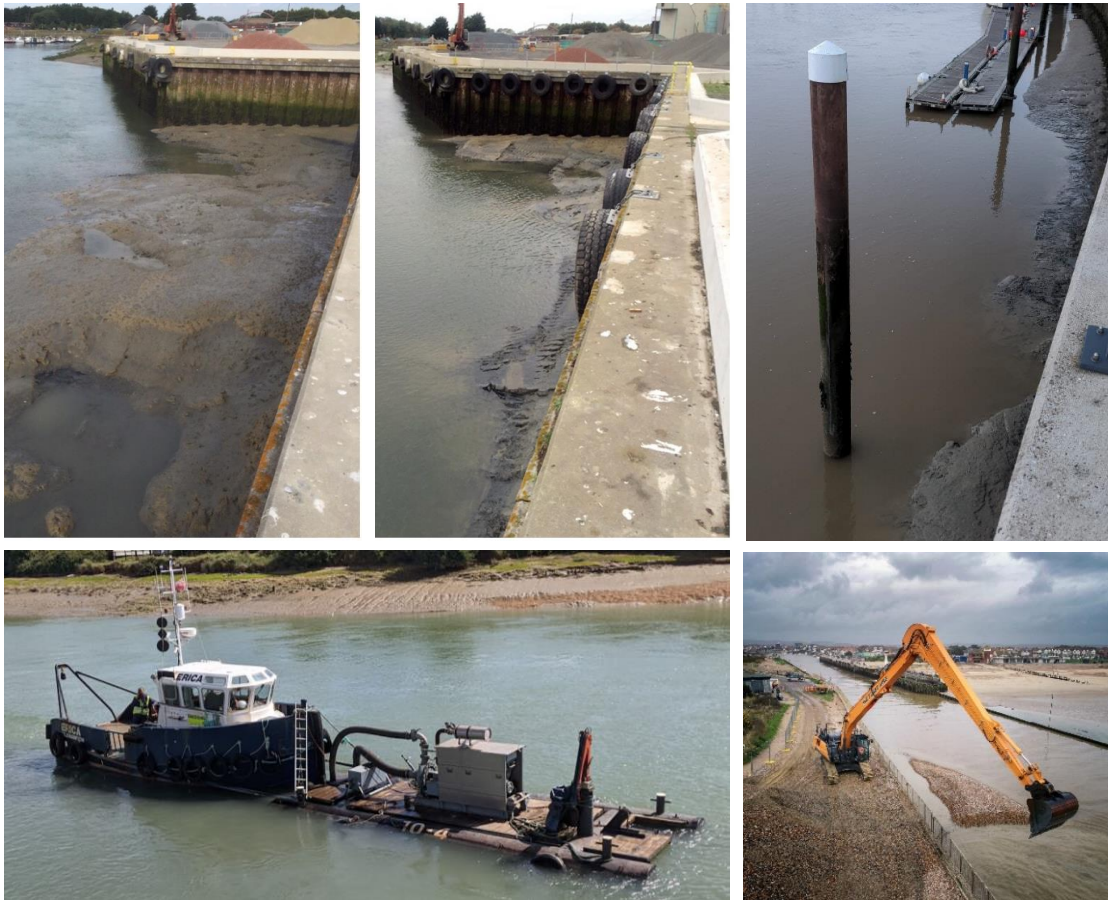


Littlehampton Maintenance Dredge Protocol and Water Framework Directive Compliance Baseline Document



V1.1 - January 2023

Summary

The Littlehampton Harbour Board (LHB), the Statutory Harbour Authority (SHA) for Littlehampton Harbour, first compiled this Maintenance Dredge Baseline document in 2016 in support of the Maintenance Dredge Protocol with the intention to reissue approximately 5 yearly. The aim of the protocol is to collate relevant information into a Baseline Document to assist operators and regulators seeking, or giving approval, for maintenance dredging activities that could potentially affect European designated sites. In the case of Littlehampton this policy has been applied to nationally protected environmental sites – namely the adjacent Climping Beach Site of Special Scientific Interest (SSSI) and Local Nature Reserve (LNR) and the newly established Marine Conservation Zone (MCZ) at Kingmere Rocks 3 nautical mile (nm) offshore. This Baseline Document provides information to:

Provide all parties wishing to carry out maintenance dredging within the harbour area with the relevant baseline information; and provide the information needed to inform the preparation of Water Framework Directive (WFD) compliance assessments in accordance with the Environment Agency's 'Clearing the Waters' guidance.

This Baseline Document concludes that the present maintenance dredging practices are sustainable and not having an adverse effect on the features of the SSSI, the estuary of the River Arun or the adjacent MCZ.

Version History

V1.0	First version published September 2016 following a consultation process starting in October 2015
V1.1	5 year update issued following consultation of local mooring operators, Natural England and the Environment Agency throughout 2022.

Contents

1. Introduction
2. Legislation
 - 2.1 National Legislation
 - 2.2 Marine Navigation Dredging Under the Habitats Regulations
 - 2.3 Marine Navigation Dredging Under the Water Framework Directive
 - 2.4 Local Harbour Powers
3. Coastal and Fluvial Processes
 - 3.1 Fluvial Sediment
 - 3.2 Coastal Sediment
4. Dredging Information
 - 4.1 Historic Dredging
 - 4.2 Current Dredge Practice
 - 4.3 Dredging Methods
5. Sediment Quality
6. Bathing Water Quality
7. Licence Information
 - 7.1 LHB Licence Information
 - 7.2 Current Non-LHB (Third Party) Licence Information
8. Environmental Information
 - 8.1 Conservation and Designations

1. Introduction

1.1 Background

The Littlehampton Harbour Board (LHB) is the Statutory Harbour Authority (SHA) for the port of Littlehampton extending from approximately 100 feet south of the west training wall (Drum Head) and approximately 500 yards either side of this point to Mean High Water Springs (MHWS) on the east and west beaches, and on the River Arun to MHWS extending up to the old Arundel road bridge. Maintaining safe port access for commercial and recreational maritime transport is an important function for Harbour Authorities (HA). This necessitates the maintenance dredging of access channels and berth pockets to remove recently deposited sediment. Most of the dredging occurs at the entrance to the harbour but individual berth operators also dredge their mooring areas.

1.2 Objectives

Where maintenance dredging has the potential to affect a Natura 2000 (N2K) site, such as a Special Area of Conservation (SAC) or Special Protection Area (SPA) as designated under the EC Habitats Directive 92/43/EEC, the Government considers maintenance dredging to be a 'plan or project' for the purposes of the Habitats Directive. Because of this, maintenance dredging operations in such areas would need to be assessed in accordance with Article 6(3) of the Directive. The requirements of the Habitats Directive have been transposed into UK legislation through, most recently, the Conservation of Habitats and Species Regulations 2017 (as amended) (commonly referred to as the Habitats Regulations)¹.

