



Poole Harbour Baseline Document for Maintenance Dredging Protocol



Compiled by
Poole Harbour Commissioners
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Part 1 Introduction

1.1 Summary

This document is designed to accompany applications for licences for maintenance dredging and disposal within the area of Poole Harbour. It provides information that is required to ensure that under the Conservation of Habitats and Species Regulations 2010 (Ref 4.4.12) it can be shown that there is no adverse effect on the integrity of the European sites in the vicinity as a result of maintenance dredging.

In addition, the scope of the document is such that it may be used for a similar purpose with respect to other conservation related designations in the area, including SSSIs, Marine Conservation Zones, Water Framework Directive and locally designated sites.

The document should be considered in the light of the fact that maintenance dredging of a similar nature has occurred in Poole Harbour since well before any of these designations were developed. The indication therefore must be that with the present knowns, the basic practice of maintenance dredging in Poole Harbour is unlikely to have a significant adverse effect on the conservation interests.

This document will need regular review and updating so that it remains valid as a baseline for consents for future work. The Poole Harbour Commissioners are responsible for this updating, however input is required from time to time from the statutory agencies and key stakeholders in the area.

1.2 Purpose of Document

Where maintenance dredging operations have the potential to affect Habitat Directive sites, the Government considers that maintenance dredging should be considered a 'plan or project' for the purposes of the EC Habitats Directive (92/43/EC), and be assessed in accordance with Article 6(3) of the Directive. As outlined in Maintenance Dredging & The Habitats Regulations 1994 – a Conservation Assessment Protocol for England (2007) (Ref 4.4.11), the aim of the protocol is therefore to collate relevant information into a baseline document to make the process of assessing the effect of repeated similar maintenance dredging applications more straightforward for all parties. In addition, this document should be used as the basis for assessing the effect of maintenance dredging on areas designated under other legislation including SSSIs, MCZs and local nature reserves. The information held in this document should serve also to assist in the determination of 'no deterioration' under the requirements of the Water Framework Directive. This document provides the basis against which any future maintenance dredging application within Poole Harbour and its approach channels can be assessed by the regulator, the Marine Management Organisation (MMO). Consequently, it is important that the document is regularly updated. The Channel Deepening Environmental Impact Assessment (2005/6) (Ref 4.4.1) and the

subsequent monitoring reports provide understanding of the harbour regime which has informed this document.

This document incorporates the Sediment Management Plan (Ref 4.4.2.1, Appendix VII) agreed following the channel deepening in 2006 and complies with the Conservation Assessment Protocol for Maintenance Dredging (Ref 4.4.11) in relation to the Conservation of Habitats and Species Regulations 2010 (Ref 4.4.12). This has been prepared using available information in relation to both historic and current dredging developments. The Channel Deepening Environmental Impact Assessment (Ref 4.4.1) providing a data framework, from which the data can be analysed

This plan covers every aspect of the Harbour's maintenance dredging which includes both PHC and any other licensed operators who conduct this type of operation in the area. This umbrella approach allows a simple and efficient control mechanism for the recurring process of dredging and maintains the stability of the Harbour's environment.

1.3 Description of Area



Fig 1.1 Poole Harbour and Surrounds

Poole Harbour is essentially part of a drowned river valley which was formed, along with Poole Bay, when the rising sea broke through the chalk ridge which had connected Old Harry Rocks in Studland Bay with the Needles in the Isle of Wight. The Harbour was formed at the end of the last Ice Age, around 7,000 years ago. The mudflats and saltmarshes that characterise the present state of the Harbour have developed since then.

The Harbour, about 3,600 ha in area, consists of a main basin containing several small islands and two subsidiary basins, Holes Bay and Lytchett Bay. It is dominated by intertidal sedimentary flats and shallow subtidal shoals. Muddy shores are most prevalent within the relatively wave-sheltered south-western quadrant of the main basin, and the recesses of Holes Bay and Lytchett Bay (see Fig 1.1), where the upper levels of muddy shores are typically colonised by saltmarsh.

Poole Harbour is located to the west of Poole Bay, which extends 20km from Durlston Head in the south-west to Hengistbury Head in the east. Within Poole Bay (in addition to Poole Harbour entrance), there are three other smaller Bays – Durlston Bay, Swanage Bay and Studland Bay – and the long sandy shoreline of Poole, Bournemouth and Boscombe. The navigational entrance to Poole Harbour is via the Swash Channel, presently maintained to a published depth of 7.5m below CD. To the east of the channel there is a large sand bar (Hook Sands), separated from the coastline by the East Looe.

While the majority of the Harbour is thoroughly sheltered from outside maritime influence, the morphology of the principal channel beds is such that the further from the Harbour entrance, the finer the material that settles out.

The most comprehensive study of the Harbour morphology was that carried out in conjunction with the preparation of an impact assessment into proposed channel deepening, dated November 2004 (Ref 4.4.1).

1.4 Legislation

1.4.1 Marine Act

The Marine and Coastal Access Act 2009 established the Marine Management Organisation (MMO), bringing together decision-making powers linked with delivery mechanisms. The functions of the MMO include marine planning, fisheries, protecting the environment and marine works licensing; with an emphasis on sustainable development.

The MMO has taken over the roles and functions relating with the Department of Energy and Climate Change (DECC) and the Department for Transport (DfT). In addition the MMO has integrated information from the Marine and Fisheries Agency (MFA) and will work as a cross-government delivery partner.

In line with Marine Licensing Guidance 3 (Dredging, disposal and aggregate dredging) April 2011 (Ref 4.4.13) requirements for a marine licence from April 2012 will consist of:

- a. Any disposal activity will require a marine licence
- b. All third party dredging within Poole Harbour Commissioners' jurisdiction will require both a marine licence and a Poole Harbour Works Licence
- c. Dredging by Poole Harbour Commissioners under Section 22 of the Poole Harbour 1914 Act is still permitted and will not require any MMO marine licence.

In addition, under the Marine Act, there is a requirement to designate Marine Conservation Zones (MCZ) for the conservation of habitats & species. There are two proposed MCZs immediately outside Poole Harbour which have the potential to be subject to impact from the Poole Harbour Commissioners' maintenance dredging operations.

1.4.2 Poole Harbour Commissioners' Powers

The Commissioners are established under the Poole Harbour Acts and Orders 1756 to 2001. They have a statutory duty to maintain and improve the Harbour. This includes maintenance dredging of the existing channels and basins.

Section 22 of the Poole Harbour 1914 Act requires PHC to maintain as necessary and improve navigation in the form of dredging. All parties other than PHC who undertake maintenance or capital dredging within the Harbour Limits require a Harbour Works licence issued by PHC under Section 21 of the Act.

1.4.3 Habitats Regulations

The Habitats Regulations govern any development that is in or near a European Site (SAC or SPA). It is necessary for any Competent Authority to be satisfied following an Appropriate Assessment (AA) that a 'development' will not have a significant adverse effect on the features of that site. Any dredging operation within or adjacent to a designated European Marine Site (EMS) may also, in addition to the formal EIA, be subject to an Appropriate Assessment (AA) in accordance with the EC Habitats Directive (92/43/EEC).

Under Regulation 61 of the Habitat Regulations all Competent Authorities are required to carry out an AA if the proposed works are within or adjacent to a European Marine Site (EMS) and if it is likely to have a 'significant effect' on the site, either alone or in combination with other 'plans and projects'.

1.4.4 Water Framework Directive



Fig 1.2 Water Framework Directive Areas

The Water Framework Directive imposes the requirement that there should be no deterioration of the chemical or ecological status of waterbodies. Poole Harbour is designated as a heavily modified waterbody for reasons of coast protection and navigation, while the sea area outside Poole Harbour is part of the Dorset/Hampshire waterbody which is designated as heavily modified for coast protection purposes.

1.5 Maintaining Access

Maintenance dredging is 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 is the excavation of the seabed in an area or down to a level not previously dredged. As a rule of thumb the MMO considers that if no dredging has taken place on a site during the preceding ten years then the first dredge should be considered capital, however there may be exceptions where siltation rates are slow. Maintenance dredging is carried out routinely by Poole Harbour Commissioners to maintain depths in existing shipping channels and also by third party dredging operators, boatyards, marinas and yacht clubs, to maintain depths in and access to their sites. A Harbour Works Licence is required for all dredging operations within the Harbour and is issued by the Commissioners under their 1914 Act.

The need for maintenance dredging is driven by the economic need for both the Port and the small individual marinas etc to remain commercially viable. For this they have to be able to offer safe access for vessels at publicly declared depths.

Maintenance dredging within the Harbour is of two distinct types: the main bi-annual navigation channel dredging which is completed by a Contractor, usually with the use of a trailer suction hopper dredger; and the relatively small boatyard and marina dredging operations, using barges with backhoe or grab dredging plant. Historically the sediment dredged has been deposited at the licensed offshore site in Swanage Bay, but where possible suitable sediment is used for beach nourishment and more recently deposited within the Harbour. This practice is designed to maintain as much dredged material as possible within the natural harbour regime, thereby reducing net losses of sediment from mudflats and other intertidal areas.

The main bi-annual maintenance dredge to maintain the navigational depth of 7.5m below CD between the Port and the open sea involves the extraction of approximately 110,000 m³ of material from the main channels. This is comprised of approximately 42,000m³ of sandy material from the Swash Channel and another 41,000 m³ from the Middle Channel, with 26,000m³ of predominantly silty sediment dredged from the Turning Basin. This dredging process takes place over a period of approximately 3 weeks, operating 24 hours a day presently using a suitable trailer suction hopper dredger.

The smaller scale dredging of the marinas and boatyards varies from year to year. In the past 20 years 3,000m³ has been the minimum amount with 38,000m³ being the maximum. On average the figure is about 18,000 m³ a year, with a vast majority from Holes Bay. The backhoe/grab dredging plant utilised for this have a hopper capacity of between 200 m³ to 800 m³.

1.6 Tidal Flow & Sedimentation

Poole Harbour has a relatively small tidal range, being approximately 1.6m on springs, down to 0.5m on neap tides. The HR Wallingford Report EX4945, Rev 3 (Ref 4.4.1, Appendix 3) included in the Environmental Impact Assessment carried out for the 2005/6 Channel Deepening provides detailed information on tidal flows in various parts of the Harbour and a coarse indication of depth average tidal currents in the Harbour is shown in Fig 1.3 .

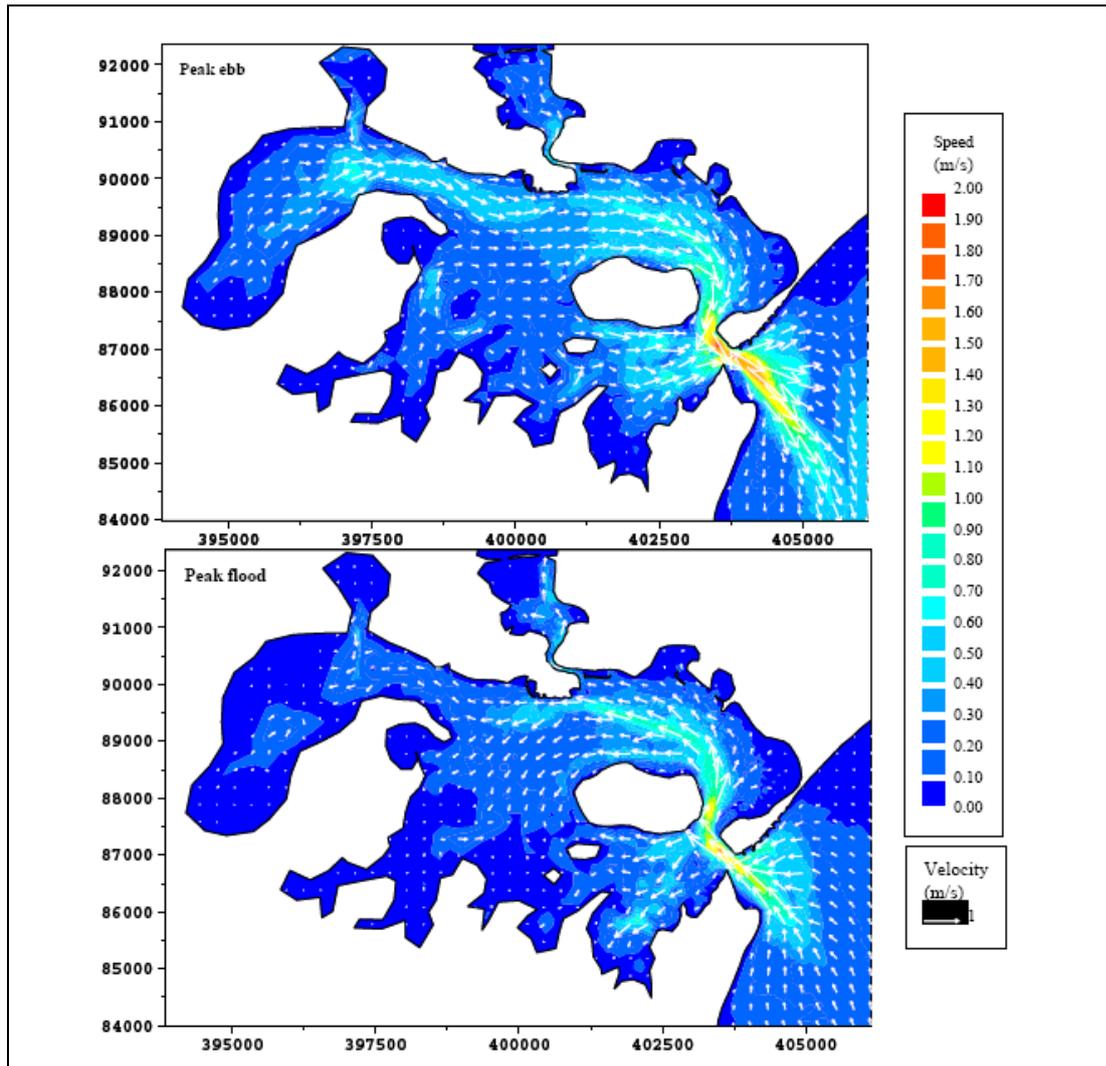


Fig 1.3 Predicted depth averaged tidal currents in Poole Harbour

In addition, earlier work carried out by SCOPAC produced an estimate of probable sediment input and transport paths through the Harbour, shown in Fig 1.4.

Poole Harbour: Sediment Transport



Fig 1.4 Sediment Flow

The conclusion from the EIA work was that following the Channel Deepening it should be expected that there would be a net loss of fine sediment from the Harbour of between 56-76,000m³ per annum.

As a result of this, a programme is now in hand for disposal of suitable fine dredged material within the Harbour so that it is no longer lost to the regime. Monitoring of this suggests that this is successful with no significant further loss of mudflat being recorded since the capital works were carried out.

Studies at the time of the Channel Deepening project 2005/6 show Saltmarsh coverage around the Harbour edges generally decreasing. An historical resume up to channel deepening was carried out by Dorset Environmental Records Centre (DERC) and included in the Harbour Monitoring Report 2007, (Ref 4.4.2.1 Appendix IX). A further report on Saltmarsh Monitoring has been included in the Harbour Monitoring Report 2011 (Ref 4.4.2.5 Appendix 2) showing a very minor decrease in area. We do not consider that this can be attributable to maintenance dredging.

Historically the decrease is less evident in the Upper reaches of the Harbour west of Rockley and towards Wareham. The intertidal mudflats fronting the remaining saltmarsh appear from surveys to be reducing in level where the dieback is most evident. Again there is little change where the saltmarsh is still well established.

Sediment input into the Harbour comes from four rivers as well as the drainage of several small creeks and cliff erosion on south west facing shoreline. The Frome and Piddle are the two major rivers that enter the Harbour, located to the west near Wareham. The smaller Sherford river discharges into Lytchett Bay and the Corfe river into Wych Lake to the south of the Harbour.

The table below displays the yearly sedimentation rate of the main channels and the other areas of the Harbour, having a total rate of sedimentation for the whole Harbour of 88,500m³ per annum. This data directly correlates with the maintenance dredging that is detailed in the next section. In relation to the volume of silt entering the Harbour system the erosion of the intertidal saltmarsh is estimated to be releasing between 17,500m³ to 26,250m³ of silt per annum, with the total amount of silt entering the Harbour, estimated between 20,000 m³ and 40,000 m³.

Location	Sedimentation m³/year	Material Type
Swash Channel	21,000	Sand
Middle Ship Channel	20,500	Predominantly Sand
Turning Basin	13,000	Predominantly Silt
Elsewhere in the Harbour	34,000	Predominantly Silt

1.7.1 Poole Harbour Special Protection Area

Parts of Poole Harbour are designated an SPA as it supports:

- Internationally important populations of regularly occurring species classified as Annex 1 under the Birds Directive. These are birds that are in danger of extinction, rare or vulnerable and are the subject of special conservation measures concerning their habitat. Annex 1 species in Poole Harbour are the Avocet, Mediterranean Gull and the Common Tern.
- Internationally important populations of regularly occurring migratory Black-tailed Godwit and Shelduck.
- An internationally important assemblage of waterfowl. The Harbour regularly supports over 20,000 birds.

Natural England's outline for the SPAs Nature Conservation Objectives is as follows;

- Subject to natural change, maintain in favourable condition the habitats for the internationally important populations of regularly occurring bird species, under the European Birds Directive, in particular:
 - Shallow inshore waters
 - Intertidal sediment communities
 - Saltmarsh
- Subject to natural change, maintain in favourable condition the habitats for the Internationally important populations of regularly occurring migratory bird species, under the European Birds Directive, in particular:
 - Shallow inshore waters
 - Intertidal sediment communities
 - Saltmarsh
 - Reedbed
- Subject to natural change, maintain in favourable condition the habitats for the internationally important assemblage of waterfowl, under the European Birds Directive, in particular:
 - Shallow inshore waters
 - Intertidal sediment communities
 - Saltmarsh
 - Reedbed

The SPA conservation objectives focus on habitat condition in recognition that bird populations may change as a reflection of national or international trends or events. The conservation objectives refer to maintaining habitats in a favourable condition and the Regulation 33(2) advice document, issued by Natural England, contains a table providing information on how to recognise favourable condition for the features and acts as a basis for the development of a monitoring programme.

1.7.2 Poole Harbour Site of Special Scientific Interest

The reason for designation as a Site of Special Scientific Interest was that Poole Harbour is one of the largest natural harbours in the world, a very high proportion of its area comprising intertidal marshes and mudflats. These, together with the permanent channels, support large numbers of wintering wildfowl and waders, for which Poole has national and international significance. Fringing habitats of heathland, grassland and the islands provide additional interests, in turn supporting further scarce and restricted flora and fauna.

1.7.3 Proposed Studland to Portland SAC

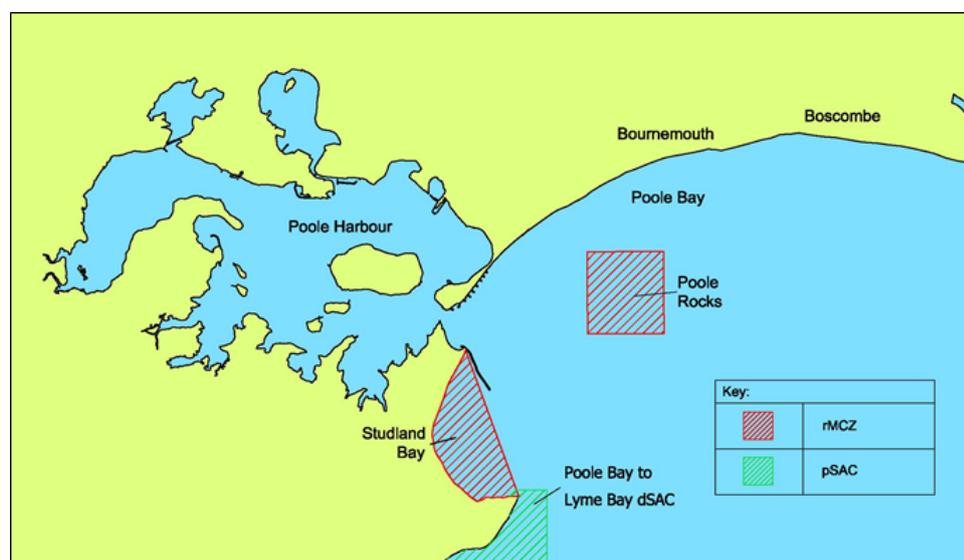


Fig 1.6 Proposed SAC & Recommended MCZs

Outside the main Harbour the proposed Studland to Portland Special Area of Conservation (SAC) is located as shown on Fig 1.6. This area is presently under consideration by Government by designation, the public consultation having been completed in 2011. The pSAC is proposed to be designated for 'the conservation of the Studland Bay to Ringstead bedrock and biogenic reefs'. It is likely to become a full SAC in late 2012, and there is potential for it to be affected by placement of dredged material on the Swanage Disposal Ground. It is therefore appropriate to consider it in this document.

1.7.4 Poole Rocks and Studland Bay Marine Conservation Zones (rMCZ)

Under the Marine Act it is proposed that there will be two Marine Conservation Zones in the vicinity of Swanage Disposal Ground. The designation of these zones is in process, and still subject to public consultation, scheduled for late 2012.

