of the coastline known as a sub-cell within a littoral sediment cell. A sediment cell is defined as a length of coastline, which is relatively self-contained as far as the movement of sand or shingle is concerned, and where interruption to such movement should not have a significant effect on adjacent sediment cells.

The SMPs cover the entire coast of England and Wales and they detail guidance on how best to manage the coast using the following four options:

- Advance the line – a decision to build new defences seaward of the existing defence line where significant land reclamation is considered.
- Hold the line – maintain / upgrade / replace coastal defences in their current position where funding permits.
- Managed realignment – manage coastal processes to realign the 'natural' coastline configuration, either seaward or landward of its present position.
- No active intervention – a decision not to invest in providing or maintaining defences or management of the coast (NB: commonly applied on undeveloped coastline and means allowing nature to take its course).

For each part of the coast, SMPs define policy units. Each policy unit is assigned one of the four policies listed above in each of three time-periods: short, medium, and long-term. The policy can change between each time-period.

The original Poole and Christchurch Bays SMP covering Poole Harbour was produced in 1999; a review and update of this SMP was approved in 2011. The latest version takes a longer-term view of managing the coast, setting out policies for the next 100 years, as opposed to the 50-year vision of the original SMP. Greater stakeholder engagement was encouraged in the review process and the latest research relating to the environmental, social, and economic factors was considered. The Poole and Christchurch Bays SMP (Sub-cell 5f Hurst Spit to Durlston Head) covers a total of 190km of coastline including all harbours and estuaries.

Following updating of the SMP in 2011, it has been kept up to date as new evidence and information comes to light by the SMP Management Group (led by BCP Council). In 2014, this included the production of the Poole and Wareham Flood and Coastal Erosion Risk Management (FCERM) Strategy. This assessed in further detail the options for how best to implement the SMP policies in the Harbour, and schemes such as the Poole Bridge to Hunger Hill Tidal Defence Scheme and Arne Moors Coastal Change Project are now being progressed to implement the SMP policy and FCERM strategy.

Management Objectives:

The following is a list of the management objectives identified. Whilst some are specific to the management of the shoreline, others may relate to activities and issues discussed in other chapters of this plan. All management objectives can be found in the Management Matrix where a commentary on progress is made by the lead authorities.

- To ensure all relevant organisations work together and that sea level rise is incorporated in the planning, development, and management of the Harbour.
- To reduce risks to people, property, and the environment from flooding and coastal erosion through the provision of defences, flood forecasting and warning systems against national priorities and criteria.
- To respond to coastal change and rising sea levels in the most sustainable way to comply with flood protection policy and the Habitats Regulations.
- To understand where habitats may be lost in the future due to sea level rise and where there is potential for habitat re-creation.
- To identify strategic options for the future management of the Wareham tide banks.

Fisheries

7

7.1 Overview

Poole Harbour is the base port for a commercial fishing fleet employing a variety of fishing methods. Vessels from Poole fish both within and outside of the Harbour. Vessels from the commercial fishing sector, the charter angling sector and the private angling sector all operate out of Poole. The size of the vessels range from offshore potting and trawling boats operating in mid-English Channel, to small Poole canoes working within the Harbour. The Port benefits from its central position within the English Channel fishery coupled with good land and sea communications, particularly for the export trade of shellfish.

Fishing activity in Poole Harbour is managed by the Southern Inshore Fisheries and Conservation Authority (Southern IFCA). The Southern IFCA District covers the area of Dorset, Hampshire, and the Isle of Wight out to 6nm from baselines. All commercial fishing vessels operating within the Southern IFCA District must hold a permit issued by the Authority and must not exceed 12m in length. The duties of the Southern IFCA are set out under the Marine and Coastal Access Act 2009 and the IFCA vision is to lead, champion and manage a sustainable marine environment and inshore fisheries, by successfully securing the right balance between social, environmental, and economic benefits to ensure health seas, sustainable fisheries and a viable industry.

The Environment Agency manages fisheries on all freshwaters in England, which includes all freshwater rivers and streams running into Poole Harbour. The Southern IFCA and the Environment Agency work closely together to manage and monitor fishing activity and to enforce fisheries regulations.

7.2 The Fisheries

Around 35 species of finfish, 17 species of bivalve shellfish and 11 species of decapod crustaceans have been recorded in the Harbour. The conditions and productivity of the Harbour are such that shellfish, eels, and some fish species are found in much greater quantities within the Harbour than on the open coast.

Finfish

Wet fish, such as grey mullet species, European bass, flounder, sole and plaice are caught commercially using fixed, drift, seine and ring nets, and hand lines, whilst eels are trapped

using fyke nets (regulated by the Environment Agency). Fishing for fin fish also takes place outside the Harbour for a wide variety of commercial species.

Poole Harbour is a designated Bass Nursery Area under the Bass (Specified Areas) (Prohibition of Fishing) (Variation) Order 1999. The bass nursery area covers all tidal waters enclosed by a line drawn 011° true from Jerry's Point, through Branksea Castle to Salterns Pier. Between 30th April and 1st November, fishing for bass or fishing for any species of fish using sand-eels as bait, by any fishing boat is prohibited.

Shellfish

Shellfish Dredging in the Harbour – Source: Emma Rance

There are vessel based and hand worked fisheries for shellfish in Poole Harbour. The main commercial species are the Manila clam, Common cockle, and American Hard-Shelled clam. Dredge fishing for shellfish is regulated under the Poole Harbour Dredge Permit Byelaw which was introduced in 2015. This byelaw requires fishers to obtain a permit to use, store, transport or retain on board their vessel the pump-scoop dredge and auxiliary equipment associated with this fishing method. This is a closed entry fishery with the number of permits capped at 45. The Permit Byelaw is subject to an annual HRA as a plan or project within the Poole Harbour SPA and therefore the management of this fishery sits outside the scope of this management plan. It should also be noted that the Harbour is certified through the Marine Stewardship Council to drive the market for sustainable seafood.

Hand gathering for shellfish occurs in various areas of the Harbour including Whitley Lake, Rockley, and certain intertidal areas in the south of the Harbour. Both commercial and recreational hand gathering occurs and there are several regulations which are applicable to this activity in Poole Harbour. The regulations aim to reduce impact from this activity on sensitive habitats and features of Poole Harbour and include seasonal spatial restrictions and prohibited areas. Additional restrictions include a closed season and gear specifications for the gathering of cockles and a requirement that gathering for clam species is done only by hand.

Aquaculture in the Harbour – Source: SIFCA

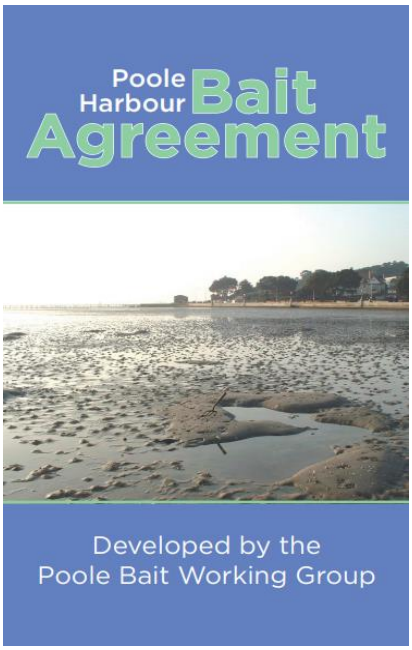
Shellfish aquaculture also takes place in Poole Harbour, regulated by the Southern IFCA under The Poole Harbour Fishery Order 2015. This is a several order which confers on the Southern IFCA the right of several fishery for the cultivation of shellfish of any kind for a period of 20 years. Under The Order, the Southern IFCA lease ground to aquaculture operators with each lease being valid for a five-year period. Currently, the primary species used on the lease beds are blue mussel, Pacific oyster, Manila clam and common cockle. The issuing of leases under The Order is subject to an HRA which is completed every five-years in line with the lease validity period. The Order is a plan or project within the Poole Harbour SPA and therefore the management of this fishery sits outside the scope of this management plan.

Other shellfish species are fished by vessels from Poole Harbour outside of the main Harbour area. These include lobster, brown crab, spider crab, velvet crab and whelk.

Bait Collection

Poole Harbour supports populations of bait species, which form a valuable economic and ecological resource. Collecting bait for personal or recreational use is part of the public right to fish but there is no legal right to gather bait commercially for sale or reward without the landowner's permission.

Bait Digging



The main species that are targeted for collection by both anglers and commercial fishermen, are lugworm, catworm and king-ragworm with most of the activity taking place on the more accessible North shore. Garden forks or similar implements are used to dig up the worms. The Southern IFCA and partners including PHC, BCP Council, Natural England, Dorset Wildlife Trust, the Angling Trust, the MMO and commercial and recreational bait diggers have created the Memorandum of Agreement for Bait Digging in Poole Harbour. This Agreement sets out several provisions for bait diggers operating within Poole Harbour to allow for the protection and the improvement of the marine environment whilst allowing for sustainable bait collection.

Figure 6: Bait digging prohibited and sensitive areas

Provisions include backfilling any holes dug, seasonal and spatial restrictions on activity, avoiding trampling sensitive habitats, avoiding disturbance, sustainable digging of bait species and avoiding areas of moorings, slipways, and sea walls. There are two notices displaying this information located at popular bait digging sites, one at Whitley Lake and the other at the south of Holes Bay. Figure 6 taken from the Memorandum of Agreement for Bait Digging in Poole Harbour shows the sensitive and prohibited areas for and when in the year they apply.

Bait Dragging

Bait dragging primarily targets king-ragworm which are harvested using hooked metal drags towed from small, low-powered vessels. This activity takes place over intertidal mudflat areas, primarily in Holes Bay and the south of the Harbour near to Round and Long Islands. As with bait digging, depending on the location and intensity of this activity there is potential, where it results in heavy perturbation of the sediment, to affect bird foraging behaviour, whilst sediment disruption and increased turbidity may affect fish and shellfish. Survey work between 2012-2015 quantified the location and effort level of the bait dragging fishery and concluded that there was no overlap between activity and the defined bird sensitive areas of the Harbour. The same survey also looked at changes to the sediment because of bait dragging and concluded that there were no significant changes to the sediment composition that could be attributed to bait dragging alone. Bait dragging is subject to regulation by the Bottom Towed Fishing Gear byelaw by virtue of the fact that the bait dragging gear interacts with the seabed.

Non-Commercial Fishing

The charter fishing fleet in Poole is one of the largest in the UK. Trips are undertaken by commercial fishermen and by specialist skippers. Fishing takes place in both within the Harbour including the entrance and out into Poole Bay targeting a variety of species depending on the time of year. Recreational sea angling is also an important industry in Poole Harbour. Private anglers fish from the shore and private vessels targeting a variety of different species. The Poole and District Sea Angling Association represents the clubs which operate out of and in the vicinity of Poole Harbour. There are several regulations for rod and line fishing in the Southern IFCA District.

Waters Feeding the Harbour

The Environment Agency has control of fish introductions (movements/transfers). Any person introducing fish (or fish eggs) to any inland water requires consent from the Agency. This control is in place primarily to prevent the spread of disease, and/or undesirable fish species. Removal of fish from the source water is dealt with under Agency byelaws. On the Frome and Piddle there is relatively little fish stocking, compared with, say, the Avon. Each year the Agency consents to the introduction of brown trout to various fisheries on the Frome and a

limited number on the Piddle. Except for the removal of pike from one or two fisheries on the Frome, this is the extent of fish movements on the two rivers feeding Poole Harbour.

Fish Migration

There are several migratory species present in the Frome and Piddle. Some of these (most notably salmon, sea trout, eel, and sea lamprey) also use Poole Harbour, passage through which forms an important phase of their migrations. Parts of the Salmon and Freshwater Fisheries Act, 1975 give the Environment Agency powers to ensure the free passage of migratory salmonids. This is done in the Harbour and lower rivers by regulation of the fisheries which the Agency police particularly at vulnerable times and supported by a byelaw. In recent years there has been a slight reduction in the illegal fishery in Poole Harbour, but there is a need to remain vigilant, as fish are extremely vulnerable here. Within the rivers the Agency facilitates salmon and sea trout migration by maintaining fish passes, investigating, and building new structures where the need is identified.

Facilities for the Industry

The facilities for the fishing fleet at Poole were upgraded as part of the construction of Poole Quay Boat Haven in 2001. An area was set aside specifically for the fishermen with floating pontoons enabling access to individual vessels, and landing facilities alongside the Quay to improve accessibility when offloading or loading vessels. Further improvements have continued to be made, including secure access from the quayside onto the floating pontoons and adequate parking facilities for the sole use of berth holders. Under a European Maritime and Fisheries Fund grant in 2019 further enhancements were made, including re-decking the pontoons with non-slip surface, the addition of a davit crane on the landing quay, and CCTV.

Fishermens Marina at Poole Quay – Source: PHC

Shellfish Quality Control

Bivalve mollusc harvesting areas are classified according to the extent of microbial (faecal) contamination as shown by monitoring of *E. coli* in shellfish flesh. The classification determines the treatment required before Live Bivalve Molluscs may be marketed for human consumption. In all cases, the health standards are set out in Annex II of retained EU law Regulation (EC) 853/2004 and Articles 53, 54 and 55 of retained EU law Regulation (EU) 2019/627. A harvesting area will be classed as A, B, C or Prohibited with class A as the least contaminated (*see Table 2*). The majority of Poole Harbour is a long-term class B with up to date information on current classifications available on the Centre for Environment, Fisheries, and Aquaculture Science website.

Class	Description
A	Molluscs can be harvested for direct human consumption if the end product standard requirements are met
B	Molluscs can be supplied for human consumption after one of three processes: • Purification in an approved establishment. • Relaying for at least one month in a classified A relaying area. • An approved heat treatment process.
C	Molluscs can be sold for human consumption after completing one of three possible processes: • Relaying for at least two months in an approved class B relaying area followed by treatment in an approved purification centre. • Relaying for at least two months in an approved class A relaying area. • After an approved heat treatment process.
Prohibited	Molluscs must not be subject to production or be harvested

Table 2: The Classification Categories of Shellfish

Management and Regulation

As has already been mentioned fishing activity within the Harbour is managed and enforced by Southern IFCA and the Environment Agency. A suite of management measures including authority byelaws, national legislation and codes of conduct are used to ensure sustainable management of fishing activity. Fishery Officers regularly carry out patrols by land and by sea around the Harbour monitoring fishing activity, carrying out inspections and provide education on fisheries regulations.

The Environment Agency also have the power to stop and search any vessel in the Harbour and out to 6 miles offshore, suspected of contravening the Salmon and Freshwater Fisheries Act 1975. Eel fishing is regulated by the Agency through licensing and there are strict fishery bylaws operating to prevent entrapment of otters in fyke nets.

Fisheries Compliance and Enforcement

The risk of illegal marine fishing activity occurring in Poole Harbour is addressed through the Southern IFCA Compliance and Enforcement Framework. Southern IFCA is committed to achieving fair, effective and proportionate enforcement. The Framework sets out the Authority's approach to compliance and enforcement and details the general principles the Authority will follow and the enforcement actions available. The Compliance and Enforcement Framework assists the development of annual risk-based enforcement plans, the Compliance Risk Register.

The previous iteration of the Poole Harbour Aquatic Management Plan identified illegal fishing for shellfish by vessels as a high risk to the Harbour. A combination of the introduction of the Poole Harbour Dredge Permit Byelaw, enhanced management, and enforcement powers for the IFCA under the Marine and Coastal Access Act 2009 and the development of the Compliance and Enforcement Framework, have led to a significant decline in this illegal activity. Within a year of the introduction of the Byelaw, the recorded level of illegal fishing had decreased by 95%. The number of compliance inspections relating to illegal, unregistered and unlicenced (IUU) vessels declined from between 34% and 23% of all inspections in 2013 and 2014 respectively, prior to the introduction of the byelaw, and then down to 1% by 2016. Since the drop in IUU activity following the introduction of the byelaw, the percentage of inspections relating to IUU vessels has stayed at 1%.

Whilst the police deal with criminal matters, the EA is the statutory lead agency on fisheries enforcement. The EA use intelligence-led enforcement to detect and deal with fisheries offences to protect and enhance the diverse habitats and fish stocks of the Harbour. Under the Salmon and Freshwater Fisheries Act 1975, Enforcement Officers hold a warrant which bestows a wide range of enforcement powers and responsibilities. Fishery enforcement patrols are undertaken with police and other enforcement partners using evidence to target, disrupt and act against fisheries crime.

Management Objectives:

The following is a list of the management objectives identified. Whilst some are specific to the management of fisheries, others may relate to activities and issues discussed in other chapters of this plan. All management objectives can be found in the Management Matrix where a commentary on progress is made by the lead authorities.

- To identify effective mechanisms (e.g., codes of conduct, voluntary agreements, byelaws) to manage conflicts between, shellfish fishing, bait digging/bait dragging and their impacts on interest features of the European Marine Site.
- To understand further the extent and potential implications of bait collection.
- To ensure the sustainable management of fisheries to not significantly affect the interest features of the European Marine Site.
- To continue enforcement and monitoring of fishing practices and awareness raising among fishermen to eliminate all illegal fishing activity from the Harbour.
- To ensure eel fishing is carried out in a sustainable way that complies with legislation and minimise impact on other wildlife.

Conservancy and Marine Safety 8

8.1 Responsibilities

PHC are responsible for ensuring that shipping channels are routinely surveyed and clearly marked, and for maintaining safety of navigation to include the management and monitoring of commercial shipping movements within their jurisdiction. PHC have powers to create, police and enforce byelaws and general directions such as those for speed limits and safe navigation.

8.2 Harbour Control

Harbour Control is located at the Harbour Office and is manned between 8am and midnight, and as required between midnight and 8am, by a fully qualified Harbour Control Officer (HCO). The HCO manages all vessels over 25m in length entering, leaving, and transiting the Harbour, and monitors all marine activity within the Harbour and its approaches. The office is the communications centre for the Harbour and the first point of contact in cases of emergency. The HCO also disseminates information on shipping movements as well as arranging pilots and tugs.

Harbour Office – Source: PHC

Pilotage is compulsory for all vessels over 50 metres in length (or over 30m in length if carrying more than 12 passengers). A pilot exemption certificate (PEC) can be given to any master or bona fide officer upon successful completion of the published requirements contained within the PHC Pilotage Directions. These are re-validated on an annual basis subject to requirements.

The HCO monitors Radar, AIS, CCTV, VHF, and telephone equipment whilst on duty which are all recorded. As well as monitoring and recording tidal and weather information, Harbour Control keep an incident log, which records any safety or environmental incident identified or reported within the Harbour.

8.3 Navigation

PHC have responsibility for ensuring that navigational channels are clearly marked, and that buoys and beacons are maintained. They are the Local Lighthouse Authority reporting to Trinity House, the General Lighthouse Authority, who carry out an annual independent inspection of navigational aids within the Harbour.

PHC's commitment to the maintenance of navigational aids is detailed in the Navigational Safety Management Plan which is reviewed every three years. An Annual Marine Safety Report is also produced and published.

All navigational marks conform to the International Association of Lighthouse Authorities (IALA) system of buoyage and are numbered consecutively from the seaward end of the Swash Channel. Buoys marking the port hand side of the channel have even numbers and buoys on the starboard side have odd numbers. Minor channels are also marked with stakes or buoys and PHC also maintain signs and notices around the Harbour.

8.4 Hydrographic Surveying

To maintain and establish channel depths for safe navigation, PHC employ the services of a Hydrographer who manages the Harbour bathymetry. Regular surveys of the main channels are undertaken and the whole Harbour is surveyed on a rolling programme of work. Data collected is supplied to the UK Hydrographic Office who then use it to produce the Admiralty Chart for the Harbour. The continuous survey information collected easily allows for trends in deposition and erosion to be identified and is used to inform environmental studies.