A Draft Conservation Assessment Protocol on Maintenance Dredging and the Habitats Regulations 2010 ('Draft Protocol') has been developed to assist port authorities in fulfilling their statutory obligations of devising arrangements which allow the effects of maintenance dredging on N2K sites to be reviewed in a way which does not impose a disproportionate burden on industry, Government or its agencies.

The Draft Protocol was produced in December 2003 and trialled at a number of ports although it has not yet been adopted. It was recommended within the draft protocol that a 'Baseline Document' is prepared, which would draw on existing and readily available information to describe current and historic patterns of dredging in relation to the conservation objectives of adjacent European Marine Sites.

Although there are no N2K sites within the Littlehampton SHA there is an adjacent site with Special Scientific Interest (SSSI) and Local Nature Reserve (LNR) status at Climping Beach as well as a Marine Conservation Zone (MCZ) at the Kingmere Rocks site centred approximately 3 nautical miles (nm) offshore. This report represents the 'Baseline Document' for the continuation of maintenance dredging in the Littlehampton Harbour SHA.

The competent authority for overseeing the implementation of the WFD within England is the Environment Agency either through local powers or as a statutory consultee through the MMO marine licensing process. The Baseline Document therefore provides a basis for the relevant authority to consider maintenance dredge applications.

Production of a Baseline Document is voluntary but without it individual maintenance dredge proposals (in this instance from third party berth operators within the LHB SHA) may require more extensive and time-consuming information gathering and consultation. The Baseline Document therefore aims to provide an agreed basis for the licensing authority to consider

¹ These have been modified by the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019.

maintenance dredge applications. The presumption, in assessing any potential consequences of dredging activity, is that maintenance dredging will continue in line with established practice. To establish existing maintenance dredge activities, this baseline has drawn on existing and readily available information, including MMO and LHB records of current and historical dredging activity within the harbour (both above and below the MMO's licensing thresholds)

At the outset it is recognised that both capital and maintenance dredging has been an ongoing activity within the port for the safe navigation and berthing of vessels since the Port of Arundel (the predecessor to the port of Littlehampton) was established in 1733.

Historically dredge disposal activities have been licensed by the regulator but no dredging involving disposal below MHWS has taken place since the introduction of MMO marine licensing in 2011 so no information is available.

2. Legislation

Marine navigational dredging (both capital and maintenance dredging) and disposal are regulated activities due to their potential to negatively affect the environment if they are not carefully considered and controlled. The following section details the legislative context in which this Baseline Document has been drafted.

2.1 National Legislation

Dredge and disposal operations are regulated in England by the MMO, an executive non-departmental public body (NDPB) established and given powers under the 'Marine and Coastal Access Act' 2009. This Act came into effect on 6 April 2011 and covers the area from Mean High Water Springs (MHWS) out to 12nm. This process requires anybody wishing to undertake works which are deemed to involve a licensable activity to obtain a marine licence from the MMO, unless the activity qualifies for an exemption from marine licensing.

The Marine and Coastal Access Act 2009 and the Marine Licensing (Exempted Activities) Order 2011 (as amended) set out activities which may be exempt from requiring a marine licence in certain circumstances. This includes certain dredging activities carried out by, or on behalf of, a Harbour Authority, which involves the relocation of sediments inside surface waters, including for the purpose of managing waters and waterways. The activity must be authorised by a local Act or harbour order and the authority must demonstrate to the MMO's satisfaction that the sediments are non-hazardous. Similarly, small-scale navigational dredging (removing under 500m³ dredge material per campaign and under 1,500m³ per annum; referred to as '*de minimus*' dredging) carried out for navigational purposes in an area that has been dredged at least once in the preceding 10 years is exempted from the requirements of a marine licence.

It should be noted that while certain dredging activities are exempted from requiring a marine licence to be issued by the MMO, the activity of disposing dredged material at sea (i.e. conventional disposal of dredge arisings at a licensed marine disposal site) requires a separate marine licence.

2.2 Marine Navigation Dredging Under the Habitats Regulations

It is the Government's view, supported by rulings in the European Court of Justice, that maintenance dredging should be considered as a 'plan or project' for the purposes of the EC Habitats Directive (92/43/EEC), and assessed in accordance with Article 6(3) of that Directive (Defra, 2007). Under Article 6(3) of the Habitats Directive, as enforced in the UK through the Habitats Regulations, an Appropriate Assessment (AA) is required where a plan or project is not directly connected with, or necessary for the management of N2K sites (also known as 'European sites') and where the possibility of a likely significant effect (LSE) on these sites cannot be excluded, either alone or in-combination with other plans or projects. Section 4.1 of the Conservation Assessment Protocol (Defra, 2007) states that the expectation (in the absence of any conflicting evidence) is that a maintenance dredge proposal will not have a LSE on a European site when:

The Baseline Document shows that maintenance dredging is not causing deterioration in the condition of the site, and

There will be little or no change to the situation described in the Baseline Document.

Where this is the case it will not be necessary for the Competent Authority to require further information or to carry out a more detailed assessment for the purposes of the Habitats Regulations.

2.3 Marine Navigation Dredging Under the Water Framework Directive

The EU Water Framework Directive (WFD) (2000/60/EC), which came into force on 22 December 2000, establishes a framework approach to the protection, improvement, management and sustainable use of Europe's rivers, lakes, estuaries, coastal waters and groundwaters. The Directive applies to all surface waters out to 1 nm seaward of the baseline for territorial waters and to groundwaters. For management purposes, surface and ground waters are divided into a number of discrete units termed 'water bodies'. Water bodies relevant to this study are shown in Figures 1 and 2 below.



Figure 1. Location of Arun transitional water body (GB540704105000)

Water Body Name	Arun
Water Body ID	GB540704105000
Water Body Type	Transitional Water
Water Body Area	1.246 km ²
Hydromorphological Designation (Reasons for Designation)	HMWB (flood protection)
Protected Area Designations	Safeguard Zone, Conservation of Wild Birds Directive (SPA), Drinking Water Protected Area, Habitats and Species Directive (SAC)
Overall Status (2019)	Moderate
Ecological Status (2019)	Moderate
Chemical Status (2019)	Fail
Parameters Not At Good Status	Mitigation Measures Assessment, Mercury and its compounds, Polybrominated diphenyl ethers (PBDE)
Higher Sensitivity Habitats	Saltmarsh (10.33ha) Subtidal kelp beds (1.44ha)
Lower Sensitivity Habitats	Intertidal soft sediment (8.06ha) Subtidal rock reef (1.44ha) Subtidal soft sediments (6.70ha)
Phytoplankton Status	-
History of Harmful Algae	Not monitored