- Poole Rocks rMCZ is proposed to be designated for subtidal mixed sediments, subtidal sand, moderate energy circalittoral rock habitats, and for Couch's goby and the native oyster species.

- Studland Bay rMCZ is closer to the disposal ground and is designated for subtidal mixed sediments, subtidal sand, intertidal mud and intertidal sand and muddy sand habitats, together with eelgrass beds, short snouted seahorse, native oyster and undulate ray species.

1.8 Poole Harbour Commissioners Maintenance Dredging Policy

Poole Harbour Commissioners adopted a formal Maintenance Dredging Policy in 2005 (Appendix 1). This was developed following the impact assessment into the 2005/6 capital dredging project (Ref 4.4.1).

1.9 Sediment Management Plan

Again, as part of the impact assessment work into the 2005/6 capital dredge (Ref 4.4.1), the Poole Harbour Commissioners had a Sediment Management Plan prepared. This is included in the Harbour Monitoring Report 2007 (Ref 4.4.2.1 Appendix VII).

This Management Plan was adopted by Poole Harbour Commissioners and since 2006 they have concentrated on minimising quantities disposed of on the Swanage Disposal Ground, while maximising the amount of material disposed of within the Harbour and therefore kept within the sediment budget. These changes to practice have been monitored, and the monitoring reported in various reports published by PHC (Ref 4.4.2).

1.10 Disposal of Dredged Material

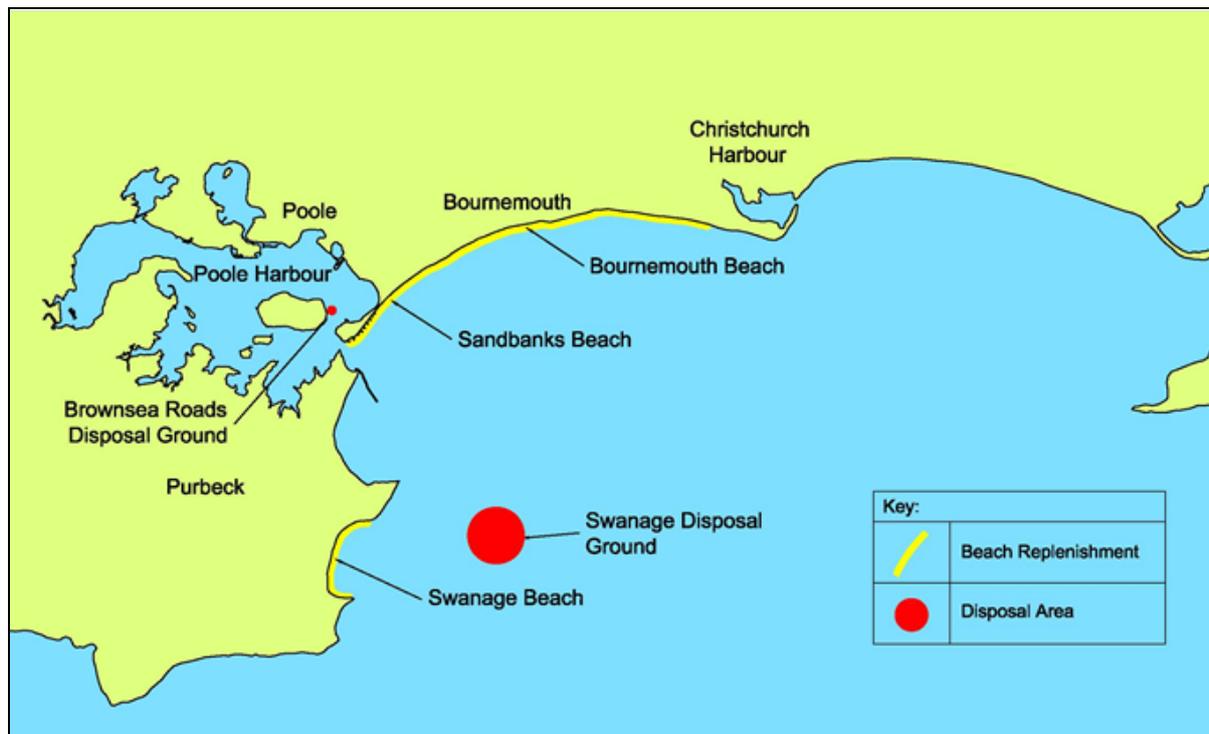


Fig 1.7 Disposal of Dredged Material

1.10.1 Out of Harbour – Swanage Disposal Ground (WI 110)

Offshore disposal takes place at the Swanage Disposal Ground located 5.6km off Swanage. This site has been utilised by PHC since at least the 1930's for both maintenance and capital dredged material and has also been used for disposal of dredgings from Weymouth.

1.10.2 Beneficial Use – Beach Recharge

Between 1989 and 2006 approximately 3 million cubic metres of sand that has been dredged from Poole Harbour and its approaches has been placed on the beaches of Poole, Bournemouth and Swanage as beach nourishment material. Whilst the majority of this has come from capital dredging and is not therefore subject to this document, there have been a number of campaigns carried out placing sand that has been dredged in the maintenance programme.

In accordance with current good practice, every opportunity to dispose of suitable material on beaches rather than at sea will be taken. However, such projects are not economically feasible in every case due to the need for participation by third parties. On occasions it is not possible to coordinate the need for maintenance dredging of suitable material with the programme of beach replenishment.

1.10.3 In Harbour Disposal – Brownsea Roads Disposal Ground (WI 111)

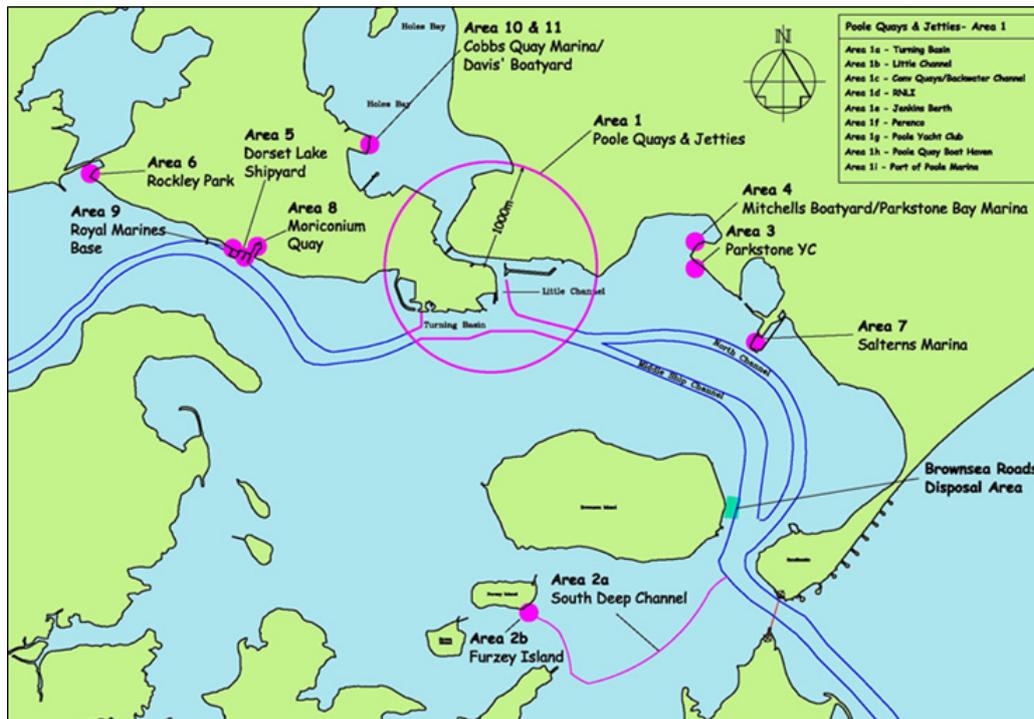


Fig 1.8 Dredging Sites suitable for Brownsea Roads Disposal Ground

As part of the work for the preparation of the Sediment Management Plan, HR Wallingford carried out a number of simulations of disposal of small quantities of fine material within Poole Harbour (Ref 4.4.2.1, Appendix VII, Annex 1). The most favourable from the point of view of low risk to adjacent sites and the ability to retain the fine material inside the Harbour (thereby remaining available for the sediment budget) was a site to the east of Brownsea Island, and show on Fig 1.8.

Since that date, the Brownsea Roads disposal site has been used for the deposition of up to 28,000t per annum of fine silty material arising from the main navigational channels, yacht havens and boatyards in the Harbour. Full details of the results of monitoring disposals at this site appear in Harbour Monitoring Reports (Ref 4.4.2).

1.11 Monitoring

Poole Harbour Commissioners maintain the resources to carry out most of the Harbour monitoring in-house. The result of this is that there are very thorough bathymetric records going back at least to the early 1970s. Earlier published information has been collated and studies made of long term changes within the Harbour.

Bathymetric surveys are routinely undertaken throughout the Harbour's channels for the purpose of navigation. These are conducted in line with international/national standards; 'IHO S44' and 'Code of Practice for UK Ports and Harbours' and in compliance with the Port Marine Safety Code. Poole Harbour Commissioners Standards and Procedures 3rd edition was produced detailing equipment and

methodology currently in use by PHC. Monitoring surveys are generally undertaken to a precision greater than that required by the standards for navigation alone.

Single beam sonar transects are used for the shoaler expanses and minor channels throughout the Harbour, and in more recent years multi beam/swath bathymetry has been used throughout the main shipping channels, berths and approaches to the Harbour, primarily for navigational safety. The increased resolution of multi beam soundings highlight relatively small seabed features such as sand waves which contribute to a better understanding of sediment movement along the channel bed.

A full review and comparison of all existing bathymetric survey data throughout the Harbour and approaches between 1785 and 2005 has previously been made and can be found in Poole Harbour Bathymetric Monitoring Project 2005 (Ref 4.3.1). As a result of Channel Deepening, a series of monitoring reports have been produced continuing the work of the 2005 report (Ref 4.4.2).

In addition to the bathymetric surveys, turbidity measurements and tidal flow data is collected using sensors attached to buoys and a bed frame positioned in various locations throughout the Harbour. The reason for collecting turbidity data was firstly to monitor the effects of dredging activities during dredging and disposal, and secondly to gain better understanding of the baseline conditions. The intention is, with the promotion of In-Harbour disposal, to continue monitoring both the bathymetry and turbidity levels regularly.

The level and frequency of monitoring carried out by PHC has evolved over many years to its current programme. As technology has advanced, the frequency and coverage of these surveys has increased allowing comparative results to be collected and analysed for change, and regular reports will continue to be prepared highlighting areas of notable change.

1.12 Capital Dredging

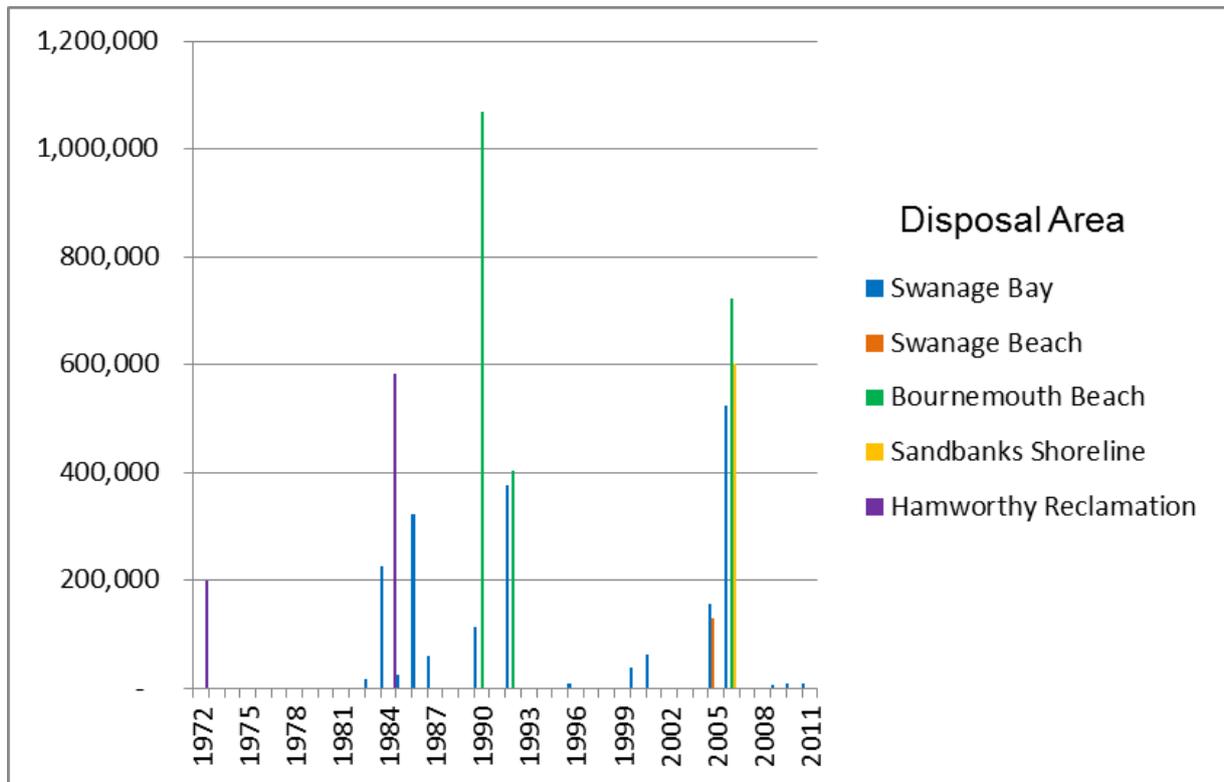


Fig 1.9 Capital Dredging 1972-2011

Although this document is concerned generally with maintenance dredging, it is useful to highlight capital dredging used to create land and improve shipping channels within the last 40 years.

In the early 1970s approximately 200,000m³ was dredged from the Hamworthy Shipping Basin and used for land reclamation at the Port of Poole. Further land reclamation and increasing the size of the shipping basin was carried out in the mid-1980s to include the creation of Poole Yacht Club.

Significant dredging of Middle Ship Channel was carried out in the late 1980s/early 1990s to deepen and widen access for cross channel ferries. A further major dredging exercise was carried out in 2005/6 to enable the latest generation of cross channel ferries to access the Port.

Besides land reclamation, sandy gravelly materials have been used over the last 20 years to recharge Poole, Bournemouth and Swanage beaches.

Part 2 Current Maintenance Dredging Information

2.1 Period of Study

Information provided in this chapter is based on activity during the ten years up to and including 2011. There are a number of reasons for choosing this period: firstly this equates to the maximum interval between dredges that is normally considered as maintenance dredging, and secondly this represents a period centred on the last major capital dredge in Poole Harbour. In the run-up to and since this period, controls have been improved, particular with regard to third party dredging. Regular use has been made for the first time of alternative disposal methods, particularly In-Harbour Disposal in Brownsea Roads. Earlier maintenance dredging records are of course still retained by Poole Harbour Commissioners.

2.2 Maintenance Dredging and Disposal

Descriptions and information regarding specific areas follow. Graphs throughout this section are generally shown with a vertical axis up to 10,000m³, and those with blue edges to the graphs are scaled appropriately to show the larger volumes.

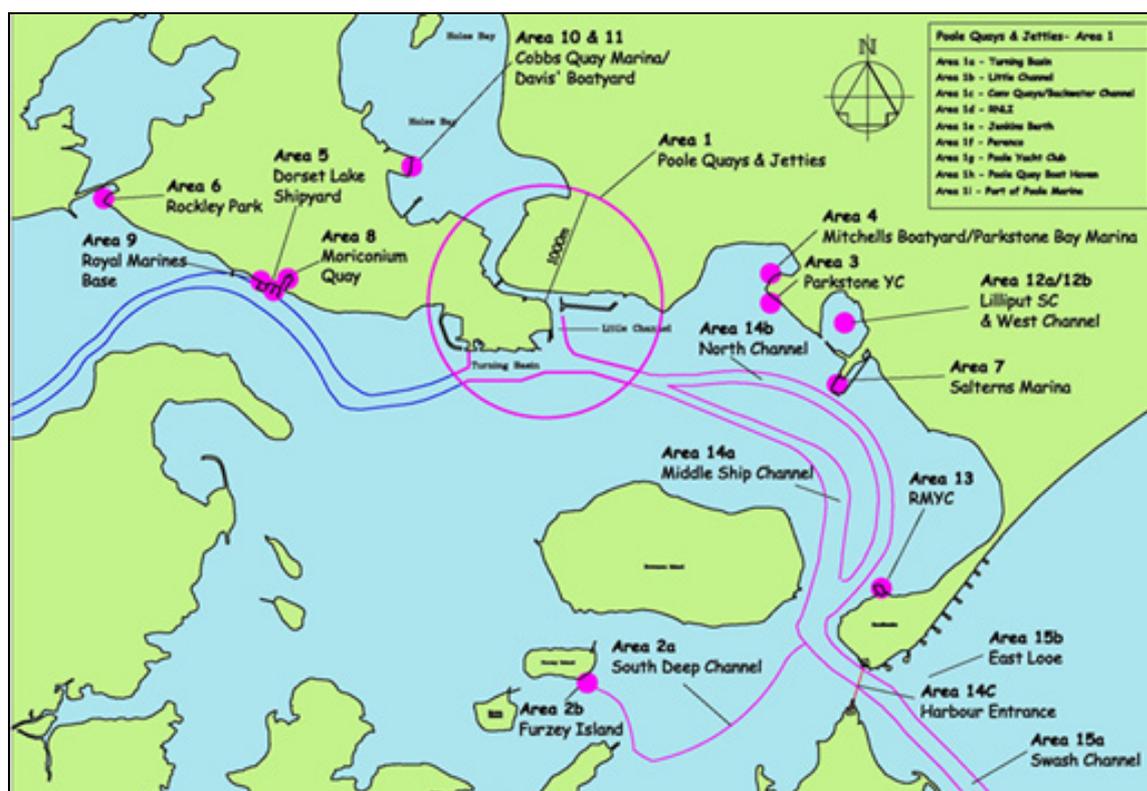


Fig 2.1 All Areas Dredged within Poole Harbour Commissioners' Jurisdiction

Generally west of Salterns Marina is silty and suitable for In-Harbour disposal with the east half of Middle Channel, Royal Motor Yacht Club and Swash Channel generally being suitable for beach renourishment. Significant progress has been made since 2008 in agreements with smaller boatyard and marina operators to

dispose In-Harbour. It is hoped to develop further In-Harbour disposal sites as outlined in HRW Report (Ref 4.4.2.1 Appendix VII, Annex 1). The ability to recharge beaches is dependent on available finance through the Environment Agency, generally economic viability is dependent on over 100,000m³ being available for placing on the beaches.

Fig 2.1 indicates all areas which are dredged within the Commissioners' jurisdiction and Fig 2.2 shows an enlarged view of Area 1, which covers all sections in the vicinity of the Port.