8.5 Maintenance Dredging

Consents and Responsibilities

Maintenance dredging refers to the activity of removing sediment that has built up in existing channels or basins that have previously been dredged and is considered separately from Capital dredging, which refers to any new excavation of the seabed or down to a level not previously dredged during the preceding ten years. Maintenance dredging is carried out routinely by PHC to maintain depths in existing shipping channels and also by third party dredging operators, boatyards, marinas and yacht clubs, to maintain access to their sites. A Harbour Works Licence is required for all dredging operations within the Harbour and is

issued by PHC. Under Part 4 of the Marine & Coastal Access Act 2009, the MMO issues a marine licence for the deposition of dredged material at sea. PHC presently hold a 10-year licence from the MMO which authorises disposal of dredged material from many areas in the Harbour to the offshore Swanage disposal ground east of Old Harry Rocks in Poole Bay, and for limited in-harbour disposal east of Brownsea Island.

Maintenance Dredging – Source: PHC

The rights of The Crown Estate as owner of the bed of the Harbour are preserved in the Harbour legislation. The current practice of The Crown Estate is not to require PHC to seek consent for Maintenance dredging every time such operations are undertaken, assuming there is no beneficial use of the material. The consent of The Crown Estate is however required for any Capital dredge and appropriate payments are sought in recognition of the improvements provided and for any beneficial use of the material.

PHC have established a Maintenance Dredging Policy and records are kept of the volume of material dredged in the Harbour. These figures are submitted to the MMO on a 6-monthly basis as a condition of their MMO marine licence.

Sediment Management Plan

Intertidal mudflats and marshes within the Harbour are of significant ecological value and are the basis for many of the habitat designations. Each year several thousand cubic metres of fine sediment are lost from the Harbour through natural processes. It is recognised that the removal of fine silts and muds from the Harbour may have a detrimental effect on intertidal habitats and PHC have a Sediment Management Plan to help mitigate this process. An in-harbour disposal site east of Brownsea Island was established in 2008 and is continuing to

be monitored closely. Between 20-30,000 m³ of suitable silty material dredged from marinas and channels is disposed of annually at the Brownsea Roads In-Harbour site to allow material to recirculate onto the mudflats. The Sediment Management Plan was developed during Channel Deepening works in 2005 with the aim of developing best practice guidance for retaining fine sediments within the Harbour system whilst keeping navigational channels clear.

Maintenance Dredging Protocol and Baseline Document

Dredging activities need to be assessed for potential impacts on marine protected areas such as Ramsar sites. The Habitats Regulations requires that maintenance dredging proposals which could potentially affect marine conservation areas should be assessed. The Maintenance Dredging Protocol for England seeks to improve the assessment process for licence applications by the production of a Baseline Document, which draws upon existing and readily available information and describes historical patterns of dredging in relation to the conservation status of Marine Protected Areas (MPAs). The Baseline Document contains information to allow all conservation aspects relevant to MPAs to be considered and defines the dredging approach (including tolerance parameters) that gives assurance that there will not be an adverse effect. The Baseline Document does not in itself mean that there is no adverse effect, it is assumed that most maintenance dredging proposals fit within the tolerance range and thus be found unlikely to have a significant effect on the MPAs.

8.6 Safety and Enforcement

Overview

Safety within the Harbour is the responsibility of all users; however, PHC seek to maintain safety with the use of guidance, byelaws, and general directions. Byelaws and general directions have been created which pertain to certain recreational activities while others relate to the safe and responsible use of the whole Harbour.

PHC have established a Navigational Marine Safety Management Plan for the purpose of meeting the standards set by, and the requirements of, the Government's Port Marine Safety Code in conjunction with their Guidance to Good Practice for Port Marine Operations and Competence Standards for port personnel.

Speed Limit

A speed limit of 10 knots is in force within PHC's area of jurisdiction. This is relaxed between 1st October and 31st March in the Swash, Middle Ship, North and Wareham channels only, but remains in force for all remaining areas of the Harbour, including the Harbour entrance. A limit of 6 knots is always in force for craft operating within Little Channel and Holes Bay and an advisory speed limit of 6 knots is in place within the quiet area to the south of Brownsea

Island. The Environment Agency also enforces a 4 knots speed limit on the River Frome between South Bridge, Wareham, and the mouth of the river.

Some organisations and vessels are exempt from the speed limit where necessary for operational reasons. These include Police and Harbour Patrol Vessels, RNLI Lifeboats and Inshore Rescue Boats, the Coastguard and Fire and Rescue RIBs and the Royal Marines.

The speed limit may also be lifted for the testing of production craft on the half-mile test zone to the south of the port area; however, this requires registration with Harbour Control who must be informed of any intended movements over the 10 knots speed limit.

Chain Ferry

The Harbour entrance is only 300 metres wide and is the most hazardous area for navigation due to the strong tidal streams. A chain ferry operates across the entrance to the Harbour and has right of way over all vessels under 50 metres in length. All vessels with engines are strongly advised to use them when transiting the entrance and to pass well clear astern of the chain ferry, which is very restricted in its manoeuvrability.

Chain Ferry and Fishing Boat – Source: PHC

Enforcement

The Harbour Master operates several patrol craft within the Harbour limits at times of busy recreational activity. Their main roles are byelaw enforcement, escorting commercial vessels, and educating the users who may not have sufficient knowledge of the regulations, or who are behaving irresponsibly. The Harbour Master will take further action in appropriate cases and in accordance with the PHC Enforcement and Prosecution Policy.

PHC Jet Ski Patrol – Source: PHC

The Dorset Police also operate regular patrols around the Harbour. There are also regular joint enforcement operations, one such being Operation Senator. These involve all the regular enforcement authorities including SIFCA as well as volunteers from local yacht clubs and boatyards.

Management Objectives:

The following is a list of the management objectives identified. Whilst some are specific to conservancy and marine safety, others may relate to activities and issues discussed in other chapters of this plan. All management objectives can be found in the Management Matrix where a commentary on progress is made by the lead authorities.

- To ensure dredging does not result in a loss of important habitats (e.g., mudflat and saltmarsh) and that potential impacts to shellfish areas are minimised.
- To better understand the potential effects of elevated turbidity due to both anthropological activities and natural or storm events.
- To ensure minimum footprint from dredging.
- To better understand the extent and potential effects of remobilised contaminants.
- To minimise the loss of fine material from sediment budget.
- To maintain current management initiatives and make improvements where necessary.

Recreation and Tourism 9

9.1 Overview

The Harbour is a popular and accessible destination both with tourists and recreational water users. PHC have jurisdiction over the various water based recreational pursuits that take place within the Harbour and regulate these activities to ensure the safety of users. Annual recreational surveys are carried out to monitor the usage of the Harbour and to identify trends in activity from year to year. These are done over the summer using fixed sightline points at locations around the Harbour.

Information from previous surveys has highlighted the need to maintain designated areas for certain watersports, where their activity can be carried out with the minimum of disturbance to wildlife and other users. Figure 7 shows the location of the different activity zones and the quiet area within the Harbour. The use of these zones assists in the reduction of disturbance to ecologically sensitive areas and in minimising the dangers associated with the mixing of powered and non-powered craft. Since its introduction in 1995 the zoning scheme has proved very successful in managing the multifarious recreational activities within the Harbour and most users are now aware of, and restrict their activities to, the relevant areas.

There is also an existing quiet area which lies to the south of a line from Patchins Point to South Haven Point where there is an advisory speed limit of 6 knots. This allows yachtsmen and other Harbour users a quiet anchorage in which to enjoy the beauty of the southern Harbour. The provision of this quiet zone has helped to reduce adverse impacts on the flora and fauna of the undeveloped mudflats and shallow inlets which characterise much of the southern shores. The area helps to provide a safe haven for birds and wildlife as well as for humans and it is intended to maintain the current policy against changes in land use and excessive recreational activity.

9.2 Yachting / Motor Boating

It is estimated that around 10,000 yachts visit Poole each year and the eight yacht clubs situated within the Harbour have around 7,500 members in total who enjoy racing and cruising within the surrounding waters. There are also several boatyards within the Harbour, which along with the yacht clubs provide facilities for launching, storage and maintenance. Many also offer receptacles for the disposal of litter and waste and some also have pump out facilities for marine holding tanks, and boat owners are encouraged to use them.

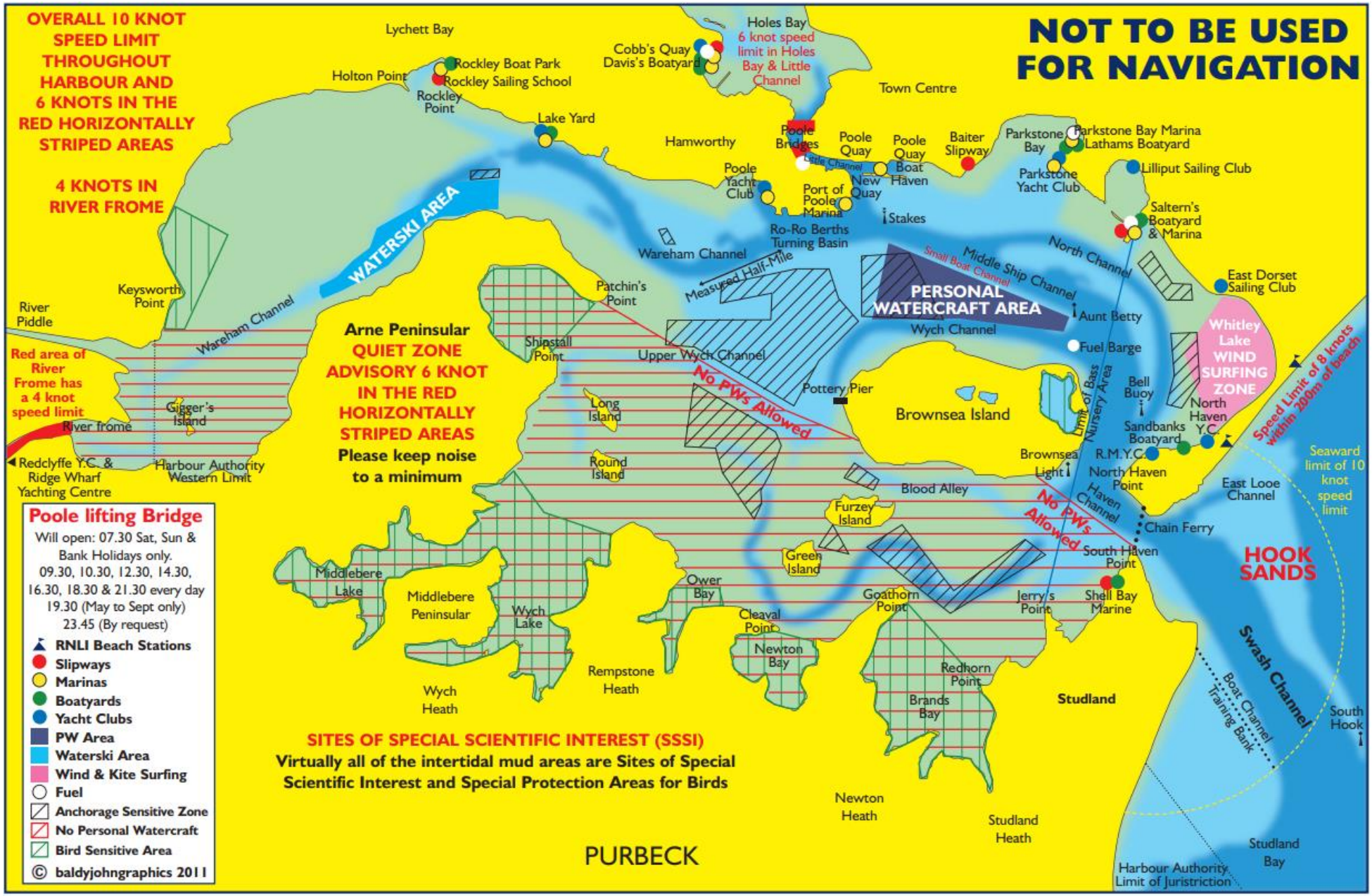


Figure 7: Designated zones for watersports in Poole Harbour

Safety and Legislation

The International Regulations for the Prevention of Collisions at Sea (IRPCS) 1972 (amended) always take precedence over International Sailing Federation (ISAF) Racing Rules and Race Sailing Instructions. All craft participating in racing or cruising must not impede vessels which can only navigate within the main shipping channel. Crossing or passing close to such a vessel may be regarded as dangerous navigation and could result in prosecution under local byelaws. Poole Yacht Sailing Procedures have been produced for all involved in yacht racing providing agreed instruction for yacht skippers, race officers, patrol and escort crew, and ship masters.

Harbour Dues

Harbour Dues are payable by all motorised vessels over 4.5m in length entering waters under PHC's jurisdiction. Dues are charged on a daily, weekly, monthly, or annual basis and are payable to PHC. The dues can be paid online, directly at the Harbour office or to the Harbour Master's staff ashore or afloat, or through any of the yacht clubs, boatyards, or mooring contractors. They are used to maintain and improve safety within the Harbour, for example the marking of minor boat channels, the policing of the Harbour and the management of traffic. Commercial vessels also pay vessel dues. Harbour Dues can be paid directly at the Harbour Office or online via the PHC website.

Moorings Policy

Moorings within the Harbour are managed and regulated by PHC. There are approximately 2,000 swinging moorings within the Harbour as well as around 2,500 sheltered marina and pontoon berths. The Environment Agency also has 85 moorings along the River Frome, downstream of South Bridge at Wareham, which are managed independently of those that fall within the jurisdiction of PHC.

Of the moorings regulated by PHC, some are private moorings which are managed directly by PHC, while others are licensed to contractors, boatyards, yacht clubs, and other small organisations. It is PHC's policy to minimise the number of swinging moorings within the Harbour in environmentally sensitive and recreationally busy areas and to maximize the areas of open water for safe navigation. All moorings are licensed by PHC. Private moorings are allocated to individuals in specific locations and the mooring is maintained by the owner. Block moorings are allocated to organisations who are responsible for the maintenance of all the moorings in the block. However, PHC also recognise the need to offer mooring facilities for craft of varying size, particularly given the trend for larger yachts, and will always look to

retain the most suitable mooring sites. The demand for the convenience of marina berths is increasing and where these are made available PHC's policy is to reduce the swinging moorings managed by that operator by the same number. Marinas offer safer more accessible berths for sailors, but cost is often the deciding factor for the boat user as to which facility they may want to use. Ideally the provision of facilities should reflect demand and it is essential that a range of facilities is available so as not to discriminate participation based on affordability.

The swinging moorings are grouped in several different locations around the Harbour with the main concentrations being around the north shore and adjacent to the channels north and east of Brownsea Island. PHC's moorings policy dictates that no moorings will be laid in environmentally sensitive areas and within the quiet area south of Brownsea Island they will be restricted to private moorings licensed to local landowners. Swinging moorings continue to be popular due to their affordability compared with marina berths. However, there are disadvantages such as lack of security, access to boats from the shore, and the need to remove craft from more exposed locations during the winter months.

Moorings in Holes Bay – Source: PHC

A licence fee is payable to The Crown Estate for every mooring laid within the Harbour on seabed owned by them. Under the terms of a management agreement this is collected PHC and passed on to The Crown Estate on an annual basis.

There are seven significant marinas in the Harbour all of which are located along the north shore. The largest of these is Cobbs Quay Marina in Holes Bay which has 850 pontoon berths and 250 dry stack berths. PHC manage the Poole Quay Boat Haven which was opened in 2001 and the Port of Poole Marina which opened in 2011, with the aim of offering improved facilities for visiting yachts as well as local fishermen.

In addition to marina pontoon berths and swinging moorings, several operators have facilities for dry boat storage throughout the year. Around the Harbour there is capacity for approximately 2,000 boats to be stored in this way, which reduces the requirement for swinging moorings. Owners still have continuous access to their boats, which can be launched on request at any time.

Trends in the recreational boating industry are linked closely to the strength of the national economy and if personal affluence continues to grow then there is likely to be an increase in the demand for marina berths within the Harbour. However, construction costs are high, often leading to a demand for associated residential and retail development to make the schemes viable. Some benefits will accrue from such developments, such as reducing the number of swinging moorings in the Harbour, providing better facilities for yachtsmen, and bringing revenue to the town. On the other hand, there will be environmental concerns which the planning authorities will have to consider when determining any planning application.

Land for such developments is at a premium and any such project would require a full Environmental Impact and/or Appropriate Assessment to obtain the relevant, local authority, Government, and Harbour authority consents.

9.3 Windsurfing & Wing-Foiling

Windsurfer – Source: BCP

Windsurfing within the Harbour has traditionally taken place within the Whitley Lake voluntary zone. The comparatively new sport of wing-foiling has also grown hugely in recent years and is also well established at Whitley Lake. This shallow area with easy access has been cleared of swinging moorings and is ideal for windsurfers and wing-foilers of all levels. Experienced windsurfers and wing-foilers also launch from the shore at Hamworthy and enjoy the open waters of the western Harbour, however they need to be aware of the Measured Half Mile that is in this area and along which craft may be tested at high speed. The shoreline between the southern chain ferry ramp and the houseboats is also a popular launching spot.

There is no recognised local windsurfing or wing-foiling association although some groups are run through yacht clubs and equipment hire and tuition can be arranged through many of the local water sport shops.

Safety and Legislation

Windsurfing may take place throughout the Harbour but should avoid the busy shipping channel and craft participating in organised or commercial activities. There are local byelaws which are specific to the regulation of windsurfing within the Harbour.

9.4 Kitesurfing

Kitesurfing is a growing sport within the Harbour and activity is generally centred around the voluntary zone at Whitley Lake. As with windsurfing, Hamworthy is the next most popular launch point. Local water sports shops also provide tuition and equipment hire and there is a local association, which is part of the British Kitesurfing Association (BKSA), run through one of the local shops. Four kitesurfing schools operate adjacent to the shoreline at Whitley Lake and assist with the management of the sport in this area.

Safety and Legislation

Kitesurfers are urged to restrict their activities to the Whitley Lake area where there is less chance of conflict with other water users. However, consideration also needs to be given to the windsurfers who use the zone and the dangers posed by out-of-control kites to members of the public and traffic on the busy Banks Road. In terms of conflict with windsurfing, the sports are to some extent self-regulating, with kitesurfers generally operating in shallower water that is inaccessible to deeper finned windsurfing boards.

Kitesurfer – Source: PHC

Kitesurfing is governed by a permitting General Direction with associated permit terms and conditions. Permits can be purchased from the Harbour Office or online via the PHC website.

9.5 Water skiing / Wakeboarding

A permit is required for water skiing and wakeboarding inside the Harbour, which signifies the Harbour Master's permission. The designated water ski area is in the Wareham Channel and is approximately 2000 metres long and varies in width between 300 metres and 600 metres. The area is marked by yellow buoys and notice boards. Water skiers are exempt from the general Harbour speed limit when operating within this area. Boats are encouraged to launch from the public slipway at Baiter.

Safety and Legislation

All water skiers must abide by the Harbour Master's directions supplied with the permit application and the activity is controlled under local byelaws. Participants should follow the Code of Safe Practice for Water Skiers, which is issued with every permit. Permits can be purchased from the Harbour Office or online via the PHC website.

9.6 Personal Watercraft (PW)

Also known as jet skis or water bikes, PW are permitted to use the Harbour with some restrictions. A permit is required to operate PW within the Harbour, which signifies the Harbour Master's permission. There is a designated area for PW to the north of Brownsea Island where they are exempt from the speed limit. PW are prohibited from using the quiet area to the south of Brownsea Island and are not allowed to land on the Island. Launching should be from the public slipway at Baiter.

Safety and Legislation

Users should abide by the Harbour Master's directions which accompany the permit applications and are urged to follow the Code of Safe Practice for PW which is issued with the permit. This activity is also controlled by local byelaws. Permits can be purchased from the Harbour Office or online via the PHC website.

9.7 Swimming

Although there are several small sandy beaches around the Harbour most notably at Hamworthy, swimming is not a common activity within the Harbour. It is however a popular summer activity from the beaches of Sandbanks, Shell Bay, and Studland which, although outside the Harbour entrance, fall within the Harbour Authority's jurisdiction.