Table 1. Arun transitional water body summary

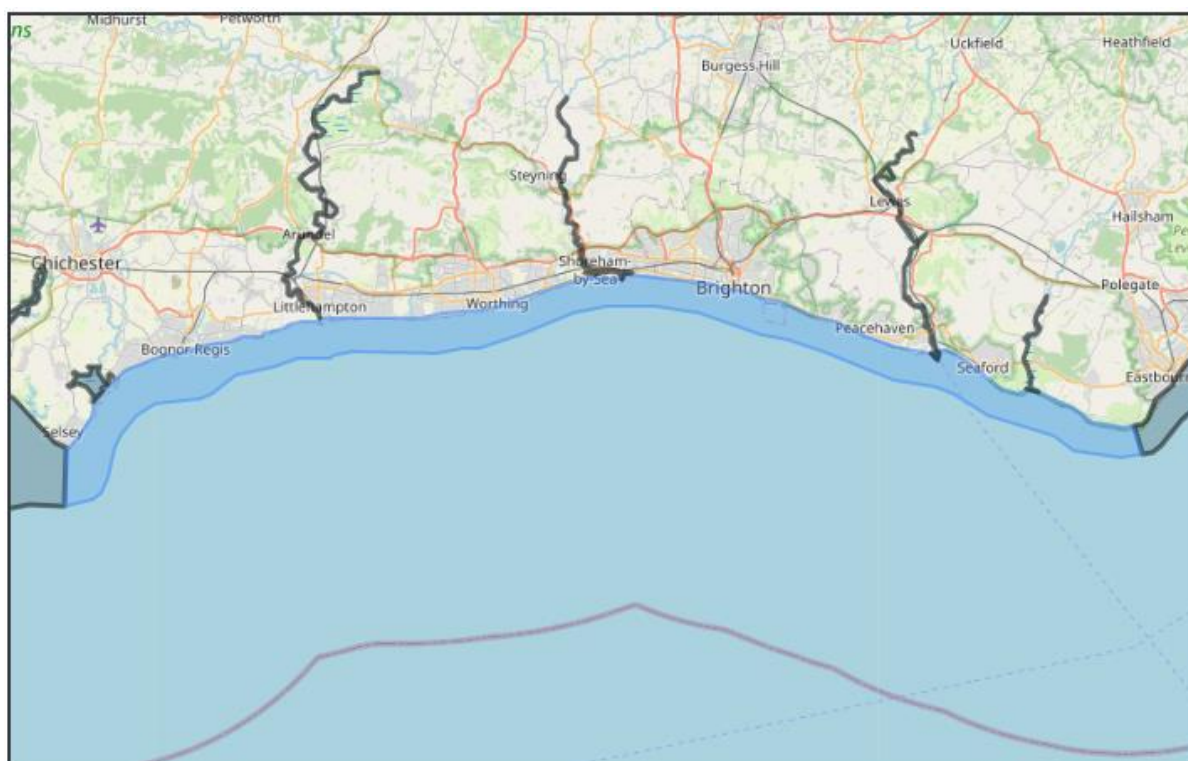


Figure 2. Location of Sussex coastal water body (GB640704540003)

Water Body Name	Sussex
Water Body ID	GB640704540003
Water Body Type	Coastal Water
Water Body Area	189.925 km ²
Hydromorphological Designation (Reasons for Designation)	HMWB (coastal protection)
Protected Area Designations	Conservation of Wild Birds Directive (SPA), Bathing Water Directive
Overall Status (2019)	Moderate
Ecological Status (2019)	Moderate
Chemical Status (2019)	Fail
Parameters Not At Good Status	Mitigation Measures Assessment, Mercury and its compounds, Polybrominated diphenyl ethers (PBDE)
Higher Sensitivity Habitats	Chalk reef (11,637.06ha) Mussel beds, including blue and horse mussel (450.63ha) Saltmarsh (1.12ha) Subtidal kelp beds (2,313.15ha)
Lower Sensitivity Habitats	Cobbles, gravel and shingle (1,207.59ha) Intertidal soft sediment (745.94ha) Rocky shore (924.69ha) Subtidal rock reef (10,896.08ha) Subtidal soft sediments (4,502.06ha)
Phytoplankton Status	Good
History of Harmful Algae	Not monitored

Table 2. Sussex coastal water body summary

The WFD is implemented in England and Wales through the 'Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 (as amended)' (commonly termed the Water Framework Regulations)². The overall objective of the WFD is to achieve "good ecological and good chemical status" in all inland, transitional, coastal and groundwaters by 2021 unless alternative objectives are set or there are grounds for time limited derogation. For example, where pressures preclude the achievement of good status (e.g. coastal defence) in heavily modified water bodies (HMWBs), the WFD provides that an alternative objective of "good ecological potential" is set. There is also a general "no deterioration" provision to prevent decline in status.

River Basin Management Plans (RBMPs) are a requirement of the WFD, setting out measures for each river basin district to maintain and improve quality in surface and groundwater water bodies where necessary. In 2009, the Environment Agency published the first cycle (2009 to 2015)³ of RBMPs for England and Wales, reporting the status and objectives of each individual water body. The Environment Agency subsequently published updated RBMPs for England as part of the second cycle (2015 to 2021)⁴, as well as providing water body classification results from 2015 via the Environment Agency Catchment Data Explorer (<http://environment.data.gov.uk/catchment-planning>). The study area is located in the South East River Basin District which is reported in the South East RBMP.

The Environment Agency has published guidance ("Clearing the Waters for All")⁵ to assist those assessing the impact of an activity in transitional and coastal waters for the WFD.

2.4 Local Harbour Powers

The LHB is the SHA for study area covered by this Baseline Document, and as such, has powers to carry out maintenance dredging for the safe navigation of vessels under the 'Littlehampton Harbour and Arun Drainage Outfall Act 1927'. Section 41 'Power as to dredging & c.' states:

"The Harbour Board may from time to time—

- (a) Alter dredge and scour the entrance channels and waterways of the harbour;*
- (b) Widen deepen enlarge improve and maintain the docks entrances channels and waterways of the harbour and reduce or remove any shoals or accumulations and for that purpose enter into agreements with the owners of land adjoining or in or near the harbour for the purchase of land;*
- (c) Abate or remove obstructions and nuisances in the entrance channels and waterways of the harbour or on the banks thereof;*

² Following the UK leaving the EU, the main provisions of the WFD have been retained in English law through the Floods and Water (Amendment etc.) (EU Exit) Regulations 2019.

³ <https://www.gov.uk/government/collections/river-basin-management-plans-2015> (Accessed October 2022).

⁴ <https://www.gov.uk/government/collections/draft-river-basin-management-plans-2021> (Accessed October 2022).

⁵ <https://www.gov.uk/guidance/water-framework-directive-assessment-estuarine-and-coastal-waters> (Accessed October 2022).