Fig 2.2 Area 1 - Dredging Areas within the Vicinity of the Port

2.3 Summary of Current Activity

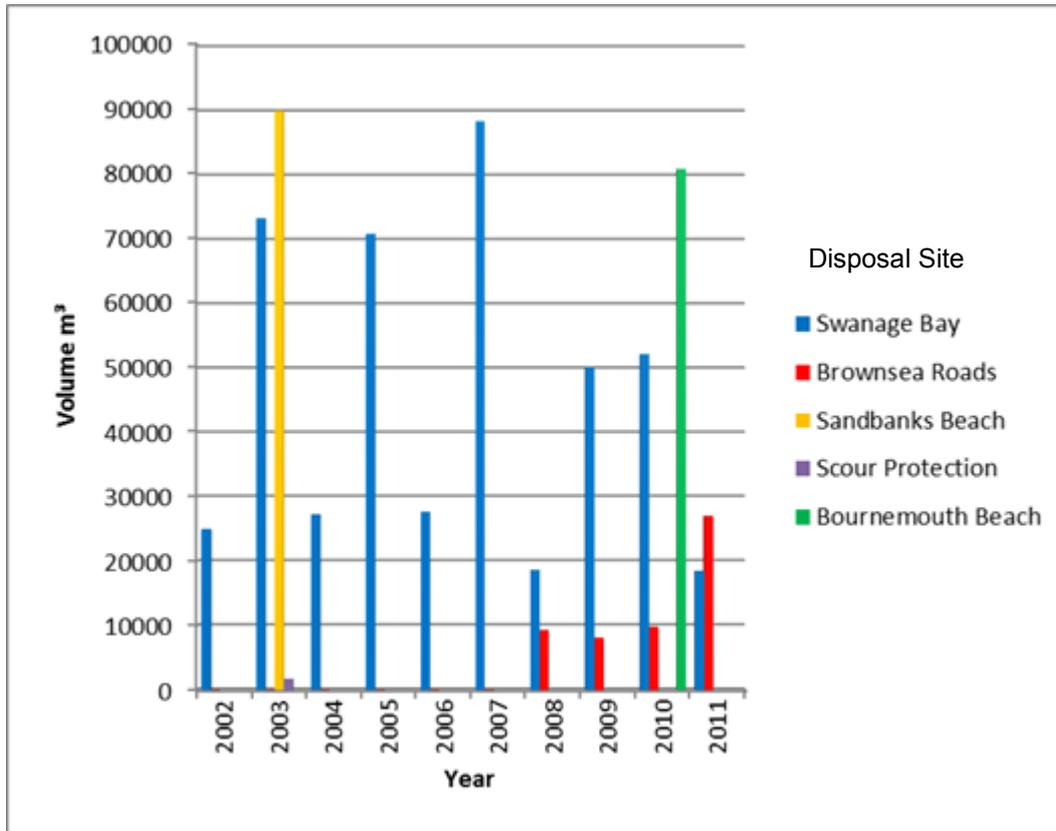
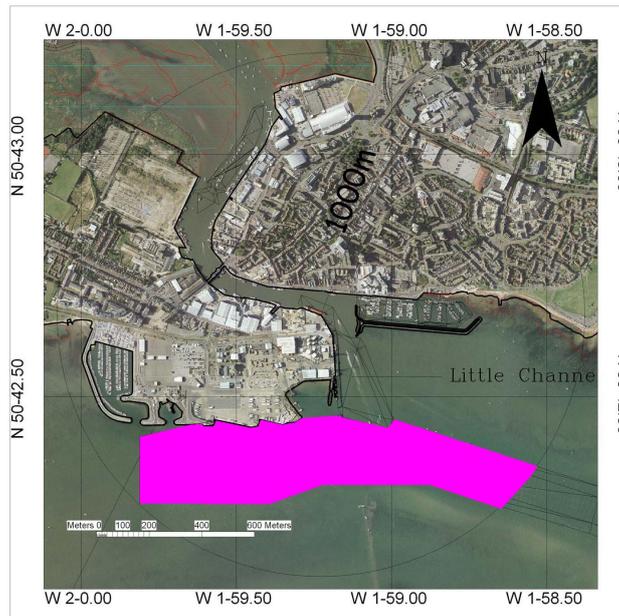


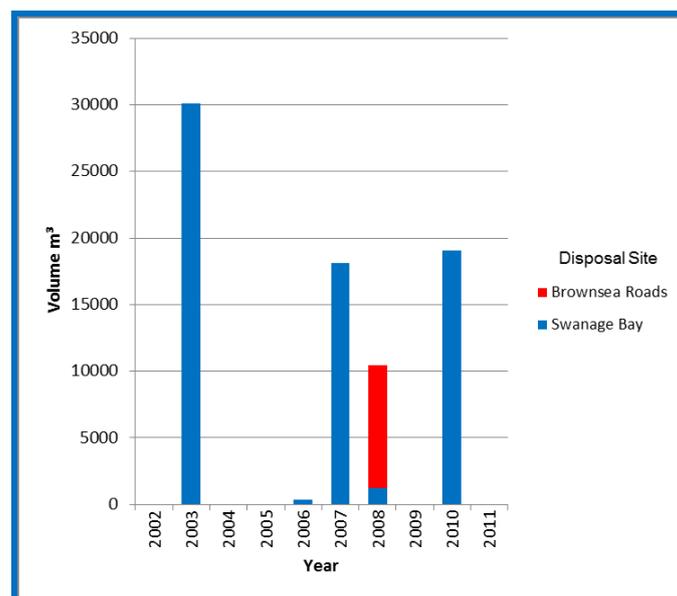
Fig 2.3 Maintenance Dredging 2002-2011

Fig 2.3 shows the total pattern of maintenance dredging throughout the last 10 years, with the bi-annual contract dredge quantities dominating the graph. In 2005/6 contract maintenance dredging was included in the capital project. Subject to the on-going monitoring regime, it is intended that dredging from marinas and channels will be evened out year on year. This however is quite difficult as although infill of marinas is consistent year on year, their requirements to dredge are dependent on other factors, particularly the economic climate.

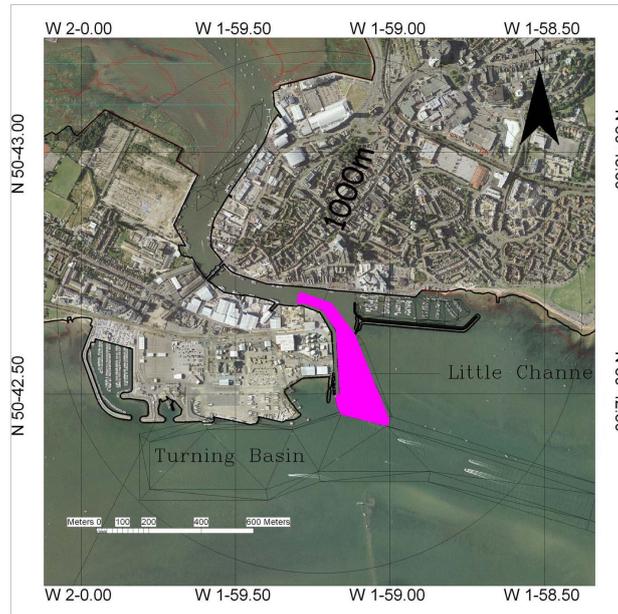
2.4 Area 1a Turning Basin



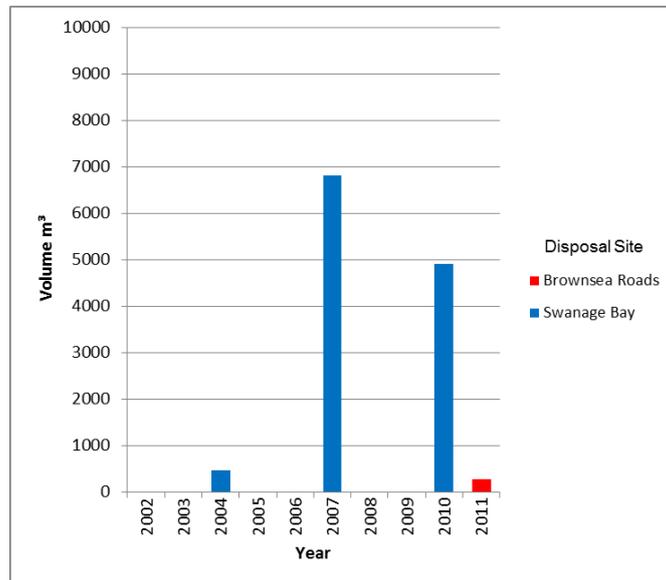
Turning Basin is the area dredged for the first time in 1972 and extended in 1984 to form the land reclamation now forming the majority of the Port of Poole's operational area. The basin gradually infills with silty sand and is generally cleared by trailer suction hopper dredger in a bi-annual maintenance dredging campaign. The quantity of material to be removed is generally greater than can be accommodated by In-Harbour disposal, however the long term plan is to reuse as much of this material within the Harbour as possible. Edges to the Turning Basin and Ro-Ro berths are trimmed on occasion by PHC grab dredger CH Horn, and that material is suitable for In-Harbour disposal. The annual infill is approximately 13,000m³.



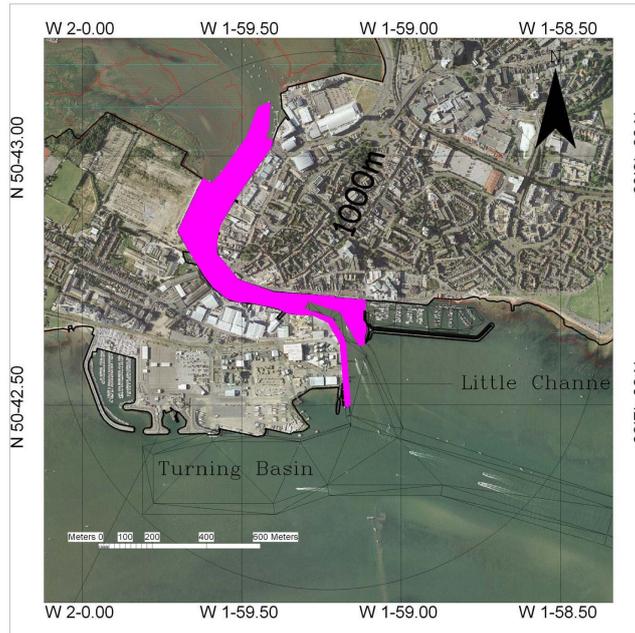
2.5 Area 1b Little Channel



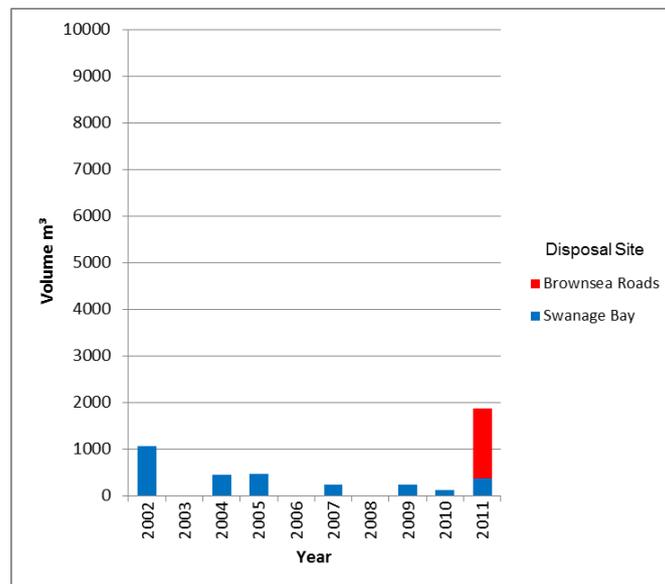
Little Channel was a natural channel connecting Holes Bay to the main Harbour. It has been subject to improvement from the 1930s onwards, and in 2006 a published depth of 6m below CD was achieved in this area. Although Little Channel fills in consistently and it is necessary to remove on average approximately 1,000m³ per annum, it is only dredged intermittently. This material is suitable for In-Harbour disposal.



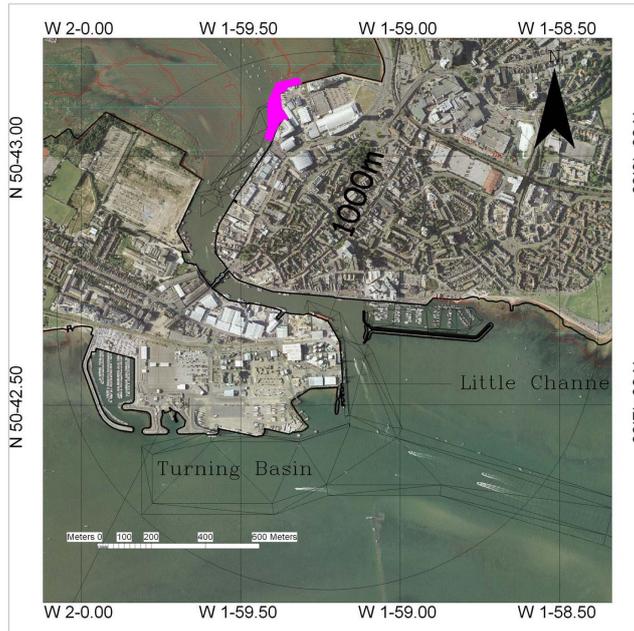
2.6 Area 1c Conventional Quays & Backwater Channel



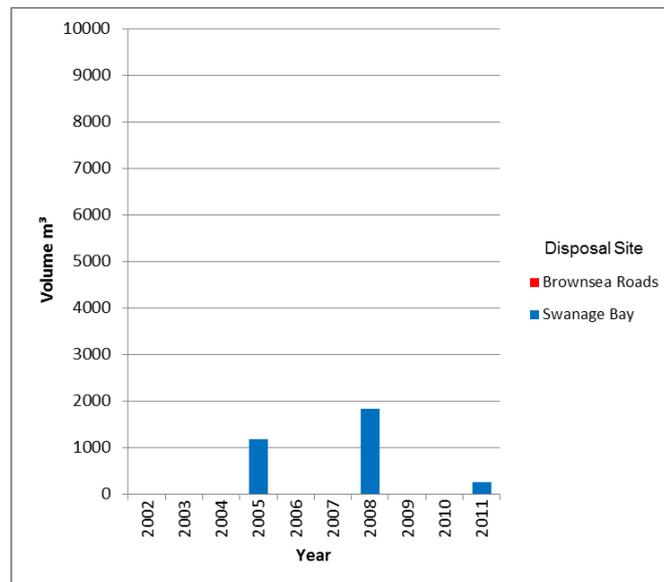
Following development of the Power Station quays in the 1950s there has been the occasional need to carry out maintenance dredging in the Backwater Channel and alongside the conventional quays adjacent to the Old Poole Bridge, including Town Quay. This material originates in Holes Bay and as such is suitable for In-Harbour disposal. However, Backwater Channel has some history of pollution and any material dredged here has to be tested and handled appropriately.



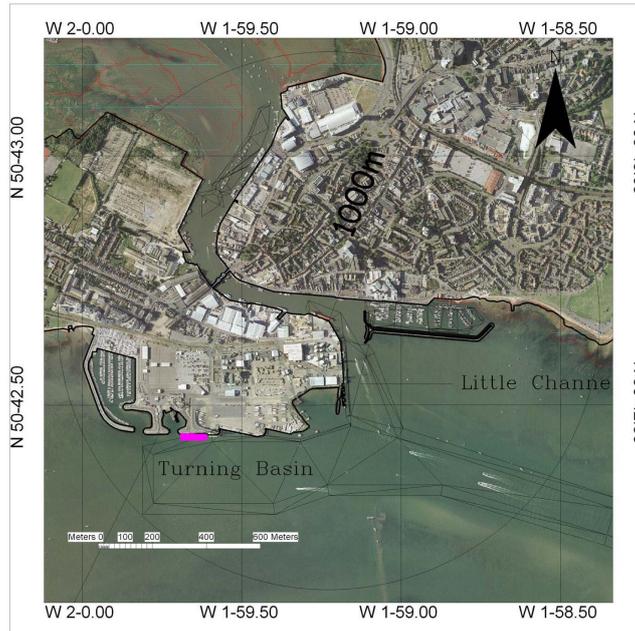
2.7 Area 1d RNLI



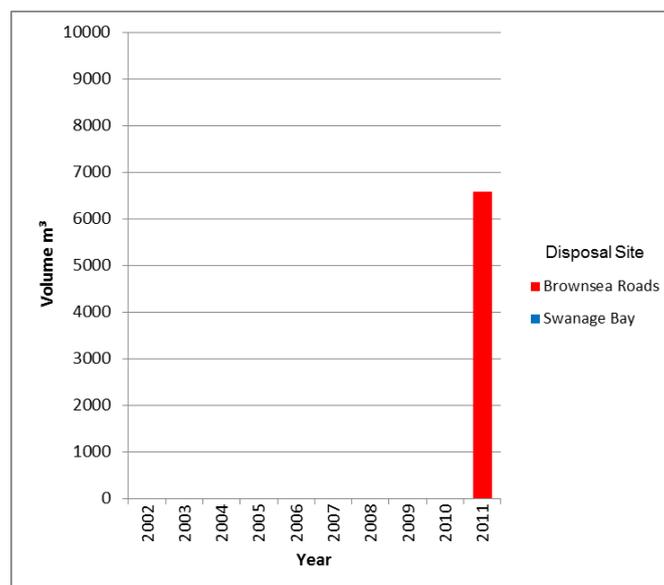
The RNLI berths at the north end of the Backwater Channel have historically been dredged every 3-4 years. This material, originating in Holes Bay, is suitable for In-Harbour disposal. Quantities are probably less than 1,000m³ per annum on average.



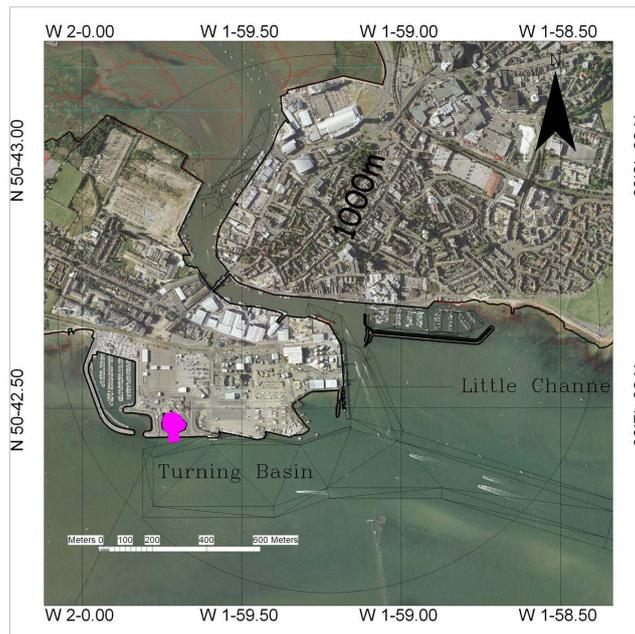
2.8 Area 1e Jenkins Berth



Jenkins Berth was constructed in 2011 and is situated on the north edge of the Turning Basin. As this area is not used by the cross channel ferries that turn in the vicinity, it has built up with material originating from the Turning Basin and deposits from the Wareham Channel area over several years. 6,000m³ was removed to In-Harbour disposal during 2011 (previous dredging was recorded under Turning Basin) and it is anticipated that with the constant use of the area there will be only an occasional need for dredging. Future deposits in the area are likely to be suitable for In-Harbour disposal.

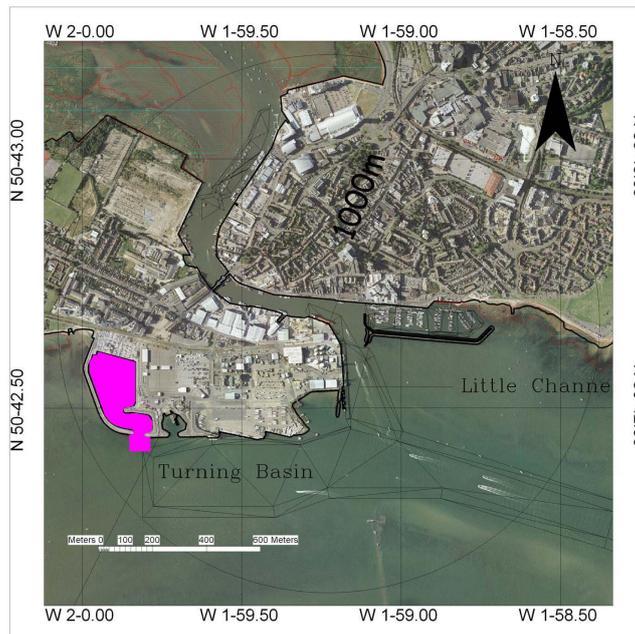


2.9 Area 1f Perenco Base

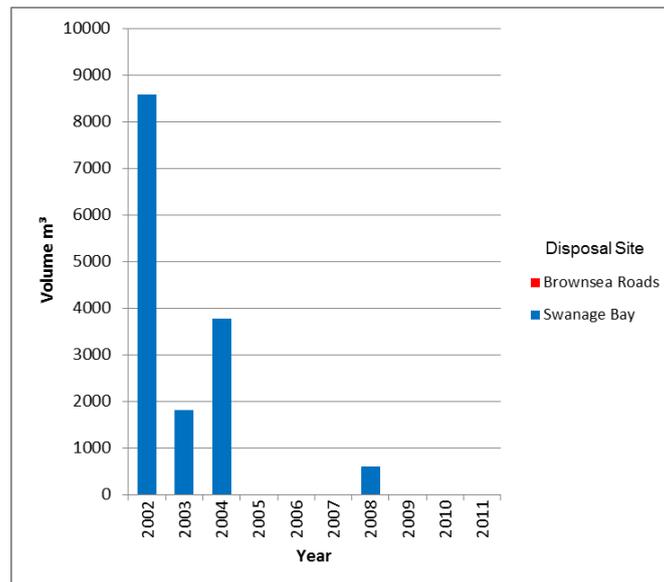


Perenco Base was constructed in the late 1980s by excavating into the Port Estate in order to service the oil extraction on Furzey Island. This basin gradually infills and requires clearing approximately every 10 years. The material is suitable for In-Harbour disposal. Most years approximately 200m³ is removed from the bottom of the slipway in this basin, and traditionally this has been measured under general Port quantities.

