C Appropriate Assessment Signposting Document

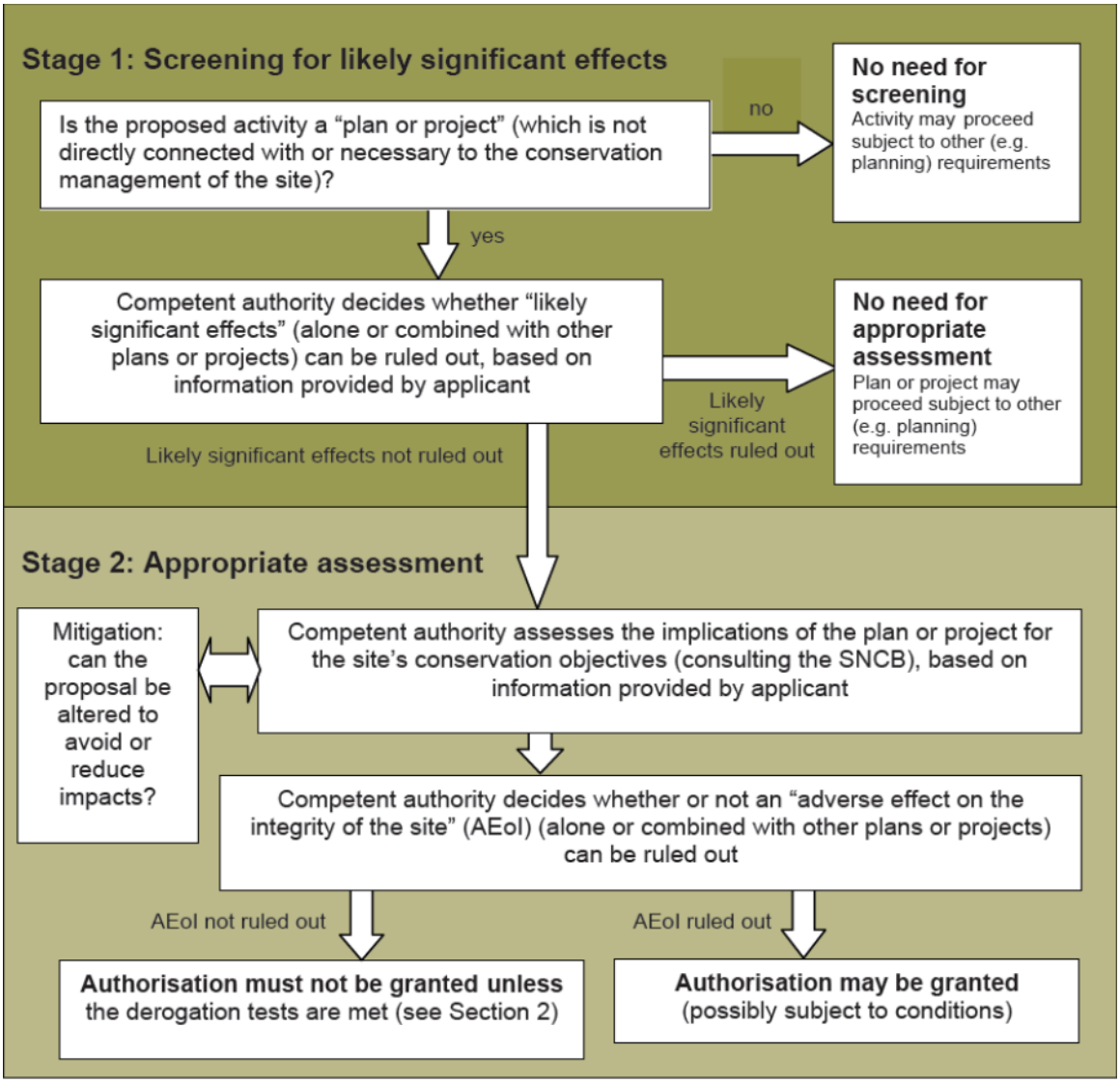
C.1 Introduction

This appendix represents an '*Appropriate Assessment (AA) Signposting Document*' for the licence applications to dredge aggregates from Area 531 (North Bristol Deep) in the Severn Estuary. It identifies, under relevant subject headings, those sections and/or paragraphs within the Environmental Statement (ES) and any relevant supporting documentation that contains the information needed by the Competent Authorities, which in this case are the Marine Management Organisation (MMO) and Natural Resources Wales (NRW), to produce an AA under the Conservation of Habitats and Species Regulations 2017 (hereafter the 'Habitats Regulations'). It is designed to serve the following functions.

1. **Avoid unnecessary repetition of information.** The information required for an Environmental Impact Assessment (EIA) and for an AA often overlaps and it is now seen as good practice to avoid replication of this information. Therefore, where comprehensive data and descriptions already exist in the main ES, cross-references to these sources of relevant information are made.
2. **Add new information that is specific to the implementation of Regulation 63 of the Habitats Regulations.** In those instances where information is needed by a Competent Authority to produce an AA but is not available in the ES report (and any relevant supporting documentation) then such additional information has been included here.
3. **Act as an auditable checklist of AA information.** This appendix is designed to provide a confirmatory checklist, which ensures that all the relevant information that is needed for an AA is contained in the ES and any supporting documentation. It also ensures that a clear audit trail exists from the Regulation 33, 35 or 37 Advice (depending on date of publication), through the consultation responses to the final assessment about the impacts of a plan or project on the integrity of a European Designated Site.
4. **Assist the Competent Authorities and its consultees.** The overall aim of this appendix is to provide a concise and readable documentation that will make it easier for the Competent Authority to consult on, and produce, an AA.

