Section 6 - Appendix Two
Summary of Key Risk Areas

Introduction

The aim of the management scheme is to ensure that activities are managed sustainably. The Management Scheme has done this by demonstrating activities that are managed through Regulation 48 or activities that are managed by an existing mechanism that ensures there is no impact on the features of interest.

It also identifies where sub-features are at a potential risk from certain activities. The key risk areas were identified through the assessment of the inventories as follows:

Key Risk Area	=	activity causes an operation to which the site features are highly vulnerable	+	activity occurs within or adjacent to the features of interest that is highly vulnerable to the operation.	+	no mechanisms are in place to manage the activity for nature conservation

It should be noted that the assessment is based on subjective information returned from relevant authorities and does not currently prioritise key risk areas.

It is stressed that the potential for any of the above activities to have an impact on a feature does not imply that it will have an impact. Until there is a clearer understanding of whether impacts are occurring these are only highlighted as potential risks. It will be up to the RAs to determine a course of action to determine impacts, solutions and actions as and when appropriate.

English Nature will carry out condition monitoring which will indicate whether the sub-features are declining in condition, where a decline is shown and this can be linked to a particular activity listed in the SEMS key risk areas then further work will be initiated. Where there is a level of doubt it will be inappropriate to suggest changes in management, in the first instance a voluntary approach will be considered with RAs and others working in partnership.

Topics Areas

The activities that are within the key risk area category can be grouped into topics for future consideration as follows:

- Access (access, airborne sports, angling, educational field trips, land based recreation).
- Bait digging (work carried out by SEMS).
- Commercial shipping.
- Dredging (beneficial disposal of dredging, capital dredging, disposal of dredged spoil, foreshore recharge, maintenance dredging).
- Fishing (shellfish collection, shellfish dredging, shellfish laying, fishing, mariculture).
- Water Sports (anchoring, boat repair/maintenance, moorings (new), moorings (ongoing), navigation, other water sports, recreational boating – power, recreational boating – sail, slipway cleaning and maintenance).

Format of Key Risks Areas

The key risks for each topic are outlined in further detail in the following sections. For each Topic area the impacts/issues are summarised and detail of the operations caused by the activities in the topic area is outlined. Each topic area also includes a number of tables which summarise the possible impacts in each cluster for each operation. The tables indicate the type of activities that can cause the operations, the relevant authorities who are responsible for the activity and the habitats that are at risk from the activity.

Topic Groups

These tables can be used as a template for identifying actual impacts in the future i.e. should there be a decline in a feature of interest in a particular cluster the tables can be used to help identify potential sources of the impact, these can then be investigated further either individually by a relevant authority or through a Topic Group. Topic Groups will only consider strategic/common issues and not be biased towards site specific issues, these should be taken forward by the Relevant Authority responsible for the activity.

A generic terms of reference for the Topic Groups is shown in box 1. However each Topic Group will need to determine its own specific terms of reference in relation to the issues of concern, these will be agreed with the Management Group.

It is therefore likely that, until we have a clearer understanding of the impact of the activities, the topic groups will consider voluntary measures such as interpretation, codes of conduct etc. based on the precautionary approach.

Box 1 - Terms of Reference for Topic Groups

Aim
To consider [activity] in the Solent European Marine Sites (SEMS) and if necessary develop advice on actions.

Function
The current management scheme has identified key risk activities in a number of generic topic areas. It is suggested that where there are impacts common across the Solent that can be linked to certain activities that they should be considered with the aid of Topic Groups. Topic Groups should only consider strategic/common issues and not be biased towards site specific issues, these should be taken forward by the Relevant Authority responsible for them.

The members of the Topic Groups will work in partnership to identify the issues which need further consideration and may advise the Management Group and Relevant Authorities on possible areas where further work might be required. The initial response to any issue will be to consider the most reasonable and practical solution. This is most likely to be consideration of voluntary measures and any changes in management would be seen as a last resort. This would also link into other work currently taking place to minimise duplication of effort. It is accepted that definitive information about impacts may not be known at this stage so Topic Groups may help identify what we need to know and this can help inform research and monitoring. This does not necessarily imply that Relevant Authorities would be required to fund further work but this can help influence other work currently taking place.

Accountability of Topic Groups
The Topic Group will advise the Relevant Authorities. However any final decisions on matters relating to that advice will be made by the individual Relevant Authority themselves. Topic Groups can not detract any power from individual RAs and there is no joint liability between Relevant Authorities. These decisions will be reported to the Management Group by the Relevant Authority concerned.

Membership
The Topic Groups will involve representatives of organisations with an interest in the activity including those who have a regulatory function, those that carry out the activity and any other interested parties. The group should be able to co-opt specialists where appropriate. The group should be a size that can be easily managed and produces constructive discussions, where a large number of individuals are interested in a particular topic area, a number of sub groups may be necessary in order to accommodate all interests in a manageable way.

Format
Each Topic Group will need to determine its own specific terms of reference in relation to the issues of concern, these will be agreed with the Management Group. In addition each Topic Group needs to determine the best format/programme of work for each activity. It will be important to have a convenor or Chair who can drive the business of each group and a secretariat to arrange meetings and take minutes etc..

Possible Actions Arising from Topic Groups
The initial response to any issue will be to consider the most reasonable and practical solution . The aim of a Topic Group is not to be a policy making body. The Topic Groups can suggest several possible outcomes as follows:

- No Action as further information has been gathered through the work of the Topic Group to demonstrate that adequate measures are in place to manage the activity so as to avoid impact on the features of interest
- Action to produce advice or guidance
- Action to consider voluntary measures such as codes of conduct for the activity
- Action to improve awareness through education or improved interpretation
- Action to carry out further research or monitoring of the activity or the impact of the activity
- Action to change management of the activity. However where there is a level of doubt it will be inappropriate to suggest changes in management, in the first instance a voluntary approach will be considered with Relevant Authorities and others working in partnership unless adequate information on impacts is known

These outcomes will be carried out by the appropriate organisation or organisations working in partnership.

Timescale
Each Topic Group will have a defined lifespan, this will determined by the Topic Group in its terms of reference and agreed by the Management Group.

Key Risks for Access

The access category covers all those land-based activities that require some form of access. This includes most land-based recreational activities such as angling and dog walking, it also includes other activities such as educational and scientific studies and access to and from the water via slipways and jetties. Potential impacts will be concentrated around key access points such as rights of way, public slipways, country parks and accessible beaches and intertidal areas.

There are a number of issues related to access that are common across the clusters these are explained in greater detail in the following sections for each operation but can be summarised as follows:

- Access can result in trampling that can lead to erosion and abrasion of land, this is particularly an issue if a large number of people are concentrated in a small area. A number of sensitive habitats are normally inaccessible, however other areas in the intertidal may be at risk.
- People involved in activities that require access can have a visual impact on the site particularly where a large number are involved e.g. school parties carrying out educational visits or competitions and events or where the activity itself involves visual intrusion such as large kites. This is predominantly an issue in the accessible intertidal areas such as beaches, mud and sand flats and in certain saltmarsh areas.
- People involved in access may cause a disturbance through noise that they make particularly if a large number of people are involved, in addition activities themselves may make noise such as remote controlled models. This is predominantly an issue in the accessible intertidal areas such as beaches, mud and sand flats and in certain saltmarsh areas.
- Discarded litter from those involved in activities that require access may introduce synthetic or non synthetic compounds into the environment which may have a toxic effect. This is predominantly an issue in the accessible intertidal areas such as beaches, mud and sand flats and in certain saltmarsh areas.

Abrasion

Abrasion can physically damage individual marine organisms and plants as well as causing deterioration to the structure of saltmarsh and sediment communities. Abrasion can result from trampling, erosion and compaction of the soil. This can result in erosion of soils and upper levels of less durable marine features, changes in the level and diversity of vegetation within a site or feature and changes in feature density, porosity and penetrability.

Intertidal areas can come under considerable pressure; they support a variety of land based activities, such as walking and horse riding, but they also provide access channels to the water for water-based recreation. Trampling and erosion is particularly evident in coastal areas frequented by walkers and in the vicinity of heavily used access points. Impacts may be higher where an activity takes participants off marked pathways such as when surveying vegetation, or where pathways are not followed. However, the greatest erosional forces exerted on a feature come from natural sources such as rain, wind and, in the intertidal area, wave action, therefore consideration of these should also be taken into account when considering the impacts. As recreational activities tend to be concentrated along specific access routes or in small areas, their impact can be magnified, causing significant erosional patches within a site or feature. Interest features such as eelgrass beds can be particularly sensitive.

A range of the features of interest are highly vulnerable to abrasion, the areas where these features coincide with activities that may cause abrasion are highlighted in the following tables for each cluster.

Portsmouth Harbour Cluster

Possible Abrasion Impacts	RA	Features of Interest[1]
		13. Estuaries
General access may cause trampling and erosion of coastal and intertidal areas under local authority control or ownership	FBC/GBC/ PCC	●*
Land-based recreation such as dog walking and angling and education and scientific visits/studies may cause trampling and erosion of coastal and intertidal areas under local authority control or ownership.	FBC/GBC	●*
Land-based recreation such as dog walking and angling and education and scientific visits/studies may cause trampling and erosion of coastal and intertidal areas.	EN/EA	●

North Coast of the Isle of Wight Cluster

Possible abrasion impacts	RA	Features of Interest[1]							
		2 Intertidal mixed sediment	3 Intertidal mudflats & sandflats	5 Subtidal sandbanks	6 Subtidal sediment	7 Intertidal Sand & shingle	10 Saltmarsh	12 Annual veg drift lines	13 Estuaries
General access such as land based recreation, angling and educational field trips may cause trampling and erosion coastal and intertidal areas under local authority control or ownership.	IoWC	●	●	●*	●*	●		●	●
General access may cause trampling and erosion of coastal and intertidal areas in Newport Harbour	NH	●	●						●
Pedestrian access may cause trampling and erosion of Norton Spit in the Yar Estuary.	YHC	●	●			●		●	●
Slipway access may cause trampling and erosion of the intertidal in the Yar Estuary	YHC	●	●						●
General access such as land-based recreation and educational and scientific studies may cause trampling and erosion in coastal and intertidal areas.	EN	●	●			●		●	●
Beach angling may cause trampling and erosion of coastal and intertidal land under QHMs jurisdiction	QHM		●						●
Angling from coastal structures may cause erosion of intertidal areas under QHMs jurisdiction	QHM		●						●
Anglers may cause trampling and erosion of coastal and intertidal areas.	EN/ EA	●	●	●	●	●		●	●
Guided walks may cause trampling and erosion of coastal and intertidal areas in the Yar Estuary	YHC		●			●			●
Studies of saltmarsh, sand dune and vegetation may cause trampling and erosion of costal and intertidal land in the Yar Estuary	YHC	●	●			●	●	●	●

Southampton Water Cluster

Possible Abrasion Impacts	RA	Features of Interest[1]						
		2 Intertidal mixed sediment	3 Intertidal mudflats and sandflats	5 Subtidal sandbanks	6 Subtidal sediment communities	7 Intertidal Sand & shingle	12 Annual vegetation drift lines	13 Estuaries
General access such as launching on public slipways may cause trampling and erosion of coastal and intertidal areas under local authority control or ownership.	NFDC/ FBC/ SCC/EBC		●				●*	●*
Anglers may cause trampling and erosion of coastal and intertidal areas under local authority control or ownership.	FBC/SCC/EBC		●	●*	●*		●*	●*
Land-based Recreation may cause trampling and erosion of coastal and intertidal areas under local authority control or ownership.	EBC/SCC/FBC/ NFDC/WCC		●			●*	●*	●*
Access via jetties may cause trampling and erosion of coastal and intertidal areas in the Hamble estuary	RHHA							●
Access may cause trampling and erosion of the East Bank footpath on the Hamble estuary	RHHA		●			●	●	●
Land-based Recreation may cause trampling and erosion of coastal and intertidal areas in the Hamble Estuary	RHHA	●	●			●	●	●
Access including angling, educational and scientific studies and land based recreation may cause trampling and erosion of coastal and intertidal areas	EN/EA*	●	●	●*	●*	●	●	●

Chichester & Langstone Harbour Cluster

Possible Abrasion Impacts	RA	Features of Interest[1]							
		2 Intertidal mixed	3 Intertidal mudflats and	4 Intertidal shingle	5 Subtidal sandbanks	6 Subtidal sediment communities	7 Intertidal Sand & shingle	12 Annual vegetation drift lines	13 Estuaries
Access on rights of way may cause trampling and erosion of coastal and intertidal areas under local authority control or ownership.	HBC/ WSCC		●						
Anglers may cause trampling and erosion of coastal and intertidal areas under local authority control or ownership.	CDC/HBC			●					
Educational and scientific studies may cause trampling and erosion of coastal and intertidal areas under local authorities control or ownership	WSCC	●	●	●	●	●	●	●	●
Land-based Recreation may cause trampling and erosion of coastal and intertidal areas under local authority control or ownership.	WSCC/CDC/HBC	●*	●	●			●	●*	●*
Access may cause trampling and erosion of coastal and intertidal areas in Chichester Harbour	CHC	●	●	●	●	●	●	●	●
Educational and scientific studies may cause trampling and erosion of coastal and intertidal areas in Langstone Harbour	LHB								●

Possible Abrasion Impacts	RA	Features of Interest[1]							
		2 Intertidal mixed	3 Intertidal mudflats and	4 Intertidal shingle	5 Subtidal sandbanks	6 Subtidal sediment communities	7 Intertidal Sand & shingle	12 Annual vegetation drift lines	13 Estuaries
General access such as land based recreation and educational and scientific studies may cause trampling and erosion of coastal and intertidal areas	EN	●	●	●			●	●	●
Anglers may cause trampling and erosion of coastal and intertidal areas.	EN/EA?SSFC	●	●	●	●	●	●	●	●

North West Solent

Possible Abrasion Impacts	RA	Features of Interest[1]						
		2 Intertidal mixed sediment	3 Intertidal mudflats and	5 Subtidal sandbanks	6 Subtidal sediment	7 Intertidal Sand & shingle	12 Annual veg drift lines	13 Estuaries
Access may cause trampling and erosion of coastal and intertidal areas under local authority control or ownership	NFDC	●	●				●	●
Angling may cause trampling and erosion of coastal and intertidal areas under local authority control or ownership	HCC/NFDC					●*	●*	
Land-based Recreation may cause trampling and erosion of coastal and intertidal areas under local authority control or ownership	NFDC						●	●
Access to the water via slipways etc may cause trampling and erosion of coastal and intertidal areas in Lymington Estuary	LHC/WL							●
Land and water access may cause trampling and erosion of coastal and intertidal areas in the Beaulieu Estuary	BRM		●					
General access related to land-based recreation and angling may cause trampling and erosion of coastal and intertidal areas	EN/EA*	●	●				●	●
Educational and scientific studies may cause trampling and erosion of coastal and intertidal areas	EN		●			●	●	●

* Not all RAs in the category agreed on if activity occurred on or adjacent to the features of interest

[1] Features of interest which are highly vulnerable and which may be affected

Noise and Visual

Nesting, feeding and roosting birds species are sensitive to noise and visual disturbance. Disturbance causes birds to expend energy, this is more of a problem when this coincides with times when they require more energy to breed and forage for food. Disturbance can include the following impacts:

- Birds may take flight temporarily, but return after the disturbance ends, this results in energy intake ceasing and energy expenditure greatly increasing. At times of limited food supply and/or cold weather this could be life threatening for certain species.
- Birds may modify their feeding habits.
- More sensitive species may suffer reduced breeding success or, ultimately, desert the site.

Intertidal areas can come under considerable pressure; they support a variety of land based activities, such as walking and horse riding, but they also provide access channels to the water for water-based recreation. Normally the disturbance from these activities is likely to be minimal however large numbers or certain types of activity could increase the noise and visual impacts. Potentially noisy activities include organised sports matches, skateboarding, ball games, children playing. Levels of disturbance are difficult to assess as the sensitivity of different species to disturbance varies considerably, as does the potential disturbance caused by each activity. Disturbance is particularly evident in coastal areas frequented by walkers and in the vicinity of heavily used access points.

A range of the features of interest are highly vulnerable noise and visual impacts, the areas where these features coincide with activities that may cause noise and visual impacts are highlighted in the following tables for each cluster.

Portsmouth Harbour Cluster

Possible Noise & Visual Impacts	RA	Features of Interest[1]		
		3 Intertidal mudflats & sandflats	10 Saltmarsh	15 Shallow coastal waters
General access related to large events, competitions and noisy activities that involves the use of rights of ways or intertidal and coastal areas under local authority control or ownership.	HCC/FBC/ GBC/PCC	●	●*	●*
Activities involving harbour access or using slipways and bridleways in coastal and intertidal areas under QHM jurisdiction	QHM	●	●	●
Airborne sports such as kite flying and model aeroplanes in coastal and intertidal areas under local authority control or ownership	FBC/GBC/PCC	●*	●*	●*
Anglers particularly during large competition where they use the intertidal or coastal areas under local authority control or ownership.	HCC/FBC/ GBC	●	●*	●*
Anglers may cause a visual presence where they use the intertidal or coastal areas under QHMs area of jurisdiction	QHM	●		●
People and particularly groups carrying out educational or scientific studies where they use the intertidal or coastal areas under local authority control or ownership	HCC/PCC	●*		
Activities involving access of people and groups such as airborne sports, angling, educational and scientific study and other types of land-based recreation) where they take place in the intertidal or coastal areas.	EN (SFC/EA angling)	●	●	●

North Coast of the Isle of Wight Cluster

Possible noise and visual impacts	RA	Features of Interest				
		1 Boulder & cobble shores	2 Intertidal mixed sediment	3 Intertidal mudflats and sandflats	7 Intertidal Sand & shingle	10 Saltmarsh
Activities such as land-based recreation, angling and educational visits that involve access in coastal or intertidal areas under LA control or ownership.	IoWC	●	●	●	●	●
Activities such as land-based recreation that involve access in coastal or intertidal areas in Newport Harbour	NH		●	●		●
Activities such as land-based recreation that involve access in coastal or intertidal areas in Bembridge Harbour	BHIC	●	●	●	●	
Pedestrian access in coastal or intertidal areas in the Yar Estuary	YHC		●	●	●	●
Slipway access in coastal or intertidal areas in the Yar Estuary	YHC		●	●	●	
Access to Wightlink ferries slipway in Wootton Creek	WL			●	●	
Kite surfing between Bembridge and Ryde	QHM		●	●		
Anglers particularly in large numbers from the beach, boats or coastal structures in QHMs area of jurisdiction	QHM			●		
Guided walks in coastal or intertidal areas in the Yar Estuary	YHC			●	●	
Educational saltmarsh, sand dune and vegetation studies in coastal or intertidal areas in the Yar Estuary	YHC		●*	●*	●	●*
Activities that involve access such has land-based recreation, angling and study visits in coastal or intertidal areas.	EN/EA (angling)	●	●	●	●	●

Southampton Water Cluster

Possible Noise and Visual Impacts	RA	Features of Interest[1]				
		1 Boulder & cobble shores	2 Intertidal mixed sediment	3 Intertidal mudflats and sandflats	7 Intertidal Sand & shingle	10 Saltmarsh
Activities that involve access such as land-based recreation, angling, in coastal or intertidal areas that are rights of ways or areas under local authority control or ownership.	HCC/NFDC/ FBC/SCC/ EBC		●*	●	●*	●*
Airborne sports such as kite flying and model aeroplanes in coastal or intertidal areas under local authority control or ownership.	HCC/FBC/SC C		●*			
Educational and scientific studies in coastal or intertidal areas under local authority control or ownership	HCC		●	●	●	●
Access along East Bank footpath on the Hamble estuary	RHHA	●		●	●	●
Land-based recreation in coastal or intertidal areas in the Hamble Estuary	RHHA	●	●	●	●	●
Activities that involve access such as land-based recreation, angling, educational and scientific studies in coastal or intertidal areas.	EN/EA*	●	●	●	●	●
Airborne sports in coastal or intertidal areas.	EN		●			
Note: TVBC and ABP proformas not all returned.						