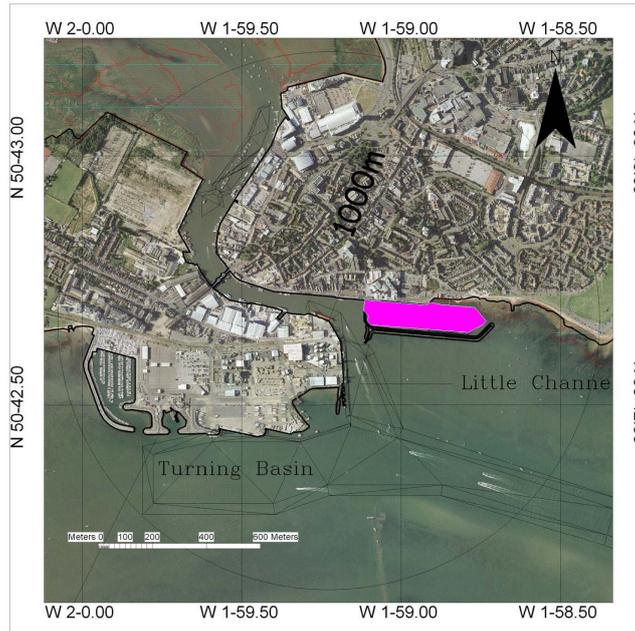
2.10 Area 1g Poole Yacht Club



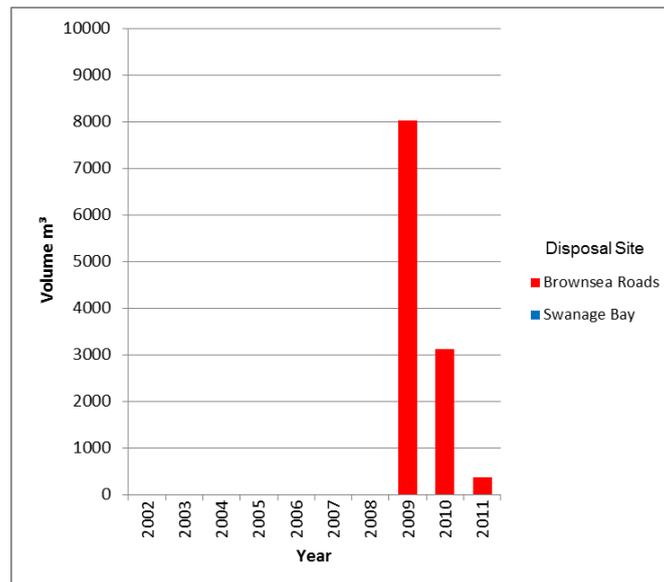
Poole Yacht Club was constructed as part of a land reclamation exercise in the mid-1980s. Infill is in the region of 1,500m³ per annum. As is the case with most marinas, for a dredging exercise to take place it is necessary to clear large areas of the marina and this leads to intermittent but intensive maintenance dredging. Significant work was carried out in the early 2000s and bathymetric levels indicate that significant work will be required shortly. The material is suitable for In-Harbour disposal.



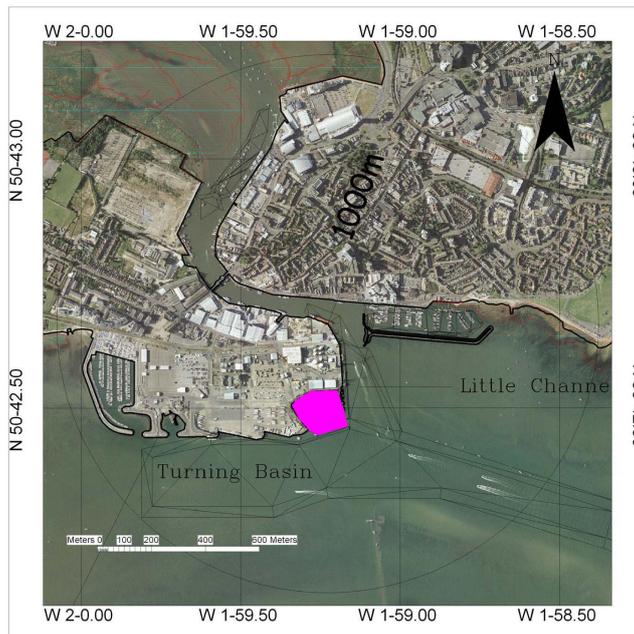
2.11 Area 1h Poole Quay Boat Haven



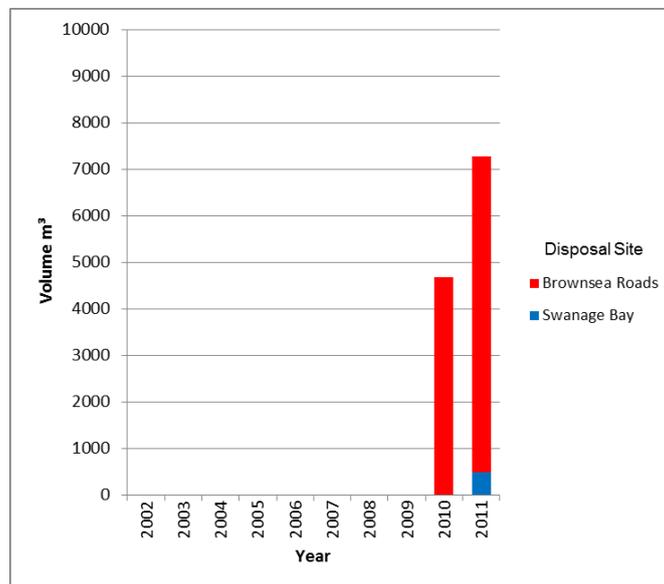
Poole Quay Boat Haven was constructed in 2001 and since that period has had a steady infill of material, probably originating from Holes Bay, of 4,000m³ per annum. Other than the original capital dredge, this is an area that has only been disposed of In-Harbour. The first maintenance dredging was required in 2008, and as this region is directly under the control of PHC, a policy of removing a consistent amount annually has been instigated. The 2008 figure in the graph results from a dredging campaign at either end of the summer season.



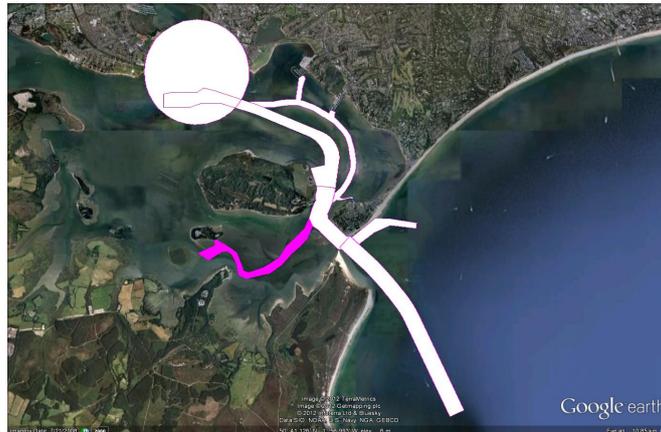
2.12 Area 1i Port of Poole Marina (Previously Ro-Ro 1)



Port of Poole Marina was established in 2011 in what was previously a ferry berth constructed in the early 1970s. The ferry berth had been out of action for several years and had silted up. It is anticipated that following the initial clearance an average of 1,000m³ per annum will need to be removed. This material is likely to be suitable for In-Harbour disposal.



2.13 Area 2a South Deep

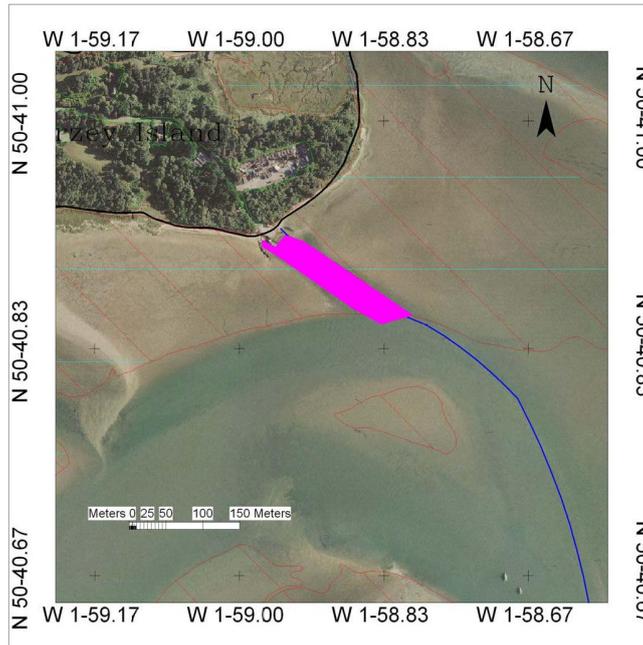


(The white outline denotes the extent of the Commissioners' current licence to dredge)

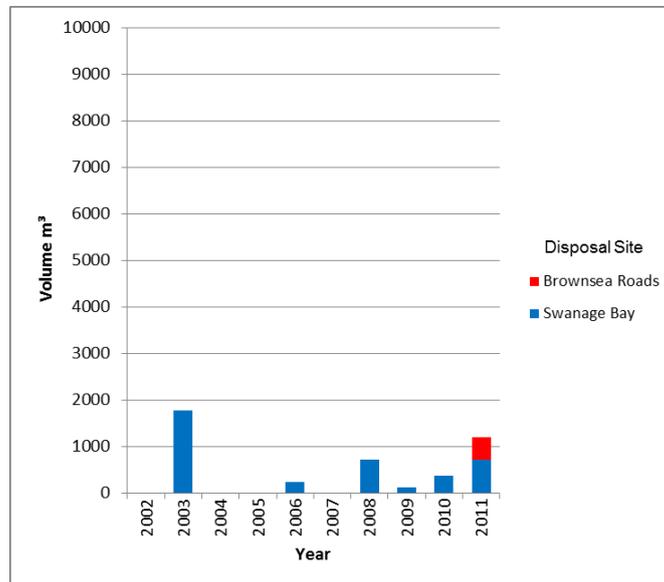
South Deep is the channel used to access the oil wells on Furzey Island. Over the years there has been a small amount of maintenance dredging carried out to trim the channel edges. Quantities are included with dredging at Furzey Island (see next item).

Breeding terns feed in this area from April to June and Natural England have requested that maintenance dredging is not undertaken during those months.

2.14 Area 2b Furzey Island



Furzey slipway was constructed in 1986 to provide access to the island developed by BP as an oil base. This access slipway infills consistently and requires approximately 500m³ per annum to be removed. This material is suitable for In-Harbour disposal.

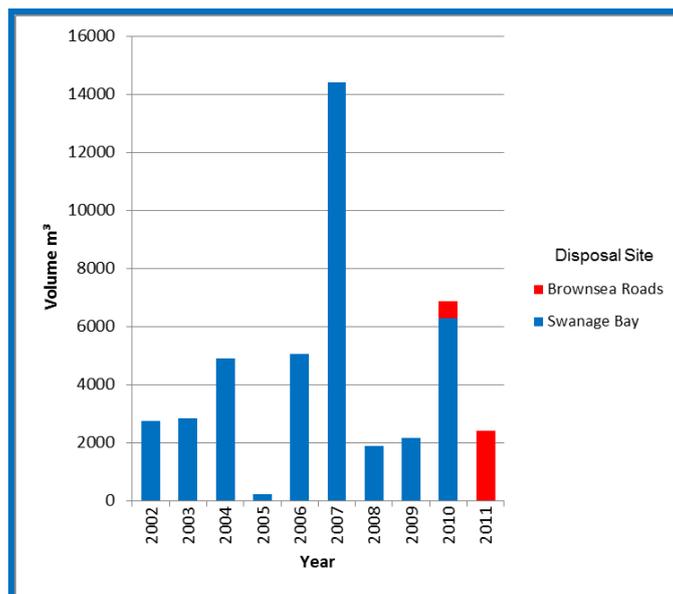


2.15 Area 3 Parkstone Yacht Club

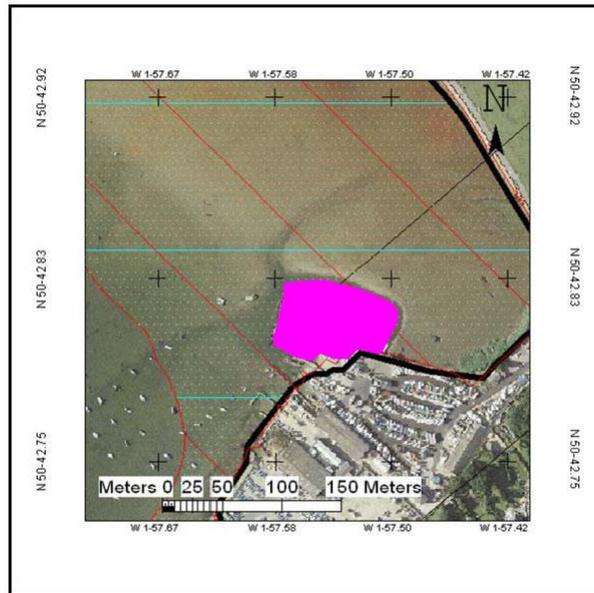


Parkstone Yacht Club is one of the larger marinas within Poole Harbour. Major construction took place on the breakwaters during the 1990s and the access channel was widened and deepened. As with all marinas on the north side of the Harbour, there is a consistent infill rate of material. This material is suitable for In-Harbour disposal, with the exception of a small area of contaminated ground adjacent to the slipway which must go to Swanage Disposal Ground.

Due to the potential disturbance to wildfowl feeding in the area, Natural England have requested dredging is not undertaken during January and February.

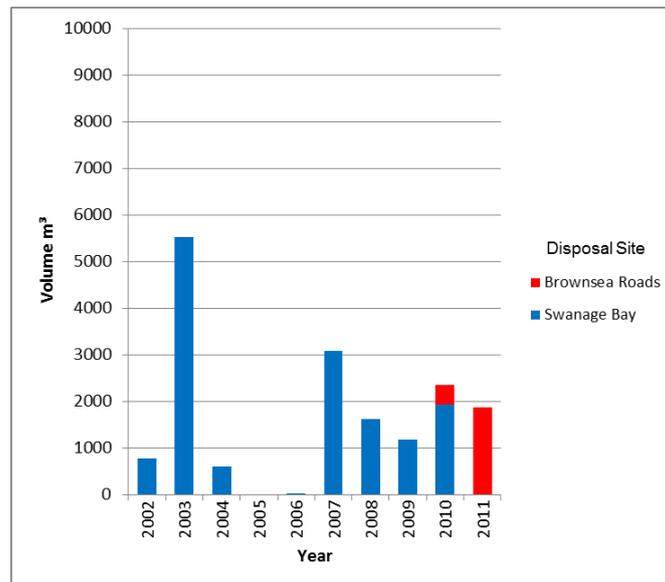


2.16 Area 4 Mitchells Boatyard/Parkstone Bay Marina

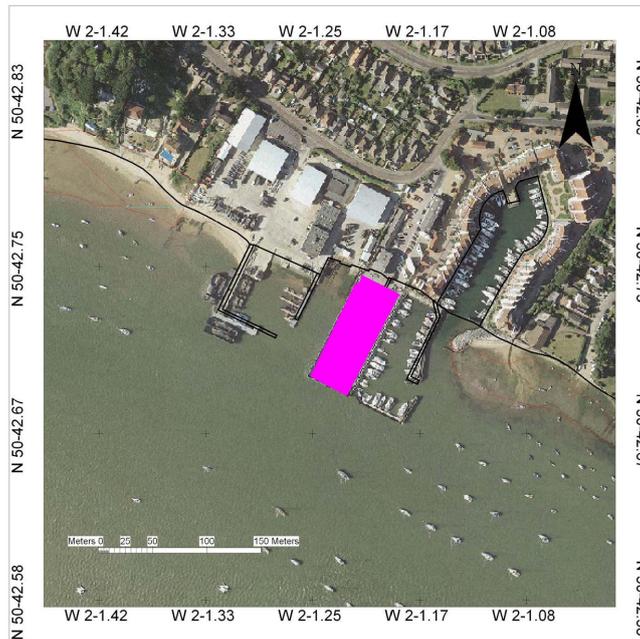


This marina has gradually developed over the last 30 years on the south side of Parkstone Bay and requires a consistent quantity of material to be removed. This is generally removed by a small hopper dredger at a rate of 40m³ per load. There is a requirement to remove up to 1,000m³ per annum. In 2003 a complete clearout of the marina was carried out after removal of the pontoons.

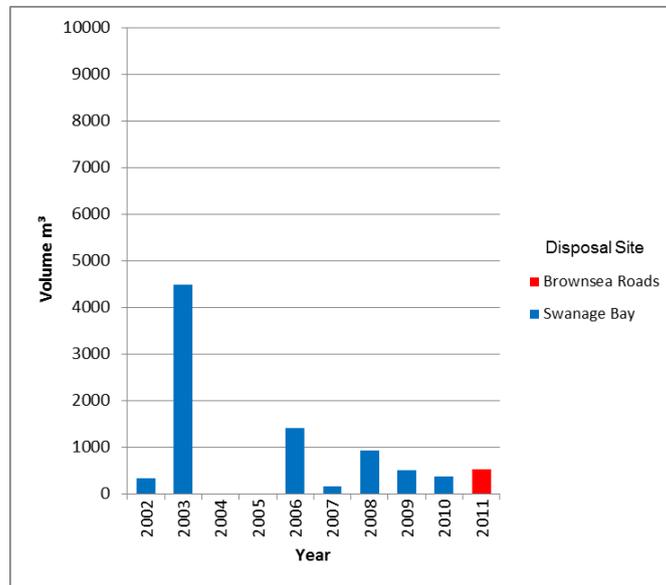
Due to the potential disturbance to wildfowl feeding in the area, Natural England have requested dredging is not undertaken during January and February.



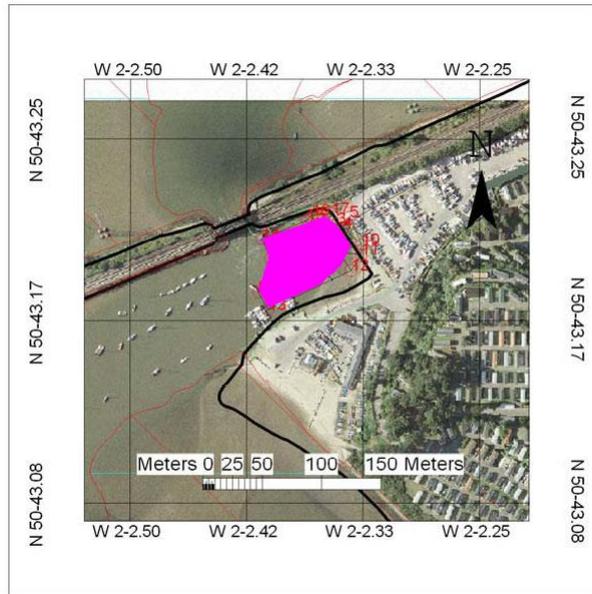
2.17 Area 5 Dorset Lake Shipyard



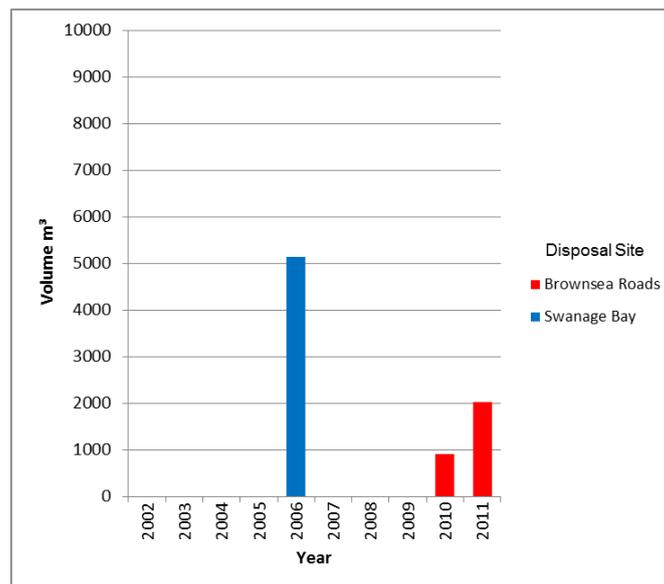
Lake Shipyard is a long established boatyard adjacent to Wareham Channel on the north side of the Harbour. It has been in operation since the 1940s and was redeveloped in the 1990s as a small marina. This area of the Harbour infills steadily and there is a requirement to remove up to 1,000m³ a year. Again, this is suitable for In-Harbour disposal.



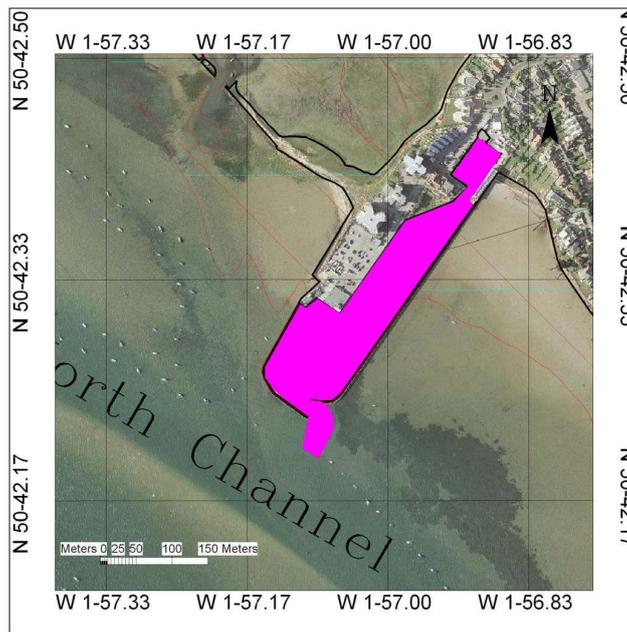
2.18 Area 6 Rockley Park



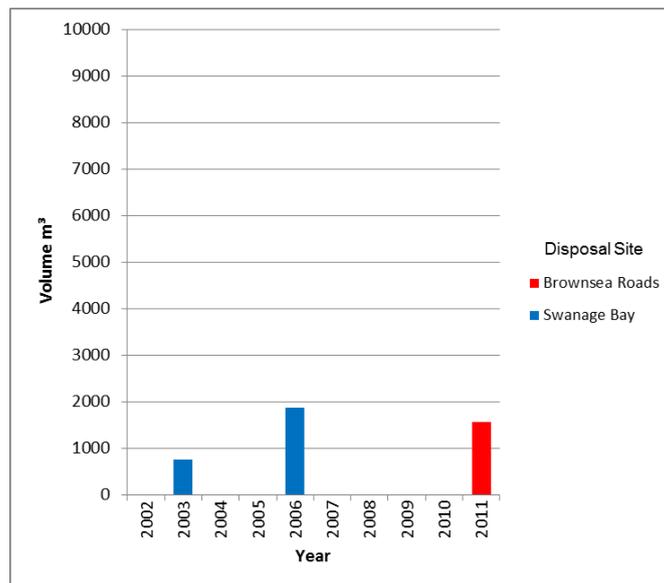
Rockley Park is a very shallow development off the Wareham Channel, approached by a shallow channel and is used primarily as a base for small sailing craft. The owners, Bourne Leisure, maintain the facility and since the implementation of the Commissioners' Sediment Management Plan, have adopted the In-Harbour disposal philosophy. There is a possibility from HR Wallingford's report into In-Harbour disposal (Ref 4.4.2.1 Appendix VII, Annex 1) to create a dispersion point under the railway viaduct adjacent to the yacht club, In 2006, with the redevelopment of the yard, the opportunity was taken to maintain the marina to depth, and it is now envisaged that Rockley will dredge annually to maintain their facility.