(d) Sell or dispose of any materials raised by them under this section or lay the same behind any piers or structure or otherwise use such materials for the purpose of making altering repairing and maintaining the banks and foreshore of and improving the harbour; and

(e) Execute all other works which shall be necessary or proper for rendering the harbour safe and commodious and for carrying out the purposes of this Act:

Provided that no materials raised under the provisions of this section shall be deposited in any place below the high-water mark otherwise than in such position and under such restrictions as may be fixed by the Board of Trade [now administered by the MMO].”

These powers enable the LHB to carry out maintenance dredging in its SHA, however, consent is still required from the MMO in the form of a Marine Licence in order to deposit any dredged material at sea.

The harbour also has powers to approve marine works within the harbour. Section 43 ‘Penalty for erections without consent of harbour Board.’ is as follows. This consenting framework has also been used to monitor local dredge activity below the MMO’s licensing threshold that could still have an impact of safety of navigation in Littlehampton’s narrow and tidally restricted channel. For example, through displacement of material from berths into the fairway and thus reducing underkeel clearance.

“Subject to the provisions of this Act a person shall not make any embankment or erect any building or work in the bed or on the banks of the harbour or drive any pile therein without the written consent of the Harbour Board which consent shall be given unless in the opinion of the Harbour Board any such embankment building work or pile would interfere with or endanger the use of the waterways of the harbour. If any person acts in contravention of this section he shall be liable on summary conviction to a fine of twenty pounds and to a further penalty of forty shillings for every day on which the contravention continues after conviction:

If the Harbour Board shall refuse their consent to any such embankment building or work or to the driving of any piles in the bed or on the banks of the harbour, or as a condition of such consent shall require and modification or alteration therein any person dissatisfied by such refusal or by such modification or alteration shall notify his dissatisfaction and the reasons therefore in writing to the Harbour Board within twenty-eight days of such refusal or consent with modification or alteration as the case may be and thereupon a difference shall be deemed to have arisen between the Harbour board and such person which shall be determined by an arbitrator to be appointed in default of agreement by the Board of trade[now administered by the MMO] upon the application in writing of either of the parties and the provisions of the Arbitration Act 1889 or any statutory modification thereof shall apply to such arbitration.

Provided that nothing in this section shall affect any rights or powers of the Postmaster-General under the Telegraph Acts 1863 to 1926:

Provided also that nothing in this section shall affect any rights or powers of the Railway Company.”

3. Coastal and Fluvial Processes

There are two main sources of sediment in the LHB SHA.

3.1 Fluvial Sediment

Fluvial sediment is deposited throughout the harbour via the River Arun. This is generally confined to the accumulation of fine mud at the edge of the main channel below MHWS and in basins and moorings above MLWS. The river is notoriously swift due to its channelled and artificially established course and as such is self scouring in the main channel or fairway.

3.1 Coastal sediment

Coastal sediment in the form of shingle is provided by the process of long shore drift from the West Beach at the mouth of the river. Shingle makes its way along the West Beach until it is gathered by the West Works training wall structure. At the landward base of the West Works (where it meets the West training Wall) a large shingle bank can appear due to the continual overtopping and occasional breaches of the wooden structure.

Shingle is then transported seaward along either side of the West Works gathering at the seaward end of the training wall structures (West Works and East Training Wall or Dicker Works) before being pushed around the East Beacon and over the southern section of the Dicker works and accumulating in a shingle bank extending from the East Beacon to the third groyne on the East Beach.



4. Dredging Information

The LHB as the SHA has a statutory duty to monitor and to improve or maintain charted depths of water in navigable channels within its jurisdiction, in addition to the maintenance of its operational berthing facilities (both commercial and leisure). This is achieved through regular planned bathymetric surveys, maintenance dredge campaigns and additional capital dredge campaigns if and when required.

In addition to dredging by the LHB, there are around 5 other organisations listed below which carry out, or have carried out maintenance dredging at various scales within the last 10 years within the study area.

Where available, information on third party dredge operators and activities including their locations, methods, volumes and times has also been obtained. The following sections, therefore, describe the historic and current known dredge activities, outlining dredge quantities, dredge techniques and identifying disposal sites where appropriate.

4.1 Historic Dredging

4.1.1 Capital Projects

The MMO defines Capital Dredging as dredging to a depth not previously dredged, or to a depth not dredged within the last 10 years. Capital dredging is generally undertaken to create or deepen navigational channels, berths or to remove material deemed unsuitable for the foundation of a construction project. A capital dredge project within the SHA would require local consent from the HA (locally known as a Section 43 Consent) as well as a Marine Licence from the MMO.

S43 Licences and Applications:

There is no record of local consents issued by the LHB for capital projects.

MMO – Public Register and Other Historic Records:

There are no records of capital dredge works on the MMOs Public Register. However local research has contributed the following:

Littlehampton Harbour Board (LHB)

The LHB invested some £615K on capital dredge work at the entrance to the harbour to allow increased tidal access to the port for a commercial operator. This work was carried out by Van Oord ACZ Ltd in Jan-April 2001 and covered by FEPA licences 31174/01/2 (for disposal of up to 73,050 tonnes at the Shoreham disposal area WI031) and 31175/01/2 (for deposition of up to 20,000 cubic metres on the LW mark at Rustington).

It is estimated that by completion around 32,000 cubic metres of material were dredged of which 20,000 tonnes was deposited on the foreshore at Rustington.

Littlehampton Yacht Club (LYC)

The predecessor to the LYC the Littlehampton Sailing & Motor Club (LSMC) conducted backhoe dredging at the LYC basin in 2007/8 and again in 2008/9. It is unclear what volumes were removed or what depths were achieved, but material was piled behind the black shed on land now controlled by LYC and some subsequently moved to the Littlehampton Golf Club.

Arun Yacht Club (AYC)

The basin outside the AYC clubhouse was excavated in 1981 to 1.5m above chart datum. The arisings were used to extend the area, and height, of the club car park and dinghy pen.

Littlehampton Marina / The Shipyard / Osborne of Arun

No information regarding capital dredging has been received from Osborne of Arun, Littlehampton Marina or The Shipyard but it is clear that the historic excavation of the Littlehampton Marina basin and Timer Docks/Shipyard basins have been locally significant historical capital dredge projects.

There are no extant Marine Licences or Marine Licence Applications for capital dredge projects within the harbour.

4.1.2 Maintenance Projects

Maintenance Dredging can be defined as removal of accumulated sediments from harbour channels and berths to ensure a safe depth of water for navigational purposes. The “10-year rule” means that areas that have not been dredged within the last 10 years cannot be dredged again without being considered as a capital project.

S43 Licences and Applications

There are 11 local consents on record for maintenance dredge activity in the harbour. Four remain extant as of January 2023.