Safety and Legislation

Along the beach at Sandbanks a zoned swimming area is marked out by buoys during the summer months and the RNLI provide a sea rescue lifeguard service. Swimming in the Harbour can sometimes be dangerous due to conflict with watercraft that often use the same beaches to launch and land. There are currently no safe swim zones within the Harbour and although swimming is not recommended, it is recognised that some beaches are used for this activity. Future initiatives therefore need to focus on ensuring the safety of all users and that swimming and other recreational activities do not come into conflict.

9.8 Other Water Based Activities

Rowers and canoeists also use the Harbour and there are several clubs, particularly around the Hamworthy area. There are no restrictions as to where these activities can take place within the Harbour, but participants should avoid the shipping channels and be fully aware that small craft are difficult to spot from larger vessel. As with all other users, canoeists and rowers should comply with byelaws pertaining to safe navigation and restrictions on where they may land. Commercial diving also takes place within the Harbour which must be authorised by PHC following receipt of a Dive Plan and associated site-specific risk assessment. As part of the risk assessment commercial diving companies must be aware of the dangers posed by other users, particularly those who may not be aware of the flag system used by dive boats. The diving flag (international flag code A) must be flown by boats from which divers are operating or from a point onshore as close as possible to where the dive is taking place. PHC will not authorise any recreational diving within their jurisdiction.

9.9 Harbour Access

There are several points around the north shore which offer safe public access to the Harbour. The launching of PW is encouraged from Baiter where there is a public slipway with parking for cars and trailers. Other small craft such as water ski boats can also be launched from here as well as from Lake Road at Hamworthy, although there is currently restricted access here and parking of cars and trailers can cause conflict with residents. Many boatyards also offer launch sites and facilities that can be used by members of the public for the payment of an annual, seasonal, or daily fee.

The main slipway at Baiter can become very crowded but there are not currently any plans to provide additional access points and opportunities for such provision is limited. Creation of a new slipway would require suitable road access and adequate space where cars and trailers would not impact on residents or the natural environment. Land and resources would also need to be made available for the construction and manning of the slipway. Access and facilities could be improved at Lake Pier, but this has caused concern from residents about increased congestion in the area.

Whilst the need to maintain adequate access to the Harbour is essential for many of its users it is also recognised that improving access to environmentally sensitive areas could be potentially damaging. Improving access to southern parts of the Harbour would greatly increase disturbance to wildlife and have a detrimental effect on the natural features of the Harbour. Any review of access would therefore need to have due regard for the environmental interests of the site.

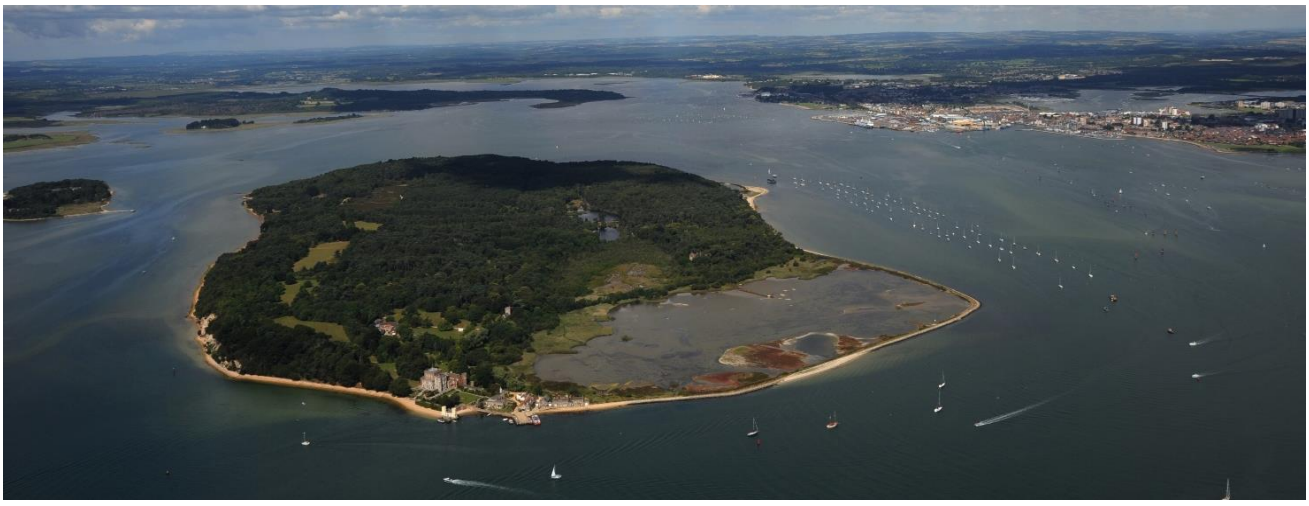
9.10 Wildfowling

The Dorset Wildfowlers' Association for Shooting and Conservation (DWASC) undertake their activities in the south and west of the Harbour. They have a long-term lease for the sporting rights over the foreshore, (land between Mean High Water and Mean Low Water) which is granted by The Crown Estate as landowner. The wildfowling season runs from 1st September to the 20th February with most of the activity taking place at dawn or dusk.

As a requirement to obtaining their lease from The Crown Estate the DWASC produced a management plan. This original management plan was prepared in consultation with Natural England and other conservation bodies such as the Dorset Wildlife Trust (DWT) and the RSPB, who expressed their approval of the plan. The plan is reviewed regularly and revised when necessary. It provides details of refuge areas, conservation initiatives and monitoring of bird numbers.

The plan also makes provision for the regulation of shooting via a permit and warden system, which is administered by the DWASC. Permits can be restricted if necessary to ensure that there can never be excessive shooting pressure on the area. A small number of permits are also issued to non-members who must possess third party liability insurance and belong to the British Association for Shooting and Conservation (BASC) to whom DWASC is also affiliated. Shooting is further restricted because access to the shooting marshes is by boat only, as the Association does not have any direct land access to leased foreshore.

Conservation measures undertaken by the Association include the setting up and management of no shooting areas for birds. These currently reflect what are believed to be significant roosting or feeding areas for wildfowl and waders in the Harbour. Other initiatives have been clean ups of marine debris from the tideline and habitat restoration in conjunction with the RSPB and the DWT.



Brownsea Island showing lagoon – Source: PHC

The Association has also helped with the construction of gravel nesting islands on the Brownsea Island lagoon which has led to a significant increase in the numbers of sandwich and common terns breeding in the Harbour. Overall, the DWASC endeavour to carry out its activity in a considerate, sustainable way, with minimal disruption or inconvenience to other Harbour users.

9.11 Review of Zoning

Since being established in 1995 the recreational zones as shown in Figure 7 have proven to be successful in segregating potentially conflicting activities. However, although surveys have shown that the existence of these zones is widely known and the associated restrictions largely adhered to, it is recognised that their ongoing effectiveness needs to be monitored. In the face of increasing numbers of recreational users and the emergence of different activities and craft over recent years, a periodical review of the zoning scheme will be carried out every 5 years to ensure the continued safety of all Harbour users and the natural environment.

Management Objectives:

The following is a list of the management objectives identified. Whilst some are specific to the management of recreational activities, others may relate to activities and issues discussed in other chapters of this plan. All management objectives can be found in the Management Matrix where a commentary on progress is made by the lead authorities.

- To ensure all recreational activity is undertaken in a sustainable and sensitive manner.
- To manage access to and use of the Harbour from land to minimise conflicts between users and wildlife.
- To improve communication with user groups and organisations to explain their potential impacts on the interest features of the European Marine Site.
- To ensure safe navigation for all by minimising conflict between commercial and recreational craft.
- To review moorings policy to ensure impact on wildlife, habitats and seascape is minimised.
- To maintain and improve present standards to reduce conflict between yacht racing and commercial activities.

Commerce

10

10.1 The Port

The Harbour has been a centre for maritime trade since at least the Iron Age. Today the port of Poole is an important local and regional asset, which currently offers direct and indirect employment to hundreds of people as well as making a significant contribution to the economy of the area. In terms of turnover Poole is the 6th largest Trust Port in the country and is not subsidised in any way. Commercial port operations are responsible for around 90% of the income of the port authority and any surplus monies are used to maintain the Harbour for the benefit of all users.

Port of Poole – Source: Ian Roman

The future success of the port relies in part on a flexible approach from PHC who need to be able to adapt to the changing requirements of the commercial operators that use the port. Improved road and rail links both locally and regionally are also key to the future security of the commercial port. The Twin Sails bridge, as Poole's second harbour crossing, was completed and opened in 2012 and the regeneration linked to the bridge is vital to the continued development of the area. The regeneration schemes associated with the Twin Sails bridge have however significantly reduced the length of deep-water frontage within the town of Poole.

10.2 Channel Deepening

To secure the Harbour as a viable port for use by large ferry operators, the Middle Ship and Swash Channels underwent a Capital Dredge to increase their depth to 7.5m below Chart Datum (CD). The work took place between November 2005 and March 2006 and was jointly commissioned by PHC and the Borough of Poole (now BCP Council). Under the Harbour Works (Environmental Impact Assessment) Regulations 1999 the project required a full Environmental Impact Assessment (EIA) to be carried out to investigate the potential social, economic, and environmental impacts of the scheme. Consents were also obtained in relation

to the Coast Protection Act 1949 and Food and Environmental Protection Act 1985 before work could commence.

Poole Beach Replenishment – Source: PHC

Around 1.8 million m^3 of material was removed with over half of this being used beneficially for beach replenishment at Poole, Bournemouth, and Swanage. In line with the SMP any suitable material that needs to be maintenance dredged from the Approach Channel to the Port is continuing to be used to replenish the beaches. The success of this scheme means that the Port is more versatile in the type of vessels that it can accommodate and now has the capacity to increase activity and therefore profitability in the long-term. Additional beach replenishments are scheduled in Poole Bay, as well as Swanage, over the coming years which could bring a further benefit from sediment re-use.

10.3 Ro-Ro Traffic

Commercial ferry operators currently run regular passenger and/or freight services to Bilbao, Cherbourg, and the Channel Islands. The continued custom of ferry companies is key to the Port's economic future. The channel deepening works have ensured that the port can accommodate larger vessels and attract the custom of other ferry and cruise line operators.

10.4 Conventional Cargo

Poole is a major destination for bulk cargo imports and exports, handling imports of steel, timber, bricks, fertiliser, grain, aggregates, and palletised traffic. Export cargoes include clay, sand, and grain. PHC employ a team of stevedores who handle most of the 500,000 metric tonnes of conventional cargo leaving and entering the port each year. Improvements to facilities over the years mean that a variety of different cargoes can now be handled and stored which offers more economic security for the future.

As well as cargo operations managed by PHC, the commercial quay is currently home to an independent marine aggregate dredging operation which discharges cargoes of sand and gravel. The Poole Local Plan (2018) recognises the importance of the Port as a vital resource in terms of providing an opportunity for aggregate handling. Hence any development that would hinder the port's ability to provide a deep-water quay frontage for the handling of aggregates will be resisted by BCP Council.

10.5 Other Significant Industries

As well as commercial operations directly associated with the Port, the Harbour and its shores also support many other industries of differing scales. Several local companies, boatyards, marinas, and sail lofts are located around the Harbour and offer services to both commercial and recreational mariners. The Harbour is also home to a large commercial fishing fleet which supplies local and overseas markets with high quality fish and shellfish (see Chapter 7). Charter angling and dive boats operate from the quay along with several passenger boats, which offer sightseeing trips to visitors during the summer months.

A builder of luxury motor yachts for both domestic and international clients operates from deep-water quay frontages as well as from several factory sites around the area.

Yacht handler on Ballast Quay – Source: PHC

The Royal Marines have an established base at Hamworthy and much of their assault craft training is carried out in and around the Harbour, while the RNLI has established its National Headquarters and Training College at a waterfront facility in Holes Bay. The complete range of operational lifeboats can be observed at Poole, both at evaluation trials and post refit trials and undergoing work up programmes with their operational crews, prior to going on station at their appointed places.

Europe's largest onshore oil field is also situated within the Harbour. Drilling platforms on Furzey Island and Goathorn Peninsular use extended reach drilling techniques to exploit oil deposits under Poole Bay which are distributed from the Harbour via subterranean pipelines to Southampton Water. Production from the field peaked during the 1990s at around 100,000 barrels per day but current production stands at approximately 13,500 barrels per day (2019 base date). To support their operations a small, specialised terminal adjacent to the main Port is used to ferry materials and personnel to Furzey Island. The Bournemouth, Dorset and Poole Minerals Strategy (2014) sets out policies relevant to the extraction of hydrocarbons in Dorset both for existing and potential sites. They identify the need to minimise the impact of such operations through sound environmental management and the use of existing infrastructure by new developments.

Overall, it is important that existing waterfront sites are available for appropriate marine related industries in accordance with regional and local statutory plans. These industries contribute towards the economic and social health of the Harbour but there is also a need to

ensure that strategies, initiatives, projects, and plans are developed and implemented in accordance with the planning process and the Habitat Regulations. The Harbour and its hinterland also support an important tourism industry, which brings substantial revenue to the region and there is a need to maintain a balance between the Harbour as a working area and its promotion as a tourist destination.

Condor Liberation – Source: PHC

Transport Connections

11

11.1 Overview

Poole Town and Harbour are relatively well connected to the main road network and are also served by national rail links, with a principal route connecting the town with London and Southampton to the east and Weymouth to the west. Transportation by ship has to some extent been covered in the previous chapter, however it is also important to consider the wider transport infrastructure that supports the Port and the surrounding hinterland. With predicted growth in population, combined with increasing visitor numbers and the possibility of higher volumes of port traffic, it is essential that local plans and policies continue to recognise the need for a robust transportation network to support the local area.

The National Planning Policy Framework (updated 2023) states that planning policies should provide for any large-scale transport facilities, including ports, that need to be located in the area, and the infrastructure and wider development required to support their operation, expansion, and contribution to the wider economy. Policies for large scale facilities should, where necessary, be developed through collaboration between strategic policy-making authorities and other relevant bodies. Policy PP34 – Transport Strategy, of the Poole Local Plan (2018), stresses that the Council will continue to work with developers and partners to implement measures to deliver a safe, connected, and accessible transport network across south-east Dorset. The Council will manage growth and improve accessibility for all users to key services by facilitating improved freight connectivity with the port and across the county.

Port of Poole – Source: Ian Roman

Local authorities are encouraged to promote the role of ports by encouraging access to them by rail and road. However, it is acknowledged that the benefits of securing the economic prosperity of the port need to be balanced against environmental and recreational considerations.

11.2 Strategic Highway Network

Links to the Port

Historically there have been major congestion problems caused by the absence of an adequate route from the Port to the A31 trunk road limiting access to Poole town centre and the Port, compromising the economic viability of the area.

Through the Local Growth Deals initiative, since 2014, local enterprise partnerships (LEPs), which are partnerships between local authorities and businesses, were tasked with developing strategic economic plans to promote long term economic growth. Dorset's plan 'Transforming Dorset', was submitted to Government in March 2014 and was used in negotiations to secure funding from the Dorset Growth Deal. To address the historical access issue, one area of particular focus was improving access to the Port, as one of the county's key assets, and its surrounding regeneration area. The Port of Poole Programme was successful in securing £22 million of funding from the Dorset LEP's Local Growth Fund and has delivered six transport schemes to improve access into and around the Port of Poole.

The following provides a summary of the transport improvement schemes that have been delivered through this funding stream:

- Hatch Pond – The Hatch Pond Junction scheme is an integral part of the wider Port of Poole programme. It complements the 'Conurbation-wide key junction improvements' action outlined in the Major Transport proposals (Addressing barriers to growth) section in the Transforming Dorset: Strategic Economic Plan.
- Poole Bridge – New 'approach spans' for Poole Bridge carry the traffic from the land to the main section of the bridge. This £8 million superstructure replacement ensures the bridge continues to offer a vital route into the port.
- Gravel Hill and Dunyeats – £3.3 million of works have taken place at Gravel Hill and Dunyeats, the main link road into the Port of Poole and the town centre from the A31.
- Townside Access – £9.93 million worth of major access improvements to the Port of Poole on the town side of the Backwater Channel and new development sites.
- Cabot Lane / Broadstone Way – Junction improvement works delivered to ease congestion and increase road safety.
- Darby's Corner – Junction improvement design for Darby's Corner to keep traffic flowing, reduce congestion, ensure more reliable journey times, and improve overall experience for pedestrians and cyclists.

The investment and delivery of this transport improvement schemes will help drive local economic growth in and around the Port and bring an anticipated £500 million of leveraged private investment into the area.

Twin Sails Regeneration Area

Poole's second harbour crossing, the Twin Sails bridge, was completed and opened in 2012. The new bridge has helped address the access issues that have hindered reliable road movements between Hamworthy and the Poole Town side of the channel and have considerably improved communication links to the Port of Poole. The new crossing forms part of the primary transport route.

Twin Sails Bridge – Source: BCP Council

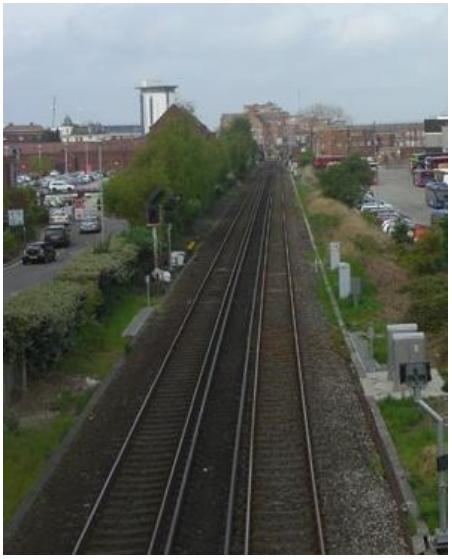
There are a few vacant and underused sites located around the Twin Sails bridge which have been long earmarked for development and regeneration to create a new mixed-use community. Whilst the delivery of some of these sites has begun, others remain vacant and provide a major opportunity to regenerate this part of the town centre. BCP Council has recently been awarded a £12.5m Flood Defence Grant in Aid to deliver flood defences from Poole Bridge to Hunger Hill which will unlock the town side frontage for development. Until now, the significant flood risk has hindered progress.

Together the Twin Sails sites will strengthen the role of the town centre by providing new homes and transforming the waterfront with an extended public quayside. The area provides a critical link to the Port which remains one of Dorset's most important employment sites. As such there is a need to balance the requirements of providing access to the Port with the need for a well-connected and attractive town centre.

As a lifting bridge, Twin Sails operates in conjunction with the existing Poole Bridge to ensure whenever possible that there is one bridge open to road traffic. There are occasions when both bridges will need to be opened together to facilitate the safe movement of vessels. This situation is provided for in the Transport and Works Act Order which allows the Harbour Master to direct that both bridges be lifted to ensure maritime safety is not compromised. A variable messaging system directs road traffic to whichever bridge is available for crossing and measures have been implemented to ensure the safe navigation of boats through the two bridges.

11.3 Rail Link

Poole has good rail links to London and other parts of the country, making it accessible for both tourists and freight operators. The Port itself was historically served by a branch line connecting it to the main rail network and discussions are being held with Network Rail to resurrect this line. BCP Council forms part of the Western Gateway Sub-National Transport Body which is one of seven Sub-National Transport bodies across England and is formed of the nine local authorities that sit within Gloucestershire, Bristol, parts of Somerset, Wiltshire, and Dorset. It aims to be a region that is sustainably connected and provides high quality and value for money travel opportunities for all its businesses, residents, and visitors.



Poole town centre railway line
Source: BCP Council

11.4 Port Services

As one of the largest trust ports in the UK, the Port of Poole is a thriving freight port for commercial shipping, as well as an important destination for a variety of passenger and vehicle ferries, and cruise vessels. PHC are the sole employers of the skilled Stevedores at the port and offer a full range of freight, ferry, cruise, and cargo handling operations. Conventional cargo handled includes commodities such as clay, steel, timber, grain, road stone, brick, and fertiliser, as well as yacht transportation and project cargo. Ships of up to 210 metres in length and with a draft of up to 8.7 metres can use the port thanks to the new deep-water facilities that were opened in 2018. The Port of Poole boasts a first-class suite of services and facilities, to meet the needs of all port users.