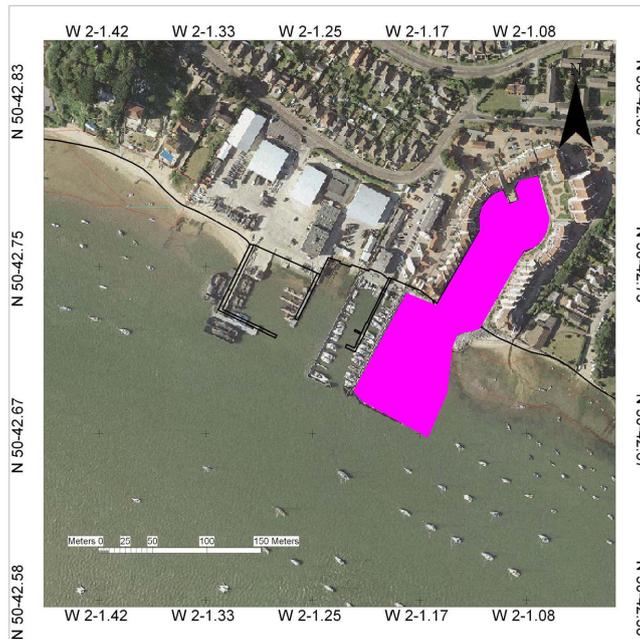
2.19 Area 7 Salterns Marina



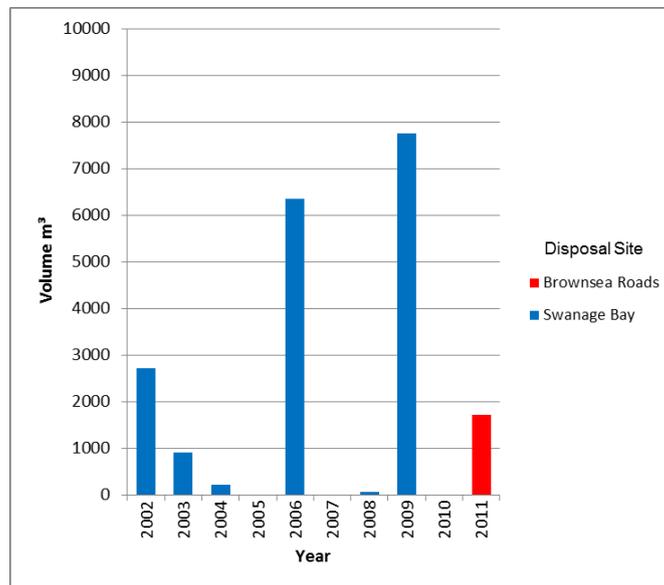
Salterns Marina is a long established development directly off the North Channel. It was operated as a commercial venture into the 1930s where barges took clay based products from the adjacent pits. The marina was extended to the North Channel in the 1970s and has a minimal quantity of material building up inside annually. The material is suitable for In-Harbour disposal and is probably less than 1,000m³ per annum. Due to the potential disturbance to wildfowl feeding in the area, Natural England have requested dredging is not undertaken during January and February.



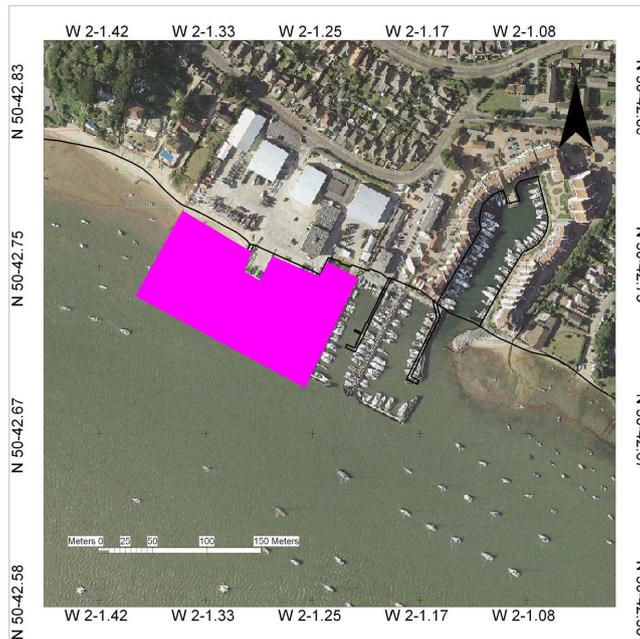
2.20 Area 8 Moriconium Quay



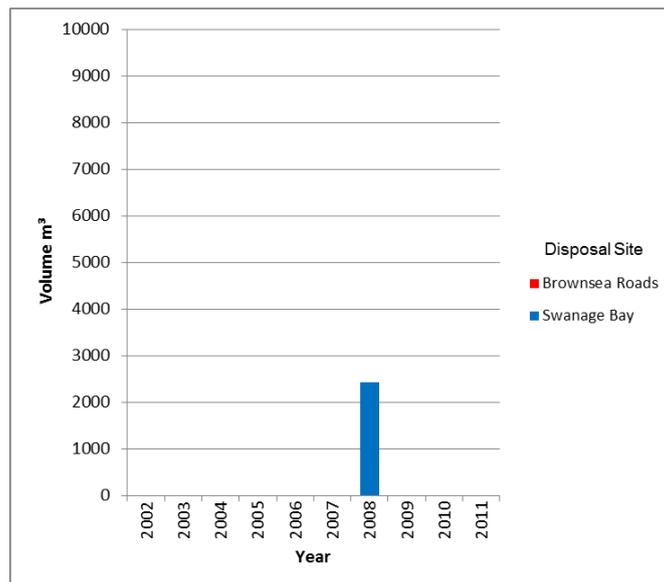
Moriconium Quay, is adjacent to Area 5 (Dorset Lake Shipyard) and is subject to a similar regime. The marina was developed in the early 1990s and requires an annual quantity of approximately 2,000m³ to be removed. The material is suitable for In-Harbour disposal.



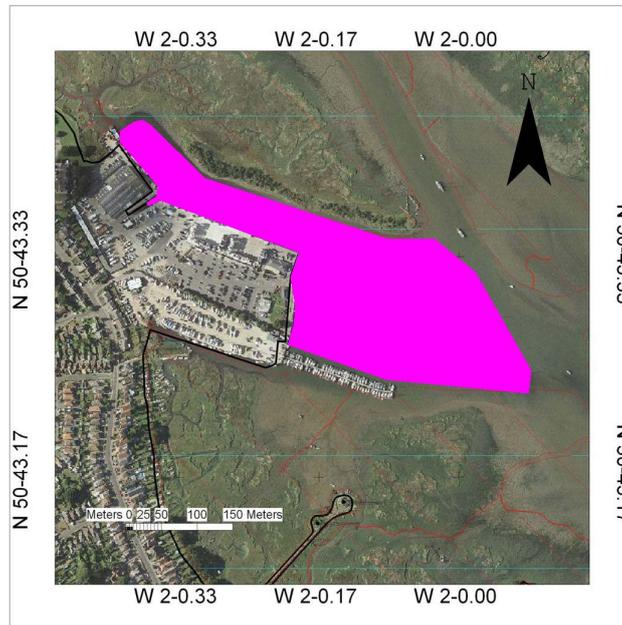
2.21 Area 9 Royal Marines Base



The Royal Marines Base is also adjacent to Dorset Lake Shipyard (Area 5) and in line with the SMP the dredged material is suitable for In-Harbour disposal. This area is controlled by the Ministry of Defence who do not require consents from the Commissioners for their works. However, over the last five years the correct consents procedure has been undertaken and regular dredging is required. The frequency is dependent on the MOD budget. Surveys indicate that infill appears to be approximately 1,500m³ per annum which is consistent with the adjacent marina developments. Prior to 2006 Royal Marines dredging records are incomplete

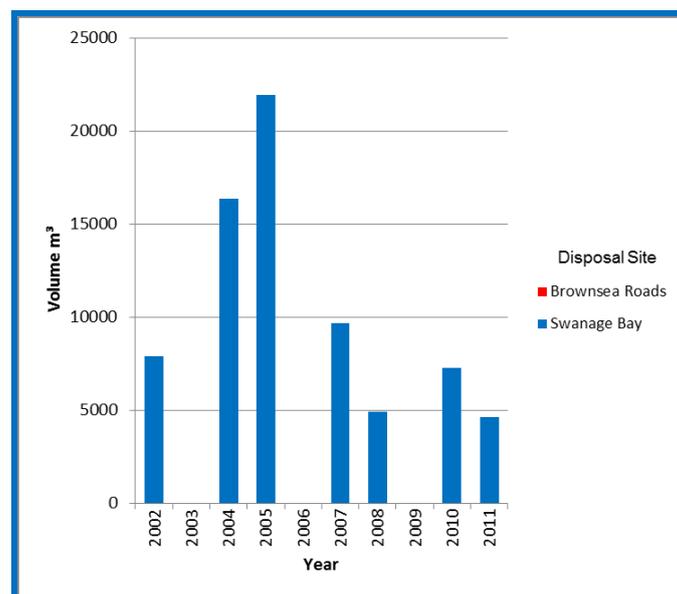


2.22 Area 10 Cobbs Quay Marina

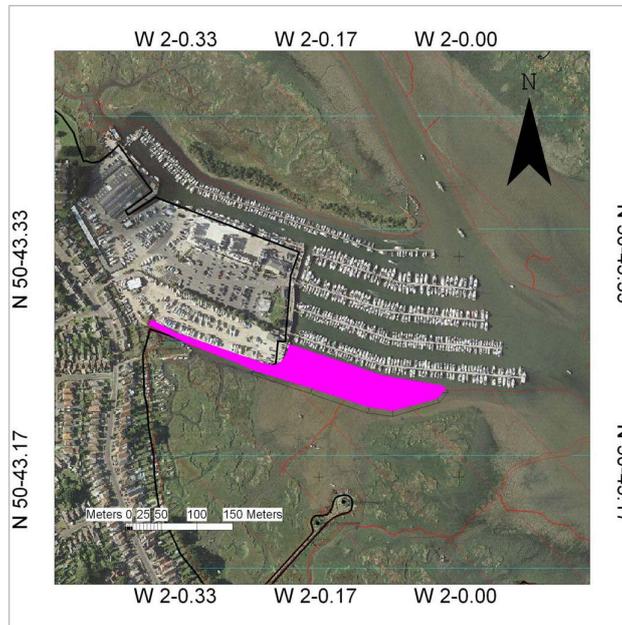


Cobbs Quay is a marina developed in the 1960/70s and is the largest commercial marina in the Harbour at present, with approximately 800 boats in the water. There is consistent significant infill of material in this area, probably averaging 9,000m³ per annum, which is removed annually by backhoe and barge. This material would be suitable for In-Harbour disposal, however the quantity and intensity of the operation is not compatible with the present controls for In-Harbour disposal and consequently the material is being disposed of on the Swanage site. The graph below includes some dredging from Davis Boatyard prior to 2011 (see section 2.23).

Because the adjacent mudflats/saltmarsh are an important habitat for feeding and roosting birds during the period January and February, Natural England have requested that dredging is not undertaken in the outer parts of the marina during that period.

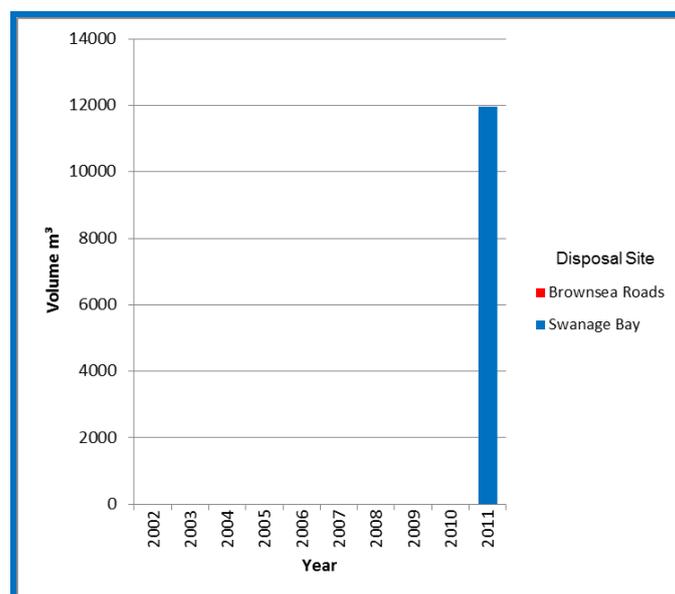


2.23 Area 11 Davis Boatyard, Hamworthy

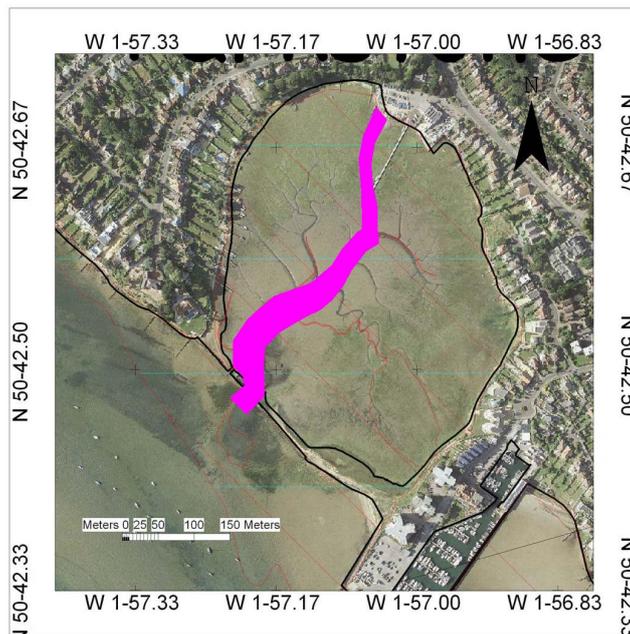


Davis Boatyard was constructed in the 1960/70s in Holes Bay alongside Cobbs Quay. Historically dredging for Davis Boatyard has been undertaken by the same contractor as Cobbs Quay in the same timeframe. Consequently quantities have been included in the graph of Area 2.22, and the graph below shows no dredging prior to 2011. As part of a general refurbishment of the boatyard, during 2011 a substantial maintenance dredge was undertaken and this is reflected in the graph. There is a small area adjacent to their development that is contaminated, and this has recently been disposed to landfill.

Because the adjacent mudflats/saltmarsh are an important habitat for feeding and roosting birds during the period January and February, Natural England have requested that dredging is not undertaken during those months.



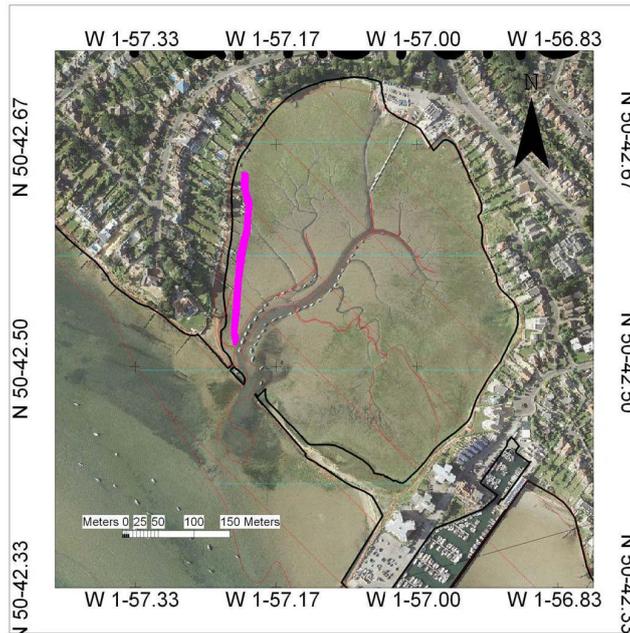
2.24 Area 12a Blue Lagoon, Lilliput Sailing Club



Blue Lagoon is a former salting, the wall of which was breached during the 1940s. Lilliput Sailing Club has a small approach channel down the centre of the lagoon and has carried out minor maintenance dredging in the past. Up to 2009 this material was generally taken to landfill; however there is an on-going process of clearing the channels onto the adjacent mudflats by a sludge pump system which has proved effective so far. To date a maximum of 200m³ has been moved per annum, which has been dispersed adjacent to the works.

Natural England have requested no dredging between November and March because the enclosed nature of the lagoon means any activity is likely to cause disturbance to the area.

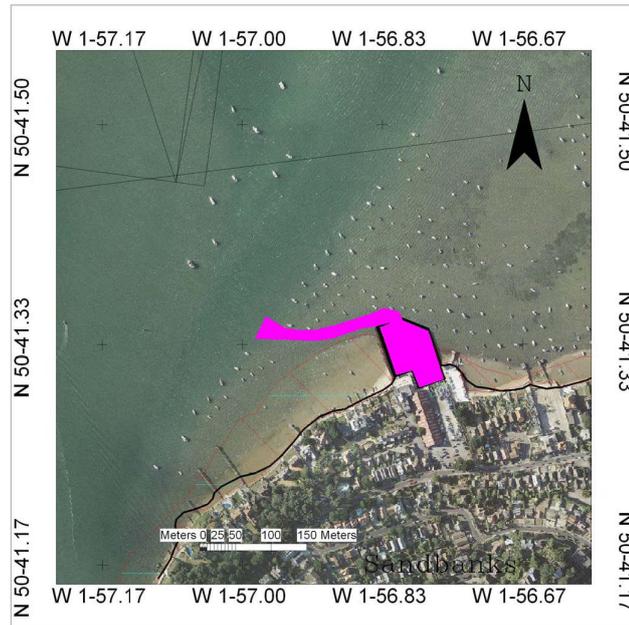
2.25 Area 12b Blue Lagoon, West Channel



At the time of compiling this document, there is an as-yet unconsented proposal by the properties adjacent to the west side of Blue Lagoon to create their own channel. Thus far they have not developed an effective means of carrying out this work; however, before the next iteration of this document it is expected that the consents process will have been completed.

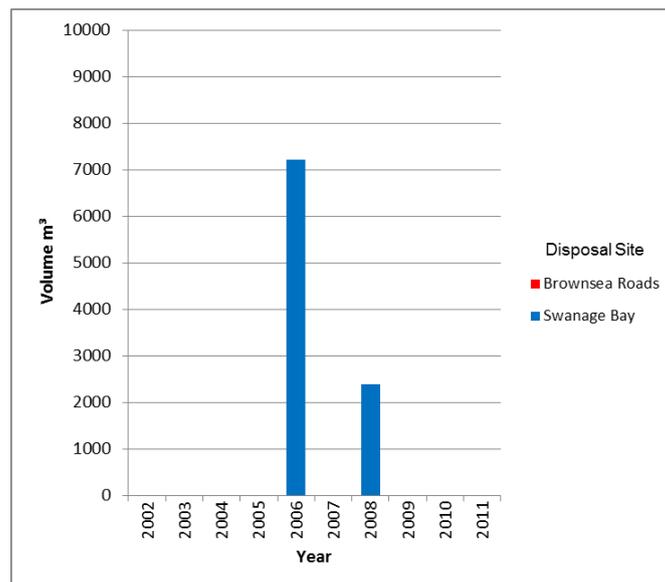
Natural England have requested no dredging between November and March because the enclosed nature of the lagoon means any activity is likely to cause disturbance to the area.