Chichester & Langstone Harbour Cluster

Possible Noise and Visual Impacts	RA	Features of Interest	
		4	7
		Intertidal shingle	Intertidal Sand & shingle
Activities that involve access on rights of ways or coastal or intertidal areas under local authority control or ownership	CDC/HBC/ PCC/WSCC/HCC	●*	●*
Land-based recreation in coastal or intertidal areas under local authorities control or ownership	WSCC/HCC/PCC /CDC/HBC	●*	
Airborne sports such as kite flying and model aeroplanes in coastal or intertidal areas under local authority control or ownership	WSCC/PCC/HBC	●*	●*
Anglers particularly during competitions in coastal or intertidal areas under local authority control or ownership	HCC/PCC/CDC /HBC	●*	●*
Educational and scientific studies, particularly large groups in coastal or intertidal areas under local authority control or ownership	WSCC/HCC/PCC	●*	●*
Activities that involve access in coastal or intertidal areas in Langstone Harbour	LHB		●
Activities that involve access in coastal or intertidal areas in Chichester Harbour	CHC	●	●
Activities that involve access such as land-based recreation, angling, airborne sports and educational and scientific studies in coastal or intertidal areas	EN/EA*/SSFC*	●	●

North West Solent Cluster

Possible Noise & Visual Impacts	RA	Features of Interest[1]				
		1	2	3	7	10
		Boulder & cobble shores	Intertidal mixed sediment	Intertidal mudflats and sandflats	Intertidal Sand & shingle	Saltmarsh
Educational and scientific studies in coastal or intertidal areas under local authority control or ownership	HCC			●	●	
Activities that involve access such as land based recreation and angling, in particular large events and dogs, on rights of ways and in coastal or intertidal areas under local authority control or ownership. and.	HCC/NFDC	●	●*	●*	●*	●*
Activities that involve land and water access in coastal or intertidal areas in Beaulieu Estuary	BRM			●		●
Activities that involve access such as land based recreation and angling in coastal or intertidal areas	EN/EA*	●	●	●	●	●
Educational and scientific studies in coastal or intertidal areas	EN			●	●	

* Not all RAs in the category agreed on if activity occurred on or adjacent to the features of interest

[1] Features of interest which are highly vulnerable and which may be affected

Toxic Contamination

Many marine and coastal habitats and species are sensitive to toxic contamination through the introduction of synthetic compounds such as pesticides, polychlorinatedbiphenyls (PCBs) and biocides (e.g. tributyltin (TBT)) and non-synthetic compounds such as heavy metals and hydrocarbons. Many synthetic compounds are known to have toxic effects even in low concentrations and are capable of high levels of bioaccumulation within many benthic organisms which can then be compounded further along the food chain. The potential effects of toxic pollutants also varies according to the state and availability of the compound and the characteristics of the receiving environment. In many cases the effects may be temporary and minimal due to the dilution of wastes in the water.

Synthetic and non-synthetic toxic contamination can enter the site from a number of point and non-point sources ranging from land-based discharges (licensed and un-licensed), run-off (e.g. roads), water-based discharges (e.g. oil from ships and metal compounds such as anti-fouling paints) to atmospheric deposition.

Introduction of synthetic and non-synthetic compounds can occur through activities associated with access. The main problem is associated with accidental loss or irresponsibly discarded litter by those who are carrying out various activities in the coastal or intertidal areas, this can include items such as plastics and fishing tackle. Litter can have an impact on wildlife both on shore and in the water.

A range of the features of interest are highly vulnerable to toxic contamination, the areas where these features coincide with activities that may cause toxic contamination are highlighted in the following tables for each cluster.

Portsmouth Harbour

Possible introduction of synthetic and non-synthetic compound impacts	RA	Features of Interest[1]				
		3 Intertidal mudflats and sandflats	9 Cordgrass swards	10 Saltmarsh	13 Estuaries	15 Shallow coastal waters
Activities involving access may result in litter being discarded which may include synthetic compounds, this may occur in coastal or intertidal areas under local authority control or ownership.	FBC/GBC	●	●*	●*	●*	
Run-off from roads may introduce synthetic compounds which may enter Portsmouth Harbour.	QHM	●		●		
Harbour and slipway access may cause the introduction of synthetic compounds such as litter in coastal or intertidal areas under QHMs jurisdiction	QHM	●		●		●
Activities involving access may result in litter being discarded which may include synthetic compounds, this may occur in coastal or intertidal areas	EN	●	●	●		

North Coast of the Isle of Wight

Possible impacts due to the introduction of synthetic and non-synthetic compounds	RA	Features of Interest											
		1 Boulder & cobble shores	2 Intertidal mixed sediment	3 Intertidal mudflats & sandflats	5 Subtidal sandbanks	6 Subtidal sediment communities	8 *Salicornia & other annuals*	9 Cordgrass swards	10 Saltmarsh	12 Annual veg drift lines	13 Estuaries	14 Saline lagoons	15 Shallow coastal waters
Activities involving access may result in litter being discarded which may include synthetic compounds, this may occur in coastal or intertidal areas under local authority control or ownership.	IoWC	●	●	●	●	●	●	●	●		●	●	●
Activities involving access may result in litter being discarded which may include non-synthetic compounds, this may occur in coastal or intertidal areas under local authority control or ownership.	IoWC									●			
Activities involving access may result in litter being discarded which may include synthetic compounds, this may occur in coastal or intertidal areas in Newport Harbour	NH		●	●			●	●	●		●		
Slipway access in the Yar Estuary may introduce detergents from boats.	YHC		●	●					●		●		
Activities involving access may result in litter being discarded which may include synthetic compounds, this may occur in coastal or intertidal areas.	EN	●	●	●			●	●	●		●	●	

Southampton Water Cluster

Possible impacts due to the introduction of synthetic and non-synthetic compounds	RA	Features of Interest[1]											
		1 Boulder & cobble shores	2 Intertidal mixed sediment	3 Intertidal mudflats and sandflats	5 Subtidal sandbanks	6 Subtidal sediment communities	8 *Salicornia & other annuals*	9 Cordgrass swards	10 Saltmarsh	12 Annual vegetation drift lines	13 Estuaries	14 Saline lagoons	15 Shallow coastal waters
Activities involving access may result in litter being discarded which may include synthetic compounds, this may occur in coastal or intertidal areas under local authority control or ownership.	NFDC/ FBC/EBC			●				●*	●		●*		●*
Activities involving access may result in litter being discarded which may include non-synthetic compounds, this may occur in coastal or intertidal areas under local authority control or ownership.	NFDC/ FBC/EBC									●*			
Activities involving access via jetties may result in litter being discarded which may include non-synthetic compounds in the Hamble Estuary	RHHA										●		
Access along East Bank footpath on the Hamble Estuary may result in litter being discarded which may include synthetic compounds	RHHA	●		●			●	●	●		●	●	●
Access along East Bank footpath on the Hamble Estuary may result in litter being discarded which may include non-synthetic compounds	RHHA									●			
Activities involving access may result in litter being discarded which may include synthetic compounds, this may occur in coastal or intertidal areas	EN	●	●	●			●	●	●		●	●	
Activities involving access may result in litter being discarded which may include non-synthetic compounds, this may occur in coastal or intertidal areas	EN									●			
Note: TVBC and ABP proformas not all returned.													

Chichester & Langstone Harbour Cluster

Possible impacts due to the introduction of synthetic and non-synthetic compounds	RA	Features of Interest									
		2 Intertidal mixed sediment	3 Intertidal mudflats and sandflats	5 Subtidal sandbanks	6 Subtidal sediment communities	8 *Salicornia & other annuals*	9 Cordgrass swards	10 Saltmarsh	12 Annual vegetation drift lines	13 Estuaries	15 Shallow coastal waters
Activities involving access may result in litter being discarded which may include synthetic compounds, this may occur in coastal or intertidal areas under local authority control or ownership.	CDC/HBC		●*				●*	●*		●*	●*
Activities involving access may result in litter being discarded which may include synthetic compounds, this may occur in coastal or intertidal areas in Chichester Harbour	CHC	●	●	●	●	●	●	●		●	●
Activities involving access may result in litter being discarded which may include non-synthetic compounds, this may occur in coastal or intertidal areas in Chichester Harbour	CHC								●		
Activities involving access may result in litter being discarded which may include synthetic compounds, this may occur in coastal or intertidal areas	EN	●	●			●	●	●		●	●
Activities involving access may result in litter being discarded which may include non-synthetic compounds, this may occur in coastal or intertidal areas	EN								●		

North West Solent Cluster

Possible introduction of synthetic and non-synthetic compound impacts	RA	Features of Interest[1]											
		1 Boulder & cobble shores	2 Intertidal mixed	3 Intertidal mudflats and	5 Subtidal sandbanks	6 Subtidal sediment communities	8 *Salicornia & other annuals*	9 Cordgrass swards	10 Saltmarsh	12 Annual vegetation drift lines	13 Estuaries	14 Saline lagoons	15 Shallow coastal waters
Activities involving access may result in litter being discarded which may include synthetic compounds, this may occur in coastal or intertidal areas under local authority control or ownership.	NFDC	●	●	●			●	●	●		●	●	●
Activities involving access may result in litter being discarded which may include non-synthetic compounds, this may occur in coastal or intertidal areas under local authority control or ownership.	NFDC									●			
Access to the water via slipways etc in Lymington Estuary may cause the introduction of synthetic compounds	LHC/WL										●		
Activities involving access may result in litter being discarded which may include synthetic compounds, this may occur in coastal or intertidal areas	EN	●	●	●			●	●	●		●	●	
Activities involving access may result in litter being discarded which may include non-synthetic compounds, this may occur in coastal or intertidal areas	EN									●			

* Not all RAs in the category agreed on if activity occurred on or adjacent to the features of interest

[1] Features of interest which are highly vulnerable and which may be affected

Key Risk for Bait Collection

Bait digging can be divided in two types i) recreation collection which is part of the public right to fish under the Magna Carta and ii) commercial collection which requires various permissions. Bait collection occurs around the accessible intertidal shores of the Solent. It is predominantly small scale by local individuals, however if the bait stock is good on any particular site the intensity can increase. Certain areas have also been subjected to large scale bait digging presumed to be carried out by commercial diggers from outside of the local area.

The Topic Group decided that in order to solve the impacts a voluntary approach would be taken to try and influence those collecting bait to do so sustainably. This was done through the production of a voluntary code of conduct that has been widely circulated to the bait collecting and angling community. The Bait Collection Topic Group has no further meetings planned, however, if it is thought that if the code is not successful it may be necessary to meet again in the future to consider whether any further actions or research are required.

There are a number of issues related to bait collection that are common across the clusters these are explained in greater detail in the following sections for each operation but can be summarised as follows:

- Physical disturbance such as abrasion e.g. holes left in the mud. Sediment habitat damage from bait digging is most significant in sheltered habitats (estuaries and inlets), where holes can persist for weeks or months. Recovery is rapid in high-energy environments. Mixed sediments are seriously affected, with fine sediments lost and stones uncovered, and very slow recovery. Overturning rocks and stones while searching for intertidal species damages this habitat.
- Non-physical disturbance through visual presence. The presence of bait collectors may cause disturbance of birds, scale varies as species have different tolerances to disturbance and radii of exclusion around bait diggers.
- Toxic contamination through the introduction of synthetic and non-synthetic compounds. Toxic contamination can occur as digging sheltered sediment releases fine materials into suspension and frees heavy metals and contaminants if anoxic sediments are disturbed.

Abrasion

Abrasion can physically damage individual marine organisms and plants as well as causing deterioration to the structure of saltmarsh and sediment communities. Abrasion can result from trampling, erosion and compaction of the soil. This can result in erosion of soils and upper levels of less durable marine features, changes in the level and diversity of vegetation within a site or feature and changes in feature density, porosity and penetrability.

Baitdigging can cause abrasion by physical disturbance such as holes left in the mud and trampling. Sediment habitat damage from bait digging is most significant in sheltered habitats (estuaries and inlets), where holes can persist for weeks or months. Recovery is rapid in high-energy environments. Mixed sediments are seriously affected, with fine sediments lost and stones uncovered, and very slow recovery. However, erosional forces exerted on the intertidal causing abrasion also come from natural sources such as rain, wind and wave action, therefore consideration of these should also be taken into account when considering the impacts. Interest features such as eelgrass beds can be particularly sensitive.

A range of the features of interest are highly vulnerable to abrasion, the areas where these features coincide with activities that may cause abrasion are highlighted in the following tables for each cluster.

Portsmouth Harbour

Possible Abrasion Impacts	RA	Features of Interest[1]
		13
		Estuaries
Bait collection in intertidal parts of Portsmouth Harbour may cause trampling or holes	PCC/EA/EN	●

Chichester & Langstone Harbour

Possible Abrasion Impacts●	RA	Features of Interest[1]							
		2 Intertidal mixed sediment	3 Intertidal mudflats & sandflats	4 Intertidal shingle	5 Subtidal sandbanks	6 Subtidal sediment communities	7 Intertidal sand and shingle	13 Estuaries	14 Saline lagoons
Bait collection in intertidal areas under local authority control or ownership may cause trampling or holes in Chichester Harbour	WSCC	●	●	●			●	●	
Bait collection in intertidal areas under local authority control or ownership may cause trampling or holes	HCC	●	●						
Bait collection in intertidal areas under local authority control or ownership may cause trampling in Langstone Harbour	PCC	●	●						
Bait collection in intertidal areas under local authority control or ownership may cause trampling	HBC		●					●	
Bait collection in intertidal areas may cause trampling or holes in Langstone Harbour	LHB		●				●		
Bait collection in intertidal areas may cause trampling or holes in Chichester Harbour	CHC	●	●	●			●	●	
Bait collection in intertidal areas may cause trampling or holes	EA	●	●	●	●	●	●	●	●
Bait collection in intertidal areas may cause trampling or holes	EN	●	●	●			●	●	●

North West Solent

Possible Abrasion Impacts	RA	Features of Interest[1]						
		2 Intertidal mixed sediment	3 Intertidal mudflats & sandflats	5 Subtidal sandbanks	6 Subtidal sediment communities	7 Intertidal sand and shingle	12 Annual vegetation drift lines	13 Estuaries
Bait collection in intertidal areas under local authority control or ownership may cause trampling or holes	HCC		●					
Bait collection in intertidal areas under local authority control or ownership may cause trampling or holes	NFDC		●					●
Bait collection in intertidal areas may cause trampling or holes	EA	●	●	●	●	●	●	●
Bait collection in intertidal areas may cause trampling or holes	EN	●	●			●	●	●

Southampton Water

Possible Abrasion Impacts	RA	Features of Interest[1]						
		2 Intertidal mixed sediment	3 Intertidal mudflats & sandflats	5 Subtidal sandbanks	6 Subtidal sediment communities	7 Intertidal sand and shingle	12 Annual vegetation drift lines	13 Estuaries
Bait collection in intertidal areas under local authority control or ownership may cause trampling or holes	HCC	●	●					●
Bait collection in intertidal areas under local authority control or ownership may cause trampling or holes	FBC		●		●			●
Bait collection in intertidal areas under local authority control or ownership may cause trampling or holes	SCC		●					
Bait collection in intertidal areas under local authority control or ownership may cause trampling or holes	EBC		●	●	●		●	●
Bait collection in intertidal areas under local authority control or ownership may cause trampling or holes	NFDC	●						●
Bait collection in intertidal areas in the Hamble Estuary may cause trampling or holes	RHHA	●	●	●	●	●	●	●
Bait collection in intertidal areas may cause trampling or holes	EA	●	●	●	●	●	●	●
Bait collection in intertidal areas may cause trampling or holes	EN	●	●			●	●	●

Isle of Wight

Possible Abrasion Impacts	RA	Features of Interest[1]					
		2 Intertidal mixed sediment	3 Intertidal mudflats & sandflats	5 Subtidal sandbanks	7 Intertidal sand and shingle	12 Annual vegetation drift lines	13 Estuaries
Bait collection in intertidal areas under local authority control or ownership may cause trampling or holes	IoWC	●	●	●	●	●	●
Bait collection in intertidal areas may cause trampling or holes	EA/EN	●	●		●	●	●

* Not all RAs in the category agreed on if activity occurred on or adjacent to the features of interest
[1] Features of interest which are highly vulnerable and which may be affected

Visual Disturbance

Nesting, feeding and roosting birds species are sensitive to visual disturbance. Disturbance causes birds to expend energy, this is more of a problem when this coincides with times when they require more energy to breed and forage for food. Disturbance can include the following impacts:

- Birds may take flight temporarily, but return after the disturbance ends, this results in energy intake ceasing and energy expenditure greatly increasing. At times of limited food supply and/or cold weather this could be life threatening for certain species.
- Birds may modify their feeding habits.
- More sensitive species may suffer reduced breeding success or, ultimately, desert the site.

Intertidal areas can come under considerable pressure as they support a variety of activities. Normally the disturbance from activities is likely to be minimal however large numbers or certain types of activity could increase the visual impacts. The presence of bait collectors may cause disturbance of birds particularly if there are large numbers working the same area, scale varies as species have different tolerances to disturbance and radii of exclusion around bait diggers. The disturbance should be seen against the other background disturbance factors

A range of the features of interest are highly vulnerable to visual impacts, the areas where these features coincide with activities that may cause noise and visual impacts are highlighted in the following tables for each cluster.