Policy PP19 – Poole Port, of the Poole Local Plan (2018), states the Council will support the growth of Poole Port as a regionally significant feeder port with capacity to accommodate larger cruise ships, as well as its continued sea-based handling of freight and passengers and its diversification into marine-related industrial and leisure activities, in accordance with the following criteria:

a) proposals will be permitted where they are for port-related activities, marine-related industrial uses, other employment uses, or marine leisure uses that would be compatible with the function of the Port.
b) sites with deep water frontage will be reserved for uses which require access to such frontage, and
c) development will not be permitted where it would prejudice the use of the rail link for freight handling.

Emergency Planning 12

12.1 Chemical / Oil Spills

The Harbour is at low risk from a significant oil or chemical spill within the Harbour but there is always the chance of a major oil incident in the English Channel, which could affect its waters and adjacent beaches. Authorities need to be able to respond to incidents of any size and therefore in accordance with the Merchant Shipping (Oil Pollution Preparedness, Response and Co-operation Convention) Regulations 1998, PHC have prepared an Oil Spill Contingency Plan.

12.2 Oil Spill Contingency Plan

The contingency plan is designed to provide the management, control, and communications structure for dealing with oil and other hazardous substance release within the PHC area of responsibility. It was agreed through consultation with Dorset Council, BCP Council, Natural England, DEFRA and the Environment Agency. The plan has also been approved by the Maritime and Coastguard Agency (MCA), who are the competent UK authority that responds to pollution incidents from shipping and offshore installations. Guidelines created by the MCA ensure that the National Contingency Plan (NCP) and local plans, including those such as the Oil Spill Contingency Plan, work in harmony to enable an effective response to any incident.

It covers scenarios ranging from local through to national scale incidents. The plan is informed by, and interfaces with, many other contingency documents, such as those maintained by local councils, oil companies and the MCA. The plan contains contact details for the various individuals and organisations who need to be informed of and respond to an incident, along with ongoing training requirements for personnel.

As well as a risk assessment of the various activities within the Harbour that could potentially result in a pollution incident it details site specific response strategies for different areas around the Harbour. The shoreline of the Harbour is a combination of many different habitats and substrates, from concrete walls and slipways to tidal mudflats and saltmarshes. All of these respond differently to the various clean up techniques that can be employed and the situation may be further complicated by the time of year that the spill occurs in. The contingency plan contains a clean-up options matrix which suggests the preferred method for different shore types.

The effectiveness of the contingency plan is tested every three years by a planned Incident Major Exercise (IME) undertaken by PHC's pollution response contractor. A table-top exercise is conducted during all other years. This assesses the readiness and response of

all those who would be called to deal with a real-life incident and ensures that communication centres and equipment deployments are as effective as possible.

Contingency plans continue to evolve as technology changes and the understanding and experience of spill incidents grow, but one of the key components of a successful contingency strategy is ensuring co-operation between all the main stakeholders.

Harbour oil leak clean-up operation, March 2023 – Source: PHC

The plan was put into action in March 2023 when a leak occurred at a pipeline operated by Perenco under Owers Bay in the Harbour and approximately 200 barrels of reservoir fluid was released into the water column. The contingency plan proved to be robust, and the leak was efficiently dealt with by PHC, with the assistance of oil spill response companies and the Dorset Local Resilience Forum. The forum includes Dorset Police, Dorset Council, BCP Council, the NHS, Environment Agency, and Natural England.

12.3 Responsibilities

PHC, as the statutory harbour authority for Poole, are responsible for the planning and preparation of the response to oil spills and the coordination of the clean-up effort on water. The local authorities (BCP and Dorset) are responsible for the co-ordination of clean-up efforts on shore. Depending on the size of the incident then it may be necessary to involve county or national bodies who may take over responsibility for operations. Other organisations such as Natural England, the Environment Agency, SIFCA and oil companies may all have a role to play in the event of a spill incident and their responsibilities are detailed within the Oil Spill Contingency Plan document. Nationally the Civil Contingencies Act 2004,

places local organisations into two separate categories depending on their roles and responsibilities in planning for and responding to any incident.

12.4 Spill Categorisation

Oil spills are categorised using an internationally recognised tier system, which relates to the size of the spill and therefore the appropriate response.

- Tier 1 – A small operational spill: PHC have the equipment and personnel trained to deal with this scale of spill without the assistance of outside authorities.
- Tier 2 – A medium sized spill: PHC have a contract with an Oil Spill Response company who will attend an incident at the Port with specialised equipment and trained personnel. Local oil company resources can also be mobilised to augment PHC resources. Other agencies such as local authorities, Natural England, the emergency services, and the Environment Agency will also be involved and, in some instances, so will the Government.
- Tier 3 – A large spill: An incident of this size will require national resources and the Government in the form of the Secretary of State's representative (SOSREP) will take control and will co-ordinate the overall response.

12.5 Non-Spill Emergencies

Although oil spills are the focus of most of the contingency planning within the Harbour, key organisations such as PHC, the oil company and local authorities also produce emergency plans which detail responses to other potential incidents. Events such as explosions, fires and even terrorist attacks, all need to be considered and a contingency plan put in place to ensure the safety of personnel and members of the public.

The production of emergency contingency plans demonstrates a proactive approach by the key organisations involved which will minimise the potential social, economic, and environmental cost of any incident in or around the Harbour.

Management Objectives:

The following is a list of the management objectives identified which are specific to emergency planning. All management objectives can be found in the Management Matrix where a commentary on progress is made by the lead authorities.

- To review and exercise the Oil Spill Contingency Plan as required.
- To ensure appropriate emergency and contingency plans are in place.

Archaeology 13

13.1 Background

The Harbour has been historically important as a commercial port since before Roman times and evidence of human activity has been identified which predates the Iron Age. This long period of human occupation, along with the excellent preservation of coastal and marine structures and artefacts, submerged by rising sea levels, has led Historic England to identify the Harbour as one of the most important areas for coastal archaeology in the country. The Harbour has also been included on a list of wetland sites and landscapes of national importance prepared by the University of Exeter for Historic England as part of a protocol for the heritage management of England's wetlands.

The Poole Maritime Trust (PMT) is a key organisation in relation to the archaeological interests of the Harbour. The trust aims to preserve the history of Poole Harbour for future generations and contribute towards the public understanding of Poole's maritime heritage and that of its immediate surroundings through the support of historical and archaeological research. As well as through a programme of talks, presentations, and visits to historical sites and through supporting local museums and other historical study centres.

13.2 Marine Historic Assets

Dorset's Historic Environment Record (HER) and the maritime section of the National Monuments Record (NMR) contain information on the numerous paleoenvironmental and archaeological sites in and around the Harbour. The Receiver of Wreck, part of the Maritime and Coastguard Agency, is also a useful source of information as it is a legal requirement that any wreck material recovered from UK territorial waters is reported to them. These along with the UK Hydrographic Office (UKHO) are the primary sources of archaeological information relating to the Harbour.

The archaeological and heritage section for the 2005 channel deepening project Environmental Impact Assessment (EIA), compiled by Wessex Archaeology, was also useful in drawing all this information together. More recently the PMT has invested in a remotely operated underwater vehicle (ROV), enhancing the trusts' ability to study and explore the busy sea floor in and around the Harbour.

Although there are sites within the Harbour that have produced artefacts of a Palaeolithic and Mesolithic origin most marine historic assets of significance date from the iron age or later. Evidence suggests that the Harbour was probably inundated sometime during the Mesolithic

period and that ships have been visiting the Harbour from at least the Iron Age. Sources indicate that shipping activity within the Harbour increased throughout the Roman and Saxon period. At this time Wareham was the principal port within the Harbour, with the Port of Poole being established by early Medieval times.

Cleavel Point and Green Island Causeway

Following on from work undertaken by scouts in the 1950s, the Poole Bay Archaeological Research Group and Bournemouth University investigated this feature in 2001 on behalf of the PHHP. It consists of two stone structures, one running out from Cleavel Point on the mainland and the other projecting from Green Island with a 70m gap in between. The mainland pier is 160m long and between eight and ten metres wide and is normally two metres below the water surface and is only exposed at very low tides. As there is no evidence that the piers were ever linked, it is believed that the structures are the remains of two harbour piers rather than being a causeway. Timbers used to support the flagstone surface of the piers have been carbon dated to 250BC, making it the oldest identified constructed port structure in north-west Europe.

Iron Age Logboat

The boat was discovered in the Harbour in 1964 when a dredger brought it up off Brownsea Island. It was made from one giant log, estimated to have weighed 14 tonnes and could have carried up to 18 people. After it was found, it was kept submerged in water for 30 years while archaeologists decided what to do with it. In 1995 it was submerged in a sucrose solution, which gradually replaced the soft tissue of the wood but kept the boat's shape. At 32 feet, it is one of the largest surviving log boats of the prehistoric period in the UK and is believed to have been built by the Durotriges tribe in about 300 BC. The boat indicates the great potential for preservation of other assets within the silts of the Harbour and is displayed in Poole Museum.

Iron Age Logboat – Source: Poole Museum

Studland Bay Wreck

Situated just outside the Harbour limits in Studland Bay this wreck is significant in that it demonstrates the type of trade taking place at the Port and is also designated under the

Protection of Wrecks Act 1973. The wreck, discovered in 1984, is that of an armed Spanish merchantman which is thought to have sunk around 1520 with a cargo of pottery from Seville. Initial investigations were undertaken by the PMT and around 750 artefacts have so far been recovered from the wreck which has a fifty-metre exclusion zone around it under its designation.

Swash Channel Wreck

This wreck was discovered during the EIA for channel deepening works in 2004 and was immediately designated under the Protection of Wrecks Act 1973. Experts believe it to be a Dutch merchant vessel named The Fame which foundered in a storm in March 1631.

In 2010 Historic England agreed to fund an excavation of the site led by a Bournemouth University team of marine archaeologists. The site was divided into 6 metre grids where two teams began excavating the sediment and recovering the small finds; once a grid was excavated, the areas were photographed to create a photomosaic of the site. A third team worked on the recording and dismantling of the bow castle ready for raising and preserving. The excavation was the largest underwater excavation in the UK since the Mary Rose.

The 8.4 metre rudder, with a moustachioed face carved into it, was lifted onto Poole Quay by Bournemouth University marine archaeologists in 2013 after almost a decade of investigation and excavation work. The raised rudder was carefully dried and preserved in a three-year conservation effort by York Archaeological Trust. It has now gone on show at Poole Museum with other recovered artefacts. The remaining parts of the wreck still on the sea floor have been covered with sand to protect them for the future.

Rudder – Source: Poole Museum

Other significant maritime finds include two Roman ceramic vessels and a Bronze Age axe head discovered by divers in the entrance to the Harbour. Other scattered finds also indicate the presence of several wrecks dating back to the early eighteenth century. Holes Bay was also traditionally used as a dumping ground for old vessels and the remains of many ships can still be found there.

13.3 Legislation and Guidance

The National Heritage Act 2002 gave Historic England responsibility for underwater archaeology within English territorial waters. This not only included day to day responsibility for wrecks protected under the Protection of Wrecks Act, but also enabled them to schedule an underwater site under the Ancient Monuments and Archaeological Areas Act 1979 and National Heritage Act 1983. The precise ways in which these powers will be applied is currently under discussion.

13.4 Potential Threats

Erosion

Rising sea levels and increased coastal erosion have the potential to impact marine historic assets both above and below the high water mark. While the potential for damage to coastal structures from retreating shorelines is well documented, the impact of a moving seabed is less well understood. Previously unknown wrecks can be exposed, and old ones covered. This can both enable a wreck or artefact to be examined but can also expose it to physical, biological, and chemical decay.

The national programme of Rapid Coastal Zone Assessment Surveys (RCZAS), funded by Historic England, is designed to enhance and update coastal Historic Environment Records through a two-phased approach. Phase 1 (Desk-based Assessment, DBA) assesses the data available on the character of the historic environment within the project area, and potential threats to heritage assets. This informs a strategy for Phase 2 (Field Survey) which prioritises areas where heritage assets may be most at risk. The Phase 1 DBA component of the Dorset RCZAS was carried out in 2014/15 by the Cornwall Archaeological Unit and Bournemouth University.

Salvage and Diving

A minority of recreational divers regard a visit to a wreck as an opportunity to remove items of value or interest. This can cause damage to sites as objects are removed without being recorded or properly conserved, it should always be remembered that all recovered wreck has an owner and therefore all such material must be brought to the attention of the Receiver of Wreck; and failure to do so is an offence under the Merchant Shipping Act 1995. For wreck considered to be of historical, archaeological or artistic importance, designation is possible under the Protection of Wrecks Act, 1973. Close to the Harbour, two wrecks are afforded statutory protection under this Act which means that access to these sites is only possible through licences granted by the Secretary of State for Culture, Media and Sport. Further information about these sites should be obtained from Historic England's Maritime Archaeology Team. To ensure that recreational scuba divers are aware of the importance of the marine historic envrionment and how such material should be treated it is important for

the Poole Harbour Steering Group to support initiatives that provide education and further public understanding and appreciation of underwater heritage.

Fishing

Heavy fishing gear can damage archaeological sites and trawling has inadvertently caused wrecks to be discovered through attempts to recover trapped or lost fishing gear. Sites where fishing nets are prone to catch might be submerged wrecks and investigation of them has led to the finding of previously unknown wrecks such as the Studland Bay wreck. However, it is crucial that if such a discovery is made appropriate measures are taken to implement an archaeological investigation. Further information about the appropriate techniques to be adopted should be obtained from local archaeological curators.

Development

Development of the intertidal and marine areas, such as construction of jetties and marinas, has the potential to damage archaeological sites. Recently there have been moves to ensure that approved development proposals take adequate steps to ensure the survival of both marine and terrestrial archaeology. The Poole Local Plan (2018) draws attention to this, highlighting that the Harbour has marine archaeology that is of national significance. In particular, works such as capital dredging can significantly impact marine historic assets but also have potential to discover new sites, as was the case with the Swash Channel wreck. Overall best practice and guidance recognises that detailed historic environment assessment prior to development, and liaison with archaeological curators, offers the best means to manage a project that seeks to avoid damaging the historic environment.

13.5 Reporting Protocol

To ensure marine historic assets are not lost and to further improve our understanding of the maritime historic environment, a strict protocol for the reporting of archaeological or potential archaeological finds needs to be developed and adhered to. As previously mentioned, it is a legal requirement that all wreck found in UK territorial waters is reported to the Receiver of Wreck. Wreck includes a ship, aircraft or hovercraft, parts of these, their cargo and equipment. However, any object either on the seabed or raised to the surface should be reported to a suitable body. Locally this should be the Dorset Historic Environment Record or Historic England's South West Regional Office (Bristol). Both nationally and locally there is a need to produce a central database to record all the information concerning the location of marine historic assets around the UK and in and around the Harbour. This would be of benefit to both archaeologists and developers looking to undertake work on the seabed or along the shoreline.

Management Objectives:

The following is a list of the management objectives identified. Whilst some are specific to archaeology, others may relate to activities and issues discussed in other chapters of this plan. All management objectives can be found in the Management Matrix where a commentary on progress is made by the lead authorities.

- To ensure coastal defence schemes do not adversely affect archaeological features or ensure adequate mitigation and recording.
- To understand what historical assets may be lost or damaged in the future, due to natural changes in the coastline and identify the mitigation measures necessary to protect the resource.
- To adhere to best practice archaeological investigation techniques.
- To ensure dredging does not cause undue damage to archaeology through prior investigation and appropriate mitigation.

Management Matrix

The Management Matrix highlights the management objectives identified at the end of each respective chapter. Where appropriate each chapter ends with a list of management objectives relevant to that activity or issue and these feed into the Management Matrix where a commentary is provided by the relevant responsible authorities.

The commentaries on the management objectives are updated periodically as and when information becomes available by the responsible authorities. The commentaries shall include information on any changes to a responsible authority's management of activities, including changes to any relevant plans/initiative/policies. Commentaries will also provide links to more detailed information in relation to the management objective.

Site Improvement Plans (SIPs) have also been developed for each European Marine Site (EMS). The Poole Harbour SIP provides a high-level overview of the issues affecting the condition of the EMS features on the site and outlines the measures required to improve the condition of the features. Several of the SIPs actions are reflected within the Management Matrix of this Plan. The Poole Harbour SIP 2023 Update is available in Appendix 6.

Management Objective	Chapter	Management Commentary	Responsible Authority	Date Updated
To ensure that any development, plan, or project is sustainable and can demonstrate no adverse impact on the designated site and fully complies with the Habitats Regulations.	4			
To monitor the habitats in Poole Harbour and implement management initiatives to ensure their protection and enhancement for the biodiversity and other ecosystem services they provide.	4			
To reduce the concentration of water quality-nutrients entering the Harbour to improve the condition of habitats.	4			

Management Objective	Chapter	Management Commentary	Responsible Authority	Date Updated
To manage the shoreline including recreating coastal habitats to be lost due to sea level rise.	4			
To manage and monitor shore and water-based recreation pressure to avoid damage to habitats and significant disturbance to waders and wildfowl.	4			
To monitor and review measures that have been put in place to ensure that harvesting activities do not affect habitats and wildlife.	4			
To monitor and review measures that have been put in place to ensure that dredging activities do not affect habitats and wildlife.	4			
To continue deer management initiatives to alleviate damage to saltmarsh and reedbed habitats.	4			
To investigate the potential to restore habitats to enhance biodiversity and for other ecosystem services these habitats provide.	4			
To produce a natural capital plan: identifying assets, ecosystem services flowing from those assets and identify those that benefit from those assets to facilitate future stakeholder engagement and investment into habitat and	4			
To monitor and review measures to prevent any invasive non-native species significantly impacting habitats and wildlife.	4			
To ensure litter does not affect the wildlife of the Harbour.	4			
To improve communication with all user groups and organisations to improve awareness of important habitats and wildlife in the Harbour and explain how they can reduce potential impacts on the wildlife of the Harbour.	4			

Management Objective	Chapter	Management Commentary	Responsible Authority	Date Updated
To promote more research into the impacts of human activities, sea level rise and climate change on biodiversity and the other ecosystems services the Harbour's habitats and wildlife provide.	4			
To understand the potential effects of the transfer of ballast water to the marine environment.	5			
To ensure best practice is followed to minimise the impact of antifouling paints on marine fauna and flora.	5			
To ensure air quality in and around the Harbour meets agreed emission standards.	5			
To ensure discharges from industry meet emission standards.	5			
To ensure discharges from vessels are regulated and comply with legal requirements.	5			
To investigate the potential effects of sacrificial anodes.	5			
To ensure discharges of treated effluent meet emission standards.	5			
To ensure planned improvements are made to storm sewage and emergency overflows.	5			
To ensure litter does not affect the interest features of the European Marine Site.	5			

Management Objective	Chapter	Management Commentary	Responsible Authority	Date Updated
To seek to encourage the use of more environmentally sensitive farming techniques.	5			
To ensure all relevant organisations work together and that sea level rise is incorporated in the planning, development, and management of the Harbour.	6			
To reduce risks to people, property, and the environment from flooding and coastal erosion through the provision of defences, flood forecasting and warning systems against national priorities and criteria.	6			
To respond to coastal change and rising sea levels in the most sustainable way to comply with flood protection policy and the Habitats Regulations.	6			
To understand where habitats may be lost in the future due to sea level rise and where there is potential for habitat re-creation.	6			
To identify strategic options for the future management of the Wareham tide banks.	6			
To identify effective mechanisms (e.g., codes of conduct, voluntary agreements, byelaws) to manage conflicts between, shellfish fishing, bait digging/bait dragging and their impacts on interest features of the European	7			
To understand further the extent and potential implications of bait collection.	7			
To ensure the sustainable management of fisheries to not significantly affect the interest features of the European Marine Site.	7			
To continue enforcement and monitoring of fishing practices and awareness raising among fishermen to eliminate all illegal fishing activity from the Harbour.	7			

Management Objective	Chapter	Management Commentary	Responsible Authority	Date Updated
To ensure eel fishing is carried out in a sustainable way that complies with legislation and minimise impact on other wildlife.	7			
To ensure dredging does not result in a loss of important habitats (e.g., mudflat and saltmarsh) and that potential impacts to shellfish areas are minimised.	8			
To better understand the potential effects of elevated turbidity due to both anthropological activities and natural or storm events.	8			
To ensure minimum footprint from dredging.	8			
To better understand the extent and potential effects of remobilised contaminants.	8			
To minimise the loss of fine material from sediment budget.	8			
To maintain current management initiatives and make improvements where necessary.	8			
To ensure all recreational activity is undertaken in a sustainable and sensitive manner.	9			
To manage access to and use of the Harbour from land to minimise conflicts between users and wildlife.	9			
To improve communication with user groups and organisations to explain their potential impacts on the interest features of the European Marine Site.	9			

Management Objective	Chapter	Management Commentary	Responsible Authority	Date Updated
To ensure safe navigation for all by minimising conflict between commercial and recreational craft.	9			
To review moorings policy to ensure impact on wildlife, habitats and seascape is minimised.	9			
To maintain and improve present standards to reduce conflict between yacht racing and commercial activities.	9			
To review and exercise the Oil Spill Contingency Plan as required.	12			
To ensure appropriate emergency and contingency plans are in place.	12			
To ensure coastal defence schemes do not adversely affect archaeological features or ensure adequate mitigation and recording.	13			
To understand what historical assets may be lost or damaged in the future, due to natural changes in the coastline and identify the mitigation measures necessary to protect the resource.	13			
To adhere to best practice archaeological investigation techniques.	13			
To ensure dredging does not cause undue damage to archaeology through prior investigation and appropriate mitigation.	13			

Appendix 1 Memorandum of Agreement

Between the members of the **Poole Harbour Steering Group** consisting of:

Bournemouth, Christchurch and Poole Council
Dorset Council
Environment Agency
Marine Management Organisation
Natural England
Poole Harbour Commissioners
Southern Inshore Fisheries and Conservation Authority
Wessex Water Services Ltd

Relating to the management of Poole Harbour under its designations as a Special Protection Area (SPA), Site of Special Scientific Interest (SSSI) and Ramsar site for its nature conservation importance.