2.26 Area 13 Royal Motor Yacht Club (RMYC)

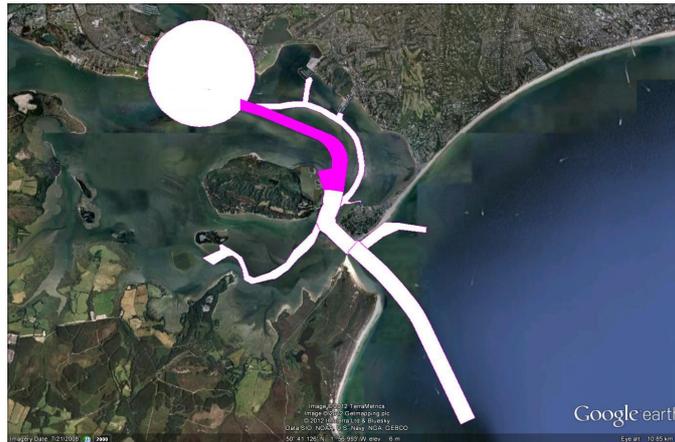


Royal Motor Yacht Club carried out major wavescreen developments in the 1980s and at present a new proposal to extend the site is undergoing the approval process. There is generally very little movement of material in this area, however occasionally there is a need to clear the approach channel and some of the berth areas. Mean annual siltation is not expected to exceed 1,000m³ infill per annum. The material here has a higher sand content than the other marinas within the Harbour, and as such should be used as beach recharge or disposed at sea.

Due to the potential disturbance to wildfowl feeding in the area, Natural England have requested dredging is not undertaken during January and February.



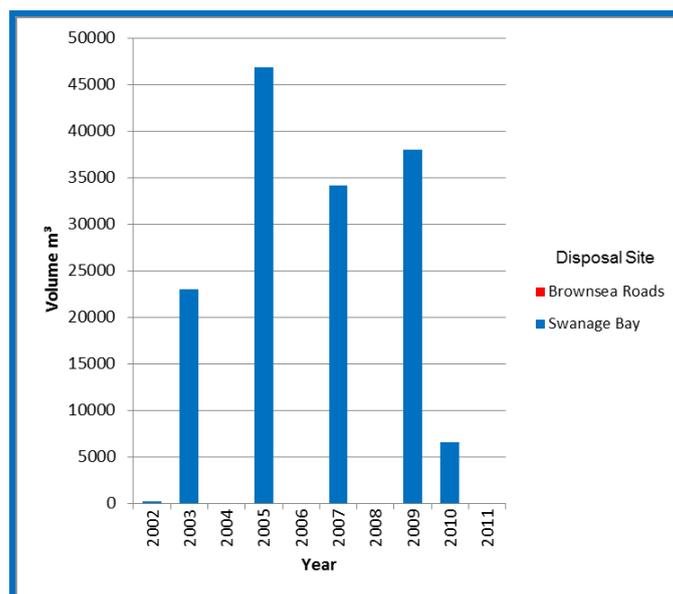
2.27 Area 14a Middle Ship Channel



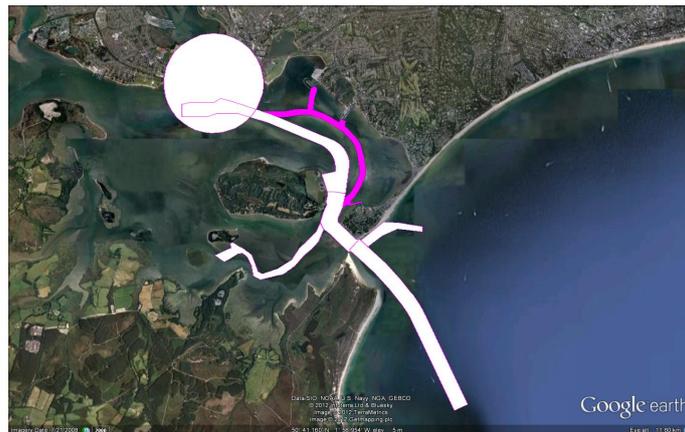
(The white outline denotes the extent of the Commissioners' current licence to dredge)

There are three main channels running between the Harbour entrance and the Port area. Originally North Channel was the main shipping channel, however a major capital dredge took place in the mid-1980s to establish Middle Ship Channel as the primary route. A further capital dredge in 2006 widened and deepened the channel to establish an approach to the Port of a maintained depth of 7.5m below CD. Significant work was done in establishing consents for this channel (Ref 4.4.2) and that EIA forms the basis for much of this document

Annual infill of the Middle Ship Channel is approximately 20,500m³. This is normally removed during the bi-annual dredging campaign. Material dredged ranges from silty sand at the east end to fine sand at the west end. Material from the extreme east end of the channel is suitable for In-Harbour disposal, but this option is not followed since dredging is normally carried out by trailer suction dredger at a rate that would be unsuitable for placing In-Harbour. Where possible the intention is to minimise disposal to Swanage and use for beach recharge in line with SMP2.



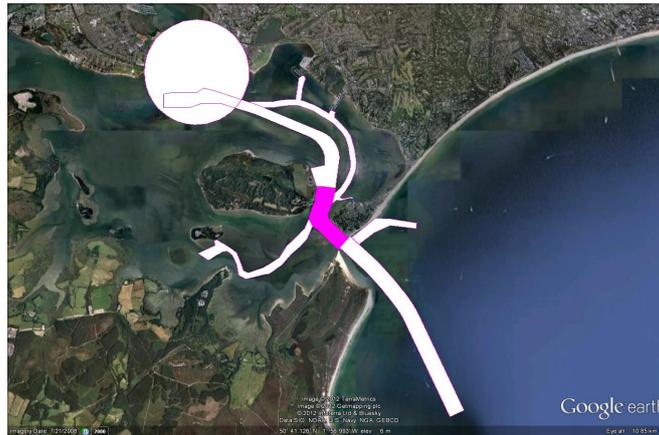
2.28 Area 14b North Channel



(The white outline denotes the extent of the Commissioners' current licence to dredge)

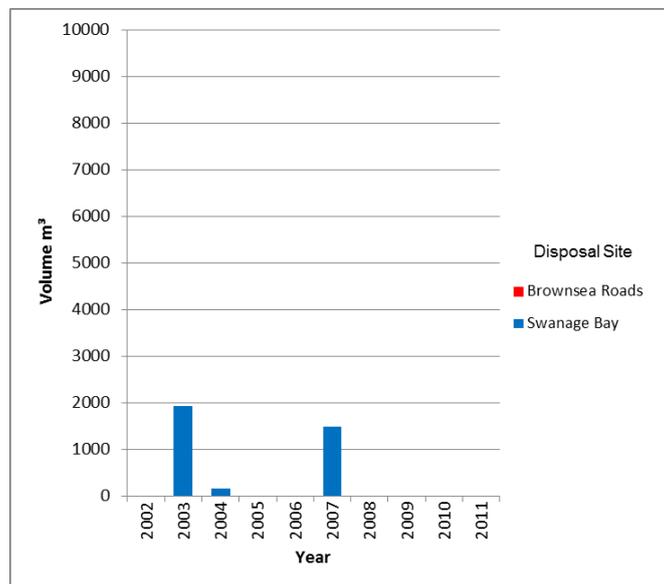
Historically North Channel was the main access channel to the Port until the major capital dredge of Middle Ship Channel in the mid-1980s. Since that time there has been intermittent removal of silty material throughout the channel for disposal at sea. This material is considered suitable for In-Harbour disposal. Regular dredging of the cuts from North Channel to various marinas are maintained and are dealt with under each individual marina.

2.29 Area 14c Harbour Entrance

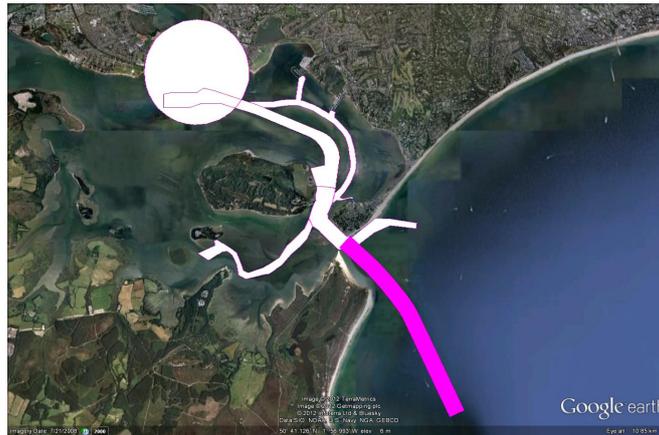


(The white outline denotes the extent of the Commissioners' current licence to dredge)

The majority of the Harbour Entrance is self-scouring due to the speed of tidal currents in the area. However, to the north-east of the main entrance, there is a feature known as 'Chapman's Peak', a bank of coarse granular material which effectively limits the width of the channel for large vessels. Attempts have been made to dredge this but on each occasion the feature has returned within weeks. Studies carried out by HR Wallingford (Ref 4.3.4) showed that while removal of the feature could be carried out without risking wider hydrological changes, it was not economic to maintain depths over Chapman's Peak due to the rate of accretion.



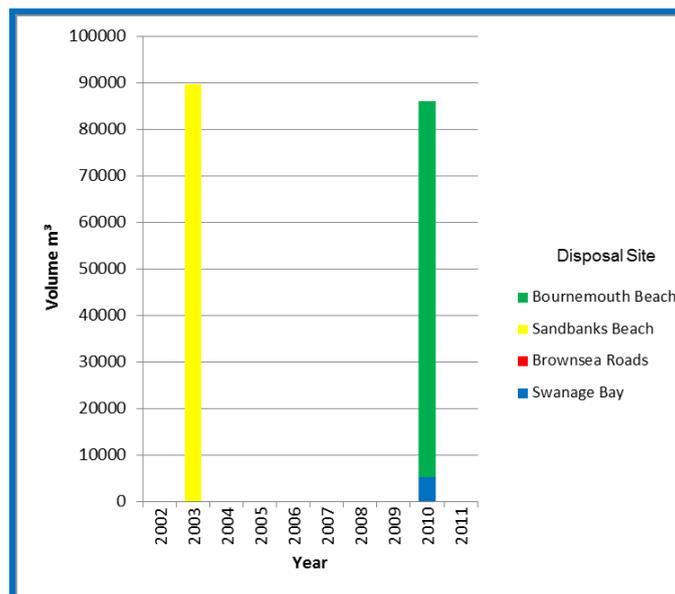
2.30 Area 15a Swash Channel



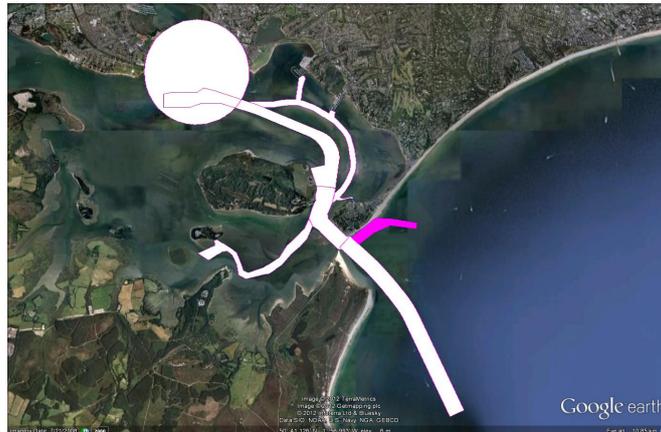
(The white outline denotes the extent of the Commissioners' licence to dredge)

Swash Channel is the main approach to Poole Harbour entrance, used by all commercial shipping and most recreational vessels. A training bank was constructed along the south-western edge of the channel in the 1920s to encourage scour. This increased the depths to approximately 4.2m below CD. Poole Harbour Commissioners carried out capital dredging in the late 1980s and again in 2005/6 to create the present channel, maintained at a depth of 7.5 below CD. Accretion in the channel is of the order of 30,000m³ per annum and maintenance has been carried out approximately bi-annually. Material arising from this dredging is ideal for beach recharge, provided that a scheme can be agreed with a relevant local authority at the time the dredging is required.

In the graph below it can be seen that there is no maintenance dredging shown during 2005/6. This is due to the fact the area was part of the capital dredging and volumes are included in capital dredging records.



2.31 Area 15b East Looe



(The white outline denotes the extent of the Commissioners' current licence to dredge)

East Looe channel is a natural channel between Hook Sands and the beach at Sandbanks, outside the Harbour. It is used by some small boats at suitable times of the tide to give quicker access to Poole Bay and avoid transitting the whole of the Swash Channel. Minimal maintenance dredging has been carried out in this channel, although it is marked and is prone to natural movements.

Part 3 Environmental Impacts

3.1 Impacts of Maintenance Dredging

3.1.1 Potential Impacts

Potential impacts of maintenance dredging which may be relevant to Poole Harbour include:

- changes to designated habitats and habitats supporting designated features resulting from hydrodynamic change which could lead to changes in the morphology of the estuary.
- increases in levels of suspended sediment during dredging operations which could impact on the food resources of the SPA interest features. Particular concerns are terns which feed on fish within the Harbour, and the smothering of eelgrass.
- the remobilisation and redistribution of sediments which may be contaminated within the study area. These sediments could potentially impact on the intertidal benthic organisms used as a feeding resource by the waterfowl features of interest for the SPA and Ramsar sites.
- increased disturbance. Potentially an increase in noise and visual disturbance levels due to maintenance dredging could impact on SPA waterbird populations. This is of particular concern during the winter period when waterbirds are trying to conserve energy reserves prior to their migrations.

3.1.2 Potential changes to morphology

The channel deepening completed in 2006 carried the most significant potential to change the morphology of Poole Harbour of any project in the last ten years. The Impact Assessment (Ref 4.4.1) identified a potential increase in the loss of fine material from the Harbour sediment budget as a result of the works. This potential loss of additional fine material could have the result of increasing the rate of loss of intertidal mudflats and consequently marginal saltmarsh from the Harbour. This has been mitigated by the introduction of In-Harbour disposal for fine material arising from maintenance dredging referred to in Section 1.10.3.

In addition, where maintenance dredging of silt is taking place in some of the smaller sub compartments of the Harbour (eg Holes Bay and Blue Lagoon), work is on-going in developing methods of retaining the silt in the relevant local sub-area.

3.1.3 Increases in Levels of Suspended Sediment during Dredging Operations

Changes in turbidity have the potential to impact directly and indirectly on wildlife. For example, changes to the transparency of the water column could potentially have an impact on breeding terns by making it harder for the birds to find their fish prey. However, the bi-annual channel dredge that takes place in closest proximity to the location where terns feed does not take place in spring, thereby avoiding an impact on this feature of the SPA. In the event of major maintenance dredging campaigns, which are generally in areas fairly isolated from the conservation designated areas of the Harbour, there is a programme of turbidity monitoring coupled to the contractual ability to control dredging within limits of turbidity.

With respect to smaller maintenance dredging works which tend to be closer to sensitive areas, they are small in quantity and duration, and also generally carried out by plant which is less likely to create undue turbidity.

3.1.4 Re-Suspension of Contaminated Sediment

Only very small areas of the Harbour which are subject to maintenance dredging suffer from the presence of contaminated sediment. The testing regime connected to the licence application system can highlight these, and in the event of special treatment being required, this can be done. In reality, the small size of the areas and relatively long time intervals between the work being necessary render this potential impact negligible.

3.1.5 Increased Disturbance

The nature of maintenance dredging carried out in Poole Harbour minimises the risk of impact through noise and visual disturbance. Large maintenance dredging campaigns are normally carried out using trailer suction dredgers which create no more visual or noise disturbance than the normal passage of a commercial vessel.

Those smaller projects taking place closer to sensitive areas can be timed to avoid the critical months of January and February, mitigating any impact on the designated areas.

3.1.6 Smothering of Sensitive Habitats and Species

Maintenance dredging could have the potential to smother sensitive habitats and species [eg the Ramsar features of interest *Suberites massa* (sponge) and *Hartlaubella gelatinosa* (hydroid species) and eelgrass beds]. However, the location, volumes and short term nature of maintenance dredging operations are unlikely to have a significant effect on these features.

3.1.7 Impact of Maintenance Dredging on the 'Favourable Condition' of Designated Areas

A condition assessment of Poole Harbour SSSI was compiled on 01.01.12 (Ref 4.4.8) The features of interest of the Ramsar and SPA were also covered in this assessment. This concluded that despite apparent declines in six species of waterbird, the non-breeding waterbird populations were in favourable condition as the declines could have been due to more widespread national and regional trends, although this required further investigation.

The report found that currently there is little evidence that the extent of the intertidal resource in the Harbour is declining, pointing to an early indication that the new practice of In-Harbour disposal to reduce the loss of fine material from the regime is starting to bear fruit.

The main concern from the assessment is the high input of nitrogen into the Harbour and consequent abundance and density of algal mat growth. There was also a significant reduction in the abundance and variety of benthic invertebrates between 2004 and 2009. The distribution and decline in the numbers of key overwintering bird species may have been influenced by noise and visual disturbance. To avoid any impact, maintenance dredging operations that could potentially disturb birds and which take place close to sites favoured by feeding and roosting birds should take place outside of key times of the year (January and February).

The action of maintenance dredging could potentially contribute to algal mat growth via changes in sediment transport pathways raising the mudflat level. However there is no evidence from bathymetric studies that the type, scale and location of the current maintenance dredging operations are altering sediment transport pathways.

There is potential for maintenance dredging to adversely affect breeding tern populations due to turbidity. For operational reasons, however, the larger maintenance dredging operations already avoid this breeding season.

The Natural England report card for the Poole Harbour EMS is reproduced at Appendix 2 and bears out the view that maintenance dredging not only represents a low risk, but that it is managed at a high level, further reducing any risk.

3.2 Impacts of the Disposal of Spoil Arising from Dredging in Poole Harbour

3.2.1 Impact of In-Harbour Disposal

The consequences of In-Harbour disposal of silty spoil materials arising from maintenance dredging have been considered in the assessment of impacts of the 2005/6 capital dredge regime (Ref 4.4.1). The execution of this work has been monitored and reported in the Poole Harbour Commissioners' harbour monitoring reports (Ref 4.4.2). The conclusion is that such disposal, when properly controlled and regulated, is beneficial to the conservation interests of the designated Harbour

areas and should be considered as part of the ongoing management of the Poole Harbour SPA.

3.2.2 Impact of the Disposal of Spoil at the Swanage Disposal Ground

At present there are no statutory designated conservation areas in this vicinity. There are however a number of habitats and species that could potentially be affected by the deposition of dredged material. Furthermore, future designations are considered in 3.3 below. A study of the impact of the capital dredge that took place during the Channel Deepening in 2005/6, (Ref 4.4.1) showed no significant adverse effect on eelgrass within the Studland Bay rMCZ, *Sabellaria spinulosa* reefs, reef biota, algal density on patch reefs including within Poole Rocks rMCZ, and pink sea fans. However a 60% decrease in the growth of maerl in the area occurred between 2003 and 2007, during which time 520,000m³ of capital dredged material was deposited. A further study in 2011 (Ref 4.4.2.5 Appendix 2) indicated that by that time the maerl had made a full recovery, despite further material from maintenance dredging being deposited at the site. It is therefore considered that maintenance dredging at its current level will not impact on this nature conservation feature.

3.3 Future Designations

There are two statutory conservation designations of areas that may be affected by the proximity of the Swanage Disposal Ground, which are currently in the process of being made.

- Proposed Studland to Portland SAC: the Studland to Portland pSAC Draft Conservation Objectives, (Ref 4.4.9).state that the area is to be designated for the conservation of the Studland Bay to Ringstead and the Isle of Purbeck bedrock and biogenic reefs. The closest interest feature in the pSAC is 2.5kms from the edge of the Swanage Disposal Ground. It should be noted that the risk to these features from smothering as a result of deposition of dredged material is assessed as 'low' and their sensitivity to this is also assessed as 'low'. It is not, therefore, anticipated that the continued use of the Swanage Disposal Ground for the disposal of maintenance dredgings from Poole Harbour is likely to have a significant adverse effect on the proposed SAC.
- Recommended Marine Conservation Zones: under the Marine Act 2009 It is proposed that there will be two marine conservation zones in the vicinity of the Swanage Disposal Ground. The designation of these zones is in process, and still subject to public consultation, scheduled for late 2012.
 - Poole Rocks rMCZ: The Poole Rocks rMCZ is proposed to be designated for subtidal mixed sediments, subtidal sand, moderate energy circalittoral rock habitats, and for Couch's goby and the native oyster species.
 - Studland Bay rMCZ: This rMCZ is closer to the disposal ground and is designated for subtidal mixed sediments, subtidal sand, intertidal mud

and intertidal sand and muddy sand habitats, together with eelgrass beds, short snouted seahorse, native oyster and undulate ray species.

3.4 Other Potential Impacts

In addition to the foregoing there is the potential for an impact on maintenance dredging in Poole Harbour from the execution of the Poole & Christchurch Bays Shoreline Management Plan (SMP2). This carries a recommendation that tidebank in the lower reaches of the River Frome, outside the Poole Harbour Commissioners' area of jurisdiction, should be allowed to decay and the area become subject to managed retreat. If this were to happen, the tidal compartment of the upper reaches of the Harbour would be effectively increased, possibly leading to significant changes in the regime of erosion and deposition of silts in other parts of the Harbour. In turn, this could result in the requirement for significant changes to the established maintenance dredging patterns described in this document.