It is recognised that the scope and content of an HRA can vary on a case-by-case basis, however the information provided is considered to represent most, if not all, the detail required and is based on recommendations within the most recent relevant Habitats Regulations Guidance (Defra, 2012), the principles of which are equally applicable in Wales. The key stages of the HRA process are shown in Image C.1.

This appendix seeks to provide the information needed by the Competent Authorities (MMO and NRW) to determine whether the proposal is likely to have an adverse effect on the integrity of any European Sites and to undertake a HRA, if required. In compiling this information, the starting point has been Natural England (NE) and the Countryside Council for Wales' (now NRW) advice provided in Regulation 33(2) of the Habitats Regulations for the Severn Estuary/Môr Hafren European Marine Site (NE and CCW, 2009). The latest conservation objectives for all component designations of these sites have also been consulted, and supplementary advice considered, where available (consulting Natural England's Designated Sites System / Website). Consideration has also been given to prior consultation and correspondence with stakeholders that has been undertaken with respect to the Area 531 licence application.



Source: Defra, 2012

Image C.1 Summary of the key stages for an HRA

C.2 Need for an Appropriate Assessment

Area 531 is located within the boundary of European Sites and so has the potential to affect them. Therefore, the MMO and NRW, as the lead Competent Authorities in England and Wales respectively, need to take account of the Habitats Regulations. Because of the location it has been assumed that the scheme will require an AA under Regulations 63(1) of the Habitats Regulations if it is likely to have a significant effect on an SAC or SPA. Regulation 63 states that:

"(1) A competent authority, before deciding to undertake, or give any consent, permission, or other authorisation for a plan or project which:

(a) is likely to have significant effect on a European site or a European offshore marine site (either alone or in combination with other plans or projects); and
(b) is not directly connected with or necessary to the management of the site

must make an appropriate assessment of the implications of the plan or project for that site in view of that site's conservation objectives".