December 2023

Description

The Poole Harbour Steering Group (hereafter referred to as the Steering Group) provides a framework for coordination between statutory bodies having responsibilities in Poole Harbour. Its members work together to review, prepare and implement common plans and policies including the Poole Harbour Aquatic Management Plan and Poole Harbour Management Policies.

The Steering Group enables its members to coordinate and exercise their responsibilities as relevant and competent authorities with respect to the Poole Harbour SPA under The Conservation of Habitats and Species Regulations 2017 amended by The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019. This is also true regarding the management responsibilities of the SSSI under the Wildlife and Countryside Act 1981 (as amended). The designation as a Ramsar site is also underpinned by this SSSI legislation.

This Memorandum of Agreement (MoA) is between the Steering Group members. It acknowledges the importance of working together for the management of Poole Harbour's designated areas and delivering best practice through the implementation of the respective legislation.

All parties acknowledge that this process provides an opportunity to co-ordinate their work, policies that are developed by their work and the actions that may be the consequences of this work, in so far as this relates to the Poole Harbour SPA, SSSI and Ramsar site.

This MoA has been drawn up to:

- Set out the aims of the Steering Group in relation to the Poole Harbour designations as an SPA, SSSI and Ramsar site.
- For parties to this MoA to agree to use the advice and guidance produced by the Steering Group.
- Reduce unnecessary repetition of work.

- Share expertise and information.
- Confirm the commitment of the members to the coordinated management of the Poole Harbour SPA, SSSI and Ramsar site.
- Nothing in this MoA shall in any way alter or affect any member organisation's statutory responsibilities or rights.

Introduction

Poole Harbour is one of the world's largest natural harbours, is a commercial port and supports many recreational activities. It is also an environmental asset with its shallow waters, extensive mudflats, saltmarshes and reedbeds. The ecological importance of the Harbour is internationally recognised with its designation as a Ramsar wetland site, whilst nationally it was designated as a SSSI in 1991 to protect its valuable intertidal and coastal habitats.

In 1999 it was also classified as an SPA under the European Birds Directive due to its internationally important assemblages of waterfowl and populations of certain regularly occurring resident and migratory species. The SSSI and SPA was further extended in 2017 and 2019 respectively to include an additional 1,832 hectares of land and sea brought within the site to help protect the entire harbour, an increase of 40 percent.

Overall Aims

The Steering Group aims to promote the sustainable use of Poole Harbour, balancing and resolving conflicts of interest.

The Steering Group seeks to stimulate, through shared information, co-operation and action, an appropriate balance between competing demands placed on the Harbour and create a culture of openness and communication.

All parties recognise the importance of working together to co-ordinate their efforts and share information, and/or expertise for the management of the Poole Harbour SPA, SSSI and Ramsar site in maintaining its favourable conservation status.

The Steering Group will meet approximately every 6 months. The main aims and responsibilities of the Steering Group regarding the Poole Harbour SPA, SSSI and Ramsar site are:

- To facilitate the management of the Poole Harbour SPA, SSSI and Ramsar site.
- To report back to their organisations any relevant decisions of the Steering Group, and any other relevant information.

Management

Members will have regard for Natural England's advice given under Regulation 37(3) of The Conservation of Habitats and Species Regulations 2017 amended by The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019.

Annually the Steering Group will review the monitoring programme and identify priorities for the coming year producing a summary report on the status of the Harbour on an annual basis.

Each member of the Steering Group is to provide data collected under their normal statutory responsibilities, and/or provide expertise to develop the SPA monitoring programme. All

information about Poole Harbour SPA, SSSI and Ramsar site, that is in the public domain or is reasonably required to discharge members' responsibilities towards the management of the Harbour's environmental designations under the respective legislation, will be shared between the Steering Group members.

The Steering Group member organisations intend to work to the advice and guidance produced in agreement for the SPA, SSSI and Ramsar site by the Steering Group.

The Secretary to the Steering Group will co-ordinate the Steering Group's data collation and activities.

Resolution of Problems

Should it appear that any element of this agreement cannot be met, a meeting of the relevant parties should be called to explore and identify the issues and seek alternatives / resolutions.

Where there appears to be fundamental disagreement, any party may call a special meeting to be attended by the representatives sitting on the Steering Group. The parties should attempt to call a meeting within 4 weeks of any such request.

Signed By

Organisation: Bournemouth, Christchurch and Poole Council
Representative: Alan Frampton
Position: FCERM Strategy, Policy and Environment

Organisation: Dorset Council
Representative: Bridget Betts
Position: Environment, Policy and Partnerships Manager

Organisation: Environment Agency
Representative: Steve Malpass
Position: Flood and Coastal Risk Management

Organisation: Marine Management Organisation
Representative: James Morgan
Position: Senior Marine Officer

Organisation: Natural England
Representative: Maxine Chavner
Position: Senior Marine Advisor

Organisation: Poole Harbour Commissioners
Representative: Captain Brian Murphy
Position: Chief Executive Officer

Organisation: Southern Inshore Fisheries and Conservation Authority
Representative: Sarah Birchenough
Position: Deputy Chief Officer – Research and Policy

Organisation: Wessex Water Services Ltd
Representative: Lydia O'Shea
Position: Senior Environmental Scientist

Appendix 2 Relevant Bodies & Organisations

Poole Harbour Steering Group Member Organisations

Bournemouth, Christchurch and Poole (BCP) Council

BCP Council is the responsible local authority for the northern part of the Harbour and adjoining land. The Council is a Unitary Authority with responsibilities which include the statutory planning function, transportation, environmental protection, coastal protection, and emergency planning. The Council is responsible for the preparation of the Local Plan which provides a framework of policies and site allocations to guide future development. The Council has a shared Local Transport Plan with Dorset Council which sets the strategy for the management, maintenance, and development of the area's transport system.

Dorset Council

Much of the Harbour lies within the administrative boundary of Dorset Council. Dorset Council is responsible for strategic planning, highways and waste management, in areas outside the BCP unitary authority area. There are a broad range of environmental specialists covering the historic environment, ecology, coast and countryside, landscape and sustainability, and minerals and waste. The Council has a shared Local Transport Plan with BCP Council which sets the strategy for the management, maintenance, and development of the area's transport system.

Environment Agency

The Environment Agency is a non-departmental public body, established in 1996 and sponsored by the government's Department for Environment, Food and Rural Affairs, with responsibilities relating to the protection and enhancement of the environment in England. The Environment Agency is responsible for flood and coastal risk management, regulating major industry and waste, treatment of contaminated land, water quality and resources, fisheries, inland river, estuary and harbour navigations, conservation and ecology.

Marine Management Organisation (MMO)

The MMO is an executive non-departmental public body established under the Marine and Coastal Access Act 2009, with responsibility for English waters. The MMO exists to make a significant contribution to sustainable development in the marine area, and to promote the UK government's vision for clean, healthy, safe, productive, and biologically diverse oceans and seas. Its powers enable it to set up a marine planning system and a marine licensing regime and manage English fishing fleet capacity and English fisheries quotas. The MMO work with partners to create and manage a network of marine protected areas designed to preserve vulnerable habitats and species in UK marine waters, respond to marine emergencies alongside other agencies, and develop an internationally recognised centre of excellence for marine information that supports its decision-making process.

Natural England

Natural England have the responsibility for enhancing biodiversity and our landscapes and wildlife in rural, urban, coastal and marine areas; promoting access, recreation and public well-being, and contributing to the way natural resources are managed – so they can be enjoyed now and for future generations. Natural England have a statutory responsibility to advise relevant authorities as to the conservation objectives for European Marine Sites in England such as Poole Harbour. Natural England advise relevant authorities as to the activities which may cause deterioration of natural habitats or the habitats of species, or disturbance of species for which the site has been designated.

Poole Harbour Commissioners

Poole Harbour Commissioners is a trust, which means it is an independent statutory body, governed by legislation. The Commissioners manage the Harbour and the Port having responsibilities for conservation, improvement, and regulation of the Harbour and play an important role in the implementation of policies in these areas. As a statutory harbour authority, the Commissioners have a duty to run a harbour open for the shipping and unshipping of goods with the only constraint being the physical capacity of the port. The Commissioners ensure that all the varied interests operate in harmony, both for the common good and for the long-term sustainability of the whole harbour and its stakeholders. The Harbour Authority is empowered to consent or undertake operations in relation to land or waters within or adjacent to a European Marine Site and is a relevant authority under the Habitats Regulations.

Southern Inshore Fisheries and Conservation Authority (IFCA)

Southern IFCA are responsible for fishing activities surrounding Dorset, Hampshire and the Isle of Wight. Southern IFCA lead and manage sustainable marine environments and inshore fisheries, by successfully securing the right balance between social, environmental and economic benefits to ensure healthy seas, sustainable fisheries and a viable industry. The primary duties for Southern IFCA are set out within the Marine and Coastal Access Act 2009.

Wessex Water Services Ltd

Wessex Water is the regional water and sewage treatment business serving an area of the southwest of England, covering 10,000 square kilometres including Dorset, Somerset, Bristol, most of Wiltshire and parts of Gloucestershire and Hampshire. Wessex Water, as a statutory undertaker, has a duty to enhance and protect biodiversity as laid down in several pieces of legislation. Natural Environment and Rural Communities Act 2006 requires that they have regard, so far as is consistent with the proper exercise of its functions as a statutory undertaker, to the purpose of conserving biodiversity. As well as legal drivers specifically relating to SSSIs, the Water Industry Act 1991 and Environment Act 1995 include general duties on the statutory undertakers in respect of conservation, access and recreation.

Relevant National Bodies

On a national level there are also many other statutory and non-statutory organisations who to some extent play a role or have an interest in the management of the Harbour, including:

Historic England

Historic England is the Government's statutory adviser on the historic environment. It works in partnership with the central government departments, local authorities, voluntary bodies and the private sector to; conserve and enhance the historic environment, broaden public access to the heritage of England and increase people's understanding of the past. Specifically relating to the Harbour, Historic England are responsible for securing the preservation of ancient monuments in, on, or under the seabed; and promoting the public's enjoyment of and advancing their knowledge of these.

Marine Consents and Environment Unit (MCEU)

The MCEU is an alliance between the Department for the Environment, Food and Rural Affairs marine environment branch and the Department for Transport's ports division. It is responsible for the administration of a range of applications for statutory licences and consents to undertake works in the tidal waters and at sea in UK waters and beyond, including marine developments, coast defences, dredging and waste disposal.

Maritime and Coastguard Agency (MCA)

The MCA is responsible throughout the UK for implementing the Government's maritime safety policy. That includes co-ordinating search and rescue at sea through His Majesty's Coastguard and checking that boats such as passenger ferries meet UK and international safety rules. They work to prevent the loss of lives at the coast and at sea, to ensure that ships are safe, and to prevent coastal pollution. Guidelines created by the MCA ensure that the National Contingency Plan and local plans, including those such as the Oil Spill Contingency Plan, work in harmony to enable an effective response to any pollution incident. The Agency also has responsibilities in relation to waste management for ports and shipping and in recording archaeological finds through the Receiver of Wreck.

The Crown Estate

The Crown Estate owns virtually the entire seabed around the UK out to the 12 nautical mile territorial limit and around 55% of the foreshore, the area between mean high and mean low water. It also owns approximately half of the beds of estuaries and tidal rivers in the UK including most of Poole Harbour. The Crown Estate grants leases or licences for work and activities to be carried out on its land. Within the Harbour they issue leases for such things as dredging, construction of jetties and marinas, wildfowling, and the laying of moorings. Its Marine Stewardship Programme also provides funding for community and practical initiatives around the UK to raise awareness and promote sustainable use of the marine environment.

Trinity House

Trinity House are the General Lighthouse Authority for England, Wales, the Channel Islands and Gibraltar. Their remit is to provide aids for navigation to ensure safe passage for vessels in coastal and offshore waters. Their responsibilities also include the annual inspection and auditing of aids to navigation provided by local port and harbour authorities such as Poole Harbour Commissioners.

Other Relevant Local Bodies and Organisations

The following is a list of some of the other organisations and associations with an interest in the management of Poole Harbour and its surrounding coastline.

Dorset Coast Forum

The Dorset Coast Forum was established in 1995 to look at issues facing the Dorset coast. It consists of a partnership of over one hundred key organisations which have a vested interest in the Dorset coastline. It has no agenda to take on statutory functions, but it can help with co-ordination of coastal policy or management. It works by generating ideas, co-ordinating discussion and encouraging friendly relations and providing good networking. Empowerment is by consensus, peer review and willingness to commit to jointly agreed action. The Forum aims to encourage co-operation and dialogue between all the different interests and users of the coast. They encourage the gathering and dissemination of knowledge and carrying out of research and to review existing policies and working towards the production of integrated policies specific to the Dorset Coast, including Poole Harbour.

Dorset Environmental Records Centre (DERC)

DERC was established in 1976 as an independent organisation to collate information on all of Dorset's wildlife. It provides an opportunity for local naturalists and conservation organisations to work together. Most of the data held by DERC is accessible to everyone from students and local residents to local authorities, conservation organisations and consultants.

Dorset Wildfowlers' Association for Shooting and Conservation (DWASC)

DWASC have managed wildfowling in Poole Harbour since 1952. The club have been proactive in designating a number of no-shooting areas in the Harbour in areas believed to be important for roosting and feeding birds. The club are involved in local conservation projects including partnership projects with Dorset Wildlife Trust and RSPB.

Dorset Wildlife Trust

The Dorset Wildlife Trust is primarily responsible for managing the nature reserve on Brownsea Island on behalf of owners the National Trust. The reserve consists of wetland habitats and woodland and includes the lagoon. Within the reserve are internationally important numbers of two wintering wading species (avocet and black-tailed godwit), nationally important colonies of sandwich and common tern, one of the largest little egret colonies in the

UK and a population of red squirrels subject to its own Species Action Plan. The Trust also has an advisory input on the marine matters through the Joint Dorset Marine Committee and responds to planning and other development applications.

National Trust

The National Trust is a charity and is completely independent of Government. They protect and open to the public historic houses and gardens as well as industrial monuments and mills. They also look after archaeological sites as well as natural habitats including areas of coastline. Within Poole Harbour the National Trust own and manage Brownsea Island as well as the adjacent Studland Beach and nature reserve.

Poole Harbour Study Group

The Poole Harbour Study Group was founded in 1997 and is made up of a group of individuals interested in the recording of wildlife and other biological and scientific aspects of Poole Harbour. The Poole Harbour Study Group is not affiliated to any statutory, commercial, or charitable organisation. The group acts to centralise and encourage the dissemination of knowledge about the Harbour but remains neutral about planning and other issues involving Poole Harbour. Group members are private individuals and from universities and other wildlife and conservation bodies.

Poole Maritime Trust

The Trust, originally founded in 1972 to support the establishment of a Maritime Museum in the Old Town Cellars in Poole, has been involved in several major research projects. The Trust aims to contribute to the public's understanding of Poole's maritime heritage and that of its immediate surroundings.

Poole Yachting Association

The Poole Yachting Association is made up of members of sailing, yacht clubs and associations within the Harbour. The Association represents the interests of its members and promotes recreational sailing. It also works closely with other statutory harbour regulators to help minimise conflict between recreational yachting and other commercial activities.

Purbeck Heritage Committee

The Purbeck Heritage Committee is a joint Committee of organisations with an interest in the Purbeck region. It was formed in 1993 to build partnerships between the bodies involved with the conservation, management, and enjoyment of Purbeck, raise resources, and keep people informed of progress. The Committee provides an opportunity for a wide range of bodies such as, Parish Councils, landowners, voluntary conservation, tourism and leisure organisations, local employers, and other interested groups, to contribute their ideas and support to the Committee.

Royal Society for the Protection of Birds (RSPB)

The RSPB are Europe's largest conservation charity and exists to secure a healthy environment for birds and wildlife. They are campaigning for comprehensive legislation to achieve better protection of the marine and coastal environment and its wildlife. Around the Harbour they own the Arne nature reserve which annually is home to thousands of wild birds.

Standing Conference on Problems Associated with the Coastline (SCOPAC)

SCOPAC works to promote sustainable shoreline management, and to facilitate the duties and responsibilities of local authorities and other organisations managing the coastal zone of central southern England. Its membership consists of Local Councils and other statutory and non-statutory bodies such as Natural England, the Environment Agency, Poole Harbour Commissioners, and wildlife trusts. It commissions research and reports on various issues such as sediment transport and coastal defence and is currently committed to understanding the full extent and impact of climate change.

Appendix 3 Conservation Designations

Area of Outstanding Natural Beauty (AONB)

Poole Harbour falls within an AONB the purpose of which is the conservation and enhancement of the natural beauty of the area. This includes protecting its flora, fauna, and geological and landscape features.

European Marine Site (EMS)

Where SACs or SPAs consist of areas continuously or intermittently covered by tidal waters or any part of the sea in or adjacent to Great Britain up to the limit of territorial waters, they are referred to as European Marine Sites. These also form part of the national site network established through the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019.

Heritage Coast

This is a non-statutory designation designed to protect the landscape and provide for managed recreation of an area of coast.

Local Nature Reserves (LNRs)

These are established and managed by local authorities in consultation with Natural England. They are generally of local significance and provide important opportunities for environmental education.

National Nature Reserves (NNRs)

These represent some of the most important natural and semi-natural ecosystems in the country and are managed to protect the conservation value of the habitats that occur on these sites.

Ramsar Sites

These are designated under an International Convention on the conservation of wetland habitats and species. The convention on Wetlands signed in Ramsar, Iran in 1971, is an intergovernmental treaty which provides the framework for national action and international co-operation for the conservation and wise use of wetlands and their resources.