Organisation	Activity	LHB s43 Ref	Start Date	End Date	Status
AYC	Bed levelling, Basin	04/10	13 Dec 10	31 Mar 12	Expired
AYC	Bed levelling, South Yacht Berth	01/12	30 Jan 12	31 Mar 12	Expired
Osborne of Arun	Water Injection Dredging (WID) (small scale), West Bank Moorings	03/13	17 Jun 13	16 Jun 18	Expired
AYC	WID, Basin	07/13	8 Oct 13	8 Oct 18	Expired
AYC	Bed levelling, South Yacht Berth	06/14	11 Nov 14	30 Nov 14	Expired
AYC	Bed levelling, South Yacht Berth	03/15	30 Aug 15	30 Aug 20	Expired
LYC	Agitation at LW frontage	02/16	6 Jul 16	5 Jul 21	Expired
AYC	Backhoe Dredging, Embankment against basin breakwater	02/22	21 Sep 22	22 Sep 23	Extant
AYC	WID (ongoing small scale), Basin	03/22	21 Sep 22	22 Sep 27	Extant
Littlehampton Marina	WID (ongoing small scale), Basin	04/22	05 Oct 22	05 Oct 27	Extant
AYC	WID (large scale), Basin	02/23	21 Sep 22	22 Sep 23	Extant

Agitation dredging using a portable general service pump and hoses on foot is considered to be exempt from Local Consents (as well as Marine Licensing) as long as annual quantities remain under 1500 cubic metres which is understood to be the case for Arun Yacht Club,

Littlehampton Yacht Club, Osborne of Arun, the Shipyard and Littlehampton Harbour Board who regularly undertake this activity (primarily to keep pontoons sitting level at low water).

MMO – Public Register

A number of marine projects have been licensed in the harbour and these can be found by searching for Arun and Littlehampton on the MMOs Marine Case Management System – Public Register⁶. Entries recorded at time of last update of this report are below.

The AYC, LYC and Littlehampton Marina have also submitted notification of exempt activity for maintenance dredge work at the South yacht Berth and Ballast Wharf. Maintenance works carried out by marina operators are covered by an MMO exemption providing that they do not exceed 500 cubic metres per campaign and do not total more than 1500 cubic metres per annum.

Case	Project Type	Project Title	Applicant	Decision
MLA/2019/00311/2	Construction of new works	Replacement Jetty - Sea Cadets Littlehampton	Littlehampton Sea Cadets	15-Sep-22
MLA/2022/00179	Navigational dredging (maintenance)	Marina dredging	Arun Yacht Club Limited(The)	25-Aug-22
MLA/2022/00011	Deposit of markers	Arun Yacht Club cruiser yacht racing buoys.	Arun Yacht Club Limited(The)	12-Jan-22
MLA/2021/00196	Maintenance of existing structures or assets	Surrey Wharf River-wall maintenance	Wph Limited	27-Apr-21
MLA/2021/00129	Deposit of markers	Arun Yacht Club yacht racing marks	Arun Yacht Club Limited(The)	12-Mar-21
MLA/2021/00110	Maintenance of existing structures or assets	Arun Surface Water Abstraction - Screen replacement / eel screens	Southern Water Limited	02-Mar-21
MLA/2019/00233/1	Other works	Arundel Tidal Flood Defences	Environment Agency (Southern Region)	27-Mar-20
MLA/2020/00055	Deposit of markers	Arun Yacht Club yacht racing marks	Arun Yacht Club Limited(The)	27-Jan-20
MLA/2018/00505	Maintenance of existing works	Replacement of a bridge, pontoon and access jetty	Osborne Of Arun Group (Management) Limited	29-Jan-19
MLA/2017/00151/1	Maintenance of existing works	Arundel River Wall	Wph Marine Construction	15-Feb-18
MLA/2017/00436	Navigational dredging (maintenance)	Marina maintenance dredging	Arun Yacht Club Limited(The)	08-Feb-18
MLA/2016/00388/1	Construction of new works	Arun Sailing Club Dinghy Pen River Wall	Arun Sailing Club	13-Oct-17
MLA/2017/00163	Construction of new works, Other works	Arun Timber Docks Removal of decaying existing wooden piles and installation of new steel piles and pontoons	River Arun Investments Ltd	05-Oct-17
MLA/2015/00177	Construction of new works, Other deposits	PowerFrame	Saunders Energy Limited	20-Oct-15
MLA/2015/00131	Maintenance of existing works	Littlehampton Baltic & Norfolk Wharves Remedial Works Package	Unimead Limited	20-Apr-15

⁶ https://marinelicensing.marinemanagement.org.uk/mmofox5/fox/live/MMO_PUBLIC_REGISTER

4.2 Current Dredge Practice

4.2.1 Conservancy Dredge Activity

Restricted to entrance to the harbour and fairway – which is defined as “the channel below the level of low water which is navigable by all vessels, including small vessels” in the LHB General Directions issued September 2015 and updated April 2019.

LHB dredge effort at entrance Bar:

The LHB carries out a small amount of bed levelling on the bar to maintain the 0.9m drying controlling depth, but this activity is limited by lack of take-up space to plough into. Business cases to slightly improve depths here using other technologies are kept under review.

LHB dredge effort at Shoal Bank:

The LHB removes on average around 9,000 tonnes of shingle per annum from the river channel by the West Beach car park at the base of the West Works. This material overtops the west training wall and West Works during autumn and winter storms and material can be either sold on or (more normally) contributed to the Environment Agency shingle recycling effort that takes place annually on the West Beach (see below).

The LHB also maintains a groyne on the West Beach in order to slow the movement of material towards the west works.

Volumes of material excavated from the river since the last MDP and WFD Compliance Baseline Document are outlined below:

Campaign	Partners	Tonnes Removed	Of which Tonnes Recycled	Yearly Total Campaign	
Feb-16	Dudmans	10,000	6,000	2016	10,000
May-17	Land & Water/EA	4,000	4,000		
Nov-17	Land & Water/EA	6,000	6,000	2017	10,000
Jun-18	Land & Water/EA	6,000	6,000	2018	6,000
Apr-19	Land & Water/EA	6,000	6,000		
Nov-19	Flannery/EA	4,000	4,000	2019	10,000
Feb-20	WM Plant/Horsham Stone	10,000	200		
Mar-20	WM Plant/EA	5,000	5,000		
Sep-20	WM Plant/EA	7,250	7,250	2020	22,250
Mar-21	Les Searle/EA/CDC/TJ Transport / Others	8,500	7,500		
Oct-21	Les Searle/EA/ADC / Bairds / TJ Transport	6,200	3,810	2021	14,700
Mar-22	Les Searle/CDC/ TJ Transport/ Others	9,000	9,000		
Nov-22	Les Searle/ADC/EA/Bairds/ APET/TJ Transport	4,200	3,510	2022	13,200

Environment Agency effort at West Beach:

The Environment Agency have legal agreements “for ever after to maintain improve and construct such sea defence works As are from time to time reasonably necessary for the protection of the ... estate at Bailiffscourt” between two areas near

Poole Place to the west and Atherington car park to the east; and to “take over responsibility for sea defences over the Bailiffscourt frontage and maintain the same in a satisfactory state of protection and repair.”