Portsmouth Harbour

Possible Visual Impacts	RA	Features of Interest[1]		
		3 Intertidal mudflats & sandflats	10 Saltmarsh	15 Shallow coastal waters
Presence of bait collectors may cause a visual disturbance to birds in the intertidal areas under local authority ownership	HCC	●		
Presence of bait collectors may cause a visual disturbance to birds in the intertidal areas under local authority ownership	FBC	●	●	●
Presence of bait collectors may cause a visual disturbance to birds in the intertidal areas under local authority ownership	GBC/ PCC	●	●	
Presence of bait collectors may cause a visual disturbance to birds in the intertidal	EA	●	●	●
Presence of bait collectors may cause a visual disturbance to birds in the intertidal	EN	●		

Chichester & Langstone Harbour

Possible Visual Impacts	RA	Features of Interest[1]	
		4 Intertidal shingle	7 Intertidal sand and shingle
Presence of bait collectors may cause a visual disturbance to birds in the intertidal areas in Chichester Harbour under local authority ownership	WSCC	●	●
Presence of bait collectors may cause a visual disturbance to birds in the intertidal areas in Langstone Harbour	LHB		●
Presence of bait collectors may cause a visual disturbance to birds in the intertidal areas in Chichester Harbour	CHC	●	●
Presence of bait collectors may cause a visual disturbance to birds in the intertidal areas	EA/EN	●	●

North West Solent

Possible Visual Impacts	RA	Features of Interest[1]				
		1 Boulder & cobble shores	2 Intertidal mixed sediment	3 Intertidal mudflats & sandflats	7 Intertidal sand and shingle	10 Saltmarsh
Presence of bait collectors may cause a visual disturbance to birds in the intertidal areas under local authority ownership	HCC			●		●
Presence of bait collectors may cause a visual disturbance to birds in the intertidal areas under local authority ownership	NFDC			●		
Presence of bait collectors may cause a visual disturbance to birds in the intertidal areas	EA/EN	●	●	●	●	●

Southampton Water

Possible Visual Impacts	RA	Features of Interest[1]				
		1 Boulder & cobble shores	2 Intertidal mixed sediment	3 Intertidal mudflats & sandflats	7 Intertidal sand and shingle	10 Saltmarsh
Presence of bait collectors may cause a visual disturbance to birds in the intertidal areas under local authority ownership	HCC		●	●		
Presence of bait collectors may cause a visual disturbance to birds in the intertidal areas under local authority ownership	FBC			●	●	●
Presence of bait collectors may cause a visual disturbance to birds in the intertidal areas under local authority ownership	SCC/EBC			●		
Presence of bait collectors may cause a visual disturbance to birds in the intertidal areas under local authority ownership	NFDC			●		●
Presence of bait collectors may cause a visual disturbance to birds in the intertidal areas in the Hamble Estuary	RHHA	●	●	●	●	●
Presence of bait collectors may cause a visual disturbance to birds in the intertidal areas	EA/EN	●	●	●	●	●

Isle of Wight

Possible Visual Impacts	RA	Features of Interest[1]				
		1 Boulder & cobble shores	2 Intertidal mixed sediment	3 Intertidal mudflats & sandflats	7 Intertidal sand and shingle	10 Saltmarsh
Presence of bait collectors may cause a visual disturbance to birds in the intertidal areas under local authority ownership	IoWC	●	●	●	●	●
Presence of bait collectors may cause a visual disturbance to birds in the intertidal areas	EA/EN	●	●	●	●	●

* Not all RAs in the category agreed on if activity occurred on or adjacent to the features of interest
[1] Features of interest which are highly vulnerable and which may be affected

Toxic Contamination

Many marine and coastal habitats and species are sensitive to toxic contamination through the introduction of synthetic compounds such as pesticides, polychlorinatedbiphenyls (PCBs) and biocides (e.g. tributyltin (TBT)) and non-synthetic compounds such as heavy metals and hydrocarbons. Many synthetic compounds are known to have toxic effects even in low concentrations and are capable of high levels of bioaccumulation within many benthic organisms which can then be compounded further along the food chain. The potential effects of toxic pollutants also varies according to the state and availability of the compound and the characteristics of the receiving environment. In many cases the effects may be temporary and minimal due to the dilution of wastes in the water.

Bait digging may cause toxic contamination as digging sheltered sediment releases fine materials into suspension and frees heavy metals and contaminants if anoxic sediments are disturbed.

A range of the features of interest are highly vulnerable to toxic contamination, the areas where these features coincide with activities that may cause toxic contamination are highlighted in the following tables for each cluster.

Portsmouth Harbour

Possible Toxic Contamination Impacts	RA	Features of Interest[1]				
		3 Intertidal mudflats & sandflats	9 Cordgrass swards	10 Saltmarsh	13 Estuaries	15 Shallow coastal waters
Bait digging may cause the introduction of synthetic compounds from intertidal sediments in areas under local authority control or ownership	FBC	●	●	●		●
Bait digging may cause the introduction of synthetic compounds from intertidal sediments in areas under local authority control or ownership	GBC	●	●	●		
Bait digging may cause the introduction of synthetic compounds from intertidal sediments in areas under local authority control or ownership	PCC	●		●	●	
Bait digging may cause the introduction of synthetic compounds from intertidal sediments	EA	●	●	●	●	●
Bait digging may cause the introduction of synthetic compounds from intertidal sediments	EN	●	●	●	●	

Chichester & Langstone Harbour

Possible Toxic Contamination Impacts	RA	Features of Interest[1]										
		2 Intertidal mixed sediment	3 Intertidal & mudflats	4 Intertidal shingle	5 Subtidal sandbanks	6 Subtidal sediment communiti	8 *Salicornia* & other annuals	9 Cordgrass swards	10 Saltmarsh	12 Annual vegetation drift lines	13 Estuaries	15 Shallow coastal waters
Bait digging may cause the introduction of synthetic and non-synthetic compounds from intertidal sediments in areas under local authority control or ownership in Chichester Harbour	WSCC	●	●	●							●	
Bait digging may cause the introduction of synthetic and non-synthetic compounds from intertidal sediments in areas under local authority control or ownership in Langstone Harbour	PCC	●	●									
Bait digging may cause the introduction of synthetic and non-synthetic compounds from intertidal sediments in areas under local authority control or ownership	HBC		●					●	●	●	●	●
Bait digging may cause the introduction of synthetic and non-synthetic compounds from intertidal sediments in areas in Chichester Harbour	CHC	●	●	●						●	●	
Bait digging may cause the introduction of synthetic and non-synthetic compounds from intertidal sediments	EA	●	●	●	●	●	●	●	●	●	●	●
Bait digging may cause the introduction of synthetic and non-synthetic compounds from intertidal sediments	EN	●	●	●			●	●	●	●	●	

North West Solent

Possible Toxic Contamination Impacts	RA	Features of Interest[1]											
		1 Boulder & cobble shores	2 Intertidal mixed sediment	3 Intertidal mudflats & sandflats	5 Subtidal sandbanks	6 Subtidal sediment communities	8 *Salicornia* & other annuals	9 Cordgrass swards	10 Saltmarsh	12 Annual vegetation drift lines	13 Estuaries	14 Saline lagoons	15 Shallow coastal waters
Bait digging may cause the introduction of synthetic and non-synthetic compounds from intertidal sediments in areas under local authority control or ownership	NFDC			●			●	●	●		●		●
Bait digging may cause the introduction of synthetic and non-synthetic compounds from intertidal sediments in areas	EA	●	●	●	●	●	●	●	●	●	●	●	●
Bait digging may cause the introduction of synthetic and non-synthetic compounds from intertidal sediments in areas	EN	●	●	●			●		●	●	●		

Southampton Water

Possible Toxic Contamination Impacts	RA	Features of Interest[1]											
		1 Boulder & cobble shores	2 Intertidal mixed sediment	3 Intertidal mudflats & sandflats	5 Subtidal sandbanks	6 Subtidal sediment communities	8 *Salicornia* & other annuals	9 Cordgrass swards	10 Saltmarsh	12 Annual vegetation drift lines	13 Estuaries	14 Saline lagoons	15 Shallow coastal waters
Bait digging may cause the introduction of synthetic and non-synthetic compounds from intertidal sediments in areas under local authority control or ownership	FBC			●		●	●	●	●	●	●		●
Bait digging may cause the introduction of synthetic and non-synthetic compounds from intertidal sediments in areas under local authority control or ownership	SCC			●									
Bait digging may cause the introduction of synthetic and non-synthetic compounds from intertidal sediments in areas under local authority control or ownership	EBC			●	●	●				●	●		
Bait digging may cause the introduction of synthetic and non-synthetic compounds from intertidal sediments in areas under local authority control or ownership	NFDC			●					●		●		
Bait digging may cause the introduction of synthetic and non-synthetic compounds from intertidal sediments in the Hamble Estuary	RHHA	●	●	●	●	●	●	●	●		●	●	●
Bait digging may cause the introduction of synthetic and non-synthetic compounds from intertidal sediments in areas	EA	●	●	●	●	●	●	●	●	●	●	●	●
Bait digging may cause the introduction of synthetic and non-synthetic compounds from intertidal sediments in areas	EN	●	●	●			●	●	●	●	●		

Isle of Wight

Possible Toxic Contamination Impacts	RA	Features of Interest[1]										
		1 Boulder & cobble shores	2 Intertidal mixed sediment	3 Intertidal mudflats & sandflats	5 Subtidal sandbanks	8 *Salicornia* & other annuals	9 Cordgrass swards	10 Saltmarsh	12 Annual vegetation drift lines	13 Estuaries	14 Saline lagoons	15 Shallow coastal waters
Bait digging may cause the introduction of synthetic and non-synthetic compounds from intertidal sediments in areas under local authority control or ownership	IoWC	●	●	●	●	●	●	●	●	●	●	●
Bait digging may cause the introduction of synthetic and non-synthetic compounds from intertidal sediments	EN/EA	●	●	●		●	●	●	●	●		

* Not all RAs in the category agreed on if activity occurred on or adjacent to the features of interest

[1] Features of interest which are highly vulnerable and which may be affected

Key Risks for Commercial Shipping

Commercial shipping includes all types of commercial craft such as cargo ships, passenger and car ferries (commercial fishing is covered in separate category). The activity is concentrated in Southampton Water and Portsmouth Harbour.

There are a number of issues related to commercial shipping that are common across the clusters these are explained in greater detail in the following sections for each operation but can be summarised as follows:

- Commercial shipping may cause abrasion of the intertidal and subtidal sediments through ship-wash.
- Commercial shipping may cause a disturbance to birds in the intertidal and shallow coastal waters.
- Commercial shipping may cause an introduction of synthetic or non-synthetic compounds such as incidental or deliberate discharge of lubricants, fuel, refuse etc., the flushing of empty storage tanks with seawater, pumping out oily bilges and disposal of refuse. There is legislation in place to prevent such discharges however these may still occur. This is most likely to occur in the subtidal areas but all areas may be at risk from the subsequent pollution.

Abrasion

Abrasion can physically damage individual marine organisms and plants as well as causing deterioration to the structure of saltmarsh and sediment communities. Abrasion can result from trampling, erosion and compaction of sediment. This can result in erosion of upper levels of less durable marine features, changes in the level and diversity of vegetation within a site or feature and changes in feature density, porosity and penetrability.

Physical damage from abrasion may be caused from commercial shipping. This could be caused by grounding due to navigation error or accident. Ship wash may also cause changes to the hydrodynamic regime which may result in erosion of intertidal and shallow subtidal habitats and disturbance to communities (impact of ship wash is dependent on magnitude of the waves generated, distance between the vessel and the marine feature of interest, form of the seabed, depth of water and the type of shoreline). A boat that produces large waves some distance from the shoreline may have less impact then a vessel producing small waves closer to the shoreline. These types of impacts need to be considered in relation to other natural forces such as wave impacts during storms etc..

A range of the features of interest are highly vulnerable to abrasion, the areas where these features coincide with activities that may cause abrasion are highlighted in the following tables for each cluster.

Chichester & Langstone Harbour Cluster

Possible Abrasion Impacts	RA	Features of Interest[1]
		3. Intertidal mudflats and sandflats
Commercial shipping in Langstone harbour may generate ship wash	LHB	●

North West Solent Cluster

Possible Abrasion Impacts	RA	Features of Interest[1]			
		3 Intertidal mudflats and sandflats	6 Subtidal sediment communities	7 Intertidal Sand & shingle	13 Estuaries
Commercial shipping using Lymington River may generate ship wash	LHC				●
Commercial shipping in Keyhaven may generate ship wash	NFDC	●	●	●	●
Ferries may generate ship wash	WL/ LHC	●	●	●	●

Southampton Water Cluster

Possible Abrasion Impacts	RA	Features of Interest[1]						
		2 Intertidal mixed sediment	3 Intertidal mudflats and sandflats	5 Subtidal sandbanks	6 Subtidal sediment communities	7 Intertidal Sand & shingle	12 Annual vegetation drift lines	13 Estuaries
Commercial shipping in Southampton water may generate ship wash	ABP	●	●	●	●	●	●	●

Isle of Wight Cluster

Possible Abrasion Impacts	RA	Features of Interest[1]					
		2 Intertidal mixed sediment	3 Intertidal mudflats and sandflats	5 Subtidal sandbanks	6 Subtidal sediment communities	7 Intertidal Sand & shingle	13 Estuaries
Commercial shipping in Bembridge Harbour may generate ship wash	BHIC						●
Ferries in the Medina Estuary may generate ship wash	CHC	●	●	●	●	●	●
Cargo ships in the Medina Estuary may generate ship wash	CHC	●	●	●	●	●	●
Ferry operating from Wootton Creek may generate ship wash	QHM/ WL	●*	●				
Hovercraft operating from Ryde may generate ship wash	QHM		●				
Commercial traffic in Newport Harbour may generate ship wash	NHA	●	●				●
Commercial traffic in Yar Estuary may generate ship wash	YHC					●	●

* Not all RAs in the category agreed on if activity occurred on or adjacent to the features of interest

[1] Features of interest which are highly vulnerable and which may be affected

Noise and Visual Disturbance

Nesting, feeding and roosting birds species are sensitive to noise and visual disturbance. Disturbance causes birds to expend energy, this is more of a problem when this coincides with times when they require more energy to breed and forage for food. Disturbance can include the following impacts:

- Birds may take flight temporarily, but return after the disturbance ends. This results in energy intake ceasing and energy expenditure greatly increasing. At times of limited food supply and/or cold weather this could be life threatening for certain species.
- Birds may modify their feeding habits.
- More sensitive species may suffer reduced breeding success or, ultimately, desert the site.

Non–physical disturbance such as noise and visual presence can be generated from commercial ships and may disturb bird species.

A range of the features of interest are highly vulnerable noise and visual impacts, the areas where these features coincide with activities that may cause noise and visual impacts are highlighted in the following tables for each cluster.

Portsmouth Harbour Cluster

Possible Noise and Visual Impacts	RA	Features of Interest[1]		
		3 Intertidal mudflats and sandflats	10 Saltmarsh	15 Shallow coastal waters
Continental ferry movements	QHM	●		●
Cargo from the commercial port	QHM/PCP	●		●
Transit of dredgers from Fareham	QHM	●	●	●
Marine scrap dealer from Tipner	QHM	●		●
Corporate and sail training from Port Solent	QHM	●		●
Pleasure boat tours	QHM	●		●

Chichester & Langstone Harbour Cluster

Possible Noise and Visual Impacts	RA	Features of Interest[1]
		3. Intertidal mudflats and sandflats
Commercial shipping in Langstone harbour may cause visual disturbance	LHB	●

North West Solent Cluster

Possible Noise & Visual Impacts	RA	Features of Interest[1]		
		3 Intertidal mudflats and sandflats	7 Intertidal Sand & shingle	10 Saltmarsh
Commercial shipping in Keyhaven	NFDC	●	●	●
Ferries	WL/LHC	●	●	●

Southampton Water Cluster

Possible Noise & Visual Impacts	RA	Features of Interest[1]				
		1 Boulder & cobble shores	2 Intertidal mixed sediment	3 Intertidal mudflats and sandflats	7 Intertidal Sand & shingle	10 Saltmarsh
Commercial shipping in the Hamble estuary	RHHA	●	●	●	●	●
Commercial shipping in Southampton water	ABP	●	●	●	●	●

Isle of Wight Cluster

Possible Noise & Visual Impacts	RA	Features of Interest[1]			
		2 Intertidal mixed sediment	3 Intertidal mudflats & sandflats	7 Intertidal Sand & shingle	10 Saltmarsh
Ferries in the Medina Estuary	CHC	●	●	●	
Cargo ships in the Medina Estuary	CHC	●	●	●	●
Car ferry operating from Wootton Creek	QHM/WL	●*	●		
Passenger ferry operating from Ryde Pier	QHM		●		
Hovercraft operating from Ryde	QHM		●		
Commercial traffic in Newport Harbour	NHA	●	●		
Commercial traffic in Yar Estuary	YHC			●	●

* Not all RAs in the category agreed on if activity occurred on or adjacent to the features of interest
[1] Features of interest which are highly vulnerable and which may be affected

Toxic Contamination

Many marine and coastal habitats and species are sensitive to toxic contamination through the introduction of synthetic compounds such as pesticides, polychlorinatedbiphenyls (PCBs) and biocides (e.g. tributyltin (TBT)) and non-synthetic compounds such as heavy metals and hydrocarbons. Many synthetic compounds are known to have toxic effects even in low concentrations and are capable of high levels of bioaccumulation within many benthic organisms which can then be compounded further along the food chain. The potential effects of toxic pollutants also varies according to the state and availability of the compound and the characteristic of the receiving environment. In many cases the effects may be temporary and minimal due to the dilution of wastes in the water,

Synthetic and non-synthetic toxic contamination can enter the site from a number of point and non-point sources ranging from land-based discharges (licensed and un-licensed), run-off (e.g. roads), water-based discharges (e.g. oil from ships and metal compounds such as anti-fouling paints) to atmospheric deposition.

Toxic contamination by introduction of synthetic and non-synthetic compounds can occur from the following activities related to commercial shipping:

- accidental and deliberate discharge of lubricants, fuel, refuse etc.
- flushing of empty ballast tanks with seawater
- pumping out oily bilges
- disposal of refuse

A range of the features of interest are highly vulnerable to toxic contamination, the areas where these features coincide with activities that may cause toxic contamination are highlighted in the following tables for each cluster.

Portsmouth Harbour Cluster

Possible Toxic Contamination Impacts	RA	Features of Interest[1]		
		3 Intertidal mudflats and sandflats	10 Saltmarsh	15 Shallow coastal waters
Continental ferry movements may cause the introduction of synthetic compounds	QHM	●		●
Commercial cargo ships from the commercial port may cause the introduction of synthetic compounds	QHM/PCP	●		●
War ships from UHAF and Bedenham pier may cause the introduction of synthetic compounds	QHM	●		●
Transit of dredgers from Fareham may cause the introduction of synthetic compounds	QHM	●	●	●
Marine scrap dealer from Tipner may cause the introduction of synthetic compounds	QHM	●		●
Corporate and sail training from Port Solent may cause the introduction of synthetic compounds	QHM	●		●
Pleasure boat tours may cause the introduction of synthetic compounds	QHM	●		●

North West Solent Cluster

Possible Toxic Contamination Impacts	RA	Features of Interest[1]						
		3 Intertidal mudflats and sandflats	6 Subtidal sediment communities	8 *Salicornia & other annuals*	9 Cordgrass swards	10 Saltmarsh	13 Estuaries	15 Shallow coastal waters
Commercial shipping using Lymington River may cause the introduction of synthetic compounds	LHC						●	
Commercial shipping in Keyhaven may cause the introduction of synthetic compounds	NFDC	●	●	●	●	●	●	●
Ferries may cause the introduction of synthetic compounds	WL/LHC	●	●	●	●	●	●	●

Southampton Water Cluster

Possible Toxic contamination Impacts	RA	Features of Interest[1]										
		1 Boulder & cobble shores	2 Intertidal mixed sediment	3 Intertidal mudflats and sandflats	5 Subtidal sandbanks	6 Subtidal sediment communities	8 *Salicornia & other annuals*	9 Cordgrass swards	10 Saltmarsh	12 Annual vegetation drift lines	13 Estuaries	15 Shallow coastal waters
Commercial shipping in Southampton water may cause intro of synthetic compounds	ABP	●	●	●	●	●	●	●	●		●	●
Commercial shipping in Southampton water may cause introduction of non-synthetic compounds	ABP									●		

Isle of Wight Cluster

Possible Toxic contamination Impacts	RA	Features of Interest[1]								
		2 Intertidal mixed sediment	3 Intertidal mudflats and sandflats	5 Subtidal sandbanks	6 Subtidal sediment communities	8 *Salicornia & other annuals*	9 Cordgrass swards	10 Saltmarsh	13 Estuaries	15 Shallow coastal waters
Commercial shipping in Bembridge Harbour may cause introduction of synthetic compounds	BHIC								●	●
Ferries in the Medina Estuary may cause introduction of synthetic compounds	CHC	●	●	●	●				●	●
Cargo ships in the Medina Estuary may cause introduction of synthetic compounds	CHC	●	●	●	●	●	●	●	●	●
Ferry operating from Wootton Creek may cause introduction of synthetic compounds	QHM/WL	●*	●							●*
Passenger ferry operating from Ryde Pier may cause introduction of synthetic compounds	QHM		●							●
Hovercraft operating from Ryde may cause introduction of synthetic compounds	QHM		●							●
Commercial traffic in Newport Harbour may cause introduction of synthetic compounds	NHA	●	●			●	●	●	●	
Commercial traffic in Yar Estuary may cause introduction of synthetic compounds	YHC				●	●	●	●	●	●

* Not all RAs in the category agreed on if activity occurred on or adjacent to the features of interest

[1] Features of interest which are highly vulnerable and which may be affected

Key Risks for Dredging

Dredging covers all activities related to the removal and disposal of dredged material ie capital and maintenance dredging and disposal of dredged spoil including beneficial disposal of dredging and foreshore recharge. Potential impacts will be concentrated around dredged areas and at disposal sites however knock on effects can impact on other adjacent areas. Most activities related to dredging are licensed and as such conditions may ensure minimal impacts.