Regionally Important Geological and Geomorphological Sites (RIGSs)

These are considered to be sites worthy of protection for their educational, research, historical or aesthetic importance. There are three RIGS within the Harbour: two on Brownsea and the third at Shipstal Point.

Special Areas of Conservation (SACs)

The selection and designation of SACs is based on the criteria set out in Annex III of the Habitats Directive so far as it applies to the UK. They are sites of European Community importance, where the necessary conservation measures are applied to maintain the site in a favourable condition. The Conservation of Habitats and Species Regulations (2017) transposed these European Directives into UK law with the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations (2019) allowing these to be operable from 1st January 2021 becoming part of the UK's national site network.

Sensitive Marine Areas (SMAs)

This is not a designation as such but describes nationally important marine sites that require a cautious, detailed, and integrated management approach for a whole area.

Sites of Nature Conservation Importance (SNCIs)

These are sites of local nature conservation interest that have been defined by wildlife trusts and local authorities. They are not statutory but are often protected through local and structure plans.

Sites of Special Scientific Interest (SSSIs)

These are the finest sites for wildlife and natural features in England, supporting many characteristic, rare and endangered species, habitats, and natural features. The purpose of SSSIs is to safeguard a series of sites that are individually of high natural heritage importance.

Special Protection Areas (SPAs)

These are designated under the Birds Directive, which is the primary European legislation for the protection of birds. They are designed to conserve the birds listed in Annex I of the Birds Directive as well as migratory birds. The Conservation of Habitats and Species Regulations (2017) transposed these European Directives into UK law with the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations (2019) allowing these to be operable from 1st January 2021 becoming part of the UK's national site network.

Appendix 4 Natural England's advice on small developments (jetties and slipways) in the Harbour

POOLE HARBOUR SPECIAL PROTECTION AREA AND RAMSAR SITE: PRINCIPLES[1] WHICH WILL BE USED BY NATURAL ENGLAND WHEN RESPONDING TO CONSULTATIONS AND PROVIDING ADVICE ON PROPOSED SMALL DEVELOPMENTS ON THE FORESHORE THAT PROVIDE PRIVATE ACCESS TO THE HARBOUR

Prepared by Natural England
Slepe Farm, Arne, Wareham, Dorset BH20 5BN
November 2009

[1] The principles set out in this document are based on the best scientific evidence available and experience to date.

1. Aims

The purpose of this advice is to raise awareness of Natural England's views regarding the construction of small developments, such as jetties and pontoons, on the foreshore within Poole Harbour. This advice is directed primarily towards the developer in order to help during the early planning stages of a development application. The scope of the area covered by this advice is shown in Figure 5. And runs from the south east of Lytchett Bay in the west to Sandbanks in the east The advice relates to **private** jetty, slipway and pontoon applications linked to **existing** residential developments. All other types of developments on the foreshore and outside of this area will be responded to on a case by case basis. Outside of the scope of this area Natural England are likely to object to jetty, slipway and pontoon applications due to such developments resulting in an increase in access to currently undisturbed parts of the Harbour.

By presenting this advice, Natural England hopes to raise developers' awareness of the potential problems associated with proposing developments in certain parts of the harbour , but also to facilitate (and so save time and costs) the granting of relevant approvals for well-designed proposals in other parts of the harbour. The advice contained in this document seeks to promote a positive approach to protecting the natural environment and promote sustainable use by highlighting the sensitivities of parts of the harbour to further development and assisting in the design of structures that minimise adverse effects in other parts of the harbour.

2. Background

Poole Harbour is one of the largest natural harbours in the world. Its extensive mudflats, salt marshes and reed beds support over 20,000 wintering wildfowl and waders. It is home to internationally important species listed as rare, vulnerable or in danger of extinction including Avocet, Common Tern and Mediterranean Gull. Due to its importance for nature conservation, Poole Harbour is recognised as being of national and international significance with areas designated as a Special Protection Area (SPA), a Site of Special Scientific Interest (SSSI) and a Wetland of International Importance (Ramsar site).

Development in the intertidal areas of Poole Harbour (between Highest Astronomical Tide and Mean Low Water) is likely to requires four separate permissions from different statutory bodies (otherwise known as relevant authorities);

- Planning permission (Borough of Poole or Purbeck District Council)
- Poole Harbour Commissioners Licence (Poole Harbour Commissioners)
- Food and Environmental Protection Act (FEPA) Licence (Marine Management Orga nisation)
- Coast Protection Act (CPA) consent (Marine Management Organisation)

The relevant authorities are required to consult Natural England about applications which may affect any of the designated features of the Poole Harbour SPA, SSSI or Ramsar site or the integrity of the site as a whole. The relevant authority seeks the advice of Natural England as to the likely significance of any effect that a development may have and must apply strict tests when carrying out its decision making function to ensure that adverse impacts on nationally and internationally important nature conservation sites are avoided.

3. Impacts of developments on the shore

Over the last century or more there have been a number of relatively large scale developments around the shores of Poole harbour eg port developments, marina developments and land reclamation works. In addition, in the past 50 years the number of small private developments within Poole Harbour has increased dramatically (see *Figures 1-4*). Thus, there has been a gradual encroachment of developments of one kind or another around the fringes of the natural environment of the harbour. In many places around the harbour, this fringing habitat consists of upper shore mudflat and saltmarsh. These habitats are important feeding and roosting habitats for many birds. One potential threat to the waterfowl in the Harbour is thus the cumulative effect of the gradual encroachment onto the foreshore of many small developments such as jetties and slipways.

Small foreshore developments result in direct loss of intertidal habitat within their "footprint". However, there are other less obvious effects that need to be considered. Evidence that the presence of structures such as jetties and groynes on the foreshore impedes waterfowl usage of the nearby intertidal habitat has been produced through a number of surveys (Morrison, 2003; Morrison, 2005, Donnelly et al, 2003). The habitat close to these structures is likely to be of less value to the birds for foraging and roosting because their sightlines and flight lines are restricted. Sightlines and flightlines are considered to be important for birds to protect themselves from predators and survey their feeding ground (English Nature, 2000; Milsom et al 1998; ENRR 359, 2000) Furthermore, the structures may create shade and increased abrasion from wave action resulting in habitat deterioration in localised areas along the shoreline and therefore decrease foraging potential. Although foreshore structures may be used by some common species as roosting sites over high water, human activity associated with the construction, use and maintenance of jetties, slipways etc also poses a risk of increased disturbance to birds feeding or roosting near the upper shore. English Nature, 2000).

Without careful control further small developments on the foreshore could result in a significant loss of potential bird roosting and feeding habitat within the Poole Harbour SSSI , SPA and Ramsar site. There has been a significant loss of natural saltmarsh roosting habitats over the last century as a result of saltmarsh dieback while sea level rise is predicted to result in further losses of mudflat and saltmarsh (Underhill-Day, 2006). It is therefore imperative that further significant human induced loss of upper shore habitat usable by birds for feeding and roosting is avoided.

Through this advice Natural England wants to ensure that the remaining undeveloped important sites for waterfowl are maintained. It is, however, Natural England's opinion that, in certain other parts of the Harbour, structures can be built that minimise potential effects on the waterfowl provided that certain safeguards and mitigation measures are incorporated at the design and planning stage.

Figure 1: Blue Lagoon in 1952

Figure 2: Blue Lagoon in 2002

Figure 3: Sandbanks in 1952

Figure 4: Sandbanks in 2002

4. Your location in the Harbour

The north shore of the Harbour is subject to considerable development pressure in the residential, recreational, commercial and industrial areas. The impacts of foreshore structures on waterfowl will vary throughout the harbour. A number of reports have highlighted that the northern shore is important to the wintering bird population of the SPA (EPR, 2004; NECR017, 2009, Donnelly et al 2003)). These reports have also shown that there are definite areas of the northern shore which attract key species (eg Blue Lagoon, Baiter) both during the day and the night. Some developments will have only a minor effect, for example an additional structure in a developed area with many existing slipways and jetties, extensive human activity and little bird activity is likely to create little additional impact. However, the same structure in a less developed location is likely to have much more pronounced direct and indirect effects on the birds.

In 2003, Natural England commissioned a research project to assess bird usage within areas of the north shore of Poole Harbour between Rockley Point and Sandbanks where jetty and slipway developments are most common. The report (Donnelly et al. 2003) highlighted certain areas along the northern shore that support relatively high numbers of key species (eg Blue Lagoon and Baiter). It also suggested a strategic approach when assessing the impact of jetties/slipways etc depending on the relative usage of the shore by birds and existing disturbance levels.

Building on this report, and other surveys of bird usage of the northern shore of the Harbour, (eg EPR, 2004; NECR017, 2009) Natural England looked more closely at the stretches of the foreshore between east of Lytchett Bay and Sandbanks in order to classify: i) their potential importance to waders and wildfowl and ii) the present density of jetties'slipways etc. Natural England also considered how present regulations can be used to enforce restrictions on small development design. As a result, Natural England has split the north shore of the harbour into a number of discrete sections and classified each of these as being either a "Blue Zone" or a "Red Zone".

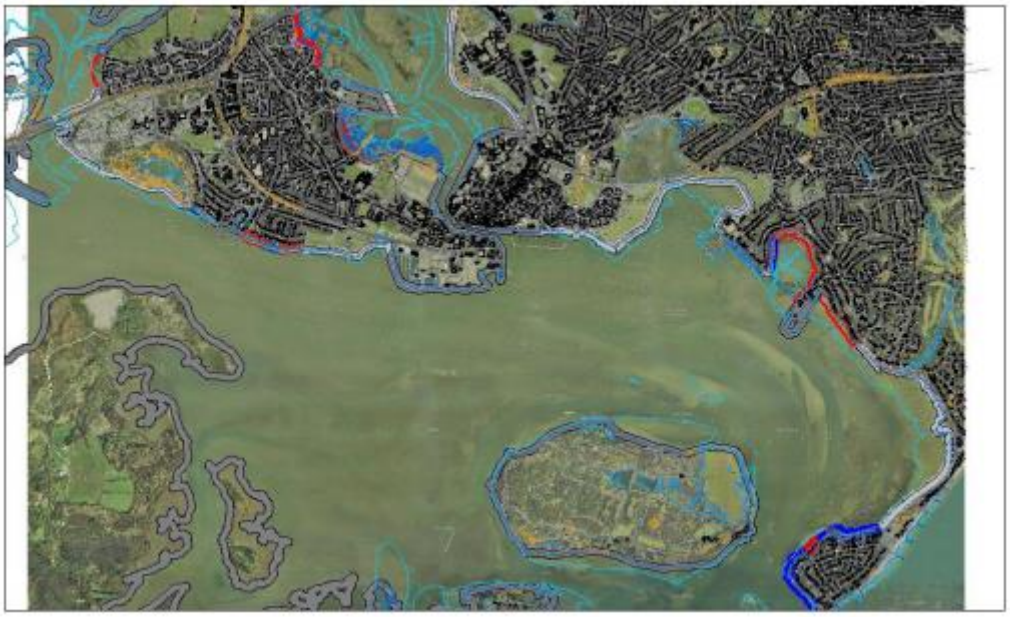


Figure 5: Policy areas for the north shore of Poole Harbour

5. Blue Zones are :

- areas of the foreshore which have existing foreshore development and have a higher density of jetties and slipways than other parts of the shoreline
- areas where existing potentially disturbing activities (e.g. boat movements, walking on the foreshore etc) are also likely to be high

Principles relating to Blue Zones

Although these areas have some value for feeding and roosting birds, Natural England considers that a new **small development** in such an area, if it is designed carefully and of a similar length to existing structures, is unlikely to have a significant effect on Poole Harbour SPA, SSSI and Ramsar site. Natural England will, therefore, generally have no objection to proposals in the Blue Zone that meet the principles set out below.

1. The proposed works should not lead to unnecessary proliferation of small developments within the SPA. An applicant should therefore be able to demonstrate that the purpose of the jetty or slipway could not be served by sharing existing facilities, or in any other way.

2. Where new facilities are justified Natural England are more likely to agree with the consenting of structures where the applicant has considered how the structure can be designed so as to minimise its impact on the foreshore. The following table lists designs which will be considered.

Type of Design	Way by which the design minimises impact on the environment
A structure that has little or no impact on over-wintering birds	• Structure that can be removed during the winter periods eg floating pontoons • Slipways set back away from the shore eg into residential gardens so as to encroach only a little way on to the shore
Applications where the applicant seeks to find ways of making more of the foreshore available for foraging and roosting birds	• Derelict structures removed from adjacent foreshore especially within direct location of the new proposed development or at neighbouring properties • setting back of existing retaining walls to create additional intertidal habitat.
A structure whose dimensions are no longer or wider than required for their purpose	• Structures of the minimum proportions necessary to perform the required function (no longer or wider than necessary and close to existing nearby structures) • Structures appropriate to the shore gradient (a bathymetric survey will be required to help determine the additional boat access time that will be gained from the proposed structure)
Applications where the remaining bird feeding area maximised	• Structure positioned so as to maximise undeveloped open areas and maintain bird sightlines
The structure is designed to be environmentally sensitive	• Perforated mesh design for slipways; benefit of allowing sunlight through, resulting in less shading effects on the inter-tidal habitat • Incorporation of some timber; e.g. in the piling would provide an additional type of substrate for colonising species such as seaweeds and sponge • Use of open piling benefit of allowing movement of tidal waters, maximum retention of shore area and minimum displacement of tidal water • Materials from a sustainable source wherever possible

3. The construction of the development should avoid disturbing overwintering birds and take place between 1st April and 31st October.

6. Red Zones are:

- areas that have relatively little existing foreshore development
- likely to have relatively low disturbance levels at present
- of particular importance to feeding or roosting birds

Principles relating to Red Zones

Because of the relatively underdeveloped nature of these areas and their relative importance to birds, Natural England considers that new structures that **encroach on to the foreshore** in these zones are likely to have a significant detrimental effect on the birdlife of Poole Harbour SPA through direct loss of habitat and through displacement of birds due to interference with their sightlines and flightlines. Natural England will, therefore, generally object to proposals in Red Zones because, on the objective evidence available, it cannot be ruled out that further jetties and slipways in these zones would be likely to have a significant effect on the SPA and Ramsar site. An appropriate assessment (Annex A) will therefore need to be undertaken by a competent authority before a decision can be made regarding the granting of any necessary consent. It is unlikely that a competent authority could ascertain that proposals in the Red Zone would not adversely affect the integrity of the SPA and Ramsar site.

Figure 10: this slipway has been constructed as a solid mass of concrete which results in a complete loss of natural, intertidal habitat under the concrete and the total displacement of tidal water. There has been no mitigation for the structure's adverse effects such as meshing, open piling, or seasonal removal.

Further information regarding the assessment of the importance of specific areas of the foreshore and their classification as either a blue or red zone can be found in the supporting information (Annex A) that accompanies this document.

7. Summary

- In some parts of the northern shore of Poole Harbour (Red zones) where there is currently little development and bird usage is relatively high Natural England will object to further small developments eg jetties and slipwaysIn Natural England's opinion, developments here are likely to have a significant detrimental effect on the birdlife of Poole Harbour SPA..

- In other parts of the northern shore of Poole Harbour (Blue Zones), where the shore is already relatively well developed and bird usage is relatively low, Natural England is unlikely to object to further **small developments** (eg slipways and jetties) provided that the proposal meets the principles set out above. These principles aim to ensure that unnecessary proliferation of small developments within the SPA is avoided and that where new structures prove necessary, they are of an environmentally sensitive design.

- Applicants should ensure they have consulted Natural England and other consenting agencies for their views on any proposed development at an early stage and ascertained whether the proposed structure is in a red or blue zone.

- Where the structure is in a blue zone the applicant should provide clear and detailed plans of the development with a supporting statement as to why it is required and how they have followed the principles set out above.

- If you have any concerns please do not hesitate to contact Natural England.

8. Consenting Agencies

Natural England *Room H7* *Government Buiding* *Prince of Wales Road* *Dorchester* *Dorset* *DT1 1PY* *Dorset@naturalengland.org.uk*	**Poole Harbour Commissioners** *Harbour Engineer* *20 New Quay Road* *Poole* *Dorset* *BH15 4AF* *01202 440200 Extension 234* *heng@phc.co.uk*
Borough of Poole *Civic centre* *Poole* *BH15 2RU* *01202 633633* *planning@poole.gov.uk*	**Marine Management Organisation** **(for CPA approval and FEPA licensing)** *Marine Environment Team* *PO Box 1275* *Newcastle Upon Tyne* *NE99 5BN* *0300 123 1032* *Marine.consents@marinemanagement.or.uk*
Purbeck District Council *Purbeck District Council* *Westport House* *Worgret Road* *Wareham* *Dorset* *BH20 4PP* *01929 556561* *www.purbeck-dc.gov.uk*	

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ENRR 359 (2000) Key habitat attributes for birds and bird assemblages in England.

NECR017 (2009

Note: *With referenece to the table above, section 8. Consenting Agencies, Borough of Poole and Purbeck District Council are no longer in existence and have joined with other local authorities to form BCP Council and Dorset Council respectively.*

Annex A

Principles which will be used by Natural England in responding to consultations and providing advice on proposed jetties and slipways – *Supporting Information*

The purpose of these principles - Assessing the cumulative effects of small developments on the foreshore

Articles 6(3) and (4) of the Habitats Directive requires that any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect, either individually or in combination with other plans or projects, must be subject to "appropriate assessment" of its implications. In light of such an assessment, plans or projects may only be agreed after ascertaining that they will not adversely affect the integrity of the site.

The Conservation of Habitats and Species Regulations 2010 recently replaced The Conservation (Natural Habitats &c) Regulations 1994, and this translates the Habitats Directive and Birds Directive into law in Great Britain. It gives Natural England (previously English Nature) a statutory responsibility to advise relevant authorities as to the conservation objectives for European Marine Sites and operations which may cause deterioration of natural habitats or the habitats of species, or disturbance of species for which the sites have been designated. English Nature issued advice for the Poole Harbour European Marine Site in fulfilment of Regulation 33 (2) of the Conservation (Natural Habitats &c.) Regulations 1994 (English Nature, 2000) now to be referred to as Regulation 35 (2) of the The Conservation of Habitats and Species Regulations 2010.

The advice in the Regulation 33 advice is a material consideration that must be borne in mind when conducting an Appropriate Assessment. This document lists each of the interest features (birds) of the Poole Harbour SPA and the various sub-features (habitats) that support them. It also identifies four key attributes for which there are targets that must be met in order for those features and sub-features to be deemed to be in favourable condition. It is part of Natural England's duty to ensure that all features and sub-features of designated sites such as Poole Harbour remain, as far as possible, in favourable condition. The four key attributes and associated targets are summarised in the following table:

Attribute	Target
Disturbance in feeding, nesting and roosting areas	No significant reduction in numbers or displacement of wintering and breeding birds attributable to disturbance from an established baseline, subject to natural change

Absence of obstructions to view lines	No increase in obstructions to existing bird view lines
Extent and distribution of habitat	No decrease in extent from an established baseline, subject to natural change.
Food availability	Presence and abundance of prey species should not deviate significantly from an established baseline, subject to natural change

In the light of the above, the concern is that proposed small developments on the foreshore such as jetties would have the potential to damage the features of special interest of the site via the following potential impacts:

- Long term intermittent disturbance and displacement during jetty use in the winter months, causing the area of inter-tidal habitat to be unavailable to feeding waterfowl.
- Restriction of views of wintering birds for foraging and/or loafing. This may result in a reduction in the feeding efficiency of birds that use this stretch of the shoreline, or could potentially deter birds from utilising the area of shoreline affected.
- Disruption of flight-lines of wintering birds, potentially deterring or obstructing the use of traditional flight-lines.
- Reduction in total area of inter-tidal habitat within Poole Harbour SPA/SSSI.
- Direct or indirect change to the physical quality of habitat in a localised area; i.e. structure creating shading of inter-tidal habitat;
- Creating a potential increase in demand for future associated dredging.