Part 4 Conclusions

4.1 Gaps in the Knowledge Base

The historic situation in Poole Harbour over at least the last 40 years has been of intermittent capital dredging projects interspersed with a regular maintenance dredging regime, which has largely developed as a result of the need to maintain the aforementioned capital projects.

Over this period, as legislation has required increasing research before carrying out capital projects and a higher level of monitoring after, the Poole Harbour Commissioners have kept pace with requirements.

As a result, the level of knowledge of the sediment regime in the Harbour is high for an area so complex. In addition, there is a high level of recording of physical information on depth and turbidity in the Harbour both on a day to day basis and as a means of controlling maintenance dredging operations.

There are some gaps in the detailed knowledge of the chemical status of some areas of sediment in the Harbour. However, since there are currently no statutory thresholds in the UK for levels of chemical pollution of dredged material, this is considered on a case by case basis by the MMO. To date there have been few instances of the chemical quality of maintenance dredgings causing any requirement for changes in practice in Poole.

In summary, Poole Harbour Commissioners consider their knowledge of the Harbour regime is sufficient to enable to present maintenance dredging operations to continue unaffected. Future changes arising, either from works in and around the Harbour or more likely, changes to legislation, can only reasonably be tackled as they occur.

4.2 Recommendations

There is evidence of Poole Harbour's use as a port dating back thousands of years, and it has been a significant port over the entire intervening period. Since the early 1970s consistent records have been kept of both capital and maintenance dredging in the Harbour. This information has helped to provide an efficient and cost effective way of keeping channels and marinas accessible.

While the conservation condition of large areas of Poole Harbour's mudflats are technically 'unfavourable', this is due to extensive algal mats associated with the high nitrogen load entering the Harbour, principally arising from input from sewage works and agricultural practices in the overall catchment. Current maintenance dredging practices do not have any significant effect on the nitrogen in Poole Harbour, and responsibility for water quality of this nature is not in the Commissioners' remit. Controls exist as described to minimise any effect on birds

arising through disturbance or turbidities from maintenance dredging. This is partly locational and partly seasonal.

Maintenance dredging could have a potential impact on the SPA through loss of sediment from the system reducing the extent of the intertidal resource. However, currently there is no evidence to suggest this is happening. It is important, however, that the sediment budget continues to be monitored. As a result of mitigation for the channel deepening, measures have been taken to minimise sediment loss from the Harbour.

A possible temporary adverse effect on maerl in Poole Bay resulting from the disposal of material at the Swanage disposal ground during the 2005/6 channel deepening was detected. Since that time, this feature has recovered, while maintenance dredging and disposal at present levels have continued. This indicates that maintenance dredging at current levels will not have an adverse effect on this feature. Also, as described, efforts are constantly made to minimise disposal at Swanage by beneficial use of dredged material.

With the success of the Brownsea Island In-Harbour site it is recommended that the possibilities of opening up further In-Harbour disposal sites are explored, particularly in Lytchett Bay and Holes Bay.

In accordance with the protocol, it is recommended that this document is developed over time to incorporate new information as changes occur and the information becomes available. In the event of a significant change in regime arising from new capital dredging, reclamation or managed retreat, this document must be reviewed. In any event, a routine review should take place on a six-yearly basis.

4.3 References

- 4.3.1** Pearce, SR. Poole Harbour Bathymetric Monitoring Project 2005
- 4.3.2** UK Hydrographic Office. Provision of Hydrographic Information – A Code of Practice for UK Ports & Harbours, September 2001
- 4.3.3** Pearce, SR, MRes. Port of Poole Standards and Procedures Currently in Place for Hydrographic Surveying, 3rd edition, September 2010
- 4.3.4** Hydraulics Research Ltd. 1991. The Effects of Dredging Chapman's Peak on the Entrance to Poole Harbour, Report EX2356, Report to Poole Harbour Commissioners, 10pp.

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4.4.2 Poole Harbour Commissioners' Harbour Monitoring Reports

4.4.2.1 Report on Harbour Monitoring 2007

Poole Harbour Commissioners

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4.4.2.2 Report on Harbour Monitoring 2008

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4.4.2.3 Experimental Disposal of Material May-July 2008

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4.4.2.5 Report on Harbour Monitoring 2011

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4.4.3 Poole Harbour Aquatic Management Plan 2006, revised 2011

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4.4.4 Poole & Christchurch Bays Shoreline Management Plan SMP2

Royal Haskoning

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4.4.5 Poole Bay, Poole Harbour and Wareham Flood and Coastal Erosion Risk Management Strategy

Environment Agency

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4.4.6 Coastal Sediment Transport Study 2004 (Poole Harbour)

SCOPAC/University of Portsmouth

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4.4.7 Site Plan for the Poole Harbour European Marine Site (EMS)

Natural England/Defra

<http://archive.defra.gov.uk/environment/marine/documents/interim2/poole-siteplan.pdf>

4.4.8 Condition of SSSI Units

Natural England

<http://www.sssi.naturalengland.org.uk/Special/sssi/reportAction.cfm?report=sdrt13&category=S&reference=1000110>

4.4.9 Studland to Portland Possible Special Area of Conservation

Natural England

http://www.naturalengland.org.uk/Images/studland-portland-draft-conservation-objectives_tcm6-27469.pdf

4.4.10 Maintenance Dredging & The Habitats Regulations 1994

Conservation Assessment Protocol for England - Defra

<http://archive.defra.gov.uk/wildlife-pets/wildlife/protect/documents/mdp-cap.pdf>

4.4.11 Conservation Assessment Protocol for England 2007

Defra

<http://archive.defra.gov.uk/wildlife-pets/wildlife/protect/documents/mdp-cap.pdf>

4.4.12 Conservation of Habitats & Species Regulations 2010

Defra

<http://www.defra.gov.uk/rural/protected/chsr2010/>

4.4.13 Marine Licensing Guidance 3, Dredging Disposal & Aggregate Dredging

MMO

<http://marinemanagement.org.uk/licensing/documents/guidance/03.pdf>

4.5 Glossary

AA	Appropriate Assessment
CPA	Coast Protection Act
DECC	Department of Energy and Climate Change
DEFRA	Departments of Environment, Food and Rural Affairs
DfT	Department for Transport
EIA	Environmental Impact Assessment
EMS	European Marine Site
MCZ	Marine Conservation Zone
MFA	Marine and Fisheries Agency
MMO	Marine Management Organisation
PHC	Poole Harbour Commissioners
rMCZ	Recommended Marine Conservation Zone
pSAC	Possible Special Area of Conservation
SAC	Special Area of Conservation
SMP	Shoreline Management Plan
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
WFD	Water Framework Directive

Part 5 Appendices

Appendix 1 Poole Harbour Commissioners' Maintenance Dredging Policy

Appendix 2 European Marine Site (EMS) for Poole Harbour

Appendix 3 Water Framework Directive

Appendix 1. Poole Harbour Commissioners' Maintenance Dredging Policy

1. This policy will be implemented by the Poole Harbour Commissioners subsequent to the carrying out of the "Poole Harbour Approach Channel Deepening and Beneficial Use of Dredged Material Project". This project is described in the Environmental Statement dated November 2004 (ES).
2. It is anticipated that the Sediment Management Plan (SedMP) and Monitoring Plan already complete will be used by the consenting Authorities to condition the works and the subsequent maintenance dredging of the Harbour.
3. Subject to continued compliance with the above Plans and compliance with relevant legislation present and future, the Commissioners will:-
 - a) Continue the policy of hydrographic monitoring of the whole Harbour, using this information to inform adjustments and revisions to harbour marks for the safety and convenience of all users.
 - b) Continue maintenance dredging of the commercial channels using processes and procedures generally as set out in the Environmental Statement and the SedMP. The following channels are considered to fall into this category:-
 - Swash Channel
 - Middle Ship Channel
 - Turning Basin
 - Little Channel
 - c) Continue to grant Licences to operators of marinas, havens, and other facilities, to carry out necessary maintenance dredging of their basins and approach channels from time to time. These operators will be expected to promote proposals which fall in line with the requirements of the SedMP for retaining suitable fine material within the Harbour. These Licences following, consideration against existing criteria, will be granted on the basis that dredging remains the entire responsibility of the operator and the operator will obtain any other approvals required as at present. As these proposals will initially be conducted on a trial basis in accordance with Sediment Management Plan, the Commissioners will provide assistance with technical advice and monitoring until new processes are satisfactorily established.
 - d) Ensure as far as possible that "minor" channels are maintained in a manner to allow their continued safe use by vessels of a similar nature and size to those at present using them. Any loss of depth in these channels that is caused as a result of actions under the SedMP will be managed to avoid constraint to existing navigation as far as is reasonable. This will be achieved by increasing the frequency of monitoring and adjustment if appropriate and by minor dredging or clearance subject to any necessary statutory approvals (which will have to include consideration of effects on

conservation interests) being obtained and within the framework of the SedMP. The following channels are considered the most likely to fall into this category, but all minor channels including those in the southern part of the Harbour will continue be monitored:-

North Channel – whole length
Wych Channel to Pottery Pier
Wareham Channel to 82 Buoy
Rockley Channel to Rockley Point
Backwater Channel upstream of the site of the Second Harbour
Crossing works

e) There are farmed shellfish beds within certain of the channels highlighted in d above. It is likely that they are located in areas not susceptible to accretion. However the sites will be monitored and appropriate measures taken by adjustment to the detail of the SedMP, in the event of adverse changes being detected that are associated with the actions taken under the SedMP.

4. This policy to be reviewed in consultation with relevant Harbour user groups on a 6 yearly cycle following completion of the Channel Deepening Project.

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Appendix 2. European Marine Site for Poole Harbour

Introduction

Natural England (NE) was commissioned by Defra to undertake a strategic review of the risks from all ongoing activities within European marine sites (EMS), in order to identify future management required to ensure site features are maintained at or restored to favourable condition. This is the first national audit of risks on EMS to help focus management effort on EMS that are under threat or the potential to become under threat.

Natural England classed activities as those which could pose either a high, medium, low, or no risk to designated Natura 2000 features. Activities classed as a high risk are those which have been prioritised by Natural England as potentially requiring additional management measures to avoid deterioration and disturbance in line with the obligations under Article 6(2) of the Habitats Directive. Activities classified as a medium or low risk are considered to have existing management systems in place and/or they have less potential to pose harm to site features. All activities should be kept under review by the competent authorities, or management schemes where they exist. More details may be found in the report card in Annex A.

Defra has worked with Natural England and relevant regulatory bodies to formulate recommended actions to address the high risk activities identified by Natural England in its review. The following site plan sets out such recommended actions, as well as the relevant background information and risk assessment, as advised by Natural England.

Description

Qualifying features

- Annex 1 bird species (avocet, Mediterranean gull, common tern)
- Migratory bird species (shelduck, black tailed godwit)
- Assemblage of wintering waterfowl

Conservation Objectives

Subject to natural change, maintain in favourable condition the habitats supporting the above species and assemblage:

- Shallow inshore waters
- Intertidal sediment communities
- Saltmarsh
- Reedbed
- Seagrass (*Zostera*)

Management

A Poole Harbour Aquatic Management Plan has been produced by Poole Harbour Steering Group. The Steering Group is made up of representatives of each of the relevant authorities (Relevant Authorities as defined in Regulation 6 of the Habitat

Regulations 2010) that have statutory functions within Poole Harbour. The members of the Group are Borough of Poole, Purbeck District Council, Dorset County Council, the Environment Agency, Natural England, Poole Harbour Commissioners, Purbeck District Council, Southern Seas Fisheries District Committee and Wessex Water Services Ltd.

The 'Management Matrix' within the Aquatic Management Plan (Annex B) sets out actions required to ensure activities taking place on the site do not alone or in combination with others cause deterioration to the site features. The Steering Group review this table annually and meet bi-annually to discuss progress.

Activities

The following activities could pose a high risk to the site features:

Activity 1 - Baitdragging and Baitdigging

Background

The collection of organisms for use in coastal angling is an important activity that occurs throughout the UK. With an estimated one million anglers in coastal communities (Fowler 1999) there is a great demand for bait; particularly lugworm (*Arenicola marina*) and ragworm (*Nereis virens*). This demand is fulfilled by individuals who collect bait for personal use and those who collect commercially in order to sell to local fishing shops. The bait is collected from soft sediment intertidal habitats typically within estuaries and harbours. In many cases, these habitats are protected under national and international law for their high conservation value in terms of habitats and biodiversity.

The impacts of bait collection have been researched. Intensive bait digging causes habitat modification (McLusky et al. 2003), changes the population structure and abundance of both target and non-target species (Watson et al. 2007). Bird species are also affected through the removal of prey species (Shepherd and Boates, 1999) and by bait diggers causing disturbance (Townshend and O'Connor, 1993). Intensive bait digging, usually done for commercial purposes, is particularly damaging and negatively affects the interest features of designated sites. There is a right to dig for bait for personal use as part of the Magna Carta right to fish, but providing baitdigging is permitted in some areas of the Harbour this would not extinguish this right. The public right to collect bait does not apply to those digging for commercial purposes which is considered to be illegal without the landowner's permission. Whilst the law is clear that commercial bait digging is illegal if it has not been given landowner permission, unless an individual is caught actively selling the bait then there is little that the Police can do to take enforcement action.

It is therefore extremely difficult to prove whether baitdigging is being undertaken for personal use or commercial use. Whether baitdigging has an adverse effect is likely to depend on its location and intensity. Bait digging and bait dragging are identified in the Aquatic Management Plan as activities that need to be investigated in the short term. It advises:

- Further research into the impacts and effects of baitdigging
- Awareness of users through a bait digging code of conduct
- Awareness of users through a leaflet highlighting the importance of Poole Harbour for birds and the location of bird sensitive areas

Current controls on Baitdigging

The Borough of Poole is working to introduce a local bye-law to regulate the activity in one area of the Harbour (Holes Bay). Natural England has concerns about this activity taking place in this location as it has been highlighted as one of the most important feeding and roosting sites for birds in Poole Harbour (bird sensitive areas). Baitdigging activity at this location has been observed to cause disturbance and displacement of bird populations while it is taking place and afterwards where the sediment has been dug over. The location (at the top of a bay enclosed within Poole Harbour) results in the dug over areas taking some considerable time to weather down (2-10 weeks) (Morrison, 2006). An additional concern is the release of sediment bound toxins during this activity at a site which is known to have elevated sediment bound contamination (Day, 2006). Some bait diggers belong to the Solent Bait Diggers Association (SBDA), with whom there was a voluntary agreement in 2006 for zoning digging activities in Holes Bay by digging in Creekmoor Lake or Upton Lake, but not both simultaneously, and for a ban on digging north of the railway line, to reduce disturbance to feeding birds (Morrison 2006).

Currently there are no effective statutory controls in place to regulate this activity while bait dragging boats are not subject to any licensing or inspections. From April 2011, IFCA's will be able to control bait digging.

Poole Harbour Steering group have produced a leaflet publicising good practice for bait diggers in Poole Harbour.

'A Condition Assessment of Poole Harbour European Marine site', an English Nature commissioned report in 2006 (Day, 2006), provides more information on the possible impacts from bait digging, in Poole Harbour SPA and a review of surveys that have taken place up to that date. The conclusion in this report is that bait digging and bait dragging is not adequately monitored in Poole Harbour and that the distribution and extent of these activities needs to be established and monitored. This would be a necessary prerequisite for deciding whether further Harbour wide controls were required.

Actions

In order to monitor the levels of baitdigging and baitdragging taking place in the Harbour a map will be produced using the relevant authorities' knowledge of where the activities are known to take place in the Harbour. This will be repeated annually.

The survey of watercraft usage in the Harbour will also be undertaken this financial year and information from this will help to monitor the levels and location of baitdragging in the Harbour.

Natural England will support the Borough of Poole in their attempts to introduce a local bye-law to regulate the activity in Holes Bay where there is particular concern as to how this activity may be affecting the European Marine Site.

Sea Fisheries Committee to prepare an IFCA byelaw in place after April 2011 to ensure there are no unnecessary delays if further work deemed it necessary to put a byelaw in place.

Activity 2 - Illegal Fishing

Background

There is a high level of illegal unlicensed fishing activity (especially for Manila clams) posing a risk to SPA features and their supporting habitat.

A byelaw has been put in place by Southern Sea Fisheries District Committee (SSFDC) prohibiting the use of a dredge in certain areas of the Harbour (subset of the areas considered as bird sensitive areas - particularly important for roosting and feeding birds). However evidence suggests that illegal fishing is taking place in the Harbour and fishing continues to take place in the bird sensitive areas where cockle and clam fishing are prohibited. The reason for the illegal fishing seems to be that the clam remains a relatively high value resource. The Fishery Order on which the regulation of this byelaw is based is funded from licence fees and therefore resources are limited.

Unlicensed clam fishing falls to the MMO to enforce in relation to the Sea Fish (Conservation) Act 1967. It falls to the Southern SFC to enforce illegal fishing in relation to the Several and Regulating Order. There are a number of other authorities who have regulatory interest in the activities of the unlicensed fishermen. These include: Environmental Health Officers, Poole Harbour Commissioners, Work & Pensions, Gang Master Licensing Authority and the Police. The Police have organised and chaired meetings with a view to adopting a multi-agency approach to enforcement.

SSFDC work with others to police this problem (37 boat patrols, and daily land patrols) and there have been a number of successful prosecutions. SSFDC prosecutions are ongoing with some positive results regarding illegal fishing and using multi-agency policing.

Any enforcement activity undertaken by the MMO needs a full health and safety risk assessment. There is a significant and real risk of harm to any enforcement officers (including the Police) which have resource implications for enforcement. A multi-agency approach is undoubtedly the most effective way to address the illegal fishing.

Poole Harbour's Aquatic Management Plan's Action Plan is reviewed annually. Shellfish dredging is identified as a concern in terms of damage to seagrass beds, effect on prey availability and displacement of birds in the short term. The document advises increased policing effort to catch & prosecute illegal fisherman.

Actions

A combination of the following actions is recommended to reduce the risk of this activity to the European marine site:

- A survey of watercraft usage in the Harbour will be undertaken this financial year and information from this will help to monitor the levels and location of illegal fishing in the Harbour.
- A multi-agency agreed plan for enforcement of illegal fishing activities should be developed and implemented. This should include a clear and transparent risk based enforcement approach for dealing with the problem, with an assessment of any additional resources required. The plan should also address how legal operators can contribute to reduce the level of illegal activities. The plan should be produced by March 2011 and have the aim of significantly reducing the level of illegal activity within three years.

A summary of the recommended actions for baitdigging and baitdragging, and illegal fishing is in Annex B.

Monitoring

The responsible authority will review progress of actions annually and report to the Poole Harbour Steering Group. Natural England will also report back to the Steering Group on the condition monitoring of the site in order to help monitor the effect of the actions. The Poole Harbour Study group will be engaged as a source of information.

Review

The Steering Group will review these actions at the same time as the annual review of the Poole Harbour Aquatic Management Plan actions. Natural England will report to Defra within 6 years.

Annex A. Report card for Poole Harbour

1. Activities which could pose a high risk

Activity	Risk(High, Low, Medium, negligible)	Harm Potential	Activity Level	Current Management
Bait dragging	H	H	H	L
Bait digging	H	H	H	L
Commercial fishing - Illegal fishing	H	H	H	M

2. Activities posing a medium, low or no risk;

Activity	Risk	HP	Activity	Management
Coastal Squeeze	M	H	H	M
Other - bait collection	M	H	L	L
Commercial fishing - Cultivation of manila clams	M	M	L	M
Commercial fishing - Cultivation of pacific oysters	M	M	M	M
Pollution - discharge of TBT	M	M	M	M
Pollution - historic contamination of toxics	M	M	M	M
Pollution - sewage point sources	M	H	H	M
Pollution - diffuse agricultural pollution	M	H	H	M
Commercial vessels - ballast	M	H	L	M
Recreation - beach maintenance	M	M	H	M
Other - hovercraft	M		M	L
Pollution - recreational boats	M	H	H	M
Recreation - water sports	M	H	H	M
Recreation - unauthorised landing on shoreline	M	M	M	L
Recreation - pleasure craft	M	M	H	M
Pollution - litter	M	M	M	M
Recreation - dog walking	M	M	M	L
Recreation - wildfowling	M	M	M	M
Other - spread of non-native (sargassum)	M	M	M	L
Other - spread of non-native (pacific oyster)	M	M	M	L
Other - spread of non-native (slipper limpet)	M	L	H	L
Other - illegal egg collecting	M	H	L	M
Other - overgrazing	M	M	M	M
Recreation - moorings	M	M	H	H
Recreation - low flying aircraft	M	H	M	M
Habitat Loss – jetties, slipways	M	M	H	M
Dredging – maintenance dredging	L	H	H	H
Commercial fishing - Seine Netting & Beach Seine	L	M	L	L
Commercial fishing - ring nets	L	L	L	M
Commercial fishing - Fixed Nets Gill Nets / Tangle / Trammel Nets	L	L	L	M

Commercial fishing - drift nets	L	L	L	M
Commercial fishing - prawn pots	L	M	L	M
Commercial fishing - Shrimp/prawn push netting	L	H	L	M
Commercial fishing - Hand - raking cockles	L	M	L	M
Commercial fishing - Winkle hand gathering	L	M	L	M
Commercial fishing - Peeler crabs	L	M	L	N
Commercial fishing - Cultivation of native oysters	L	M	L	M
Commercial fishing - Cultivation of mussels	L	M	M	M
Commercial fishing - Cultivation of cockles	L	M	M	M
Pollution - sacrificial zinc anodes	L	L	M	L
Pollution - industry point sources	L	M	L	M
Pollution - airborne emissions	L	H	L	L
Commercial vessels - sewage	L	H	L	H
Commercial vessels - oil transportation	L	H	M	H
Commercial vessels - chemical transportation	L	H	L	H
Commercial vessels -anchoring	L	L	L	H
Recreation - anchoring	L	M	L	L
Commercial vessels - maintenance dredging	L	H	L	H
Commercial vessels - plough dredging	L	M	L	M
Other - Archaeological excavations	L	M	L	M
Commercial fishing - Fyke nets (eels)	N	N	L	M
Commercial fishing - Trolling / hand lining	N	N	M	M
Recreation - angling	N	N	H	M
Commercial fishing - Shrimp trawl	N	M	N	M
Commercial fishing - Otter trawl	N	M	N	M

Note: List comprises actual or possible ongoing activities, and does not include planned development whether small scale e.g. moorings or large scale e.g. port expansion.