There are a number of issues related to access that are common across the clusters these are explained in greater detail in the following sections for each operation but can be summarised as follows:

- Capital and maintenance dredging removes sediments from the dredged channels, although this occurs predominantly in the subtidal it can have an impact on all habitats within the system.
- All activities associated with dredging may cause smothering, this is mainly a problem at disposal sites but can also impact on adjacent sits due to the disturbance and movement of sediment in the water system.
- Capital and maintenance dredging causes direct erosion of the seabed and may alter sediment movement resulting in areas being starved of sediment.
- Dredging activities that are noisy or cause a visual presence may cause a physical disturbance.
- Dredging may cause the re-suspension of contaminants which results in toxic contamination.

Removal

Physical loss through removal can jeopardise the survival of some communities through the loss or modification of existing natural habitats and associated estuarine species**.** Developments and activities may also indirectly cause the removal of estuarine habitats through the changes in morphology, modification of coastal processes and subsequent habitat erosion. The estuary system is further compromised by hard frontages such as embankments and quays which constrain the upper shore boundary preventing landward migration of the intertidal features as a response to rising sea levels.

Capital and maintenance dredging may cause physical loss through the removal of subtidal benthic species and communities and removal of sediments which in the long term may affect the sediment regime locally and possibly at some distance. However the communities within regularly dredged channels are likely to be degraded and there is relatively rapid recovery. The magnitude and scale of the effect will depend on the scale and frequency of dredge and the local conditions at the dredge site. In general, maintenance dredging has been carried out within ports, harbours and estuaries over several years if not decades and is an intimate part of the sediment regime and dynamics of an area. However there may be gaps in the scientific understanding of hydrodynamics and sediment transport and therefore gaps in our knowledge of the impacts the environment.

A range of the features of interest are highly vulnerable to removal, the areas where these features coincide with activities that may cause removal are highlighted in the following tables for each cluster.

Portsmouth Harbour

Possible Removal Impacts	RA	Features of Interest[1]			
		3 Intertidal mudflats and sandflats	9 Cordgrass swards	10 Saltmarsh	13 Estuaries
Capital dredging	EN	●	●	●	●
Maintenance dredging	QHM/PCP /EN	●	●*	●*	●*

Chichester & Langstone Harbour Cluster

Possible Removal Impacts	RA	Features of Interest[1]										
		2 Intertidal mixed sediment	3 Intertidal mudflats and sandflats	4 Intertidal shingle	5 Subtidal sandbanks	6 Subtidal sediment communities	7 Intertidal Sand & shingle	8 *Salicornia & other annuals*	9 Cordgrass swards	10 Saltmarsh	12 Annual vegetation drift lines	13 Estuaries
Capital and maintenance dredging	EN	●	●	●	●	●	●	●	●	●	●	●
Maintenance dredging in Langstone Harbour	LHB		●									
Maintenance dredging in Chichester Harbour	CHC	●	●	●	●	●	●	●	●	●	●	●

North West Solent Cluster

Possible Removal Impacts	RA	Features of Interest[1]												
		2 Intertidal mixed sediment	3 Intertidal mudflats and	5 Subtidal sandbanks	6 Subtidal sediment	7 Intertidal Sand &	8 *Salicornia & other annuals*	9 Cordgrass swards	10 Saltmarsh	11 Intertidal reefs	12 Annual vegetation	13 Estuaries	14 Saline lagoons
Capital and maintenance dredging	EN	●	●	●	●	●	●	●	●	●	●	●	●
Maintenance dredging in Lymington River	LHC/WL		●*		●*							●	

Southampton Water

Possible Removal Impacts	RA	Features of Interest[1]											
		2 Intertidal mixed sediment	3 Intertidal mudflats and	5 Subtidal sandbanks	6 Subtidal sediment communiti	7 Intertidal Sand & shingle	8 *Salicornia & other*	9 Cordgrass swards	10 Saltmarsh	11 Intertidal reefs	12 Annual vegetation	13 Estuaries	14 Saline lagoons
Capital and maintenance dredging	EN	●	●	●	●	●	●	●	●	●	●	●	●
Maintenance dredging	RHHA	●	●		●	●			●			●	

Isle of Wight Cluster

Possible Removal Impacts	RA	Features of Interest[1]											
		2 Intertidal mixed sediment	3 Intertidal mudflats and sandflats	5 Subtidal sandbanks	6 Subtidal sediment communities	7 Intertidal Sand & shingle	8 *Salicornia & other annuals*	9 Cordgrass swards	10 Saltmarsh	11 Intertidal reefs	12 Annual vegetation drift lines	13 Estuaries	14 Saline lagoons
Capital and maintenance dredging	EN	●	●	●	●	●	●	●	●	●	●	●	●
Capital dredging in Medina Estuary	CHC	●	●	●	●	●	●	●	●	●		●	
Maintenance dredging in Medina Estuary	CHC	●	●	●	●					●		●	
Maintenance dredging in Bembridge Harbour	BHIC	●	●			●						●	
Maintenance dredging in Newport Harbour	NHA	●	●				●	●	●			●	
Maintenance dredging in Wootton Creek	WL		●										
Maintenance dredging in Yar Estuary	YHC	●	●		●	●	●	●	●			●	

***** Not all RAs in the category agreed on if activity occurred on or adjacent to the features of interest

[1] Features of interest which are highly vulnerable and which may be affected

Smothering

Physical loss through smothering can jeopardise the survival of some communities through the loss or modification of existing natural habitats and associated estuarine species through smothering**.**

The disposal of dredged material, including beneficial disposal and foreshore recharge may cause physical loss through smothering of intertidal and subtidal communities, as sediments will be deposited on top of the communities and habitats already present. Smothering is inevitable at disposal sites, however the communities within regularly used sites are often degraded. Disposal of dredged material may sometimes lead to the creation of new subtidal or intertidal habitat, either inadvertently or through planned sediment recharge schemes. Capital and maintenance dredging may also result in smothering of benthic habitat and communities where fine fractions are lost during dredging operations which then settle on the sea bed elsewhere.

A small number of the features of interest are highly vulnerable to smothering, the areas where these features coincide with activities that may cause smothering are highlighted in the following tables for each cluster.

Portsmouth Harbour

Possible Smothering Impacts	RA	Features of Interest[1]				
		3 Intertidal mudflats and sandflats	9 Cordgrass swards	10 Saltmarsh	13 Estuaries	15 Shallow coastal waters
Beneficial disposal of dredging including foreshore recharge may smother habitats already present	EN	●			●	
Capital dredging may re-suspend sediments which may settle elsewhere in the system	EN	●			●	
Maintenance dredging may re-suspend sediments which may settle elsewhere in the system	QHM/PCP /EN	●			●*	

Chichester & Langstone Harbour Cluster

Possible Smothering Impacts	RA	Features of Interest[1]			
		2 Intertidal mixed sediment	3 Intertidal mudflats & sandflats	6 Subtidal sediment communities	13 Estuaries
Beneficial disposal of dredging may smother habitats already present	EN	●	●		●
Capital and maintenance dredging may re-suspend sediments which may settle elsewhere in the system	EN	●	●	●	●
Foreshore recharge may smother habitats already present	EN				●
Maintenance dredging in Langstone Harbour may re-suspend sediments which may settle elsewhere in the system	LHB		●		
Maintenance dredging in Chichester Harbour may re-suspend sediments which may settle elsewhere in the system	CHC	●	●	●	●

North West Solent Cluster

Possible Smothering Impacts	RA	Features of Interest[1]				
		2 Intertidal mixed sediment	3 Intertidal mudflats and sandflats	6 Subtidal sediment communities	11 Intertidal reefs	13 Estuaries
Capital and maintenance dredging may re-suspend sediments which may settle elsewhere in the system	EN	●	●	●	●	●
Foreshore recharge may smother habitats already present	EN	●	●		●	●
Foreshore recharge may smother habitats already present	NFDC		●			
Maintenance dredging in Lymington River may re-suspend sediments which may settle elsewhere in the system	WL					●

Southampton Water

Possible Smothering Impacts	RA	Features of Interest[1]				
		2 Intertidal mixed sediment	3 Intertidal mudflats and sandflats	6 Subtidal sediment communities	11 Intertidal reefs	13 Estuaries
Capital and maintenance dredging may re-suspend sediments which may settle elsewhere in the system	EN	●	●	●	●	●
Foreshore recharge may smother habitats already present	EN	●	●		●	●
Beneficial disposal of dredgings may smother habitats already present.	EN	●	●	●		●
Foreshore recharge may smother habitats already present	NFDC		●			
Maintenance dredging may re-suspend sediments which may settle elsewhere in the system	RHHA	●	●	●		●

Isle of Wight Cluster

Possible Smothering Impacts	RA	Features of Interest[1]						
		2 Intertidal mixed sediment	3 Intertidal mudflats and sandflats	6 Subtidal sediment communities	10 Saltmarsh	11 Intertidal reefs	12 Annual vegetation drift lines	13 Estuaries
Capital and maintenance dredging may re-suspend sediments which may settle elsewhere in the system	EN	●	●	●		●		●
Foreshore recharge may smother habitats already present	EN	●	●			●		●
Beneficial disposal of dredgings may smother habitats already present	EN	●	●	●				●
Foreshore recharge may smother habitats already present	IoWC	●						

Possible Smothering Impacts	RA	Features of Interest[1]						
		2 Intertidal mixed sediment	3 Intertidal mudflats and sandflats	6 Subtidal sediment communities	10 Saltmarsh	11 Intertidal reefs	12 Annual vegetation drift lines	13 Estuaries
Maintenance dredging in Bembridge Harbour may re-suspend sediments which may settle elsewhere in the system	BHIC	●	●					●
Capital dredging in Medina Estuary may re-suspend sediments which may settle elsewhere in the system	CHC	●	●	●	●		●	
Maintenance dredging in Medina Estuary may re-suspend sediments which may settle elsewhere in the system	CHC	●	●	●		●		●
Maintenance dredging in Newport Harbour may re-suspend sediments which may settle elsewhere in the system	NHA	●	●					●
Maintenance dredging in Wootton Creek may re-suspend sediments which may settle elsewhere in the system	WL		●					
Maintenance dredging in Yar Estuary may re-suspend sediments which may settle elsewhere in the system	YHC	●	●	●	●			●

* Not all RAs in the category agreed on if activity occurred on or adjacent to the features of interest
[1] Features of interest which are highly vulnerable and which may be affected

Abrasion

Abrasion can physically damage individual marine organisms and plants as well as causing deterioration to the structure of saltmarsh and sediment communities. Abrasion can result from trampling, erosion and compaction of the soil. This can result in erosion of soils and upper levels of less durable marine features, changes in the level and diversity of vegetation within a site or feature and changes in feature density, porosity and penetrability.

Capital and maintenance dredging may cause physical damage through abrasion of the sediments. Alterations to coastal or estuary morphology, for example alteration of sediment pathways and changes to siltation patterns, may result in erosion, or creation of intertidal and subtidal habitat. The effects depend on the scale and frequency of the dredge, and the local conditions at the dredge site.

A range of the features of interest are highly vulnerable to abrasion, the areas where these features coincide with activities that may cause abrasion are highlighted in the following tables for each cluster.

Portsmouth Harbour

Possible Abrasion Impacts	RA	Features of Interest[1]
		13. Estuaries
Capital dredging causes direct erosion of the seabed and may alter sediment movement resulting in areas being starved of sediment.	EN	●
Maintenance dredging causes direct erosion of the seabed	QHM/PCP /EN	●

Chichester & Langstone Harbour Cluster

Possible Abrasion Impacts	RA	Features of Interest[1]							
		2 Intertidal mixed sediment	3 Intertidal mudflats and sandflats	4 Intertidal shingle	5 Subtidal sandbanks	6 Subtidal sediment communities	7 Intertidal Sand & shingle	12 Annual vegetation drift lines	13 Estuaries
Capital and maintenance dredging causes direct erosion of the seabed and may alter sediment movement resulting in areas being starved of sediment.	EN	●	●	●	●	●	●	●	●
Maintenance dredging in Langstone Harbour may cause direct erosion of the seabed	LHB		●						
Maintenance dredging in Chichester Harbour may cause direct erosion of the seabed	CHC	●	●	●	●	●	●	●	●

North West Solent Cluster

Possible Abrasion Impacts	RA	Features of Interest[1]								
		1 Boulder & cobble shores	2 Intertidal mixed sediment	3 Intertidal mudflats and sandflats	5 Subtidal sandbanks	6 Subtidal sediment communities	7 Intertidal Sand & shingle	10 Saltmarsh	12 Annual vegetation drift lines	13 Estuaries
Capital dredging causes direct erosion of the seabed and may alter sediment movement resulting in areas being starved of sediment.	EN		●	●	●	●	●		●	●
Maintenance dredging causes direct erosion of the seabed in Lymington River	WL									●
Maintenance dredging causes direct erosion of the seabed	EN		●	●	●	●	●		●	●

Southampton Water

Possible Abrasion Impacts	RA	Features of Interest[1]						
		2 Intertidal mixed sediment	3 Intertidal mudflats and sandflats	5 Subtidal sandbanks	6 Subtidal sediment communities	7 Intertidal Sand & shingle	12 Annual vegetation drift lines	13 Estuaries
Capital and maintenance dredging causes direct erosion of the seabed and may alter sediment movement resulting in areas being starved of sediment.	EN	●	●	●	●	●	●	●
Maintenance dredging causes direct erosion of the seabed in the Hamble Estuary	RHHA		●		●			

Isle of Wight Cluster

Possible Abrasion Impacts	RA	Features of Interest[1]								
		1 Boulder & cobble shores	2 Intertidal mixed sediment	3 Intertidal mudflats and sandflats	5 Subtidal sandbanks	6 Subtidal sediment communities	7 Intertidal Sand & shingle	10 Saltmarsh	12 Annual vegetation drift lines	13 Estuaries
Capital and maintenance dredging causes direct erosion of the seabed and may alter sediment movement resulting in areas being starved of sediment.	EN		●	●	●	●	●		●	●

* Not all RAs in the category agreed on if activity occurred on or adjacent to the features of interest
[1] Features of interest which are highly vulnerable and which may be affected

Noise & Visual Disturbance

Nesting, feeding and roosting birds species are sensitive to noise and visual disturbance. Disturbance causes birds to expend energy, this is more of a problem when this coincides with times when they require more energy to breed and forage for food. Disturbance can include the following impacts:

- Birds may take flight temporarily, but return after the disturbance ends. This results in energy intake ceasing and energy expenditure greatly increasing. At times of limited food supply and/or cold weather this could be life threatening for certain species.
- Birds may modify their feeding habits.
- More sensitive species may suffer reduced breeding success or, ultimately, desert the site.

Dredging activities that are noisy or cause a visual presence may cause a physical disturbance. This needs to be set in context of other activities taking place and it is likely that any noise and visual impacts will be of a minor nature and temporary.

A range of the features of interest are highly vulnerable noise and visual impacts, the areas where these features coincide with activities that may cause noise and visual impacts are highlighted in the following tables for each cluster.

Portsmouth Harbour Cluster

Possible Noise and Visual Impacts	RA	Features of Interest[1]	
		3. Intertidal mudflats and sandflats	10. Saltmarsh
Beneficial disposal of dredging including foreshore recharge	EN	●	●

Chichester & Langstone Harbour Cluster

Possible Noise and Visual Impacts	RA	Features of Interest[1]	
		4 Intertidal shingle	7 Intertidal Sand & shingle
Beneficial disposal of dredging including foreshore recharge	EN	●	●

North West Solent Cluster

Possible Noise and Visual Impacts	RA	Features of Interest[1]				
		1 Boulder & cobble shores	2 Intertidal mixed sediment	3 Intertidal mudflats and sandflats	7 Intertidal Sand & shingle	10 Saltmarsh
Foreshore recharge	EN	●	●	●	●	●
Foreshore recharge in areas of LA jurisdiction	NFDC	●				●

Southampton Water

Possible Noise and Visual Impacts	RA	Features of Interest[1]				
		1 Boulder & cobble shores	2 Intertidal mixed sediment	3 Intertidal mudflats and sandflats	7 Intertidal Sand & shingle	10 Saltmarsh
Beneficial disposal of dredging including foreshore recharge	EN	●	●	●	●	●
Foreshore recharge in areas of LA jurisdiction	NFDC			●		●

Isle of Wight Cluster

Possible Noise and Visual Impacts	RA	Features of Interest[1]							
		1 Boulder & cobble shores	2 Intertidal mixed sediment	3 Intertidal mudflats and sandflats	5 Subtidal sandbanks	6 Subtidal sediment communities	7 Intertidal Sand & shingle	10 Saltmarsh	13 Estuaries
Beneficial disposal of dredging including Foreshore recharge	EN	●	●	●			●	●	
Foreshore recharge in areas under LA control	IoW C		●						
Maintenance dredging in Bembridge Harbour	BHIC		●	●			●		●
Capital dredging in Medina Estuary	CHC		●	●	●	●	●		●
Maintenance dredging in Medina Estuary	CHC		●	●	●	●			●
Maintenance dredging in Newport Harbour	NHA		●	●					●
Maintenance dredging in Wootton Creek	WL			●					
Maintenance dredging in Yar Estuary	YHC		●	●		●		●	●

* Not all RAs in the category agreed on if activity occurred on or adjacent to the features of interest

[1] Features of interest which are highly vulnerable and which may be affected

Toxic Contamination

Many marine and coastal habitats and species are sensitive to toxic contamination through the introduction of synthetic compounds such as pesticides, polychlorinatedbiphenyls (PCBs) and biocides (e.g. tributyltin (TBT)) and non-synthetic compounds such as heavy metals and hydrocarbons. Many synthetic compounds are known to have toxic effects even in low concentrations and are capable of high levels of bioaccumulation within many benthic organisms which can then be compounded further along the food chain. The potential effects of toxic pollutants also varies according to the state and availability of the compound and the characteristic of the receiving environment. In many cases the effects may be temporary and minimal due to the dilution of wastes in the water.