There is a general principle of planning law which recognises that there may be circumstances in which to permit a development, even though it would cause no significant harm to protected interests in itself, is nevertheless harmful because it would make it difficult to refuse other similar projects, and a proliferation of such projects would, collectively, be harmful[1]

The 'in combination' provision is particularly relevant in the case of small developments on the foreshore since there is much potential for many similar 'jetty' proposals to have a cumulative effect on the SPA. The principles laid out in this document have been developed

[1] Collins Radio Ltd v SoSE (1975) 1 EGLR 146 (Ref 1); Poundstretcher Ltd v SoSE (1988) 3 PLR69 (Ref 2); Dibben Construction Ltd v SoSE (1991) JPL 260 (ref 3) and Rumsey v SoSE (2001) 81 P&CR 32 (page 465) (Ref 4)

to ascertain that the cumulative effect of these small developments will cause no significant harm to the protected interests of Poole Harbour Special Protection Area.

Developing the principles by which Natural England respond to consultations on small developments in Poole harbour

Donnelly et al. (2003) recognised that certain sectors of the shore of Poole Harbour are already heavily developed and disturbed by existing human activity and little used by birds. In such places the report recommended that "English Nature would not raise an objection to an application for a jetty and/or slipway development within this (policy) area on the grounds that additional disturbance or habitat loss would be unlikely to affect the integrity of the SPA". However in sectors of the shore that are moderately or little developed, little disturbed and well-used by birds the report recommended that "any proposal for a jetty and or slipway development within this (policy) area should be met with objection on the grounds that compensatory or mitigation measures, conditions or planning obligations would not adequately protect the integrity of the SPA, and that unacceptable, possibly irreversible damage to the SPA would be experienced, opposing the objectives set out in the Favourable Condition table as mentioned above".

Donnelly et al (2003) suggested a three 'policy layer system' of either 'No objection providing 'a good practice guidelines' for design was adhered to' (Policy 1), 'No objection with conditions' (Policy 2) or Objection (Policy 3). Many of the conditions, however, suggested in the report for policy 2 would have been difficult or unfeasible to enforce in practice. For example the removal of existing structures and placing restrictions on the type of boat the jetty user used. Further survey work has also highlighted the relative importance of different parts of the northern shore of the Harbour (EPR, 2004; NECR017,2009). Natural England has as a result taken a strategic approach where the northern shore has been split into 'red' and 'blue' zones. The zonation is based on the **relative importance of the site to birds** and the existing **density of jetties** in order to ensure that the remaining open undeveloped areas of foreshore that are important for bird feeding and roosting are maintained**.**

The principles that have been developed are that further development may be permitted providing good practice guidelines are followed in areas of less importance to birds (ie where bird numbers and diversity is low and the density of jetties and slipways are already having an impact. (blue zones). Natural England will, however, object to further development in areas important to birds and where jetty development is still of a low density (red zones).

The scope of the area covered by these principles runs from the south east of Lytchett Bay in the west to Sandbanks in the east. The advice relates to **private** jetty, slipway and pontoon applications linked to **existing** residential developments. All other types of developments on the foreshore and outside of this area will be responded to on a case by case basis. Areas that were considered by Donnelly et al (2003) that are not linked to residential development have therefore been excluded from this document.

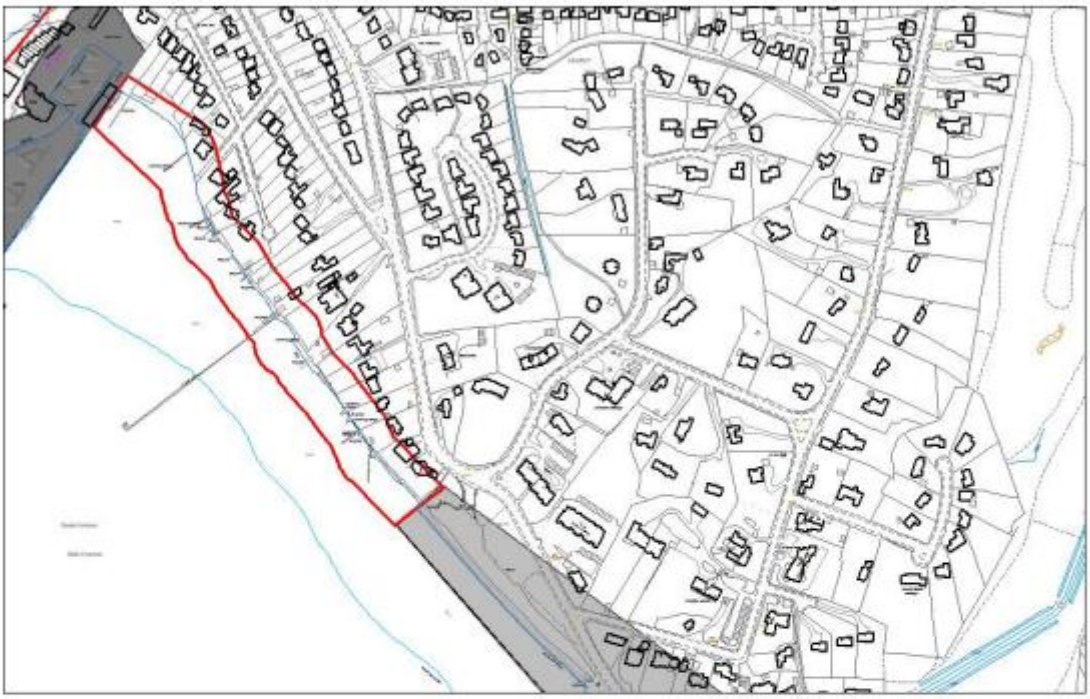
Different areas of foreshore are listed below outlining the reasoning as to why they are in the blue or red zone:

Sector S – Sandbanks

Donnelly et al (2003) recorded 11 species in this area, however the sector supported very low numbers of birds compared to other sectors.

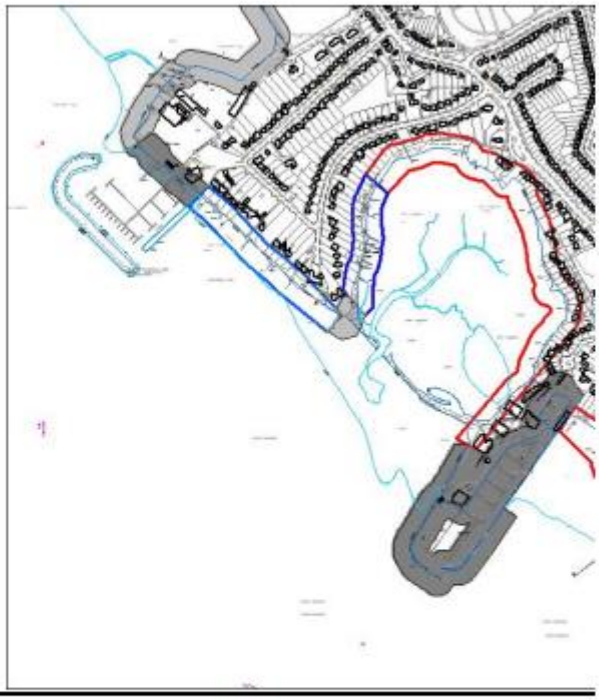
S1	There is a moderate density of jetties and slipways and a relative low disturbance level here. Morrison (2002) observed the area was relatively low lying and that this in conjunction with wash from large boats, restricts the exposure of feeding areas available for birds. Donnelly (2003) recorded a low number of key species of waterfowl This has been designated a blue zone.
S2	There is a moderate density of jetties here. This sub sector is used by birds disturbed from Whitley Lake and in Donnelly et al (2003) it was recommended that the area of shoreline be maintained as a temporary refuge with the aim being to maintain the open area within the middle of the subsector. Donnelly et al (2003) advised removing structures longer than 10m from here but this is not a realistic measure. The red zone status here is to ensure no further development impacts on this important refuge area. This has been designated a red zone.
S3	This area includes yacht clubs, a marina and a boatyard, as well as a high density of jetties and slipways. There is a potentially high disturbance level and limited intertidal area for bird feeding (Donnelly et al (2003). Donnelly (2003) also recorded a low number of key species of waterfowl. This has been designated a blue zone.

Sector L – Lilliput



L	There is a low density of jetty and slipway development here. This area is seen as a continuation of Whitley Lake an area of particular importance to birds and is likely to be a particular value when water sport activity disturbs birds at Whitley Lake (EPR 2004). Larger numbers of birds were recorded feeding here by Donnelly et al (2003) than at Sandbanks. Eight species, including most notably, Dark-bellied Brent Goose (4.3% total population of Poole Harbour) and Red-breasted Merganser (4.2% total population of Poole Harbour) were recorded. Swensson (2004) also recorded significant numbers of Red-breasted Merganser along with 5 other species. For part of this sector Donnelly et al (2003) advised limiting vessel types to small craft with small engines and restricting the use of the structures to summer only to prevent disturbance to wintering fowl. However these measures cannot realistically be enforced. This area has been designated as a red zone

Sector BL - Blue Lagoon/Parkstone

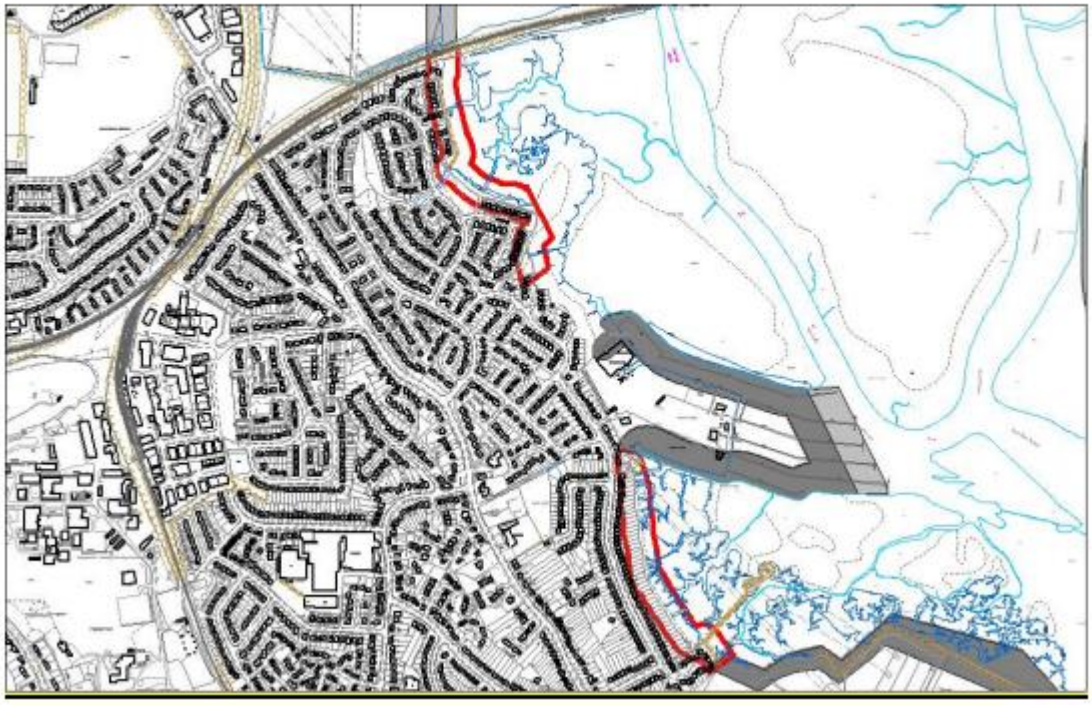


In the whole of sector BL, 5 species had numbers in excess of 1% total Harbour population: Dunlin (3.06%), Red-breasted Merganser (3.04%), Dark-bellied Brent Geese (2.08%), Redshank (1.70%) and Shelduck (1.53%) (Donnelly et al, 2003).

BL1	Blue Lagoon is one of the most important sites on the northern shore of Poole Harbour for wintering birds. The site is considered of high importance to key species of waterfowl for feeding and roosting, including within the upper beach area EPR, 2004; NECR017, 2009, Donnelly et al 2003). The highest number of birds in the upper beach area of the northern shore study area were recorded within the Lagoon during the Donnelly et al (2003) study while Blue lagoon (together with Holes Bay and part of Hamworthy shoreline) was also found to have the highest numbers of bird in a study of the northern shore both during day and night (NECR017, 2009). These areas are also the least disturbed and consist of large areas of soft mud for feeding. In addition to mudflat habitat saltmarsh and reeds also fringes Blue Lagoon. There are relatively low number of jetties around the Lagoon up to 25 Elms Avenue and Donnelly et al (2003) recorded low to moderate disturbance levels in the Lagoon This area has been designated as a red zone

BL2	This area has a high number of jetties while a lower number of birds were recorded here (Donnelly et al 2003. This has been designated a blue zone. Even so six species of bird were recorded where the jetties were less sparse (Donnelly et al 2003). In addition the shingle spit at the base of the lagoon and in close proximity to this site is important for roosting birds with 4% of the harbour oystercatcher population recorded roosting here (EPR, 2004). It is particularly important therefore that any new structures do not extend beyond the length of existing structures.
BL3	The area west of Blue Lagoon has a high density of existing structures on the foreshore and low disturbance. Donnelly et al 2003 concluded the area was of low to moderate importance to key species of waterfowl. At mid to high tide, there is little intertidal area for feeding and low numbers and species diversity were recorded. At low tide, number and species increased, but not significantly (Svennson, 2004). Morrison (2005) found a similar range of species but 'surprisingly higher numbers' compared to the previous two surveys. This area has been designated as a blue zone This site is still of value to birds particularly towards the entrance of Blue Lagoon. It is again particularly important therefore that any new structures do not extend beyond the length of existing structures.

Sector HB - Holes Bay



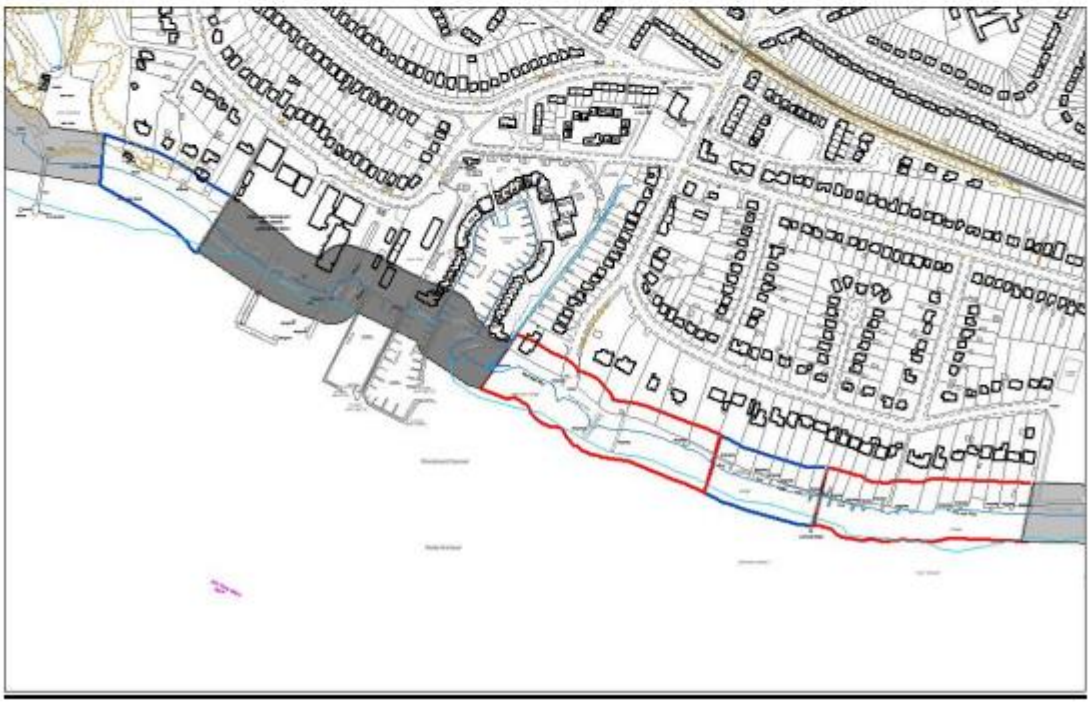
Holes Bay (together with Blue Lagoon) was found to hold the highest numbers of birds during a day and night survey of the northern shore. These areas are also the least disturbed and consist of large areas of soft mud for feeding (NECR, 2009).

Holes Bay is considered the most important area in the Harbour for Redshank (44% Poole Harbour population are found here at low water (Pickess & Underhill-Day, 2002). Substantial number of Dunlin occur here, as do Black-tailed Godwit, especially on spring passage.

The areas of Spartina marsh found here are often used as roosting and loafing sites. Holes Bay is also important during severe weather due to the sheltered position and shallow water (Collins 1985)

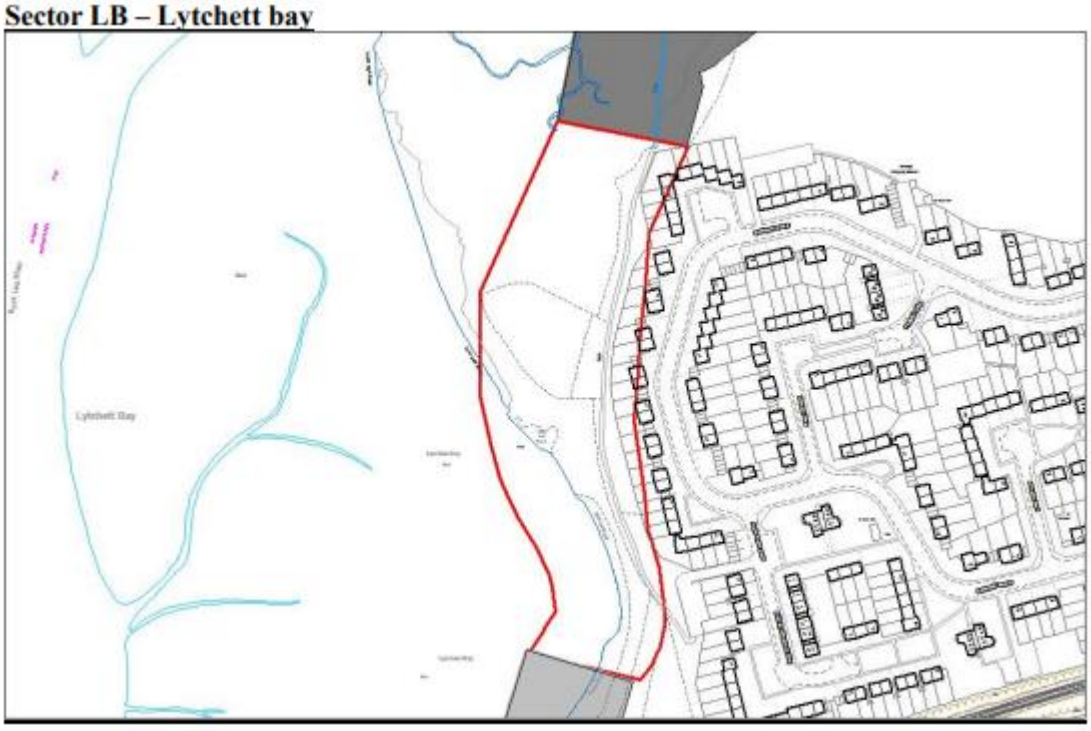
HB1	This area has a low density of jetties and slipways with a relatively low level of disturbance (Donnelly et al 2003). A variety of bird species roosting and feeding, notably Shelduck, Redshank & Dunlin were recorded here. • This area has been designated as a red zone
HB2	A low density of jetties and slipways with a low level of disturbance is found in this area. This subsector is of lower value than HB1 to waterfowl but relatively important sub sector for key species of waterfowl, most notably Shelduck (Donnelly et al, 2003) and Jonathan Cox Assoc. (2009)) • This area has been designated as a red zone

Sector H – Hamworthy



H1	This stretch of shore has a low density of existing jetty and slipway structures. Low numbers of birds were recorded here by Donnelly et al (2003) however in NECR017 (2009) more wader species were recorded in the Hamworthy area at night than during the day. The currently low density of jetties and potential value for the site mean it has been designated a red zone to preserve the current open area of shore here. This area has been designated a red zone
H2	There is a high density jetties and slipways with relatively low numbers of birds recorded here by Donnelly et al (2003) This area has been designated a blue zone
H3	This stretch of shore has a low density of existing jetty and slipway structures. Low numbers of birds were recorded here by Donnelly et al (2003) although in NECR017 (2009) more wader species were recorded in the Hamworthy area at night than during the day. This sector is noted by Donnelly et al (2003) as being important in terms of maintaining connectivity along the northern shore and the integrity of the SPA. This is due to the potential importance of this area to waterfowl by offering mainly unobstructed flight and sightlines along a stretch of shore that otherwise has a relatively high number of jetties and slipways. This area has been designated a red zone
H4	There is a high density jetties and slipways with relatively low numbers of birds recorded here by Donnelly et al (2003) This area has been designated a blue zone

Sector LB – Lytchett bay



LB	A low density of jetties and slipways and relatively low potential for disturbance was recorded here. The area is considered an important feeding area for Redshank while areas of *Spartina* are used as roost sites by Redshank and Curlew. Eleven species of waterfowl were recorded within the sector Donnelly et al. (2003). The spit located in the SE part of the bay is used as a roost site for Redshank, Dunlin and Oystercatcher. The fourth highest number of birds was recorded here in Donnelly et al (2003) survey. • This area has been designated as a red zone

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Appendix 6

Poole Harbour SIP 2023 Update

Plan Summary

This table shows the prioritised issues for the site(s), the features they affect, the proposed measures to address the issues and the delivery bodies whose involvement is required to deliver the measures. The list of delivery bodies will include those who have agreed to the actions as well as those where discussions over their role in delivering the actions is on-going.