Cumulative effects

This assessment was intended to identify those individual activities where suitable management to control or reduce the risk they pose to EMS features should be prioritised.

It is also important to understand the cumulative effects from the broad list of pressures acting on the site. Cumulative effects are defined in Habitat Regulations Guidance note 4 (English Nature 2001) as comprising of all “plans or projects” and other influences on the site (including non-licensed activities and natural conditions) which have affected and are continuing to affect the condition of each European interest feature on the site.

Annex B Summary of actions to be undertaken in Poole Harbour

Key Actions for High Risk Activities

Activity	Action	Responsible Authority for Action	Stakeholders Involved	Start of Action	Completion Deadline
Other - bait dragging & bait digging	A map needs to be produced of where both bait dragging and bait digging activities are known to take place	Natural England and Southern Sea Fisheries District committee	Poole Harbour Study Group and Poole Harbour Steering Group	ASAP	Dec 2010 and then repeated annually
	Borough of Poole Bye-law: Implement a byelaw to prohibit bait digging (commercial and personal use) in parts of Holes Bay 2010/2011	Borough of Poole and Natural England	Poole Harbour Steering Group	Dependent on gaining agreement with landowners	Dec 2011 (Dependent on gaining agreement with landowners)
Commercial fishing – illegal fishing	Watercraft survey all year around especially during key bird sensitive times (e.g. winter) and bird sensitive areas (in addition to key wintering bird sensitive areas need to consider Mediterranean gull breeding sites and breeding common tern feeding sites) <i>(In addition to fishing boats other watercraft (recreational, baitdragging etc would be recorded)</i>	SSFDC/IFCA	NE, Borough of Poole , Poole Harbour Commissioners	ASAP	Winter 2011
	A multi-agency agreed plan for enforcement of illegal fishing activities should be developed and implemented. This should include a clear and transparent risk based enforcement approach for dealing with the problem, with an assessment of any additional resources required. The plan should have the aim of significantly reducing the level of illegal activity within three years.	Police, SSFDC and MMO using Multi agency approach	Licensed fishermen	September 2010	Production of a plan by Dec 2011 Significant reduction in illegal fishing by March 2014

Other actions which could support assessment of impacts but are not essential to reducing the high risk and will be dependent on available funding

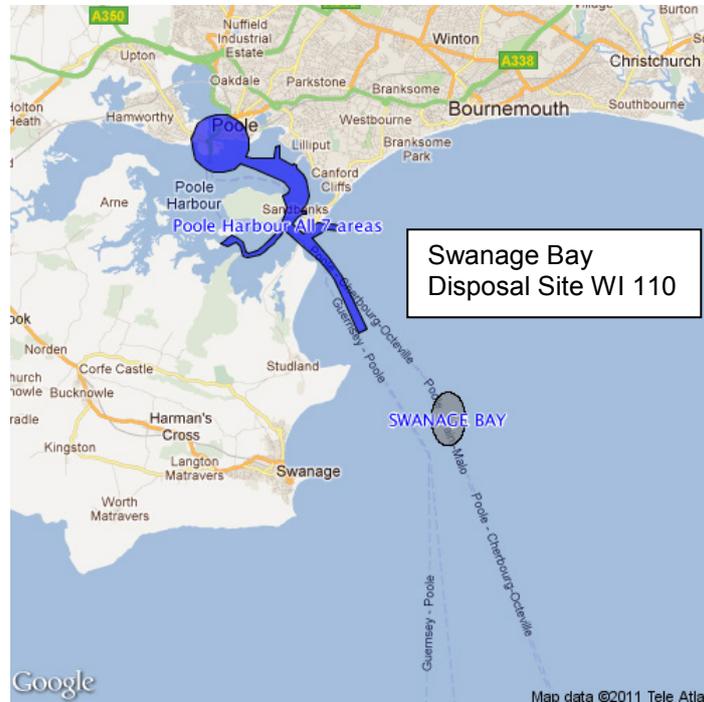
Activity	Action	Responsible Authority for Action	Stakeholders Involved	Start of Action	Completion Deadline
Other - bait dragging & bait digging	Additional evidence: Further research is required on the extent and impacts of bait digging in Poole Harbour to gauge the intensity/extent of damaging activity and therefore the appropriate management actions.	Natural England	Poole Harbour Study Group and Poole Harbour Steering Group	Dependent on funding	Dec 2011 (Dependent on funding)
	Further research into the impacts of bait dragging to assess the full environmental effect on the site.	Natural England	Poole Harbour Study Group and Poole Harbour Steering Group	Dependent on funding	Dec 2011 (Dependent on funding)
	Voluntary restrictions. In parallel, NE and the SSFDC will consider a programme of awareness raising including dissemination of code of practice leaflets being produced through the Poole Harbour Steering group to highlight the location sensitive areas. Eg Angling shops	Natural England and Southern Sea Fisheries Committee	Poole Harbour Steering Group	April 2011	Dec 2011
	Voluntary agreement and a Code of Practice agreed between Natural England and responsible bait draggers to avoid sensitive bird areas and zosteria areas	Natural England	IFCA, NE and Poole Harbour Steering Group	April 2011	Dec 2011
Commercial fishing – illegal fishing	Improved understanding of the impacts of visual and noise disturbance and prey availability effect and bird behaviour (ie how feeding effected by physical change in the mudflat) in combination with other disturbance activities	NE, SSFDC	Poole Harbour Study Group, University of Bournemouth	Funding dependent	Dec 2012
	Liaison meetings with licensed clam fisherman to ensure their views as to intensity and extent of problem considered			Ongoing	

For medium and low risk activities see the 'Review of Poole Harbour Aquatic Management Plan Table'.

<http://www.pooleharbouraqmp.co.uk/>

Appendix 3. Water Framework Directive Assessment

This Assessment is in line with the requirements for applications for marine licences for dredging and disposal. The drawing below shows the area included in the Poole Harbour Commissioners maintenance dredging licence for disposal at Swanage Bay



The Environment Agency has issued two documents:

1. 'Clearing the Waters, Marine Dredging & the Water Framework Directive'
http://www.environment-agency.gov.uk/static/documents/Business/Stage_one_Screening_final.pdf
2. 'Water for Life and Livelihoods, River Basin Management Plan, South West River Basin District, Annex B : Water body status objectives'
<http://publications.environment-agency.gov.uk/PDF/GESW0910BSTR-E-E.pdf>

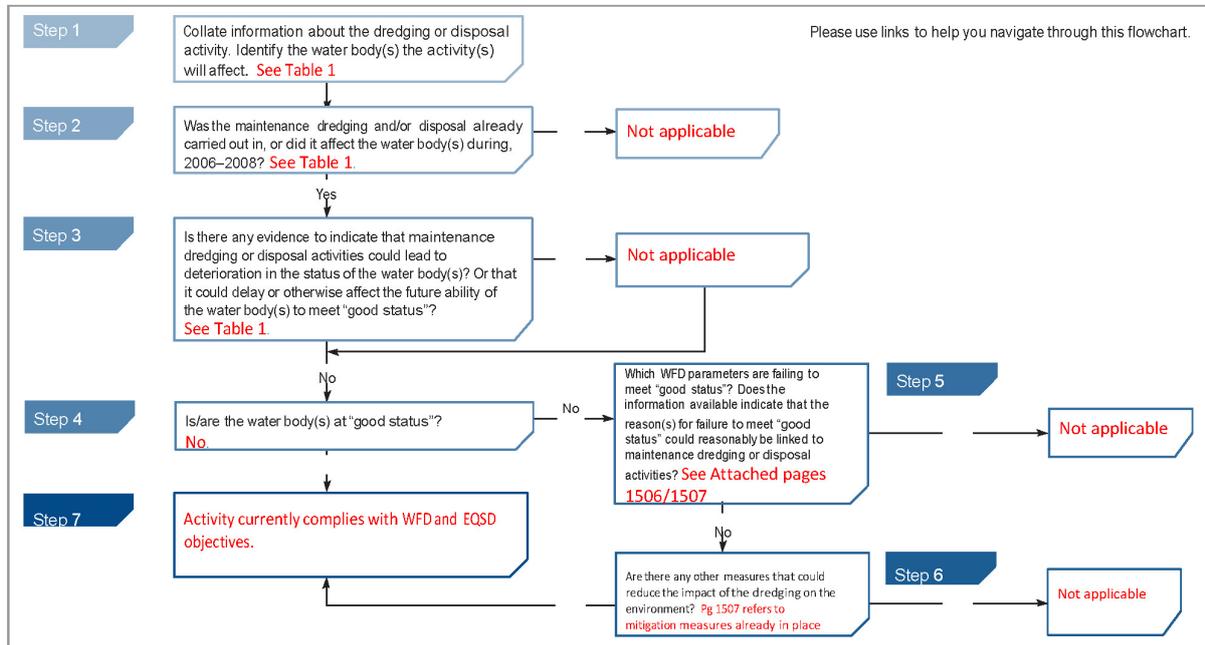
The following pages from these documents were used to ensure that the Commissioners comply with the requirements:

1. Screening process of Area T9 – Poole Harbour
2. The screening process of Area C20 – Dorset/Hampshire
3. Combined Tables 1 and 2 referring to above areas
4. Backup sheets pages 1487, 1506 and 1507 from Appendix A/B of the South West River Basin Management Plan

Clearing the waters – Stage one: the screening stage

Water Body ID **GB520804415800**
 Water Body Name **Poole Harbour (Area T9)**

Screening process flowchart for dredging and disposal operations

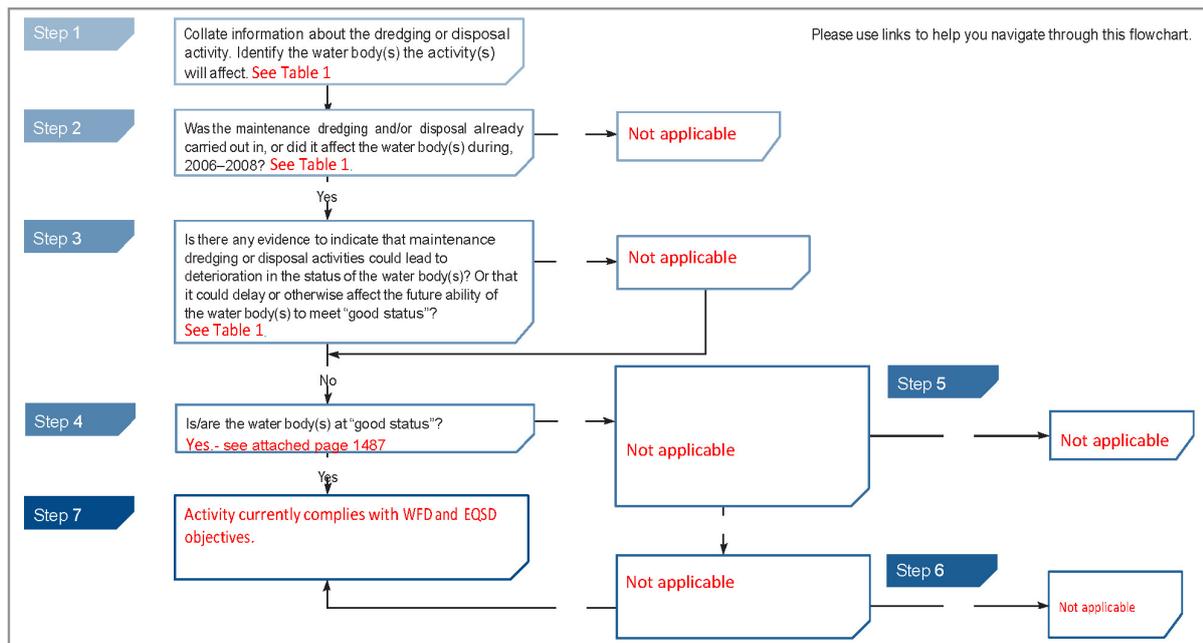


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Clearing the waters – Stage one: the screening stage

Water Body ID **GB620705550000**
 Water Body Name **Dorset/Hampshire (Area C20)**

Screening process flowchart for dredging and disposal operations



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Waterbody Category and Map Code.:	Transitional - T9	Surveillance site: Yes
Waterbody ID and Name:	GB520804415800	POOLE HARBOUR
National Grid Reference:	SZ 01488 88754	
Current Overall Potential	Poor	
Status Objective (Overall):	Good by 2027	(For Protected Area Objectives see Annex D)
Status Objective(s):	Good Ecological Potential by 2027, Good Chemical Status by 2015	
Justification if overall objective is not good status by 2015:	Disproportionately expensive, Technically infeasible	
Protected Area Designation:	Bathing Water Directive, Freshwater Fish Directive, Nitrates Directive, Shellfish Water Directive, Urban Waste Water Treatment Directive	
SSSI (Non-N2K) related:	No	
Hydromorphological Designation:	Heavily Modified	
Reason for Designation:	Coastal Protection, Navigation	
Downstream Waterbody ID:	GB650805310000	

Ecological Potential

Current Status (and certainty that status is less than good) Poor (Uncertain)

Biological elements

Element	Current status (and certainty of less than good)	Predicted Status by 2015	Justification for not achieving good status by 2015
Fish	Good	Good	
Invertebrates	Good	Good	
Macroalgae	Poor (Uncertain)	Poor	Disproportionately expensive (N1c)

Supporting elements

Element	Current status (and certainty of less than good)	Predicted Status by 2015	Justification for not achieving good status by 2015
Dissolved Inorganic Nitrogen	Moderate (Uncertain)	Moderate	Disproportionately expensive (N1c)
Dissolved Oxygen	High	High	
Copper	High	High	
Iron	High	High	

Supporting conditions

Element	Current status (and certainty of less than good)	Predicted Status by 2015	Justification for not achieving good status by 2015
Tidal Regime - Freshwater Flow	Supports Good	Supports Good	

Ecological Potential Assessment

Element	Current status	Predicted Status by 2015	Justification for not achieving good status by 2015
Mitigation Measures Assessment	Moderate	Moderate	Technically infeasible (M3f)

Waterbody Category and Map Code.:	Coastal - C20	Surveillance site: No
Waterbody ID and Name:	GB620705550000	Dorset / Hampshire
National Grid Reference:	SZ 11198 79772	
Current Overall Potential	Good	
Status Objective (Overall):	Good by 2015	(For Protected Area Objectives see Annex D)
Status Objective(s):	Good Ecological Potential by 2015	
Justification if overall objective is not good status by 2015:		
Protected Area Designation:	Bathing Water Directive, Natura 2000 (Habitats and/or Birds Directive), Nitrates Directive, Shellfish Water Directive	
SSSI (Non-N2K) related:	No	
Hydromorphological Designation:	Heavily Modified	
Reason for Designation:	Coastal Protection	
Downstream Waterbody ID:		

Ecological Potential

Current Status (and certainty that status is less than good)	Good
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Biological elements

Element	Current status (and certainty of less than good)	Predicted Status by 2015	Justification for not achieving good status by 2015
Invertebrates	Good	Good	
Macroalgae	Good	Good	
Phytoplankton	High	High	

Supporting elements

Element	Current status (and certainty of less than good)	Predicted Status by 2015	Justification for not achieving good status by 2015
Dissolved Inorganic Nitrogen	Good	Good	
Dissolved Oxygen	High	High	
Copper	High	High	

Ecological Potential Assessment

Element	Current status	Predicted Status by 2015	Justification for not achieving good status by 2015
Mitigation Measures Assessment	Good	Good	

Chemical Status

Current Status (and certainty that status is less than good)	Does not require assessment
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Mitigation Measures that have defined Ecological Potential

Mitigation Measure	Status
Vessel Management	In Place
Manage disturbance	In Place
Site selection (dredged material disposal) (e.g. avoid sensitive sites)	In Place
Sediment management	In Place
Alter timing of dredging / disposal	In Place
Reduce impact of dredging	In Place
Prepare a dredging / disposal strategy	In Place
Avoid the need to dredge (e.g. minimise under-keel clearance; use fluid mud navigation; flow manipulation or training works)	In Place
Preserve and where possible enhance ecological value of marginal aquatic habitat, banks and riparian zone	Not In Place
Bank rehabilitation / reprofiling	Not In Place

Chemical Status

Current Status (and certainty that status is less than good)	Good
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Chemical elements

Element	Current status (and certainty of less than good)	Predicted Status by 2015	Justification for not achieving good status by 2015
1,2-dichloroethane	High	High	
Cadmium And Its Compounds	High	High	
Hexachlorobenzene	High	High	
Hexachlorobutadiene	High	High	
Hexachlorocyclohexane	High	High	
Lead And Its Compounds	High	High	
Mercury And Its Compounds	High	High	
Pentachlorophenol	High	High	
Trichlorobenzenes	High	High	
Trichloromethane	High	High	
Aldrin, Dieldrin, Endrin & Isodrin	High	High	
Carbon Tetrachloride	High	High	
DDT Total	High	High	
para - para DDT	High	High	
Tetrachloroethylene	High	High	
Trichloroethylene	High	High	

Clearing the waters – Stage one: the screening stage

Table 1: The screening process

	Dredging	Disposal
Location of proposed dredging or disposal activity: <ul style="list-style-type: none"> Describe location(s) or provide grid reference or other coordinates. Dredge footprint. Dredge depth. Dredge timing and duration (proposed). Dredge methodology. 	Location and footprint as per attached drawing (Approach Channel 7.5km) Dredge depth max 1m 10,000m ³ spread throughout the year by grab/backhoe Up to 40,000m ³ per year by suction hopper trailer dredger at 20,000m ³ /trip – usually 3 days	WI110 As per dredging
Above information relating to any previous dredging and disposal activities at that location.	Licence 34141	Licence 34141
Sediment quality data (available from MMO or CEFAS if a FEPA application has previously been made).	CEFAS Das 34141/080808 DC7552	-
Protected areas.	No	No
Was this dredging and/or disposal activity carried out during the period 2006–2008? – if no, go to scoping. – if yes, continue.	Yes	Yes
Do one or more of the following (area, volume, method and timing of the dredging or disposal activity) differ significantly from that carried out during 2006–2008? – if yes, go to scoping. – if no, continue.	No	No
Is there any evidence that indicates that maintenance dredging or disposal activities could lead to deterioration in the status of the water body(s) or delay or otherwise affect the future ability of the water body(s) to meet good status?	No	No
Is the water body (or are the water bodies) already at good status (see Table 2)? – if yes, go to step 6. – if no, continue.	C20 Yes T9 No	C20 Yes
Could dredging or disposal activities affect or have affected the status of the water body (or water bodies)? – if yes, go to scoping. – if no, continue.	No	No
	Dredging	Disposal
Are there any (additional) cost-effective, technically feasible and not disproportionately costly dredging- or disposal-related measures that would contribute to a meaningful improvement in the status of the failing parameters at water body level?	No	No
Activity currently complies with WFD objectives?	Yes	Yes

Table 2: Water body information required to inform Screening Process

Water body name and reference	Water body size	Current status	If not at "good status", record 2015 objective	If not at "good status", record all WFD parameters at moderate status or below	Is the water body designated as heavily modified or artificial? If so, record the reason for designation
C20	513 km ²	Good	-	-	Heavily modified
T9	33 km ²	Poor	Chemical – good Ecological – good by 2027	See page 1506/1507 attached	Heavily modified

Date: 03 July 2012

Our Ref: Poole Harbour SSSI/PHC



2nd Floor,
Cromwell House,
15 Andover Road,
Winchester,
SO23 7BT

Dear Andy

Thank you for your sending Natural England the finalised version of the 'Poole Harbour Baseline Document for Maintenance Dredging Protocol'.

We confirm that Natural England are satisfied that the document has taken full consideration of the potential environmental impacts of maintenance dredging and developed a protocol to minimise these impacts. In particular we support the proposals to retain and dispose of material in the harbour and the proposal for ongoing monitoring.

Yours sincerely

A handwritten signature in cursive script that reads "Rachel Waldock".

Rachel Waldock
Senior Adviser