As a result, annual shingle recycling has been carried out taking material from the river mouth end of the West Beach and transporting it to the Elmer and Climping frontages. The LHB co-ordinated with this activity so that material taken from the river can be used in this process. Since 2020, this activity has largely come to a close. This left LHB with a challenge to find a new beneficial use for the material. Fortunately, a new agreement has been reached with Chichester District Council (for placement of the material at the updrift end of Sussex Bay at Selsey) and Arun District Council (for harbour bypassing of material to East Beach, Littlehampton).

4.2.2 **Operational Dredge Activity**

Defined as berths and approaches as per individual business case associated with the operation of individual mooring facilities.

Maintenance – LHB

Pier Road, Town Quay, Dukes Wharf, Workshop Pontoon. These moorings are periodically ploughed and in house WID activity takes place in specific areas as required. Dukes Wharf was also dredged by the Van Oord WID vessel ODIN in autumn 2013.

Commercial Quays. The LHB owned commercial quays (Railway Wharf and UMA Wharf) are periodically ploughed with WID undertaken periodically in line with the Berthing Management Plan in place with Tarmac (Van Oord HAVIK/BALDR in 2019 and LHB ERICA/10-4 in 2022). The shoreside excavator operated by Tarmac is also used periodically to maintain incline on these NAABSA (Not Always Afloat But Safely Aground) berths to enable safe berthing of shipping.

Maintenance – Other

Littlehampton Yacht Club (LYC)

Small scale WID activity has taken place on moorings controlled by the LSMC/LYC; this activity is likely to be covered by small scale exemptions in place for marina and berth operators.

Arun Yacht Club (AYC)

Since capital excavation of the AYC Basin in 1981 to 1.5m above chart datum a maintenance dredge has taken place approximately every 5 to 10 years using plough or WID techniques. In winter 2013/14 approximately 6,000 cubic metres were removed from the AYC basin using the Van Oord WID vessel ODIN. A repeat campaign has been arranged for Winter 2022/23 using the Marine Group vessel INNOVATION.

Smaller scale WID using the club's own small dredging vessel EDDGER is undertaken under license and also agitation dredging using a portable saltwater pump around the keels of boats has also taken place to allow vessels to take the ground safely at low water. AYC has an extant marine licence for this activity because it is believed to exceed the exemption limits of 1500 cubic metres per annum.

The AYC North Moorings (aka Ballast Island and the South Yacht Berth) has been

last dredged in October 2015 and in 2009. A seawater pump has also been used on a regular basis to clear small amounts of silt from the berths to allow vessels to sit in the mud at low water and to keep the pontoons level.

Notifications of exempt activity have been submitted to the MMO for maintenance activity at the AYC North Moorings and Basin.

Osborne of Arun

Small scale agitation dredge activity by pump or propellor wash has taken place on moorings controlled by Osborne of Arun; this activity is likely to be covered by small scale exemptions in place for marina and berth operators.

The Shipyard / Boatyard

Small scale agitation dredge activity by portable pump beneath and around pontoons every 2-3 months; this activity is likely to be covered by small scale exemptions in place for marina and berth operators.

Littlehampton Marina

Agitation dredging using in house pontoon based plant has taken place consistently since capital excavation of the Marina. It is likely that this activity is covered by small scale exemptions in place for marina and berth operators. A notification of exempt activity has been submitted to the MMO because it is understood that this activity falls within the 1500 cubic metres per year limit for exemption.

In 2019 and 2022, the Marina has made use of LHB's statutory exemption to twice participate in cross-harbour larger scale WID using plant from Van Oord (HAVIK/BALDR) and LHB (ERICA/10-4) for more intensive maintenance dredging. It is expected they will continue to do this every couple of years.

Other moorings

No dredging is known to have been undertaken at other mooring operators including the Arun View Inn and the Ship and Anchor.

4.3 Dredging Methods

4.3.1 Trailer Suction Hopper Dredging

TSHD uses suction to raise loosened material from the bed through a pipe connected to a centrifugal pump. Suction alone is normally sufficient for naturally loose material, such as recently deposited material within deepened areas such as the approach channel or berthing areas. TSHD is most efficient when working with fine substrates such as mud, silt, sand and loose gravel as the material can be easily held in suspension. Coarser materials can also be dredged using this method, but with a greater demand on pump power and with greater wear on pumps and pipes. Material dredged by TSHD then requires depositing either within a licensed sea or land disposal site usually by direct bottom dumping (at sea) or through pumped discharge (to a land disposal or beneficial use site).

4.3.2 Backhoe Dredging

Backhoe dredging involves a vessel which has one or more dredging cranes mounted around a receiving hopper or barge. The cranes are fitted with grabs that pick up material from the seabed, and discharge the material into the hopper or barge. The backhoe dredger is usually held in position while working, by anchors and moorings. However, a few are fitted with spuds, or piles, which can be dropped onto the seabed whilst the dredger is operating. Once loaded, the vessel or barge moves to a disposal site to discharge material, which is normally achieved through direct placement at the site by direct bottom dumping.

Backhoe dredging in Littlehampton was carried out by Van Oord to dredge the bar in 2001 using the dredger IJZEREN HEIN, barges SEINE and THAMES and the tug BEVER.

Backhoe Dredging from Shore: Backhoe dredging from shore involves positioning an excavator ashore and removing material either to stockpile or direct to transport for disposal

Backhoe dredging from shore has been carried out by contractors including Mackley, Land and Water and Tarmac on behalf of the LHB to remove the Shoal bank at the West Works/Training wall; and was also used to excavate the LSMC/LYC basin and AYC basin. It has also been used for bed levelling at the two commercial shipping wharves.

4.3.3 Water Injection Dredging

WID consists of injecting large amounts of water at low pressure into surface sediments on the seabed. This generates a high density layer on the seabed, normally being a maximum of 1.0 m deep, with the highest density part of the cloud being 0.5 m above the bed. The density cloud acts as a fluid layer and flows over the bed through the action of gravity along the seabed contours. The aim of this form of dredging is not to suspend sediments within the water column, but rather to move sediments from one area to another, and thus keep the sediment within the system. Some re-suspension of fine sediment fractions often occurs locally to the WID site, or where tidal flows are higher thereby mobilising material. If the density cloud flows over a pronounced change in bed gradient, material also has the potential to be re-suspended.

WID dredge activity in Littlehampton has been carried out using the Van Oord vessel ODIN.

4.3.4 **Agitation Dredging**

Agitation dredging is similar to WID in that light material is moved from the seabed using moving water. The use of hoses, lances, moored vessels ('propwashing') or the Marinas diesel pump are all forms of agitation dredging. It is best used for regular low volume maintenance work.