The decision as to whether a HRA is required or not is related to the assessment of 'Likely Significant Effect', or LSE (Image C.1), which is recognised as being a 'coarse filter' or statement that the anticipated effects of the proposal will be more than trivial, i.e. that the anticipated changes resulting from a proposal have the potential to impact on a receptor designated as a feature of a European Site. It does not automatically follow that an impact will occur, or that the impact would be significant, with a decision of LSE being purely an indication of the need for an AA. The interpretation of the term significant under the Habitats Directive in England is therefore different to its use under the EIA Directive, with LSE in the Habitats Directive effectively analogous to a Screening Decision under EIA.

C.3 Information on the Need for the Proposed Development

A comprehensive description of the project's rationale and the importance of marine aggregates is presented in Sections 2.1 to 2.2 of the ES.

C.4 Scheme Description and Alternatives

A detailed description of the scheme is provided in Section 3 and a demonstration that no alternatives exist that could have lower environmental impacts is provided in Section 2.3 of the main ES.

C.5 Consultation with Relevant Parties

The MMO and NRW have been consulted as part of the process of preparing the ES and formal scoping opinions were received from NRW on 16 August 2018 (NRW ref: SC1807) and from the MMO on 10 August 2018 (Application reference no: EIA/2018/00031). Section 4.6 of the main ES and Appendix A of the ES summarise the consultation that has been undertaken as part of this EIA. A 'consultation' sub-section has furthermore been included in the introductory text for each of the technical sections, summarising the comments raised through consultation, and how/where they have been addressed.

C.6 Designated Sites That Could Be Directly or Indirectly Affected

The international nature conservation importance of the wider study area has been recognised through a number of statutory designations that acknowledge the importance of coastal/marine habitats (see Figure 7.1 and Section 7.2.1 of the ES).

SACs and SPAs are defined as European Sites in the Habitats Regulations. Where the European Site lies below highest astronomical tide i.e. land covered (continuously or intermittently) by tidal waters, or any part of the sea, in or adjacent to Great Britain, up to the seaward limit of territorial waters, it is defined as a European Marine Site (EMS). The following EMS is located within the wider study area (as described in Section 7.2.2 of the main ES):

- Severn Estuary/Môr Hafren EMS, comprising:
  - Severn Estuary/Môr Hafren SAC;
  - Severn Estuary SPA; and
  - Severn Estuary/Môr Hafren Ramsar site.

The sites have been designated for a number of reasons and the conservation objectives for each of the international designations comprising the EMS are presented in Table C.1.

The study area directly overlaps with one of the three internationally designated sites (Severn Estuary/Môr Hafren SAC), with the over two being at least 5.5 km distant. As described in Section 4.2, the study area is defined as the area over which the potential direct and indirect impacts of the activity are predicted to occur. These are called the primary and secondary impact zones (PIZ and SIZ) and are based on a conservative assessment of the likely zones over which impacts might be realised (Section 4.1). However, additional European/Ramsar sites beyond the PIZ and SIZ may be brought into the assessment where a designated feature may have a foraging range beyond the PIZ and SIZ. For example, some seabird species have the potential to forage over very large distances (above 100 km), and as such have the potential to forage in the study area. Given the mobile nature of the Severn Estuary Ramsar and SPA bird features, the whole EMS is considered as being potentially affected by dredging in Area 531.

With regard to internationally designated sites which are located further afield, no additional sites have been considered within this HRA as the only commonly recorded long-distance foraging seabird species in the Severn Estuary are Gulls and the Great Cormorant. Gulls utilise both terrestrial and marine habitats and do not rely on capturing food solely through diving or surface feeding like many other marine birds. Furthermore, the foraging ranges for these seabirds encompass an extensive area and are not spatially restricted. With respect to marine mammals, Area 531 is a very small area in the context of the known foraging ranges of harbour porpoise and grey seal with both species foraging over large areas within the Bristol Channel and wider Irish Sea. Therefore, no impacts on features of designated sites for marine mammals in the wider study area (such as Lundy Island SAC and Bristol Channel Approaches SAC) are anticipated.