Synthetic and non-synthetic toxic contamination can enter the site from a number of point and non-point sources ranging from land-based discharges (licensed and un-licensed), run-off (e.g. roads), water-based discharges (e.g. oil from ships and metal compounds such as anti-fouling paints) to atmospheric deposition.

Dredging and the disposal of dredged material may cause toxic contamination through the introduction of synthetic and non-synthetic compounds through suspension of the contaminants as pollution bound within the dredged sediments may be remobilised either in solution or bound to fines. These may become biologically available and enter the food chain. However, it is recognized that the material is usually tested prior to disposal.

A range of the features of interest are highly vulnerable to toxic contamination, the areas where these features coincide with activities that may cause toxic contamination are highlighted in the following tables for each cluster.

Portsmouth Harbour

Possible Toxic Contamination Impacts	RA	Features of Interest[1]				
		3 Intertidal mudflats and sandflats	9 Cordgrass swards	10 Saltmarsh	13 Estuaries	15 Shallow coastal waters
Beneficial disposal of dredging including foreshore recharge may cause introduction of synthetic compounds	EN	●	●	●	●	
Capital dredging may cause introduction of synthetic compounds through resuspension.	EN	●	●	●	●	●
Maintenance dredging may cause introduction of synthetic compounds through resuspension.	QHM /PCP/EN	●	●*	●*	●*	●

Chichester & Langstone Harbour Cluster

Possible Toxic Contamination Impacts	RA	Features of Interest[1]									
		2 Intertidal mixed sediment	3 Intertidal mudflats and sandflats	5 Subtidal sandbanks	6 Subtidal sediment	8 *Salicornia & other annuals*	9 Cordgrass swards	10 Saltmarsh	12 Annual vegetation drift	13 Estuaries	15 Shallow coastal waters
Beneficial disposal of dredging may cause introduction of synthetic compounds	EN	●	●			●	●	●		●	
Beneficial disposal of dredging may cause introduction of non-synthetic compounds	EN/EA								●		
Capital dredging may cause introduction of synthetic compounds through resuspension**.**	EN	●	●	●	●	●	●	●		●	●
Capital dredging may cause introduction of non-synthetic compounds through resuspension.	EN								●		
Maintenance dredging in Langstone Harbour may cause introduction of synthetic compounds through resuspension.	LHB		●								

North West Solent Cluster

Possible Toxic Contamination Impacts	RA	Features of Interest[1]											
		1 Boulder & cobble shores	2 Intertidal mixed sediment	3 Intertidal mudflats and sandflats	5 Subtidal sandbanks	6 Subtidal sediment communities	8 *Salicornia & other annuals*	9 Cordgrass swards	10 Saltmarsh	12 Annual vegetation drift lines	13 Estuaries	14 Saline lagoons	15 Shallow coastal waters
Capital and maintenance dredging may cause introduction of synthetic compounds through resuspension.	EN	●	●	●	●	●	●	●	●		●	●	●
Capital and maintenance dredging may cause introduction of non-synthetic compounds through resuspension.	EN									●			
Foreshore recharge may cause introduction of synthetic compounds	EN	●	●	●			●	●	●		●	●	

Possible Toxic Contamination Impacts	RA	Features of Interest[1]												
		1 Boulder & cobble shores	2 Intertidal mixed sediment	3 Intertidal mudflats and sandflats	5 Subtidal sandbanks	6 Subtidal sediment communities	8 *Salicornia & other annuals*	9 Cordgrass swards	10 Saltmarsh	12 Annual vegetation drift lines	13 Estuaries	14 Saline lagoons	15 Shallow coastal waters
Foreshore recharge may cause introduction of non-synthetic compounds	EN									●			
Foreshore recharge in areas of LA jurisdiction may cause introduction of synthetic compounds	NFDC	●							●				
Foreshore recharge in areas of LA jurisdiction may cause introduction of non-synthetic compounds	NFDC									●			
Maintenance dredging in Lymington River may cause introduction of synthetic compounds through resuspension.	WL										●		

Southampton Water

Possible Toxic Contamination Impacts	RA	Features of Interest[1]											
		1 Boulder & cobble shores	2 Intertidal mixed sediment	3 Intertidal mudflats and sandflats	5 Subtidal sandbanks	6 Subtidal sediment	8 *Salicornia & other annuals*	9 Cordgrass swards	10 Saltmarsh	12 Annual vegetation drift	13 Estuaries	14 Saline lagoons	15 Shallow coastal waters
Capital and maintenance dredging may cause introduction of synthetic compounds through resuspension.	EN	●	●	●	●	●	●	●	●		●	●	●
Capital and maintenance dredging may cause introduction of non-synthetic compounds through resuspension.										●			
Beneficial disposal of dredging including foreshore recharge may cause introduction of synthetic compounds	EN	●	●	●			●	●	●		●	●	
Beneficial disposal of dredging including foreshore recharge may cause introduction of non-synthetic compounds	EN									●			

Possible Toxic Contamination Impacts	RA	Features of Interest[1]											
		1 Boulder & cobble shores	2 Intertidal mixed sediment	3 Intertidal mudflats and sandflats	5 Subtidal sandbanks	6 Subtidal sediment	8 *Salicornia & other annuals*	9 Cordgrass swards	10 Saltmarsh	12 Annual vegetation drift	13 Estuaries	14 Saline lagoons	15 Shallow coastal waters
Foreshore recharge in areas of LA jurisdiction may cause introduction of synthetic compounds	NFDC			●					●				
Maintenance dredging may cause introduction of synthetic compounds through resuspension.	RHHA	●	●			●			●		●		

Isle of Wight Cluster

Possible Toxic Contamination Impacts	RA	Features of Interest[1]												
		1 Boulder & cobble shores	2 Intertidal mixed sediment	3 Intertidal mudflats and sandflats	5 Subtidal sandbanks	6 Subtidal sediment communities	8 *Salicornia & other annuals*	9 Cordgrass swards	10 Saltmarsh	12 Annual vegetation drift lines	13 Estuaries	14 Saline lagoons	15 Shallow coastal waters
Beneficial disposal of dredging including foreshore recharge may cause introduction of synthetic compounds	EN	●	●	●			●	●	●		●	●	
Beneficial disposal of dredging including foreshore recharge may cause introduction of non-synthetic compounds	EN									●			
Foreshore recharge in areas under LA control may cause introduction of non-synthetic compounds	IoWC		●										●
Foreshore recharge in areas under LA control may cause introduction of non-synthetic compounds	IoWC									●			
Capital and maintenance dredging may cause introduction of synthetic compounds through resuspension.	EN	●	●	●	●	●	●	●	●		●	●	●
Capital and maintenance dredging may cause introduction of non-synthetic compounds through resuspension.	EN									●			
Capital dredging in Medina Estuary may cause introduction of synthetic compounds through resuspension.	CHC		●	●	●	●	●	●	●		●		●
Maintenance dredging in Medina Estuary may cause introduction of synthetic compounds through resuspension.	CHC		●	●	●	●					●		●
Maintenance dredging in Newport Harbour may cause introduction of synthetic compounds through resuspension.	NHA		●	●			●	●	●		●		
Maintenance dredging in Wootton Creek may cause introduction of synthetic compounds through resuspension.	WL			●									
Maintenance dredging in Yar Estuary may cause introduction of synthetic compounds through resuspension.	YHC		●	●		●	●	●	●		●		

* Not all RAs in the category agreed on if activity occurred on or adjacent to the features of interest

[1] Features of interest which are highly vulnerable and which may be affected

Key Risk for Fishing

Fishing covers all activities related to fishing i.e. shellfish collection, shellfish dredging, shellfish laying, commercial fishing and mariculture.

There are a number of issues related to fishing that are common across the clusters these are explained in greater detail in the following sections for each operation but can be summarised as follows:

- Mariculture can cause smothering of intertidal and subtidal habitats
- Fishing activities may cause abrasion of the sea bed, through the towing of gear used for dredging or trampling of those collecting shellfish. This can impact on all subtidal habitats and intertidal sediments.
- All fishing activities may have a visual impact, particularly if large numbers are engaged in the activity.
- Dredging activities may re-suspend contaminants from the subtidal into the water column

Smothering

Physical loss through smothering can jeopardise the survival of some communities through the loss or modification of existing natural habitats and associated estuarine species through smothering**.** Developments and activities may also indirectly cause the smothering of estuarine habitats through the changes in morphology, modification of coastal processes and subsequent sediment movements.

Some activities associated with fishing can cause smothering e.g. shellfish laying and mariculture which involves placing of objects on top of habitats and species.

The extent of any impacts from fishing activities are determined by a variety of factors including gear type, fishing effort, the nature of the seabed and its marine life.

A small number of the features of interest are highly vulnerable to smothering, the areas where these features coincide with activities that may cause smothering are highlighted in the following tables for each cluster.

Portsmouth Harbour Cluster

Possible Smothering Issues	RA	Features of Interest[1]	
		3. Intertidal mudflats & sandflats	13. Estuaries
Mariculture	EN/SFC	●	●

Chichester & Langstone Harbour Cluster

Possible Smothering Issues	RA	Features of Interest[1]			
		2 Intertidal mixed sediment	3 Intertidal mudflats & sandflats	6 Subtidal sediment com	13 Estuaries
Mariculture	EN/SFC	●	●	●	●

North West Solent

Possible Smothering Issues	RA	Features of Interest[1]				
		2 Intertidal mixed sediment	3 Intertidal mudflats & sandflats	6 Subtidal sediment com	11 Intertidal reefs	13 Estuaries
Mariculture	EN/SFC	●	●	●	●	●

Southampton Water

Possible Smothering Issues	RA	Features of Interest[1]				
		2 Intertidal mixed sediment	3 Intertidal mudflats and sandflats	6 Subtidal sediment communities	11 Intertidal reefs	13 Estuaries
Mariculture	EN/SFC	●	●	●	●	●

Isle of Wight Cluster

Possible Smothering Issues	RA	Features of Interest[1]				
		2 Intertidal mixed sediment	3 Intertidal and mudflats	6 Subtidal sediment communitie	11 Intertidal reefs	13 Estuaries
Mariculture	EN/SFC	●	●	●	●	●

* Not all RAs in the category agreed on if activity occurred on or adjacent to the features of interest
[1] Features of interest which are highly vulnerable and which may be affected

Abrasion

Abrasion can physically damage individual marine organisms and plants as well as causing deterioration to the structure of saltmarsh and sediment communities. Abrasion can result from trampling, erosion and compaction of the soil. This can result in erosion of soils and upper levels of less durable marine features, changes in the level and diversity of vegetation within a site or feature and changes in feature density, porosity and penetrability.

The following activities connected with fishing may cause abrasion:

- Commercial fishing gear may cause physical damage through abrasion of the sea bed. Factors that will influence fishing activity i.e. ability of fishing gear to tow in certain areas may mean that there is no conflict with features for which the site has been designated. Abrasion of benthic habitats and marine life will generally be shorter lived on species and habitats that have adapted to or, been shaped, by frequent natural disturbances in comparison to those species and habitats in less exposed conditions. Slow growing, fragile species are particularly vulnerable. Trawling and dredging can affect the structure and composition of benthic communities to the point where they are dominated by short-lived, opportunistic species.

- Handpicking of shellfish from the shoreline may cause physical damage from trampling by collectors which may damage sensitive species.
- Shellfish dredging may cause physical disturbance due to abrasion. Subtidal and intertidal dredge tracks may be visible for varying amounts of time, i.e. months in stable sediments, hours in mobile sediments.

The extent of any impacts from fishing activities are determined by a variety of factors including gear type, fishing effort, the nature of the seabed and its marine life.

A range of the features of interest are highly vulnerable to abrasion, the areas where these features coincide with activities that may cause abrasion are highlighted in the following tables for each cluster.

Portsmouth Harbour Cluster

Possible Abrasion Issues	**RA**	**Features of Interest[1]**
		13. Estuaries
Commercial trawling for fin fish.	SFC	●
Hand collection of shellfish from the shore	EN/SFC	●
Hand collection of shellfish from the shore	FBC/GBC/PCC	●
Fishing	EA	●
Dredging for shellfish	EN/SFC	●

Chichester & Langstone Harbour Cluster

Possible Abrasion Issues	**RA**	**Features of Interest[1]**							
		2 Intertidal mixed sediment	3 Intertidal mudflats and sandflats	4 Intertidal shingle	5 Subtidal sandbanks	6 Subtidal sediment communities	7 Intertidal Sand & shingle	12 Annual vegetation drift lines	13 Estuaries
Commercial trawling for fin fish.	SFC	●	●	●	●	●	●		●
Hand picking of shellfish from the shore	EN/SFC	●	●	●*			●	●*	●
Hand picking of shellfish from the shore	CDC/HBC /PCC	●*	●*	●*	●*	●*	●*	●*	●*
Fishing	EA	●	●	●	●	●	●	●	●
Dredging for shellfish	EN/SFC	●	●	●	●*	●	●	●*	●
Shellfish laying	EN/SFC	●	●	●*	●	●	●	●*	●

North West Solent

Possible Abrasion Issues	RA	Features of Interest[1]						
		2 Intertidal mixed sediment	3 Intertidal mudflats and sandflats	5 Subtidal sandbanks	6 Subtidal sediment communities	7 Intertidal Sand & shingle	12 Annual vegetation drift lines	13 Estuaries
Commercial trawling for fin fish	SFC	●	●	●	●	●		●
Handpicking of shellfish from the shore	EN/SFC	●	●	●	●	●		●
Shellfish dredging	EN/SFC	●	●		●	●	●	●
Fishing	EA	●	●	●	●	●	●	●
Shellfish dredging in Beaulieu River	BRM			●	●			

Southampton Water

Possible Abrasion Issues	RA	Features of Interest[1]						
		2 Intertidal mixed sediment	3 Intertidal mudflats and sandflats	5 Subtidal sandbanks	6 Subtidal sediment	7 Intertidal Sand &	12 Annual vegetation drift lines	13 Estuaries
Commercial trawling for fin fish	SFC	●	●	●	●	●	●*	●
Handpicking of shellfish from the shore	EN/SFC	●	●	●	●	●		●
Shellfish dredging	EN/SFC	●	●		●	●	●	●
Commercial trawling for fin fish in RHHA area of jurisdiction	RHHA	●	●	●	●	●	●	●
Handpicking of shellfish from the shore	EBC/SCC /FBC		●			●*	●*	●*
Fishing	EA	●	●	●	●	●	●	●
Shellfish dredging in RHHA area of jurisdiction	RHHA						●	●

Isle of Wight Cluster

Possible Abrasion Issues	RA	Features of Interest[1]								
		2 Intertidal mixed sediment	3 Intertidal mudflats and sandflats	5 Subtidal sandbanks	6 Subtidal sediment communities	7 Intertidal Sand & shingle	8 *Salicornia & other annuals*	12 Annual vegetation drift lines	13 Estuaries	14 Saline lagoons
Commercial trawling for fin fish	SFC	●	●	●	●	●			●	
Handpicking of shellfish from the shore	EN/SFC	●	●	●	●	●			●	
Shellfish dredging	EN/SFC	●	●		●	●		●	●	
Handpicking of shellfish from the shore	IoWC	●	●		●		●		●	●
Fishing	EA	●	●	●	●	●	●	●	●	●
Handpicking of shellfish from the shore in areas under Newport Harbour Authorities jurisdiction	NHA	●	●							●

* Not all RAs in the category agreed on if activity occurred on or adjacent to the features of interest

[1] Features of interest which are highly vulnerable and which may be affected

Visual Disturbance

Nesting, feeding and roosting birds species are sensitive to visual disturbance. Disturbance causes birds to expend energy, this is more of a problem when this coincides with times when they require more energy to breed and forage for food. Disturbance can include the following impacts:

- Birds may take flight temporarily, but return after the disturbance ends. This results in energy intake ceasing and energy expenditure greatly increasing. At times of limited food supply and/or cold weather this could be life threatening for certain species.
- Birds may modify their feeding habits.
- More sensitive species may suffer reduced breeding success or, ultimately, desert the site.

All fishing activities may have a visual presence which may cause a non-physical disturbance to roosting and feeding birds on the inter-tidal area (particularly over winter and during bird migration periods), however it is anticipated that this will be minimal.

The extent of any impacts from fishing activities are determined by a variety of factors including gear type, fishing effort, the nature of the seabed and its marine life.

A range of the features of interest are highly vulnerable to noise and visual disturbance, the areas where these features coincide with activities that may cause noise and visual disturbance are highlighted in the following tables for each cluster.

Portsmouth Harbour Cluster

Possible Visual Issues	RA	Features of Interest[1]		
		3 Intertidal mudflats and sandflats	10 Saltmarsh	15 Shallow coastal waters
Commercial fishing for fin fish.	SFC	●	●	●
Hand collection of shellfish from the shore	EN/SFC	●	●	●*
Hand collection of shellfish in areas under LA control	FBC/GBC	●		●
Fishing	EA	●	●	●
Dredging for shellfish	EN/SFC	●	●	●

Chichester & Langstone Harbour Cluster

Possible Visual Issues	RA	Features of Interest[1]	
		4 Intertidal shingle	7 Intertidal Sand & shingle
Commercial fishing for fin fish.	SFC	●	●
Hand picking of shellfish	EN/SFC	●*	●
Fishing	EA	●	●
Dredging for shellfish	EN/SFC	●	●

North West Solent

Possible Visual Issues	RA	Features of Interest[1]				
		1 Boulder & cobble shores	2 Intertidal mixed sediment	3 Intertidal mudflats & sandflats	7 Intertidal Sand & shingle	10 Saltmarsh
Commercial fishing for fin fish	SFC	●	●	●	●	●
Handpicking of shellfish from the shoreline	EN/SFC	●	●	●	●	●
Fishing	EA	●	●	●	●	●
Shellfish dredging	EN/SFC	●	●	●	●	●

Southampton Water

Possible Visual Issues	RA	Features of Interest[1]				
		1 Boulder & cobble shores	2 Intertidal mixed sediment	3 Intertidal mudflats and sandflats	7 Intertidal Sand & shingle	10 Saltmarsh
Commercial fishing for fin fish	SFC	●	●	●	●	●
Handpicking of shellfish from the shoreline	EN/SFC	●	●	●	●	●
Shellfish dredging	EN/SFC	●	●	●	●	●
Commercial fishing for fin fish in RHHA area of jurisdiction	RHHA	●	●	●	●	●
Fishing	EA	●	●	●	●	●
Handpicking of shellfish from the shoreline in areas under LA control	EBC/SCC /FBC			●		

Isle of Wight Cluster

Possible Visual Issues	RA	Features of Interest[1]						
		1 Boulder & cobble shores	2 Intertidal mixed sediment	3 Intertidal mudflats & sandflats	7 Intertidal Sand & shingle	8 *Salicornia & other annuals*	10 Saltmarsh	11 Intertidal reefs
Commercial fishing for fin fish	SFC	●	●	●	●		●	
Handpicking of shellfish from the shoreline	EN/SFC	●	●	●	●		●	
Shellfish dredging	EN/SFC	●	●	●	●		●	
Handpicking of shellfish from the shoreline in areas under LA jurisdiction	IoWC	●	●	●		●		●
Fishing	EA	●	●	●	●	●	●	●
Handpicking of shellfish from the shoreline in areas under Newport Harbour Authorities jurisdiction	NHA		●	●				●

Toxic Contamination

Many marine and coastal habitats and species are sensitive to toxic contamination through the introduction of synthetic compounds such as pesticides, polychlorinatedbiphenyls (PCBs) and biocides (e.g. tributyltin (TBT)) and non-synthetic compounds such as heavy metals and hydrocarbons. Many synthetic compounds are known to have toxic effects even in low concentrations and are capable of high levels of bioaccumulation within many benthic organisms which can then be compounded further along the food chain. The potential effects of toxic pollutants also varies according to the state and availability of the compound and the characteristic of the receiving environment. In many cases the effects may be temporary and minimal due to the dilution of wastes in the water,

Dredging shellfish may cause pollutants already in the sediments to be released.