4.3.5 **Plough Dredging (Bed Levelling)**

Plough dredging utilises a tug equipped with a plough unit. The plough is lowered to a predetermined depth and is used to drag sediment along the seabed. Ploughing is typically used in confined areas due to the small size and manoeuvrability of the vessel, moving material from inaccessible areas such as dock entrances, corners or complicated areas of bathymetry to areas accessible by TSHD or WID vessels, or is used for bed-levelling purposes only. Ploughing is often used in combination with TSHD operation to smooth out/fill in drag head furrows to achieve a more even bed level. Any material above the nominal maintained level (high spots) could pose a danger to the safety of navigation. As with WID, ploughing should not typically lead to significant re-suspension of sediment in to the upper water column, but if the sediment ploughed is soft it may be sufficiently disturbed to raise smaller sediment fractions into suspension.

4.3.6 **Cutter Suction Dredging**

A cutter suction dredger is a stationary or self-propelled vessel that uses a rotating cutter head to loosen the material in the bed ('cutting'). A suction inlet located beneath the cutter head (known as the suction mouth) is connected by a suction tube directly to one or more centrifugal pumps. The vacuum force at the suction inlet sucks up the loosened material. The suction tube and cutter head are attached to a ladder. The ladder with cutter head is positioned at the fore of the vessel. On the aft side, the cutter generally has two spud poles. One spud pole (the auxiliary spud) passes straight through the vessel, while the other is mounted on a movable spud carriage, which can be moved lengthwise along the vessel or pontoon. Steel cables are used to move the ladder or cutter head back and forth, with the spud in the spud carriage as the centre of each concentric circle that it describes. Moving the spud carriage causes the cutter suction dredger to move as well ('stepping'). The cutter suction dredger discharges the dredged material directly to shore via a floating pipeline or into a barge with a special loading system.

5. Sediment Quality

Sediment analysis was carried out by the LHB prior to Shoal Bank clearance in Apr 13 and again by the AYC prior to WID work at the AYC Basin in Oct 13 and Autumn 2022. Results showed sediment to be within normal limits for contaminants.

There is some suggestion that material excavated by the then Littlehampton Sailing & Motor Club (LSMC) by backhoe dredging (capital dredging) at the LYC Basin in 2007/8 and again in 2008/9.

6. Bathing Water Quality

The East Beach adjacent to the river mouth, and partly falling within the Littlehampton Harbour SHA, is a designated bathing water. The area is predominantly a groyned, shingle beach but with gently shelving sand exposed at low water. A promenade sits above the beach with a large grassed area behind. The River Arun crosses the beach at the western end of the bathing water.

The 2021 classification for Littlehampton was Good under the Bathing Water Directive. Classifications are updated annually but are based on water quality monitoring results across the preceding 4 years. The Bathing Water season runs from mid-May to the end of September so any impact on water quality from dredging activities would be reduced if they take place outside of this period.

There was a significant sewage related incident 27-31 August 2014 and frequency of lower level incidents are increasing in recent years particularly relating to increasing use of consented stormwater outfalls in local waters and within the harbour. There are periodic minor illegal discharges in rainwater runoff and LHB and the Environment Agency work closely with Southern Water and Arun District Council to address these incidents.

7. Licence Information

7.1 LHB Licence Information

There are no capital dredge licences in place. It is not felt that the LHB has the power to conduct capital works under its statutory exemptions derived from its establishing Act. At any rate any capital project undertaken would be likely to require disposal at sea and therefore require a Marine Licence.

An exemption from the normal licensing requirement derived from the ports establishing Act is used for backhoe dredge operations at the Shoal bank, entrance Bar and commercial berths and for maintenance activity conducted at LHB berths and elsewhere in the river.

Section 75 of the Marine And Coastal Access Act “Exemptions for certain dredging etc. activities” is intended to allow a harbour authority to employ a contractor to undertake a dredging activity of an area the harbour authority wishes to dredge if they do not have means to do so themselves. It does not cover the case where a person has been instructed to undertake a dredge due to a harbour authority using a power to issue a direction as the qualifying part is “on behalf of”.

A yacht club residing within a harbour authority’s area cannot use section 75 unless the harbour authority has contracted, or entered into another form of private agreement, them to undertake the dredging on the harbour authorities behalf. Following advice from the MMO, the exemption used for maintenance dredge operations by the Harbour Authority may be extended to other operators on hire of LHB vessels if appropriate but to qualify for the LHBs exemption, any dredging undertaken by a third party mooring provider within the harbour would have to be on behalf of the LHB.

7.2 Current Non-LHB (Third Party) Licence Information

There is one extant Marine licence for dredge activity in the harbour as AYC’s ongoing WID effort is believed to exceed the exemption limits of 1500 cubic metres per annum.

8. Environmental Information

8.1 Conservation and Designations

The nature conservation importance of Littlehampton and the surrounding area is recognised through a number of protected sites. The following sections provide further information on each of the relevant protected sites.

8.1.1 Site of Special scientific Interest (SSSI)

The dune system and foreshore at [Climping SSSI](#).

Monitored Feature

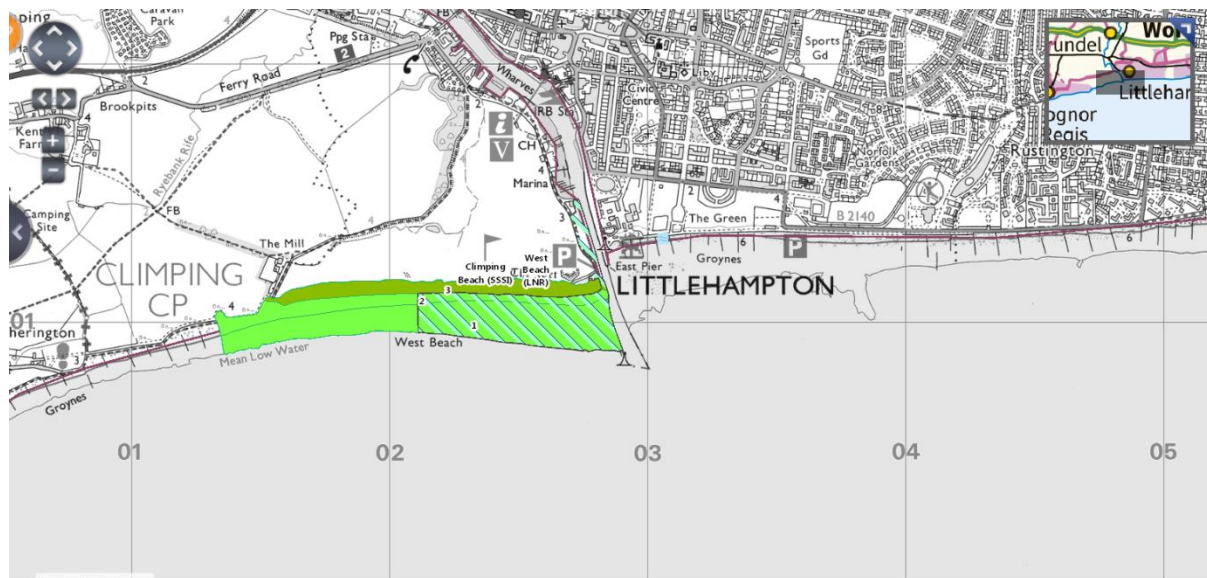
Vegetated shingle
Sanderling (*Calidris alba*)
Fixed dune grassland
Sand dune; strandline, embryo and mobile dunes

