

10 PROPOSALS FOR MONITORING

10.1 Introduction

10.1.1 A monitoring strategy has been developed to focus on those aspects of the environment that are predicted to be affected by the proposed channel dredging and/or which are considered to be of particular importance (i.e. where concern has been expressed by consultees regarding potential impacts on a particular parameter). In addition, in cases where the consequences of change due to the proposed dredging could be of importance, targeted monitoring is proposed.

10.1.2 Currently, a significant amount of monitoring is undertaken within Poole Harbour and Poole Bay. Therefore, with respect to the deepening, the most effective approach would be to integrate any monitoring required with existing initiatives, where this is considered to be appropriate.

10.2 Proposed monitoring within Poole Harbour

Harbour-wide bathymetry

10.2.1 PHC currently undertake detailed bathymetric surveys of the subtidal areas of the Harbour, including the navigation channels. It is proposed that this monitoring should be continued in order to record the ongoing changes in the Harbour and the effect of the proposed dredging on the subtidal areas of Poole Harbour.

Saltmarsh

10.2.2 Monitoring of the extent of the saltmarsh in Poole Harbour undertaken by the Poole Harbour Study Group (2001-2002), using hand-held Geographical Positioning Systems (GPS), provides a good baseline for future monitoring. A combination of PHC bathymetric survey data, GPS surveying of the saltmarsh edge and any suitably ground-truthed LiDAR data that has been collected by third parties for the intertidal and flood plain would provide a good means of quantifying the ongoing evolution of the Harbour in the future.

Suspended sediment concentrations

10.2.3 It is proposed that targeted monitoring of suspended sediment concentrations (SSC) would be undertaken during the dredging and that such monitoring would be phased. Prior to monitoring the capital dredging of silty material, it is proposed that a monitored trial of agitation dredging in the Turning Basin would be undertaken to inform the use of these methods for future maintenance dredging.

10.2.4 It is not considered that a requirement exists to monitor SSC for the duration of the capital dredging campaign. However, a series of baseline measurements (at least a spring-neap cycle) followed by measurements during the likely worse case events (i.e. dredging of the siltiest material) are recommended.

Waterbird populations

- 10.2.5 Comprehensive counts of waterbird populations are undertaken as part of WeBS through the autumn and winter period, at low water, on a sector by sector basis throughout Poole Harbour. Although no effects are predicted on waterbird populations as a result of the proposed scheme, given the internationally important status of the habitats and waterbird populations within the Harbour, it is important that these populations are monitored.
- 10.2.6 It is considered that WeBS is the most appropriate method for monitoring waterbird populations in the Harbour and no changes to this programme are required as a result of the proposed scheme. However, the data from WeBs should be analysed on an annual basis.

10.3 Proposed monitoring at the entrance to Poole Harbour

Current regime

- 10.3.1 The strong currents through the Harbour entrance, and potential changes to these currents, are of concern to the Poole Yachting Association. It is proposed to repeat Acoustic Doppler Current Profiler (ADCP) measurements undertaken as part of the baseline studies to demonstrate whether there has been a change to flow conditions in the entrance as a result of the works.

Position of chains for the chain ferry

- 10.3.2 At present, PHC monitor the positions of the chains at 12 monthly intervals and it is proposed that this would be continued following the proposed channel deepening.

10.4 Proposed monitoring within Poole Bay

Beach profiles

- 10.4.1 It is considered that the programme of beach profile monitoring already in place in Poole Bay is comprehensive and would be adequate for determining whether or not changes occur at the coastline following the proposed dredging. For the most sensitive locations between the middle of Studland Bay around South Haven Point into the Harbour, it is proposed that additional surveys of existing profiles (before, during and after the proposed capital dredging) should be undertaken to complement and extend the existing data.

Bathymetry

- 10.4.2 The hydraulic studies determined that the changing morphology of Hook Sands was an important influence on wave conditions in the area. It is considered that existing PHC bathymetric surveys of the area around the Swash Channel and Hook Sands are adequate to describe the baseline conditions. Such surveys would continue following the proposed capital dredging and would be sufficient to determine any effect of the dredging on these areas.
- 10.4.3 Bathymetric survey of the Swanage disposal ground should be undertaken before, during and after the disposal of capital dredgings in order to assess the degree of accumulation of material at the disposal ground.

Suspended sediment concentrations and deposition on subtidal marine communities

- 10.4.4 Concern has been expressed regarding the predicted increases in SSC during the offshore disposal of dredged material and the potential subsequent deposition of fine sediment on subtidal marine communities of nature conservation importance.
- 10.4.5 It is considered that the most appropriate and efficient approach to monitoring such effects is to use a combination of different methods. In order to quantify changes to SSC during the offshore disposal of dredged material, it would be practical to deploy a suitably instrumented bed frame in the vicinity of the *Sabellaria spinulosa* reefs and maerl beds to measure near-bed conditions during periods of disposal of silty material. In combination with the above, a series of dive surveys on areas of nature conservation interest would be the most suitable approach to monitor the potential deposition of fine sediment at these sites.

10.5 Reporting and presentation of monitoring

- 10.5.1 It is proposed that the details of the monitoring described above (e.g. exact methodology, frequency, duration, etc.) would be discussed and agreed with appropriate bodies (e.g. English Nature, CEFAS, etc.), subject to the scheme receiving consent. In addition, at this stage it would be necessary to agree a reporting strategy and an appropriate format and/or forum for the dissemination of findings. However, a possible approach could be to report the results of monitoring undertaken during the construction period on completion of the dredging and to report the results of subsequent monitoring on an annual basis.
- 10.5.2 The above represents a system for the reporting and review of monitoring and would allow the opportunity for any agreed monitoring programme to be amended as appropriate subject to the findings that emerge.