The extent of any impacts from fishing activities are determined by a variety of factors including gear type, fishing effort, the nature of the seabed and its marine life. The effects depend on scale of operations, background water quality, techniques used, amounts/types of contaminant in wastes and proximity of marine features. Impacts are likely to be localized and temporary due to dilution, however there may be more of a problem in enclosed areas or areas with low tidal flushing. It is very difficult to assess the impact of toxic contamination on species in isolation from other sources of disturbance, both natural and human influenced.

A range of the features of interest are highly vulnerable to toxic contamination, the areas where these features coincide with activities that may cause toxic contamination are highlighted in the following tables for each cluster.

Portsmouth Harbour Cluster

Possible Toxic Contamination Issues	RA	Features of Interest [1]				
		3 Intertidal mudflats & sandflats	9 Cordgrass swards	10 Saltmarsh	13 Estuaries	15 Shallow coastal waters
Dredging for shellfish may re-suspend sediment containing synthetic contaminants	EN/SFC	●	●	●	●	●

Chichester & Langstone Harbour Cluster

Possible Toxic Contamination Issues	RA	Features of Interest[1]										
		2 Intertidal mixed sediment	3 Intertidal mudflats and sandflats	4 Intertidal shingle	5 Subtidal sandbanks	6 Subtidal sediment	8 *Salicornia & other annuals*	9 Cordgrass swards	10 Saltmarsh	12 Annual vegetation drift	13 Estuaries	15 Shallow coastal waters
Dredging for shellfish may re-suspend sediment containing synthetic contaminants	EN/SFC	●	●		●*	●	●	●	●		●	●
Dredging for shellfish may re-suspend sediment containing non-synthetic contaminants	EN/SFC									●*		

North West Solent

Possible Toxic Contamination Issues	RA	Features of Interest[1]										
		1 Boulder & cobble shores	2 Intertidal mixed sediment	3 Intertidal mudflats and sandflats	6 Subtidal sediment communities	8 *Salicornia & other annuals*	9 Cordgrass swards	10 Saltmarsh	12 Annual vegetation drift lines	13 Estuaries	14 Saline lagoons	15 Shallow coastal waters
Shellfish dredging may re-suspend sediment containing synthetic contaminants	EN/SFC	●	●	●	●	●	●	●		●	●	●
Shellfish dredging may re-suspend non-sediment containing synthetic contaminants	EN/SFC								●			

Southampton Water

Possible Toxic Contamination Issues	RA	Features of Interest[1]										
		1 Boulder & cobble shores	2 Intertidal mixed sediment	3 Intertidal mudflats and sandflats	6 Subtidal sediment communities	8 *Salicornia & other annuals*	9 Cordgrass swards	10 Saltmarsh	12 Annual vegetation drift lines	13 Estuaries	14 Saline lagoons	15 Shallow coastal waters
Shellfish dredging may re-suspend sediment containing synthetic contaminants	EN/SFC	●	●	●	●	●	●	●		●	●	●
Shellfish dredging may re-suspend sediment containing non-synthetic contaminants	EN/SFC								●			

Isle of Wight Cluster

Possible Toxic Contamination Issues	RA	Features of Interest[1]										
		1 Boulder & cobble shores	2 Intertidal mixed sediment	3 Intertidal mudflats and sandflats	6 Subtidal sediment communities	8 *Salicornia & other annuals*	9 Cordgrass swards	10 Saltmarsh	12 Annual vegetation drift lines	13 Estuaries	14 Saline lagoons	15 Shallow coastal waters
Shellfish dredging may re-suspend sediment containing synthetic contaminants	EN/SFC	●	●	●	●	●	●	●		●	●	●
Shellfish dredging may re-suspend sediment containingnon- synthetic contaminants	EN/SFC								●			

***** Not all RAs in the category agreed on if activity occurred on or adjacent to the features of interest

[1] Features of interest which are highly vulnerable and which may be affected

Key Risks for Water Sports

Water sports covers the following anchoring, boat repair/maintenance, moorings (new), moorings (ongoing), navigation, other water sports, recreational boating – power, recreational boating – sail, slipway cleaning and maintenance. Potential impacts will be concentrated around key access points such as public and private slipways and marinas.

There are a number of issues related to water sports that are common across the clusters these are explained in greater detail in the following sections for each operation but can be summarised as follows:

- New or existing moorings may result in the removal of intertidal or subtidal habitats.
- New or existing moorings may result in smothering of underlying habitats.
- Access for water sports can result in trampling that can lead to erosion and abrasion of land (this is covered under access).
- The impact or dragging of anchors may cause abrasion to the seabed, eelgrass beds are particularly sensitive to this type of impact, but the impact may also effect other intertidal and subtidal habitats.
- Moorings can cause abrasion during their construction and also during their operation, particularly where pontoons and swing moorings cause scour to the seabed at low water, this may impact intertidal habitats.
- Some craft, particularly motorised craft may contribute to bank erosion either through increased wash or physical contact with banks.
- The visual presence of craft may cause disturbance to birds because of the size, visual intrusion and movement, this is particularly evident where large numbers of vessels are involved. All accessible intertidal areas are at risk.
- Birds may be disturbed by noise associated with water based sports i.e. the boats themselves and the participants, particularly where the boats allow the users access to sensitive habitats e.g. where breeding birds are present.
- Boat repair and maintenance and slipway cleaning can cause contaminated cleaning waters to be washed into the water system with risks of toxic contamination e.g. antifouling paints and cleaning agents.
- Sewage discharge from recreational craft can have localised impact on marine features through non-toxic contamination. This can occur anywhere in the site, however low flushing estuaries will be more at risk.
- The use of detergents for cleaning operations can form phosphate-rich waters that may encourage the formation of algal blooms which can cause oxygen depletion and may result in the localised non-toxic contamination.

Removal

Physical loss through removal can jeopardise the survival of some communities through the loss or modification of existing natural habitats and associated estuarine species**.** Developments and activities may also indirectly cause the removal of estuarine habitats through the changes in morphology, modification of coastal processes and subsequent habitat erosion. Estuary systems are further compromised by hard frontages such as embankments and quays which constrain the upper shore boundary preventing landward migration of the intertidal features as a response to rising sea levels.

Some activities associated with water sports activities can cause removal e.g. where new facilities are developed and where land claim is part of the development. Most of these types of development would be considered as plans or projects however the provision of new moorings and existing moorings could cause the removal of intertidal and subtidal habitats and species. The magnitude of the potential impacts caused by new moorings depends on factors such as the actual location, scale, construction methods and project design and implementation. The operation and management of moorings does prevent ad hoc arrangements that could be more intrusive and damaging such as temporary anchoring and ensures moorings are in least sensitive locations. It is recognized that pilings for moorings often provides ideal habitat for a range of molluscs and other organisms but little work has been carried out to quantify such effects.

A range of the features of interest are highly vulnerable to removal, the areas where these features coincide with activities that may cause removal are highlighted in the following tables for each cluster.

Portsmouth Harbour

Possible Removal Issues	RA	Features of Interest[1]			
		3 Intertidal mudflats & sandflats	9 Cordgrass swards	10 Saltmarsh	13 Estuaries
Anchoring and mooring					
New moorings within intertidal areas under local authorities control or ownership.	PCC	●			
New moorings within intertidal or subtidal areas under QHMs area of jurisdiction	QHM/PCP	●		●	
Existing mooring intertidal or subtidal areas	EA	●	●*	●	●
New and existing mooring intertidal or subtidal areas	EN	●	●*	●	●

Chichester & Langstone Harbour

Possible Removal Issues	RA	Features of Interest[1]										
		2 Intertidal mixed sediment	3 Intertidal mudflats & sandflats	4 Intertidal shingle	5 Subtidal sandbanks	6 Subtidal sediment communities	7 Intertidal Sand & shingle	8 *Salicornia & other annuals*	9 Cordgrass swards	10 Saltmarsh	12 Annual vegetation drift lines	13 Estuaries
Anchoring and mooring												
Existing moorings intertidal or subtidal areas	EA	●	●	●	●	●	●	●	●	●	●	●
New and existing moorings intertidal or subtidal areas	EN	●	●	●	●	●	●	●	●	●	●	●
Moorings in intertidal or subtidal areas in Langstone Harbour	LHB		●									●

North West Solent

Possible Removal Issues	RA	Features of Interest[1]											
		2 Intertidal mixed sediment	3 Intertidal mudflats & sandflats	5 Subtidal sandbanks	6 Subtidal sediment communities	7 Intertidal Sand & shingle	8 *Salicornia & other annuals*	9 Cordgrass swards	10 Saltmarsh	11 Intertidal reefs	12 Annual vegetation drift lines	13 Estuaries	14 Saline lagoons
Anchoring and mooring													
New moorings in intertidal or subtidal areas in Lymington river	LHC											●	
New moorings in intertidal or subtidal areas under LA control control or ownership	NFDC		●						●		●		
Existing moorings in intertidal or subtidal areas	EA	●	●	●	●	●	●	●	●	●	●	●	●
New and existing moorings in intertidal or subtidal areas	EN	●	●	●	●	●	●	●	●	●	●	●	●

Southampton Water

Possible Removal Issues	RA	Features of Interest[1]											
		2 Intertidal mixed sediment	3 Intertidal mudflats and sandflats	5 Subtidal sandbanks	6 Subtidal sediment communities	7 Intertidal Sand & shingle	8 *Salicornia & other annuals*	9 Cordgrass swards	10 Saltmarsh	11 Intertidal reefs	12 Annual vegetation drift lines	13 Estuaries	14 Saline lagoons
Anchoring and mooring													
Existing moorings intertidal or subtidal areas	EA	●	●	●	●	●	●	●	●	● *	●	●	● *
New and existing moorings intertidal or subtidal areas	EN	●	●	●	●	●	●	●	●	● *	●	●	● *
Moorings intertidal or subtidal areas in Southampton Water	ABP	●	●		●	●			●			●	
Note: TVBC proformas not all returned													

Isle of Wight

Possible Removal Issues	RA	Features of Interest[1]											
		2 Intertidal mixed sediment	3 Intertidal mudflats and sandflats	5 Subtidal sandbanks	6 Subtidal sediment communities	7 Intertidal Sand & shingle	8 *Salicornia & other annuals*	9 Cordgrass swards	10 Saltmarsh	11 Intertidal reefs	12 Annual vegetation drift lines	13 Estuaries	14 Saline lagoons
Anchoring and mooring													
New moorings in intertidal or subtidal areas under NHAs jurisdiction	NHA	●	●									●	
New moorings in intertidal or subtidal areas under LAs control	IoWC	●	●	●		●	●	●	●		●	●	
New moorings in intertidal or subtidal areas under QHMs jurisdiction	QHM		●									●	
Existing moorings in intertidal or subtidal areas	EA	●	●	●	●	●	●	●*	●*	●	●	●	●*
New and existing moorings in intertidal or subtidal areas	EN	●	●	●	●	●	●	●*	●*	●	●	●	●*

***** Not all RAs in the category agreed on if activity occurred on or adjacent to the features of interest

[1] Features of interest which are highly vulnerable and which may be affected

Smothering

Physical loss through smothering can jeopardise the survival of some communities through the loss or modification of existing natural habitats and associated estuarine species through smothering**.** Developments and activities may also indirectly cause the smothering of estuarine habitats through the changes in morphology, modification of coastal processes and subsequent sediment movements.

Some activities associated with water sports activities can cause smothering e.g. moorings can smother habitats from the following: buoys and chains of existing swinging moorings, pile berths at low water, pontoons at low water. The magnitude of the potential impacts caused by new moorings depends on factors such as the actual location, scale, construction methods and project design and implementation. The operation and management of moorings does prevent ad hoc arrangements that could be more intrusive and damaging such as temporary anchoring and ensures moorings are in least sensitive locations.

A small number of the features of interest are highly vulnerable to smothering, the areas where these features coincide with activities that may cause smothering are highlighted in the following tables for each cluster.

Portsmouth Harbour

Possible Smothering Impacts	RA	Features of Interest[1]	
		3	13
		Intertidal mudflats and sandflats	Estuaries
Anchoring and mooring			
New moorings within intertidal or subtidal areas under local control or ownership.	PCC	●	
New and ongoing management moorings within intertidal or subtidal areas under QHMs area of jurisdiction	QHM/PCP	●	
Existing moorings in intertidal or subtidal areas	EA	●	●
New and existing moorings in intertidal or subtidal areas	EN	●	●

Chichester & Langstone Harbour

Possible Smothering Impacts	RA	Features of Interest[1]			
		2	3	6	13
		Intertidal mixed sediment	Intertidal mudflats and sandflats	Subtidal sediment communities	Estuaries
Anchoring and mooring					
Existing moorings in intertidal or subtidal areas	EA	●	●	●	●
New and existing moorings in intertidal or subtidal areas	EN	●	●	●	●
New moorings in intertidal or subtidal areas under LA control or ownership	HBC	●	●		●
Moorings within intertidal or subtidal areas in Langstone Harbour	LHB		●		

North West Solent

Possible Smothering Impacts	RA	Features of Interest[1]				
		2 Intertidal mixed sediment	3 Intertidal mudflats and sandflats	6 Subtidal sediment communities	11 Intertidal reefs	13 Estuaries
Anchoring and mooring						
New moorings within intertidal or subtidal areas under LA control	NFDC		●			●
Existing moorings within intertidal or subtidal areas	EA	●	●	●	●	●
New and existing moorings within intertidal or subtidal areas	EN	●	●	●	●	●
New and existing moorings within intertidal or subtidal areas in Beaulieu River	BRM			●		●

Southampton Water

Possible Smothering Impacts	RA	Features of Interest[1]				
		2 Intertidal mixed sediment	3 Intertidal mudflats and sandflats	6 Subtidal sediment communities	11 Intertidal reefs	13 Estuaries
Anchoring and mooring						
Existing moorings within intertidal or subtidal areas	EA	●	●	●	●*	●
New and existing moorings within intertidal or subtidal areas	EN	●	●	●	●*	●
Moorings within intertidal or subtidal areas in Southampton Water	ABP	●	●	●		●
Note: TVBC proformas not all returned						

Isle of Wight

Possible Smothering Impacts	RA	Features of Interest[1]				
		2 Intertidal mixed sediment	3 Intertidal mudflats & sandflats	6 Subtidal sediment communities	11 Intertidal reefs	13 Estuaries
Anchoring and mooring						
New moorings in intertidal or subtidal areas under QHMs jurisdiction	QHM		●			●
Swing Moorings within intertidal or subtidal areas in Medina Estuary	CHC			●		●
Pontoon moorings within intertidal or subtidal areas in Medina Estuary	CHC	●	●	●	●	●
Moorings within intertidal or subtidal areas in Wootton Creek	QHM					●
Moorings within intertidal or subtidal areas in Ryde	QHM		●			
New and existing moorings within intertidal or subtidal areas in Newport Harbour	NHA	●	●			●
New moorings within intertidal or subtidal areas under LA control or ownership	IoWC	●	●			●
New moorings within intertidal or subtidal areas in Bembridge Harbour	BHIC	●	●			●
Existing moorings within intertidal or subtidal areas	EA	●	●	●	●	●
New and existing moorings within intertidal or subtidal areas	EN	●	●	●	●	●

* Not all RAs in the category agreed on if activity occurred on or adjacent to the features of interest
[1] Features of interest which are highly vulnerable and which may be affected

Abrasion

Abrasion can physically damage individual marine organisms and plants as well as causing deterioration to the structure of saltmarsh and sediment communities. Abrasion can result from trampling, erosion and compaction of the soil. This can result in erosion of soils and upper levels of less durable marine features, changes in the level and diversity of vegetation within a site or feature and changes in feature density, porosity and penetrability.

Intertidal areas can come under considerable pressure; they support a variety of land based activities, but they also provide access channels to the water for water-based recreation. As water-based recreation tends to be concentrated along specific access points or in small areas, their impact can be magnified, causing significant erosional patches within a site or feature. Trampling and erosion impacts related to water sports access are covered under the access category.

The impact or dragging of anchors may cause abrasion which may disturb or damage sensitive benthic communities, in both rocky and soft substrates. Disturbance from anchoring depends upon the frequency, magnitude and location of activity, type of sediments, and the sensitivity of benthic communities. It is generally thought that any impacts will be slight unless anchoring is carried out incorrectly. In addition the management of anchoring keeps vessels contained in particular areas, away from sensitive sites. Correct implementation of vessel traffic management policies should prevent any adverse impacts on site or site features.

Moorings (new) can lead to abrasion and disturbance through the construction phase. There may be a limited amount of scour/abrasion from existing swinging moorings at low water or from vessels left on these moorings and also from existing pile berths and pontoons at low water. The magnitude

of potential environmental impacts caused by boating facilities developments depends on factors such as the actual location of the development, the scale of the scheme, construction methods and project design and implementation. All impacts are possible from poorly considered new provision, but not necessarily so depending on location and design. The operation and management of moorings does prevent ad hoc arrangements that could be more intrusive and damaging such as temporary anchoring and ensures moorings are in least sensitive locations. It is recognized that pilings for moorings often provides ideal habitat for a range of molluscs and other organisms but little work has been carried out to quantify such effects.

The launching and navigation of all vessels involved in water-based sports may cause abrasion through the following.

- The launching of craft from designated access points is likely to have minimal impact on marine features except where it involves trampling and scouring of the feature. The launching of craft from informal access points, which is relatively common for small dinghies and windsurfers, may result in compaction and erosion of features and damage to vegetation.
- The small size, shallow draft and jet drive systems of PWC allow the craft to enter areas which are not normally navigable for other motorised craft. This may cause physical disturbance to sensitive habitats. Although other small craft are able to access similar areas, the ability of PWC to enter such areas under power provides greater potential for physical damage to features. However, there is limited evidence as to any resultant impacts.
- The natural process of bank erosion can be accelerated and accentuated by boating activities. Indirectly, boats may impact on vegetation by the generation of wash and wake and the consequent effect of erosion and turbidity. Boating may have an impact on vegetation through the contact of boats with banks, scouring and uprooting of submerged vegetation by hulls, chains, oars and anchors and cutting of vegetation by propellers. However, the greatest erosional forces exerted on a feature come from natural sources such as rain, wind and, in the intertidal area, wave action, therefore consideration of these should also be taken into account when considering the impacts.