Priority & Issue	Pressure or Threat	Feature(s) affected	Measure	Delivery Bodies
1 Water Pollution	Threat	A026(NB) Little Egret, A048(NB) Common shelduck, A132(NB) Avocet, A156(NB) Black-tailed Godwit, A176(B) Mediterranean Gull, A193(B) Common Tern, Waterbird assemblage	Investigate, monitor and manage water pollution issues	Defra, Environment Agency, Natural England, North Dorset District Council, Purbeck District Council, Wessex Water Services Ltd, West Dorset District Council, National Farmers' Union (NFU), Country Land and Business Association (CLA), Bournemouth University

Proposed update

1 Water Pollution	Pressure	*Revise features to include those added by 2017 revision of site*	Investigate and monitor water pollution pressures and pollutant sources; establish agreement of relevant delivery bodies and sectors to water pollutant limits that, in line with the site conservation objectives, provide resilience to a naturally structured and functioning marine system favouring saltmarsh and eelgrass dominance conducive to the bird features and the ecology of their supporting habitats, and agreement of these bodies to implement actions whereby water pollution is, or will be, contained within these limits.	Environment Agency, Natural England, Dorset Council, BCP Council, Poole Harbour Commissioners, Southern IFCA, Wessex Water Services Ltd, National Farmers' Union, Poole Harbour Nutrient Management Scheme Management Board, Poole Harbour Catchment Initiative, Litter Free Coast and Sea, research institutions.

1 Water Pollution

Nutrient enrichment has resulted in extensive algal mats across the mudflats with potential consequential impacts on bird prey availability and bird foraging behaviour.

Proposed update

1 Water Pollution
Nutrient enrichment, primarily from elevated inputs of nitrogen (N) and phosphorus (P)*, has changed the marine ecology to a situation that favours a dominance of opportunistic green macroalgae across mudflats and algae growth on sub-tidal habitat, and is a causal factor in the degradation of saltmarsh and the scarcity of seagrass beds. This ecological change has consequential impacts on bird prey availability and bird foraging behaviour and compromises restoration of bird supporting habitats including open mudflat, eelgrass beds, other seagrass beds and saltmarsh. There are also high concentrations of some metals and synthetic chemical pollutants, including some that fail legislative standards. The impact of these substances on the bird features and the ecology of their supporting habitats is uncertain. * Unless stated otherwise, in this document N refers to inorganic nitrogen and P to orthophosphate phosphorus. Note: actions on water pollution are augmented by actions on air pollution.

Proposed update of Action 1A

Action	*Action description*	*Cost estimate*	*Timescale*	*Mechanism*	*Funding option*	*Delivery lead body*	*Delivery partner(s)*
1A	Evidence base: biology Report on key biology* in the harbour, on a cycle aligned to Water Framework Regulation planning, and to requirements that will: • detect change in ecological conditions, • inform the science base and improvements in modelling water pollutant limits: *Includes phytoplankton, macroalgae, eelgrass, other seagrasses and saltmarsh.	Not yet determined	2014-27	Investigation / Research / Monitoring	Not yet determined	Environment Agency	Natural England

Proposed update of Action 1B

Action	*Action description*	*Cost estimate*	*Timescale*	*Mechanism*	*Funding option*	*Delivery lead body*	*Delivery partner(s)*
1B	Evidence base: biology Improve the evidence base, on the effects of algal mats on the feeding behaviour and prey availability (benthic invertebrates) of waders and wildfowl. This could help refine whether standards for Poole Harbour SPA need to be more stringent than Water Framework Directive (WFD) Good Ecological Potential (the harbour is classified as Heavily Modified). **ACTION COMPLETED** References: Thornton, 2016; Thornton *et al*, 2020.	Not yet determined	2014-27	Investigation / Research / Monitoring	Not yet determined	Environment Agency	Natural England

Proposed update of Action 1C

Action	*Action description*	*Cost estimate*	*Timescale*	*Mechanism*	*Funding option*	*Delivery lead body*	*Delivery partner(s)*
1C	<u>Evidence base: water quality*</u> Continue and extend monitoring to appropriate locations and frequency in catchment groundwater and rivers, in the harbour and selected bays and in sediment, and in tidal exchange with Poole Bay, reporting on a cycle aligned to Water Framework Regulation planning, that will: • detect change in emissions from pollutant sources, in loads entering the harbour and in concentrations in the harbour, • determine whether actions are on track to deliver agreed nutrient limits by agreed dates. • inform relationships with the marine ecology and its condition, and • inform the science base and improvements in modelling water pollutant limits, * Includes Total Nitrogen and Total Phosphorus concentrations and loads, and in the harbour also light attenuation.	Not yet determined	2014-27	Investigation / Research / Monitoring	Not yet determined	Environment Agency	Natural England Wessex Water Services Ltd

New action

Action	*Action description*	*Cost estimate*	*Timescale*	*Mechanism*	*Funding option*	*Delivery lead body*	*Delivery partner(s)*
1D	<u>Nutrient limits</u> Disseminate the findings of Natural England's science-based evidence report on setting nutrient pollutant limits for Poole Harbour that favours saltmarsh and eelgrass dominance conducive to the bird features and the ecology of their supporting habitats. Gain agreement of relevant delivery bodies to make provision to go beyond the interim nutrient limits (see action 1E), potentially to a limit in the region of 1,000 t/yr N, from 2030. Reference: Kite *et al*, 2020.	Mostly NE in-house; part not yet determined	By 2024	Investigation / Research / Monitoring	NE evidence funding	Natural England	Environment Agency

New action

Action	*Action description*	*Cost estimate*	*Timescale*	*Mechanism*	*Funding option*	*Delivery lead body*	*Delivery partner(s)*
1E	<u>'Interim' nutrient limits</u> Complete by 2030 the implementation of actions by delivery bodies and nutrient source sectors that will reduce nutrient losses to achieve at least interim nutrient limits, these being limits identified by Environment Agency/Natural England from modelling scenarios controlling opportunistic macroalgae abundance: - 1,500 t/yr N, - 22 t/yr P as load inputs into Poole Harbour from the landward catchment. (35% reduction of N and 57% reduction of P compared to 2010 baseline inputs.) Establish buy-in from each sector to deliver their 'fair share' contribution towards reaching the interim limits and understanding on the connection of this delivery with meeting legislative environmental targets and commitments set out in the government's Environmental Improvement Plan 2023. Reference: Bryan *et al*, 2021.	Not yet determined	2021-30	Advice: Negotiation	Not yet determined	Environment Agency	Natural England

New actions, in part replacing Action 1H

Action	*Action description*	*Cost estimate*	*Timescale*	*Mechanism*	*Funding option*	*Delivery lead body*	*Delivery partner(s)*
1F	<u>Agricultural sector</u> Partnership the agricultural sector to achieve high regulatory compliance and incentivise high nutrient efficiency, uptake of technological advances and change in farm practices, systems and land use (including, for example, through assurance schemes, environmental land management schemes and emerging natural capital trading markets) whereby nutrient loss to Poole Harbour catchment from agricultural land is reduced to a sector interim limit of: - 1127 tonnes/yr N (equivalent to a mean of about 18 kg N/ha agricultural land). - 3.5 tonnes/yr P, Note: Aim to incentivise especially change that delivers more rapid reduction of N and P entering the harbour and environmental co-benefits (e.g. carbon reduction and biodiversity increase).	Not yet determined	By 2030	Compliance visit – regulatory, Advise on or enforcement – Slurry Silage & Agricultural Fuel Oils, Advise on or enforcement – Nitrate Vulnerable Zone, Advise on or enforcement – Farming Rules for Water, Regulation: Application of Habitats or Birds Directives / Habitat Regulations, Voluntary trading scheme, Water Protection Zone, Project funded extensive land use change scheme	Defra, Environment Agency, financial institutions, natural capital trading	Environment Agency, National Farmers' Union (NFU),	Natural England, Country Land and Business Association (CLA), Poole Harbour Nutrient Management Scheme Management Board, Poole Harbour Catchment Initiative

Action	*Action description*	*Cost estimate*	*Timescale*	*Mechanism*	*Funding option*	*Delivery lead body*	*Delivery partner(s)*
1G	<u>Aquaculture sector (fish farms and watercress farms)</u> Subject to any refinement of 2010 baseline emissions, modify environmental permits (Pollution Prevention and Control – PPC) that will reduce, directly or indirectly (through for, example, market trading), nutrient load emissions to Poole Harbour to a sector interim limit of: - 38 t/yr N - 1.5 t/yr P See also Action 1H on Nitrogen Neutrality.	Not yet determined	By 2030	Regulation: Environmental Permits, Application of Habitats or Birds Directives / Habitat Regulations	Private/ Business	Environment Agency	Fish farm and watercress farm companies

Proposed update of Action 1D

Action	*Action description*	*Cost estimate*	*Timescale*	*Mechanism*	*Funding option*	*Delivery lead body*	*Delivery partner(s)*
1H	<u>Development growth</u> Implement Nutrient Neutrality for development growth in the catchment. Do this by establishing and maintaining projects that remove or offset through genuine reductions the additional nutrient input into the catchment in perpetuity, including through Local Planning Authority Development Plans and Supplementary Planning Documents and by regulatory limits on Total Nitrogen and Total Phosphorus in wastewater discharges and reductions in sewer overflows.. See Action 1I for interim limits on N and P from foul sewer wastewater. Reference: Borough of Poole *et al*, 2017.	Not yet determined	2015 onwards	Application of Habitats or Birds Directives / Habitat Regulations, Supplementary Planning Document (Nitrogen Reduction in Poole Harbour), Existing Local Project, Water Industry Asset Management Plan (AMP): Implement Plan Scheme	Community Infrastructure Levy (CIL), S106 Agreement, Wessex Water Business Plan and Asset Management Programmes	Dorset Council, BCP Council, Environment Agency Wessex Water Services Ltd	Natural England, Environment Agency

Proposed update of Actions 1E, F and G

Action	*Action description*	*Cost estimate*	*Timescale*	*Mechanism*	*Funding option*	*Delivery lead body*	*Delivery partner(s)*
1I	<u>Water company wastewater sector</u> Modify environmental permits (Pollution Prevention and Control – PPC) to achieve improvements, directly or indirectly (through, for example, market trading), that will reduce nutrient load emissions to Poole Harbour catchment from wastewater treatment works and foul sewer overflows to a sector interim limit (excluding measures for Nutrient Neutrality) of: - 209 t/yr N - 16.5 t/yr P	Not yet determined	2021-2035	Regulation: Environmental Permits, Water Industry Asset Management Plan (AMP): Implement Plan Scheme	Wessex Water Business Plan	Environment Agency	Wessex Water Services Ltd

	Improvements in phosphorus removal treatment to a Technically Acceptable Level of 0.25 mg/l Total Phosphorus in wastewater effluent provides a technical ability for the water company wastewater sector to go further and reduce their load emissions to below 9.4 t/yr P, achieving the 'interim' P load limit into the harbour without reductions by other sectors compared to their 2010 baseline inputs. Actions required, but not exclusively so, are: - high regulatory compliance (e.g. on standards under the Urban Waste Water Treatment Regulations including those for Poole Harbour as a Sensitive Area, and on standards for Shellfish Waters, Bathing Waters and ground and surface waters), - adequately improved treatment - adequate removal of wastewater discharges into sheltered bays within the harbour (e.g. Holes Bay) - projects that offset wastewater nutrients. See also Action 1H on Nutrient Neutrality.						

Proposed revisions to Action 1H

Action	*Action description*	*Cost estimate*	*Timescale*	*Mechanism*	*Funding option*	*Delivery lead body*	*Delivery partner(s)*
1J	<u>Urban land use sector: local authority</u> Implement policy across relevant local authority functions (e.g. building regulation, highways, surface water drainage, open spaces, public health) and in statutory documents and guidance to others that by way of reducing nitrogen and phosphorus at source, including aerial sources, and removing these nutrients from drainage pathways contributes to achieving sector interim limit to Poole Harbour catchment from urban areas of: - 78 t/yr N, - 0.5 t/y P See also Action 1K on water company function relevant to this sector and Action 1H on Nutrient Neutrality.	Not yet determined	To 2030	Application of Habitats or Birds Directives / Habitat Regulations	Community Infrastructure Levy (CIL), S106 Agreement; local authority budget, clean air zone	Dorset Council, BCP Council	Wessex Water Services Ltd, Poole Harbour Catchment Initiative

Action	*Action description*	*Cost estimate*	*Timescale*	*Mechanism*	*Funding option*	*Delivery lead body*	*Delivery partner(s)*
1K	<u>Urban land use sector: water company</u> Implement Drainage Wastewater Management Plans for urban areas that by way of addressing nutrient emissions at source (e.g. foul sewer misconnections) and removing nutrients from drainage pathways contributes to achieving sector interim limits to Poole Harbour catchment from urban areas of: - 78 t/yr N, - 0.5 t/yr P See also Action 1J on local authority function relevant to this sector and Action 1H on Nutrient Neutrality.	Not yet determined	2021-2030	Water Industry Asset Management Plan (AMP): Implement Plan Scheme, Application of Habitats or Birds Directives / Habitat Regulations	Wessex Water Business Plan	Wessex Water Services Ltd,	Dorset Council, BCP Council, Poole Harbour Catchment Initiative

Action	*Action description*	*Cost estimate*	*Timescale*	*Mechanism*	*Funding option*	*Delivery lead body*	*Delivery partner(s)*
1L	<u>Other wastewater treatment sector: non-water company works</u> Modify environmental permits (Pollution Prevention and Control - PPC) for wastewater treatment works (e.g. Package Treatment Plants and private STWs) that will, directly or indirectly (through, for example, market trading), and taking account of action on small sewage discharges – see Action 1M, contribute to achieving sector interim limit to Poole Harbour catchment of: - 10 t/yr inorganic nitrogen, - 0.1 t/yr P Actions required, but not exclusively so, are: - adequately improved treatment - connection to mains sewerage - projects that remove or offset wastewater nutrients while delivering other public benefits, notably carbon zero, catchment run-off attenuation, cleaner and re-use of water resources (e.g. effluent re-use) and biodiversity net gain (including nature designated sites in favourable condition and more resilient to climate change). See also Action 1H on Nutrient Neutrality.	Not yet determined	By 2030	Regulation: Environmental Permits, Application of Habitats or Birds Directives / Habitat Regulations	Private/ Business, Wessex Water Business Plan	Environment Agency	Wessex Water Services Ltd,

Action	*Action description*	*Cost estimate*	*Timescale*	*Mechanism*	*Funding option*	*Delivery lead body*	*Delivery partner(s)*
1M	<u>Other wastewater treatment sector: small sewage discharges</u> Implement improvements to small sewage discharges (e.g. septic tanks) that will (in taking account of action on non-water company works – see Action 1L) reduce nutrient load emissions to Poole Harbour catchment and contribute to achieving sector interim limit of: - 10 t/yr N - 0.1 t/yr P Actions required, but not exclusively so, are: - advice to homeowners and business on maintaining performance of septic tanks - requisition of rural first time sewage schemes See also Action 1H on Nitrogen Neutrality.	Not yet determined	To 2035	Advice: Other, Water Industry Asset Management Plan (AMP): Implement Plan Scheme, Application of Habitats or Birds Directives / Habitat Regulations	Private/ Business, Wessex Water Business Plan	Dorset Council, BCP Council, parish councils	Wessex Water Services Ltd, Poole Harbour Catchment Initiative

Action	*Action description*	*Cost estimate*	*Timescale*	*Mechanism*	*Funding option*	*Delivery lead body*	*Delivery partner(s)*
1N	<u>Poole Harbour boats and other harbour use sector</u> Implement projects that will reduce nutrient load emissions into Poole Harbour. An interim limit for this sector has not been determined.					Natural England, Poole Harbour Commissioners	Litter Free Coast and Sea, Poole Harbour Catchment Initiative

Action	*Action description*	*Cost estimate*	*Timescale*	*Mechanism*	*Funding option*	*Delivery lead body*	*Delivery partner(s)*
1O	<u>Recovery of catchment ecosystem processes</u> In formulating and delivering plans, projects and in discharging other duties under the Habitats Regulations for marine European sites (including Local Nature Recovery Strategies and delivery of UK government initiatives such as to protect 30% of UK land to support the recovery of nature and to reduce greenhouse gas emissions to net zero by 2050) embed measures that enable recovery of catchment ecosystem services to cleanse nutrients from water draining to the harbour by for example: - rewetting drained land - restoring a dynamic interconnection between watercourses and their floodplains throughout the year - providing woodland, including wet woodland on floodplains - providing habitat space for re-colonisation of beaver - enabling watercourses and ditches to become structurally complex (includes less cleaning out) - creating new wetland that intercepts high nutrient groundwater particularly from specific sources such as springs	Not yet determined	2021-2030	Advice, Designation strategy: Other, Regulation: Flood Defence Consent, River and floodplain rehabilitation plan, New Environmental Land Management Scheme	Not yet determined	Natural England	Environment Agency, Poole Harbour Catchment Initiative, DEFRA, Wessex Water Services Ltd, Dorset Council, BCP Council,

Proposed revision of Action 1L

New actions

Action	*Action description*	*Cost estimate*	*Timescale*	*Mechanism*	*Funding option*	*Delivery lead body*	*Delivery partner(s)*
1O	Bio-remediation Improve the evidence base and trial the ecological effectiveness of bio-remediation approaches, including shellfish cultivation and seeding, saltmarsh stabilisation and planting, seagrass restoration and planting, and opportunistic macroalgae removal, in providing resilience to a naturally structured and functioning marine system favouring saltmarsh and eelgrass dominance conducive to the bird features and the ecology of their supporting habitats.	Not yet determined	2021-27	Investigation / Research / Monitoring	Not yet determined	Natural England	Environment Agency, Southern IFCA, BCP Council, research institutions

Action	*Action description*	*Cost estimate*	*Timescale*	*Mechanism*	*Funding option*	*Delivery lead body*	*Delivery partner(s)*
1Q	Other pollutants Improve the evidence base on metals and synthetic chemical pollutants that may impact on the bird features and the ecology of their supporting habitats, particularly substances that exceeded legislative limits in the water environment during monitoring period 2013-19 (Polybrominated diphenyl ethers (PBDE), mercury and Its compounds and Tributyltin compounds), and identify actions to reduce the impacts of these substances	Not yet determined	2021-27	Investigation / Research / Monitoring	Not yet determined	Environment Agency	Natural England

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