Condition

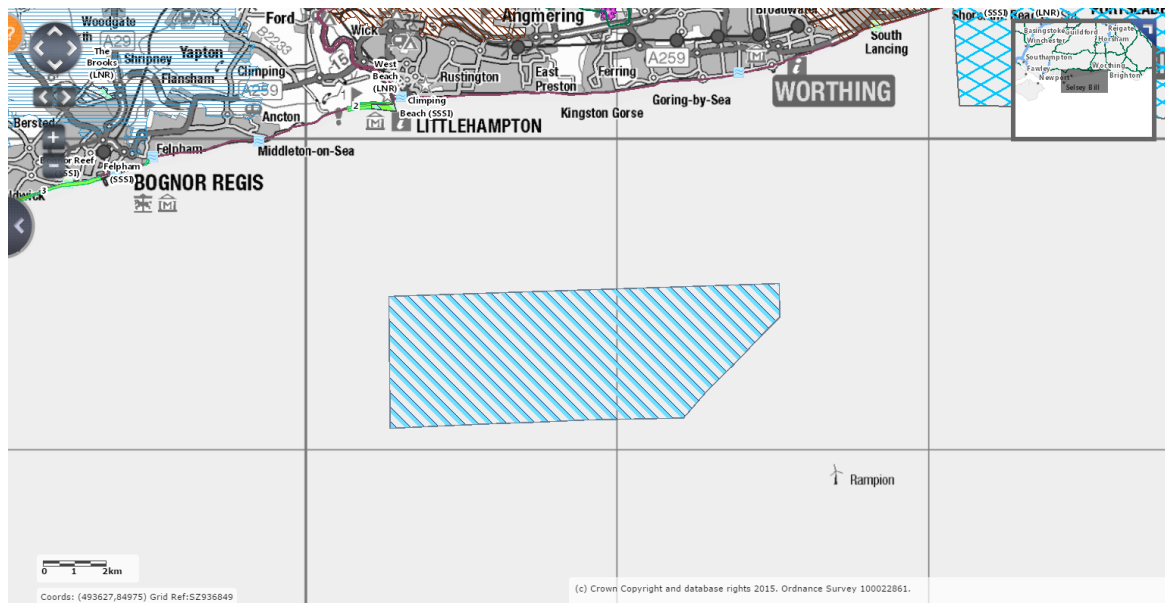
Favourable
Unfavourable – no change
Unfavourable – recovering
Unfavourable – recovering

8.1.2 Local Nature Reserve (LNR)

The dunes in the area are also designated as an LNR. Arun District Council's LNR Management Plan is available [here](#).



8.1.3 Marine Conservation Zones (MCZ)



Kingmere [MCZ](#) has been established at the [Kingmere Rocks](#) chalk outcrop. Kingmere MCZ has been designated due to the presence of Black seabream, Infralittoral rock and thin mixed sediment, and Subtidal chalk. More information is available from Natural England [here](#).

8.1.4 Water Quality – Bathing Waters Directive

The Littlehampton [East Beach](#) (formally known as Coastguards beach) is a designated bathing area.

8.1.5 Recent EIAs

A full [EIA](#) was conducted by the Environment Agency as part of the [Littlehampton East Bank Tidal Flood Defence project](#) and was completed in Spring 2015.

The [scoping phase of an EIA](#) was conducted by Highway England in February 2021 as part of the proposed A27 Arundel Bypass.

8.1.6 Pathways for Impact and Mitigations

Disturbance to shore flora and fauna by working plant: Seasonal restrictions are in place for plant working in the Climping SSSI on shingle recycling and works are kept to the northern easternmost 50m square area of the SSSI.

Disturbance to marine flora and fauna from increased sediment in suspension: Water Injection Dredging activity is scheduled for the ebbing tide only so that the River Arun's swift ebbing flow quickly carries material to sea and disperses it further with the east to west tidal stream and wave activity. There is therefore expected to be nil impact on the MCZ and very temporary impact within the river.

Impact of invasive non-native species: Best practice biosecurity measures are being used including '[Check Clean Dry](#)'

Fuel Spill: No open refuelling to occur on site, spill kits to be carried for vehicles and machinery with drip trays placed underneath standing machinery in case of oil/fuel leaks,

and that any spills will be reported to the necessary body. LHB also maintains an Oil Spill Contingency Plan with immediate Tier 1 local response capability.

8.1.7 Consultation with Natural England

Following consultation, Natural England have confirmed the view that the dredging works undertaken within the Arun River and Estuary are unlikely to have any detrimental impacts on the adjacent Climping Beach SSSI.

In addition, and based on the understanding that the dredged material is mainly recycled as part of coastal defence works under the management of various coastal authorities and not deposited out to sea, Natural England have not identified a pathway by which impacts from maintenance dredging activities would affect the interest features of the Kingmere MCZ and are therefore confident that the works will not hinder the conservation objectives of the site.

Where works entail access onto the Climping Beach side of the river (west side) there is potential to impact on the features of this site if appropriate working methodology is not complied with.

Sanderling is a notified SSSI feature at this site. Its conservation status is of concern and the evidence suggests that the Sanderling population decline is being influenced, at least in part, by site specific factors. It is therefore recommended that beach recycling activity does not occur during the core winter months of December, January and February.

Natural England's Assent for Environment Agency annual recycling work has recently been revised to avoid impacts to overwintering Sanderling as well as the impacts to vegetated shingle. It would be entirely appropriate if LHB dredging operations which involved access to Climping Beach SSSI also took into account these conditions.

The following restrictions have been agreed as suitable for operations to remove shingle from the river at West Beach adjacent to the SSSI/LNR and are in line with the restrictions placed upon the EA. A notification is shared with Natural England regarding each upcoming campaign and any new requirements discussed.

"Suitable conditions

- *All works vehicles needed to undertake the work should be confined to the immediate area around the groyne and all operatives made aware of the sensitivities of the site – to avoid damage to shingle vegetation and natural beach profile.*
- *Recycling works which impact on or cause disturbance to the intertidal sandflats should avoid the peak overwintering period for Sanderling – that is December, November and January.*
- *Single recycling works should be avoided during the summer months to allow the beach profile to recover and development of annual vegetation along the driftline, a characteristic feature of the vegetated shingle community."*

8.1.8 Consultation with the Environment Agency

No edits proposed by Environment Agency following consultation request regarding impacts on water quality.