JNCC and the four country nature conservation agencies have undertaken a review to identify further SPAs with marine components that will comprise a suite of entirely marine SPAs (Kober *et al.*, 2012; with follow up by Cook *et al.*, 2015, amongst others). There are no potential areas identified within the Severn Estuary and as such they do not need to be considered further in this HRA process.

Further information about the qualifying criteria and interest features for each of the international designations is presented in Section 7.2.1 of the ES. A tabulated summary of the features, subfeatures, conservation objectives and predicted impacts with regards to the screened in designated sites is also included in Table C.2 to Table C.6 of this appendix.

C.7 An Understanding of the Designated Features' Conservation Objectives and Favourable Condition Target

The conservation objectives for each of the screened in European/Ramsar sites are presented in Table C.1. As the 2016 Natural England Conservation Objectives for the Severn Estuary have not been agreed with NRW, for Wales, NRW has advised that the objectives from the 2009 Regulation 33 document (Natural England and CCW, 2009) should be applied; two sets of conservation objectives are thus presented for the SAC and SPA.

The Ramsar objectives have been adapted from the European Site Conservation Objectives for the Severn Estuary/Môr Hafren SAC and SPA published by Natural England (Natural England 2016a; b) and the favourable condition tables published in the Regulation 33(2) advice documents (Natural England and CCW, 2009). The potential impacts upon these sites are considered on a *feature-by-feature* basis to ensure that there is full clarity in the assessment process.

C.8 Baseline Description of Relevant Interest Features

Details of the existing condition of relevant interest features and supporting features are addressed in the ES under the following categories: Physical Processes (Section 5), Water and Sediment Quality (Section 6), Nature Conservation (Section 7), Benthic Habitats and Species (Section 8), Fish and Shellfish (Section 9) and Ornithology (Section 10).

C.9 Impacts to Relevant Interest Features

As outlined in Section C.6 of this appendix, the direct and indirect impact zones identified for Area 531 directly overlap with Severn Estuary/Môr Hafren SAC. Due to the mobile nature of some of the bird species, SPA and Ramsar internationally designated sites may also be affected, as could intertidal habitats at the coast. Consequently, there is potential for LSE through dredging activities at Area 531 for these three sites.

The summary tables C.2 to C.6 describe the potential effects of dredging activities at Area 531 on each of the attributes of the interest features within the three screened-in internationally designated sites by cross-referring to the relevant sections of the ES. In each case the significance of the effects are described. Please note that supplementary advice packages are not currently available for these sites (as confirmed by Natural England during the July 2018 regulator meeting; see Section 4.6 of the ES).

The EIA significance judgement is very different to the Habitats Regulations significance (as described above), but is considered to be a valuable guide to assessing the effect on the conservation targets/objectives. The targets are intended to define the desired condition of an attribute, taking into account fluctuations due to natural change. Assessing the predicted effects of the scheme in relation to the targets enables the potential effect on favourable condition and hence on the designated status of these sites to be determined. This in turn informs the conclusion of LSE and the decision of whether or not an adverse effect on integrity of the EMS is predicted.

A potential impact pathway as a result of the dredging activity within Area 531 will only be an issue to interest features that form part of the marine and coastal environment in the study area. In other words, there is no route of interaction for terrestrial and/or freshwater organisms and habitats. Furthermore, an impact pathway will only exist at locations where a direct and/or indirect impact will occur as a result of the proposed scheme.

C.10 Preventative Measures and Mitigation

The summary tables C.2 to C.6 include the best practice procedures and standard mitigation measures (summarised in Section 3.5 of the ES).

Under the standardised definitions of impact significance that are applied within the EIA (Section 4.5.3 of the ES), where effects are identified as either 'insignificant' or 'minor significant', this is the equivalent of no adverse effect on the given (sub)feature. In these cases then no mitigation measures are considered to be required.

The final assessment of the implications of the predicted impact on the relevant favourable condition target is presented in Tables C.2 to C.6.