The enforcement of speed limits and marking of channels contributes to the favourable condition of the site indirectly by keeping navigation to a set channel rather than uncontrolled in the most sensitive parts of SEMS. The primary purpose enforcement is to limit the potential for vessels to run aground and to this end the marks provide significant benefit to the surrounding environment by preventing abrasion.

A range of the features of interest are highly vulnerable to abrasion, the areas where these features coincide with activities that may cause abrasion are highlighted in the following tables for each cluster.

Portsmouth Harbour

Possible Abrasion Impacts	**RA**	**Features of Interest[1]**
		13
		Estuaries
Anchoring and mooring		
Impact or dragging of anchors within intertidal or subtidal areas under Portsmouth City Councils control or ownership	PCC	●
Existing moorings within intertidal or subtidal areas	EA	●
New and existing moorings within intertidal or subtidal areas	EN	●
Navigation of craft for water sports		
Power boating may produce wash which can contribute to bank erosion	GBC/PCC	●
Power boating within QHMs areas of jurisdiction	QHM/PCP	●
Power boating within intertidal or subtidal areas	EA	●

Chichester & Langstone Harbour

Possible Abrasion Impacts	RA	Features of Interest[1]							
		2 Intertidal mixed sediment	3 Intertidal mudflats and sandflats	4 Intertidal shingle	5 Subtidal sandbanks	6 Subtidal sediment communities	7 Intertidal Sand & shingle	12 Annual vegetation drift	13 Estuaries
Anchoring and mooring									
Impact and dragging of anchors within intertidal or subtidal areas in Langstone Harbour	LHB		●						
Impact and dragging of anchors within intertidal or subtidal areas in Chichester Harbour	CHC	●	●	●	●	●			
Impact and dragging of anchors within intertidal or subtidal areas	EN	●	●	●	●	●			●
Existing moorings in intertidal areas	EA	●	●	●	●	●	●	●	●
New and existing moorings in intertidal areas	EN	●	●	●	●	●	●	●	●
New moorings in in intertidal areas under LA control or ownership	HBC	●	●	●			●		●
New & existing moorings in intertidal areas in Langstone harbour	LHB		●						●
Existing moorings in intertidal areas in Chichester Harbour	CHC	●	●		●	●	●	●	●
Navigation of craft for water sports									
Navigation of craft in particular power boating in Langstone Harbour	LHB								●
Navigation of craft in particular power boating Chichester Harbour	CHC	●	●	●	●	●	●	●	●
Power boating in areas under LA control or ownership	CDC/HBC / PCC	●*	●	●*	●*	●*	●*	●*	●
Power boating in the cluster	EN	●	●	●	●	●	●	●	●

North West Solent

Possible Abrasion Impacts	RA	Features of Interest[1]						
		2 Intertidal mixed sediment	3 Intertidal mudflats and sandflats	5 Subtidal sandbanks	6 Subtidal sediment communities	7 Intertidal Sand & shingle	12 Annual vegetation drift lines	13 Estuaries
Anchoring and mooring								
Impact and dragging of anchors within intertidal or subtidal areas under LA control or ownership	NFDC							●
Impact and dragging of anchors within intertidal or subtidal areas under Trinity House control	THLS			●	●			●
Impact and dragging of anchors within intertidal or subtidal areas in Beaulieu River	BRM							●
Impact and dragging of anchors within intertidal or subtidal areas in areas	EN	●	●	●	●	●		●

Possible Abrasion Impacts	RA	Features of Interest[1]						
		2 Intertidal mixed sediment	3 Intertidal mudflats and sandflats	5 Subtidal sandbanks	6 Subtidal sediment communities	7 Intertidal Sand & shingle	12 Annual vegetation drift lines	13 Estuaries
New and existing moorings in intertidal areas in areas under LA control	NFDC		●		●*			●
Existing moorings in intertidal areas	EA	●	●	●	●	●	●	●
New and existing moorings in intertidal areas	EN	●	●	●	●	●	●	●
New and existing moorings in intertidal areas in Beaulieu River	BRM			●	●			●
New moorings in intertidal areas in Lymington River	LHC							●
Navigation of craft for water sports								
Other water sports in areas under LA control or ownership	NFDC		●					
Power boating in areas under LA control or ownership	NFDC	●	●		●	●		●
Power boating in the cluster	EN	●	●		●	●		●

Southampton Water

Possible Abrasion Impacts	RA	Features of Interest[1]						
		2 Intertidal mixed sediment	3 Intertidal mudflats and sandflats	5 Subtidal sandbanks	6 Subtidal sediment communities	7 Intertidal Sand & shingle	12 Annual vegetation drift lines	13 Estuaries
Anchoring and mooring								
Impact and dragging of anchors within intertidal or subtidal areas in the Hamble River	RHHA		●		●			●
Impact and dragging of anchors within intertidal or subtidal areas under jurisdiction of Trinity House	THLS			●	●			●
Impact and dragging of anchors within intertidal or subtidal areas	EN		●		●			●
Existing moorings in intertidal areas	EA	●	●	●	●	●	●	●
New and existing moorings in intertidal areas	EN	●	●	●	●	●	●	●
Existing moorings in intertidal areas in Southampton Water	ABP	●	●		●	●		●
Existing moorings in intertidal areas in the Hamble River	RHHA	●	●		●	●		●
Navigation of craft for water sports								
Navigation in particular power boating Southampton Water	ABP	●	●	●	●	●	●*	●
Power boating in the cluster	EN	●	●	●	●	●	●	●
Power boating in areas under LA control or ownership	FBC/SCC/ EBC NFDC	●*	●	●*	●*	●*	●*	●*
Power boating in River Hamble	RHHA	●	●	●	●	●	●	●
Note: TVBC proformas not all returned								

Isle of Wight

Possible Abrasion Impacts	RA	Features of Interest[1]						
		2 Intertidal mixed sediment	3 Intertidal mudflats and sandflats	5 Subtidal sandbanks	6 Subtidal sediment	7 Intertidal Sand & shingle	12 Annual vegetation drift	13 Estuaries
Anchoring and mooring								
Impact and dragging of anchors within intertidal or subtidal areas in the Medina estuary	CHC		●		●			●
Impact and dragging of anchors within intertidal or subtidal areas in areas under QHMs area of jurisdiction	QHM		●					●
Impact and dragging of anchors within intertidal or subtidal areas in the Yar Estuary	YHC			●	●			
Impact and dragging of anchors within intertidal or subtidal areas in areas under Trinity House jurisdiction	THLS			●	●			●
Impact and dragging of anchors within intertidal or subtidal	EN	●	●	●	●	●		●
Impact and dragging of anchors within intertidal or subtidal areas in Newport Harbour	NH	●	●					●
Impact and dragging of anchors within intertidal or subtidal areas under LA control or ownership	IoWC	●	●	●		●	●	●
Impact and dragging of anchors within intertidal or subtidal areas in Bembridge Harbour	BHIC		●			●		
New moorings in intertidal areas under QHMs jurisdiction	QHM		●					●
New and existing moorings in intertidal areas in Newport Harbour	NHA	●	●					●
New and existing moorings in intertidal areas in Bembridge Harbour	BHIC	●	●			●		●
New moorings in intertidal areas under LAs control or ownership	IoWC	●	●	●		●	●	●
Existing moorings in areas outside of any RA control	EA	●	●	●	●	●	●*	●
New & existing moorings in areas outside of any RA control	EN	●	●	●	●	●	●*	●
Swing Moorings in intertidal areas in Medina Estuary	CHC				●			●
Pontoon moorings in intertidal areas in Medina Estuary	CHC	●	●		●			●
Moorings in intertidal areas in Wootton Creek	QHM							●
Moorings in intertidal areas in Ryde	QHM		●					
Moorings in intertidal areas in Yar Estuary	YHC	●	●	●	●	●		●
Navigation of craft for water sports								
Navigation in Wightlinks area of jurisdiction	WL		●					
Navigation of pleasure craft in QHM area of jurisdiction	QHM		●					●
Navigation of ferries in QHM area of jurisdiction	QHM		●					●
Navigation of large traffic in QHM area of jurisdiction	QHM		●					
Navigation aids in QHM area of jurisdiction	QHM		●					●
Navigation of craft in Medina Estuary	CHC	●	●					●
Power boating in Medina Estuary	CHC	●	●	●	●	●	●	●
Navigation of craft eg RIBS and motor cruises in the Yar	YHC	●	●	●	●	●		●
Power Boating in QHMs area of jurisdiction	QHM		●					●
Navigation and power boating in Newport Harbour	NHA	●	●					●
Power boating in Bembridge Harbour	BHIC	●	●					●
Power boating in areas under LA control or ownership	IoWC	●	●	●		●	●	●
Power boating in the cluster	EN	●	●	●	●	●		●

* Not all RAs in the category agreed on if activity occurred on or adjacent to the features of interest

[1] Features of interest which are highly vulnerable and which may be affected

Noise & Visual Disturbance

Nesting, feeding and roosting birds species are sensitive to noise and visual disturbance. Disturbance causes birds to expend energy, this is more of a problems when this coincides with times when they require more energy to breed and forage for food. Disturbance can include the following impacts:

- Birds may take flight temporarily, but return after the disturbance ends. This results in energy intake ceasing and energy expenditure greatly increasing. At times of limited food supply and/or cold weather this could be life threatening for certain species.
- Birds may modify their feeding habits.
- More sensitive species may suffer reduced breeding success or, ultimately, desert the site.

Noise and visual disturbance can occur from a variety of activities associated with water based recreation such as anchoring of boats, moorings, cruising, sailing, canoeing, rowing and personal water craft. The disturbance occurs as follows:

- The visual presence of craft may cause disturbance, particularly where large numbers of vessels are involved in water sports or where large numbers are anchored or moored. The following aspects of water based sports may have a visual impact: speed, size, visual intrusion and characteristics of craft movement. This is more likely to be an issue during the summer and where craft are able to access areas which are generally inaccessible to larger craft, including nesting sites. The impact will vary depending upon the type of activity, the time it takes place and the vulnerability of the wildlife. The impact is extremely difficult to quantify and should be examined on a case by case basis.
- Wildlife may be disturbed by noise associated with water based sports. This may not only be by the boats themselves but also by the participants, particularly where the boats allow the users access to sensitive habitats. The following aspects of water based sports may disturb species: speed, sound, voices, music. Exceptionally noisy activities such as personal water craft may cause a disturbance to wildlife particularly where breeding birds are present.
- Noise and visual disturbance can occur during the construction phases of new facilities for water sports such as new moorings.
- Slipway cleaning may cause a noise disturbance.

The effect which disturbance has on waterfowl varies greatly between the different species of bird and also depends upon the size and characteristics of the water body and the availability of alternative sites. Vulnerable periods for some wildlife coincides with the low season for boating. It is very difficult to assess the impact on species of boating-related disturbance in isolation from other sources of disturbance, both natural and human influenced.

A range of the features of interest are highly vulnerable to noise and visual disturbance, the areas where these features coincide with activities that may cause noise and visual disturbance are highlighted in the following tables for each cluster.

Portsmouth Harbour

Possible Noise & Visual Impacts	RA	Features of Interest[1]		
		3	10	15
		Intertidal mudflats and sandflats	Saltmarsh	Shallow coastal waters
Anchoring and mooring				
The presence of anchored boats in Portsmouth Harbour may have a visual presence	PCC/PCP/ QHM/EN	●	●	●
The addition of new moorings within local authorities area of jurisdiction may have a visual presence	PCC	●		
The presence and noise associated with new and existing moorings within QHMs area of jurisdiction	QHM/PCP	●	●	●
The presence and noise associated with existing moorings in the cluster	EA	●	●	●
The presence and noise associated with new and existing moorings in the cluster	EN	●	●	●
Navigation of craft for water sports				
The presence and noise associated with craft navigating within QHMs area of jurisdiction	QHM/PCP	●	●	●
Other water sport within QHMs area of jurisdiction may have a visual presence	QHM/PCP	●	●	●
The presence and noise associated with other water sports in areas under local authority control particularly jet skis	GBC	●	●	
Other water sports in areas under local authority control may cause a visual disturbance	FBC/ PCC	●	●	●
The presence and noise associated with ***o***ther water sports in the cluster	EN	●	●	●
The presence and noise associated with recreational boating within local authorities areas of jurisdiction	FBC/ GBC/ PCC*	●	●	●*
The presence and noise associated with recreational boating within QHMs area of jurisdiction	QHM/PCP	●	●	●
The presence and noise associated with recreational boating outside of RAs areas of jurisdiction	EN	●	●	●
Landward activities associated with water sports				
Slipway cleaning and maintenance on local authority land particularly where high pressure hoses are used	GBC/PCC/ FBC*	●	●*	●*
Slipway cleaning and maintenance	EA/EN	●	●	

Chichester & Langstone Harbour

Possible Noise & Visual Impacts	RA	Features of Interest[1]	
		4	7
		Intertidal shingle	Intertidal Sand & shingle
Anchoring and mooring			
Presence of anchored boats may have a visual impact only	EN	●	
The presence and noise associated with existing moorings	EA	●	●
The presence and noise associated with new and existing moorings	EN	●	●
The presence and noise associated with existing moorings in Chichester Harbour	CHC		●
Presence of new moorings in areas under LA control or ownership may have a visual impact only	HBC	●	●
Navigation of craft for water sports			
The presence and noise associated with navigation of craft in Chichester Harbour	CHC	●	●
Other water sports in areas under LA control may cause a noise disturbance only	HBC	●	●

Possible Noise & Visual Impacts	RA	Features of Interest[1]	
		4	7
		Intertidal shingle	Intertidal Sand & shingle
Other water sports in areas under LA control may have a visual disturbance only	HBC/PCC/ CDC	●*	●*
Other water sports in Langstone Harbour may have a visual disturbance only	LHB		●
Other water sports may have a visual disturbance only	EN	●	●
The presence and noise associated with recreational boating in Chichester Harbour	CHC	●	●
The presence and noise associated with recreational boating	EN	●	●
Recreational boating in areas under LA control may cause a noise disturbance	CDC/HBC/ PCC*	●*	●*
Landward activities associated with water sports			
Slipway cleaning and maintenance in areas under LA control or ownership	CDC/PCC	●	
Slipway cleaning and maintenance	EN/EA	●	●

North West Solent

Possible Noise & Visual Impacts	RA	Features of Interest[1]				
		1	2	3	7	10
		Boulder & cobble shores	Intertidal mixed sediment	Intertidal mudflats & sandflats	Intertidal Sand & shingle	Saltmarsh
Anchoring and mooring						
The presence and noise associated with anchored boats in areas outside of any RA control	EN	●	●	●	●	
Presence of new moorings in areas under LA control may cause a noise disturbance	NFDC			●		●
Presence of new and existing moorings in areas under LA control may cause a visual disturbance	NFDC	●*		●		●
The presence and noise associated with existing moorings	EA	●	●	●	●	●
The presence and noise associated with new and existing moorings	EN	●	●	●	●	●
Existing moorings in Lymington River may cause a noise disturbance	LHC		●	●	●	●
Presence of existing moorings in Lymington River may cause a visual disturbance	LHC/WL		●*	●	●*	●*
Navigation of craft for water sports						
The presence and noise associated with navigation of craft in Lymington River	LHC/WL		●	●		●
The presence and noise associated with other water sports in areas under LA control or ownership	NFDC	●		●		●
The presence and noise associated with other water sports in Lymington River	LHC		●	●	●	●
The presence and noise associated with other water sports	EN	●	●	●	●	●
The presence and noise associated with recreational boating in areas under LA control or ownership	NFDC	●	●	●	●	●
The presence and noise associated with recreational boating	EN	●	●	●	●	●
Power boating in Beaulieu Estuary may cause a noise disturbance	BRM		●			
Landward activities associated with water sports						
Slipway cleaning and maintenance in Lymington River	WL		●	●	●	●
Slipway cleaning and maintenance	EA/EN	●*	●	●	●	●

Southampton Water

Possible Noise & Visual Impacts	RA	Features of Interest[1]				
		1 Boulder & cobble shores	2 Intertidal mixed sediment	3 Intertidal mudflats and sandflats	7 Intertidal Sand & shingle	10 Saltmarsh
Anchoring and moorings						
Presence of anchored boats in the Hamble River may cause a visual disturbance	RHHA			●		●
Presence of anchored boats may cause a visual disturbance	EN			●		●
New moorings may cause a noise disturbance only	EN	●	●	●	●	●
Presence of existing may cause a noise disturbance	EA	●	●	●	●	●
Presence of existing may cause a visual disturbance	EA	●	●	●	●	●
Presence of new and existing may cause a visual disturbance	EN	●	●	●	●	●
Presence of existing moorings in Southampton Water may cause a visual disturbance	ABP	●	●	●	●	●
Presence of existing moorings in the Hamble River may cause a visual disturbance	RHHA		●	●	●	●
Navigation of craft for water sports						
The presence and noise associated with navigation of craft in Southampton Water	ABP		●	●	●	
The presence and noise associated with navigation of craft in the River Hamble	RHHA		●	●	●	●
Presence of other water sports in areas under LA control and ownership may cause a visual disturbance	EBC/SCC/ FBC/TVBC			●		●*
Presence of other water sport may cause a visual disturbance	EN	●	●	●	●	●
The presence and noise associated with recreational boating in areas under LA control and ownership	FBC/SCC/ EBC NFDC	●*	●*	●*	●*	●*
The presence and noise associated with ***p***ower boating in Southampton Water	ABP		●	●		●
Power boating in River Hamble may cause a noise disturbance	RHHA		●	●	●	●
Presence of recreational boating in River Hamble may cause a visual disturbance	RHHA		●	●	●	●
The presence and noise associated with recreational boating	EN	●	●	●	●	●
Sailing in Southampton Water may cause a visual disturbance	ABP	●	●	●	●	●
Landward activities associated with water sports						
Slipway cleaning and maintenance in areas under LA control may cause a noise disturbance	SCC			●		
Slipway cleaning and maintenance in areas under LA control may cause a visual disturbance	SCC/FBC			●		
Slipway cleaning and maintenance	EN/EA	●	●	●		●
Note: TVBC proformas not all returned						