C.11 In-combination Effects with Other Plans or Projects

The other extant projects that are relevant to this project and the in-combination effects with these proposals are considered in Section 19 of the ES. Projects and activities screened in from the assessment (see Section 19.2) are as follows:

- Other aggregate Licence Areas – two present in within 10 km of Area 531 and three more within 30 km (see Section 19.2.1);
- Bristol Deep Sea Container Terminal (BDSCT) at Avonmouth (15 km from Area 531) – plans to construct three 400 m berths dredged to a depth of 18 m; includes capital dredge to -14;
- Bridgwater / River Parrett Barrier - proposed tidal surge barrier across the Parrett, some 14 km upstream from the mouth of the Parrett near Bridgwater (and 38 km from Area 531);
- Cables and pipelines - there are no cables or pipelines that overlap with Area 531, but several pipelines in the wider study area (see Section 17);
- Commercial and recreational fishing – widespread throughout study area, though generally at low intensities (see Section 12);
- Disposal sites – there are several open disposal sites in the wider study area, one of which is in close proximity to Area 531 (see Section 17; also Figure 19.1);
- Hinkley Point A and C (29 km from Area 531) – Hinkley Point A is being decommissioned, and Hinkley Point C, the UK's first new nuclear plant in a generation, is under construction (to be completed by 2025). Marine works include cooling water intakes, dredging, a temporary jetty and flood defences (all of which are expected to be completed prior to dredging commencing in Area 531);
- Military Practice Areas – General practice area and submarine exercise are nearby in the Inner Bristol Channel, but none overlap with Area 531 (with the nearest being 25 km away);
- Ports, navigation and shipping – incorporates all supporting infrastructure, in particular maintenance and capital dredge channels and anchorages. The Bristol Channel and Severn Estuary is an important shipping area (see Section 13);
- Recreation and tourism – Activities taking place in the area include angling, sailing and other watersports, as well as bird watching and walking (see Sections 13 and 17);
- Severn Flood Risk Management Plan (FRMP) (2016) – sets out where and how to manage flood risk to provide most benefit to communities and the environment;
- The Avonmouth Severnside Enterprise Area (ASEA) Ecology Mitigation and Flood Defence Project (16 km from Area 531);
- Tidal Lagoon Cardiff (2 km from Area 531) – a planned tidal lagoon for Cardiff Bay. The project's scoping report was submitted in March 2015. The project is currently on hold; and
- Tidal Lagoon Swansea Bay (77 km from Area 531) – a planned 'nationally significant infrastructure project' (NSIP) to construct a tidal lagoon generating station in Swansea Bay. The proposal was rejected on financial grounds in June 2018 by the UK government, but there is still potential for the continued development (Holistic Capital, 2018).

The in-combination effects on ecological receptors are assessed in Table 19.4. It is concluded that, given the location and intensity of the other projects and activities, the risk of a significant in-combination effect occurring is minimal.

C.12 Integrity of the European Marine Site

In an AA, it is necessary to determine whether the project or plan would adversely affect the integrity of the EMS in the light of the site's conservation objectives. The integrity of a site has previously been defined as the coherence of its ecological structure and function, across its whole area that enables it to sustain the habitat, complex of habitats and/or the levels of populations of the species for which it was classified (DETR, 1994).

The decision on whether integrity is affected is to be made by the Competent Authorities. However, to assist this decision, Tables C.2 to C.6 include a column about the potential effects on the relevant conservation objectives and favourable condition targets. Please note that, due to there currently effectively being two different sets of Conservation Objectives for the Severn Estuary SAC and SPA, separate tables for England and Wales are presented for these designations (i.e. one for England and one for Wales). The following tables present the assessment:

- Tables C.2 and C.3 for the Severn Estuary SPA;
- Tables C.4 and C.5 for the Severn Estuary SAC; and
- Table C.6 for the Severn Estuary/Môr Hafren Ramsar.

In light of the assessment presented in these tables, all the impacts - whether direct or indirect, permanent or temporary - to interest features are considered to be not significant.