Isle of Wight

Possible Noise & Visual Impacts	RA	Features of Interest[1]				
		1 Boulder & cobble shores	2 Intertidal mixed sediment	3 Intertidal mudflats & sandflats	7 Intertidal Sand & shingle	10 Saltmarsh
Anchoring & moorings						
Presence of anchored boats in the Medina estuary may cause a visual disturbance	CHC		●	●	●	●
Presence of anchored boats in areas under QHMs area of jurisdiction may cause a visual disturbance	QHM			●		
Presence of anchored boats may cause a visual disturbance	EN	●	●	●	●	●
Presence of anchored boats in Newport Harbour	NH		●	●	●	●
Presence of anchored boats in areas under LA control or ownership	IoWC	●	●	●	●	●
The presence and noise associated with anchored boats in Bembridge Harbour	BHIC			●	●	
The presence and noise associated with new moorings in areas under QHMs jurisdiction	QHM			●		
The presence and noise associated with existing moorings in Ryde	QHM					
The presence and noise associated with existing moorings	EA	●	●	●	●	●
The presence and noise associated with new and existing moorings	EN	●	●	●	●	●
Presence of new and existing moorings in Wightlinks area of jurisdiction may cause a visual disturbance	WL			●		
The presence and noise associated with ***n***ew and existing moorings in Newport Harbour	NHA		●	●		
The presence and noise associated with ***n***ew and existing moorings in Bembridge Harbour	BHIC	●	●	●	●	
The presence and noise associated with ***n***ew moorings in areas under the IoWC control or ownership	IoWC	●	●	●	●	●
Presence of swing moorings in Medina estuary may cause a visual disturbance	CHC					●
Presence of pile and pontoon moorings in Medina estuary may cause a visual disturbance	CHC		●	●	●	●
Presence of moorings in Yar Estuary may cause a visual disturbance only	YHC	●	●	●	●	
Navigation of craft for water sports						
Presence and noise associated with navigation of craft including power boating, sailing and other water sports in Newport Harbour	NHA		●	●		●
Presence and noise associated with navigation of craft in Bembridge Harbour	BHIC	●	●	●		
Presence and noise associated with sailing, power boating and other water sports in Bembridge Harbour	BHIC	●	●	●	●	
Presence and noise associated with sailing, power boating and other water sports in areas under LA control or ownership	IoWC	●	●	●	●	●
Presence and noise associated with navigation of craft in Wightlinks area of jurisdiction	WL			●		
Presence and noise associated with navigation of pleasure craft, ferries, large traffic and aids in QHM area of jurisdiction	QHM			●		
Presence and noise associated with navigation of craft in Medina Estuary	CHC		●	●	●	●
Presence and noise associated with navigation of craft in the Yar estuary	YHC		●	●		●

Possible Noise & Visual Impacts	RA	Features of Interest[1]				
		1 Boulder & cobble shores	2 Intertidal mixed sediment	3 Intertidal mudflats & sandflats	7 Intertidal Sand & shingle	10 Saltmarsh
Presence of navigation markers in Medina Estuary may cause a visual disturbance	CHC		●	●	●	●
Presence of navigation markers in the Yar estuary may cause a visual disturbance	YHC		●	●		●
Presence of bathers in QHMs area of jurisdiction may cause a visual disturbance	QHM				●	
Presence of canoes and windsurfers in QHMs area of jurisdiction may cause a visual disturbance	QHM			●		
Presence of kite surfing in the Medina Estuary may cause a visual disturbance	CHC			●	●	
Presence of canoes in Medina Estuary may cause a visual disturbance	CHC		●	●	●	●
Presence of canoes in Yar Estuary may cause a visual disturbance	YHC		●	●		●
Presence of other water sports may cause a visual disturbance	EN	●	●	●	●	●
Presence and noise associated with power boating in Medina Estuary	CHC		●	●	●	
Presence and noise associated with sailing in Medina estuary	CHC		●	●		
Presence and noise associated with recreational boating in QHMs area of jurisdiction	QHM			●		
Presence and noise associated with motor cruises and RIBs in the Yar Estuary	YHC		●	●	●	●
Presence and noise associated with sailing in the Yar Estuary	YHC	●	●	●	●	●
Presence and noise associated with power boating	EN		●	●	●	●
Presence and noise associated with sailing	EN	●	●	●	●	●
Landward activities associated with water sport						
Slipway cleaning and maintenance in areas of LA control	IoWC	●	●	●	●	●
Slipway cleaning and maintenance	EN/EA	●	●	●	●	●

* Not all RAs in the category agreed on if activity occurred on or adjacent to the features of interest

[1] Features of interest which are highly vulnerable and which may be affected

Toxic contamination

Many marine and coastal habitats and species are sensitive to toxic contamination through the introduction of synthetic compounds such as pesticides, polychlorinatedbiphenyls (PCBs) and biocides (e.g. tributyltin (TBT)) and non-synthetic compounds such as heavy metals and hydrocarbons. Many synthetic compounds are known to have toxic effects even in low concentrations and are capable of high levels of bioaccumulation within many benthic organisms which can then be compounded further along the food chain. The potential effects of toxic pollutants also varies according to the state and availability of the compound and the characteristic of the receiving environment. In many cases the effects may be temporary and minimal due to the dilution of wastes in the water.

Synthetic and non-synthetic toxic contamination can enter the site from a number of point and non-point sources ranging from land-based discharges (licensed and un-licensed), run-off (e.g. roads), water-based discharges (e.g. oil from ships and metal compounds such as anti-fouling paints) to atmospheric deposition.

Toxic contamination can occur from a variety of activities associated with water based recreation as follows:

- Boat repair and maintenance carried out in boatyards can cause contaminated cleaning waters to be washed down into the harbour or marina basin directly or via the drainage system. The risks of possible adverse effects increase where cleaning agents and other chemicals are used incorrectly or in large quantities far in excess of needs or where wastes are washed into enclosed waters or areas with low tidal flushing
- Boat scrubbing and maintenance may cause the release of antifouling paints eg tributyl tin (TBT) and copper compounds into the marine environment.
- Most litter in the marine environment is from sources other than water-based recreation, however irresponsible behaviour from some boat users may contribute to the problem.
- Marine engine emissions may cause introduction of toxic contamination.
- The process of slipway cleaning and maintenance may wash detergents and spillages into the Harbour. It is recognized that cleaning agents tend to only be a problem when used in high concentrations and often present the only effective means of ensuring safety in harbour areas.

The effects depend on scale of maintenance operations, background water quality, maintenance techniques used, amounts/types of contaminant in wastes and proximity of marine features. Impacts are likely to be localized and temporary due to dilution, however there may be more of a problem in enclosed areas or areas with low tidal flushing. It is very difficult to assess the impact of toxic contamination on species of boating-related activities in isolation from other sources of disturbance, both natural and human influenced.

A range of the features of interest are highly vulnerable to toxic contamination, the areas where these features coincide with activities that may cause toxic contamination are highlighted in the following tables for each cluster.

Portsmouth Harbour

Possible Toxic Contamination Impacts	RA	Features of Interest[1]				
		3 Intertidal mudflats & sandflat	9 Cordgrass swards	10 Saltmarsh	13 Estuaries	15 Shallow coastal waters
Navigation of craft for water sports						
The use of craft may introduce synthetic compounds within QHMs area of jurisdiction	QHM/PCP	●	●	●	●	●
Landward activities associated with water sports						
Boat repair and maintenance activities in Portsmouth Harbour may introduce synthetic compounds eg scrubbing down.	EA	●	●	●	●	●
Slipway cleaning and maintenance on local authority land can cause introduction of synthetic compounds	GBC/FBC/PCC	●	●*			●*
Slipway cleaning and maintenance	EA	●	●			

Chichester & Langstone Harbour

Possible Toxic Contamination Impacts	RA	Features of Interest[1]									
		2 Intertidal mixed sediment	3 Intertidal mudflats and sandflats	5 Subtidal sandbanks	6 Subtidal sediment communities	8 *Salicornia & other annuals*	9 Cordgrass swards	10 Saltmarsh	12 Annual vegetation drift lines	13 Estuaries	15 Shallow coastal waters
Landward activities associated with water sports											
Boat repair and maintenance may cause introduction of synthetic compounds in areas outside of RA control	EA	●	●	●	●	●	●	●			
Boat repair and maintenance may cause introduction of non-synthetic compounds	EA								●		
The use of craft may cause introduction of synthetic compounds in Chichester Harbour	CHC	●	●	●	●	●	●	●		●	●
The use of craft may cause introduction of non-synthetic compounds in Chichester Harbour	CHC								●		
Slipway cleaning and maintenance may cause introduction of synthetic compounds in areas under LA control and ownership	HBC/PCC	●*	●*			●*	●*	●*		●*	●*
Slipway cleaning and maintenance may cause introduction of synthetic	EN/EA	●	●			●	●	●		●	●
Slipway cleaning and maintenance may cause introduction of non-synthetic compounds	EN/EA								●		

North West Solent

Possible Toxic Contamination Impacts	RA	Features of Interest[1]											
		1 Boulder & cobble shores	2 Intertidal mixed sediment	3 Intertidal mudflats and sandflats	5 Subtidal sandbanks	6 Subtidal sediment communities	8 *Salicornia & other annuals*	9 Cordgrass swards	10 Saltmarsh	12 Annual vegetation drift lines	13 Estuaries	14 Saline lagoons	15 Shallow coastal waters
Landward activities associated with water sports													
Boat repair and maintenance may cause introduction of synthetic compounds	EA	●	●	●	●	●	●	●	●		●	●	●
Boat repair and maintenance may cause introduction of non-synthetic compounds	EA									●			
The use of craft may cause introduction of non-synthetic compounds in Lymington River	LHC/ WL		●	●	●*	●	●	●	●		●*		●
Slipway cleaning and maintenance may cause introduction of synthetic compounds in Lymington River	LHC										●		
Slipway cleaning and maintenance may cause introduction of synthetic compounds in Beaulieu River	BRM		●	●					●				
Slipway cleaning and maintenance may cause introduction of synthetic compounds	EN/EA	●*	●	●			●*		●		●*		
Slipway cleaning and maintenance may cause introduction of non-synthetic compounds	EA									●			

Southampton Water

Possible Toxic Contamination Impacts	RA	Features of Interest[1]											
		1 Boulder & cobble shores	2 Intertidal mixed sediment	3 Intertidal mudflats and sandflats	5 Subtidal sandbanks	6 Subtidal sediment communities	8 *Salicornia & other annuals*	9 Cordgrass swards	10 Saltmarsh	12 Annual vegetation drift lines	13 Estuaries	14 Saline lagoons	15 Shallow coastal waters
Landward activities associated with water sports													
Boat repair and maintenance may cause introduction of synthetic compounds	EA	●	●	●	●	●	●	●	●		●	●	●
Boat repair and maintenance may cause introduction of synthetic compounds	EA									●			
The use of craft may cause the introduction of synthetic compounds in the River Hamble	RHHA		●	●		●	●	●	●		●	●	●
The use of craft may cause the introduction of non-synthetic compounds in the River Hamble	RHHA									●			
Sailing may cause the introduction of synthetic compounds in areas under LA control or ownership	FBC/SCC/EBC NFDC		●*	●	●*	●*	●*		●*	●*	●*		●*
Sailing may cause the introduction of synthetic compounds	EN	●	●	●	●	●	●		●	●	●		●
Slipway cleaning and maintenance may cause the introduction of synthetic compounds in areas under LA control or ownership	FBC/NFDC			●		●*			●*		●*		●*
Slipway cleaning and maintenance may cause the introduction of synthetic compounds	EN/EA	●	●	●			●	●	●		●	●*	●*
Slipway cleaning and maintenance may cause the introduction of non-synthetic compounds in areas under LA control	FBC/NFDC									●*			
Slipway cleaning and maintenance may cause the introduction of non-synthetic compounds	EN/EA									●*			
Note: TVBC proformas not all returned													

Isle of Wight

Possible Toxic Contamination Impacts	RA	Features of Interest[1]											
		1 Boulder & cobble shores	2 Intertidal mixed sediment	3 Intertidal mudflats & sandflats	5 Subtidal sandbanks	6 Subtidal sediment communities	8 *Salicornia & other annuals*	9 Cordgrass swards	10 Saltmarsh	12 Annual vegetation drift lines	13 Estuaries	14 Saline lagoons	15 Shallow coastal waters
Navigation of craft associated with water sport													
The use of craft may cause introduction of synthetic compounds in Newport Harbour	NH		●	●			●	●	●		●		
The use of craft may cause introduction of synthetic compounds in Wightlinks area of jurisdiction	WL			●									
The use of pleasure craft may cause introduction of synthetic compounds in QHM area of jurisdiction	QHM			●							●		●
Navigation of large traffic may cause introduction of synthetic compounds in QHM area of jurisdiction	QHM			●									●
Navigation aids may cause introduction of synthetic compounds in QHM area of jurisdiction	QHM			●							●		●
Navigation of craft may cause introduction of synthetic compounds in Medina Estuary	CHC		●	●			●	●	●		●		●
Navigation of craft may cause introduction of synthetic compounds in the Yar estuary	YHC		●	●	●	●	●	●	●		●		●
Landward activities associated with water sports													
Boat repair and maintenance may cause introduction of synthetic compounds	EA	●	●	●		●	●	●	●		●	●	●
Boat repair and maintenance may cause introduction of non-synthetic compounds	EA									●			
Slipway cleaning and maintenance may cause introduction of synthetic compounds in areas of LA control or ownership	IoWC	●	●	●			●	●	●		●		●
Slipway cleaning and maintenance may cause introduction of non-synthetic compounds in areas of LA control or ownership	IoWC									●			
Slipway cleaning and maintenance may cause introduction of synthetic compounds	EN/EA	●	●	●			●*	●	●		●	●	●
Slipway cleaning and maintenance may cause introduction of non-synthetic compounds	EN/EA									●			

Possible Toxic Contamination Impacts	RA	Features of Interest[1]											
		1 Boulder & cobble shores	2 Intertidal mixed sediment	3 Intertidal mudflats & sandflats	5 Subtidal sandbanks	6 Subtidal sediment communities	8 *Salicornia & other annuals*	9 Cordgrass swards	10 Saltmarsh	12 Annual vegetation drift lines	13 Estuaries	14 Saline lagoons	15 Shallow coastal waters
Slipway cleaning and maintenance may cause introduction of synthetic compounds within Wightlinks areas of control	WL										●		

* Not all RAs in the category agreed on if activity occurred on or adjacent to the features of interest

[1] Features of interest which are highly vulnerable and which may be affected

Non-Toxic Contamination

Certain contaminants can have a non-toxic but nevertheless harmful effects on estuarine sub-features, mainly because they can enter the environment in large quantities, such as organic material and nutrients. Sewage effluents, industrial effluents, riverine input and agricultural run-off are major sources of both such contaminants.

Elevated nutrient (phosphate and nitrate) levels can contribute to the stimulation of phytoplankton growth (eutrophication) and the subsequent deoxygenation of the water column, particularly in areas of limited or reduced water circulation

Non-Toxic contamination through the introduction of nutrients occur from a variety of activities associated with water based recreation as follows:

- Sewage discharge from recreational craft can have localised impact on marine features, particularly in low flushing estuaries and inlets and bays, where it may contribute to reduced oxygen availability. However, its impact in fast flushing areas is negligible. The potential impact is likely to be most significant in areas which already suffer from environmental stresses, often caused by sewage discharge from water company plants or agricultural run-off. In such areas, where there are already low levels of dissolved oxygen and high levels of nutrients in the water, an increase in biochemical oxygen demand and nutrient levels resulting from boat sewage discharge can damage marine fauna and flora. The irresponsible disposal of chemical toilet waste can also have a localised impact on marine fauna and flora.
- The use of detergents for cleaning operations can form phosphate-rich waters that may encourage the formation of algal blooms which can cause oxygen depletion and may result in the localised suffocation of animals.

Portsmouth Harbour

Possible Non-Toxic Contamination Impacts	RA	Features of Interest[1]		
		3	13	15
		Intertidal mudflats and sandflats	Estuaries	Shallow coastal waters
Navigation of craft for water sports				
Discharges from recreational boats within local authorities areas of jurisdiction	FBC	●		●
Discharges from recreational boats within local authorities areas of jurisdiction	GBC	●	●	
Discharges from recreational boats within QHMs areas of jurisdiction	QHM/PCP	●	●	●
Discharges from recreational boats outside of any RA area of jurisdiction	EN	●	●	●

Chichester & Langstone Harbour

Possible Non-Toxic Contamination Impacts	RA	Features of Interest[1]								
		2 Intertidal mixed sediment	3 Intertidal mudflats and sandflats	5 Subtidal sandbanks	6 Subtidal sediment communities	8 *Salicornia & other annuals*	10 Saltmarsh	12 Annual vegetation drift lines	13 Estuaries	15 Shallow coastal waters
Navigation of craft for water sports										
Discharges from recreational power boats in areas under LA control or ownership	CDC/HBC	●*	●	●*	●*	●*	●	●*	●	●
Discharges from recreational sailing boats in areas under LA control	CDC/HBC	●*	●	●*	●*	●*	●		●	●
Discharges from recreational boats in Chichester Harbour	CHC	●	●	●	●	●	●	●	●	●
Discharges from recreational boats in Langstone Harbour	LHB								●	
Discharges from recreational boats	EN	●	●	●	●	●	●	●	●	●

North West Solent

Possible Non-Toxic Contamination Impacts	RA	Features of Interest[1]										
		1 Boulder & cobble shores	2 Intertidal mixed sediment	3 Intertidal mudflats & sandflats	5 Subtidal sandbanks	6 Subtidal sediment communities	8 *Salicornia & other annuals*	10 Saltmarsh	12 Annual vegetation drift lines	13 Estuaries	14 Saline lagoons	15 Shallow coastal waters
Navigation of craft for water sports												
Discharges from recreational boats in areas under LA control or ownership	NFDC	●	●	●		●	●	●		●		●
Discharges from recreational boats	EN	●	●	●		●	●	●		●		●

Southampton Water

Possible Non-Toxic Contamination Impacts	RA	Features of Interest[1]										
		1 Boulder & cobble shores	2 Intertidal mixed sediment	3 Intertidal mudflats & sandflats	5 Subtidal sandbanks	6 Subtidal sediment communities	8 *Salicornia & other annuals*	10 Saltmarsh	12 Annual vegetation drift lines	13 Estuaries	14 Saline lagoons	15 Shallow coastal waters
Navigation of craft for water sports												
Discharges from recreational power boats in areas under LA control and ownership	FBC/SCC EBC/NFDC		●*	●	●*	●*	●*	●*	●*	●*		●*
Note: TVBC proformas not all returned												

Isle of Wight

Possible Non-Toxic Contamination Impacts	RA	Features of Interest[1]										
		1 Boulder & cobble shores	2 Intertidal mixed sediment	3 Intertidal mudflats and sandflats	5 Subtidal sandbanks	6 Subtidal sediment communities	8 *Salicornia & other annuals*	10 Saltmarsh	12 Annual vegetation drift lines	13 Estuaries	14 Saline lagoons	15 Shallow coastal waters
Navigation of craft for water sports												
Discharges from recreational boats in Medina Estuary	CHC		●	●	●	●				●		●
Discharges from recreational boats in QHMs area of jurisdiction	QHM			●						●		●
Discharges from Motor cruises in Yar Estuary	YHC		●	●	●	●	●	●		●		●
Discharges from sailing boats in the Yar Estuary	YHC	●	●	●	●	●	●	●		●		●
Discharges from sailing boats	EN	●	●	●	●	●	●	●	●	●	●	●
Discharges from recreational boats in Newport Harbour	NHA		●	●			●	●		●		
Discharges from power boats in Bembridge Harbour	BHIC	●	●	●						●		●
Discharges from recreational boats under LA control and ownership	IoWC	●	●	●	●		●	●	●	●	●	●

* Not all RAs in the category agreed on if activity occurred on or adjacent to the features of interest

[1] Features of interest which are highly vulnerable and which may be affected