In conclusion, it is considered that dredging within Area 531 is not anticipated to affect the integrity of any of the European/Ramsar Sites as no failure of the conservation objectives (alone or in-combination) is predicted.

Table C.1 Conservation objectives for the Severn Estuary/ Môr Hafren European Marine Site

International Designations	Conservation Objective
Severn Estuary/ Môr Hafren SAC	**England (Natural England, 2016a)**: The conservation objective for the sites is to "*Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:* ▪ *The extent and distribution of qualifying natural habitats and habitats of qualifying species* ▪ *The structure and function (including typical species) of qualifying natural habitats* ▪ *The structure and function of the habitats of qualifying species* ▪ *The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely* ▪ *The populations of qualifying species, and,* ▪ *The distribution of qualifying species within the site."* The qualifying features of the SAC are: ▪ H1110. Sandbanks which are slightly covered by sea water all the time; Subtidal sandbanks; ▪ H1130. Estuaries; ▪ H1140. Mudflats and sandflats not covered by seawater at low tide; Intertidal mudflats and sandflats; ▪ H1170. Reefs; ▪ H1330. Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*); Atlantic salt meadows; ▪ S1095. *Petromyzon marinus*; Sea lamprey; ▪ S1099. *Lampetra fluviatilis*; River lamprey; and ▪ S1103. *Alosa fallax*; Twaite shad.
	Wales:(Natural England and CCW, 2009): Subject to natural processes, the conservation objective **for the "estuaries" feature** is to maintain the feature in favourable condition, in particular: i. The total extent of the estuary is maintained; ii. The characteristic physical form (tidal prism/cross sectional area) and flow (tidal regime) of the estuary is maintained; iii. The characteristic range and relative proportions of sediment sizes and sediment budget within the site is maintained; iv. The extent, variety and spatial distribution of estuarine habitat communities within the site is maintained; v. The extent, variety, spatial distribution and community composition of hard substrate habitats and their notable communities is maintained; vi. The abundance of the notable estuarine species assemblages is maintained or increased; vii. The physico-chemical characteristics of the water column support the ecological objectives described above; viii. Toxic contaminants in water column and sediment are below levels which would pose a risk to the ecological objectives described above; and ix. Airborne nutrient and contaminant loads are below levels which would pose a risk to the ecological objectives described above. Subject to natural processes, the conservation objective **for the "subtidal sandbanks" feature** is to maintain the feature in favourable condition, in particular: i. The total extent of the subtidal sandbanks within the site is maintained; ii. The extent and distribution of the individual subtidal sandbank communities within the site is maintained; iii. The community composition of the subtidal sandbank feature within the site is maintained; iv. The variety and distribution of sediment types across the subtidal sandbank feature is maintained; and v. The gross morphology (depth, distribution and profile) of the subtidal sandbank feature within the site is maintained.

International Designations	Conservation Objective
Severn Estuary/ Môr Hafren SAC	Subject to natural processes, the conservation objective **for the "mudflats and sandflats" feature** is to maintain the feature in favourable condition, in particular: i. The total extent of the mudflats and sandflats feature is maintained; ii. The variety and extent of individual mudflats and sandflats communities within the site is maintained; iii. The distribution of individual mudflats and sandflats communities within the site is maintained; iv. The community composition of the mudflats and sandflats feature within the site is maintained; and v. The topography of the inter-tidal flats and the morphology (dynamic processes of sediment movement and channel migration across the flats) are maintained. Subject to natural processes, the conservation objective **for the "Atlantic salt meadow" feature** is to maintain the feature in favourable condition, in particular: i. The total extent of Atlantic salt meadow and associated transitional vegetation communities within the site is maintained; ii. The extent and distribution of the individual Atlantic salt meadow and associated transitional vegetation communities within the site is maintained; iii. The zonation of Atlantic salt meadow vegetation communities and their associated transitions to other estuary habitats is maintained; iv. The relative abundance of the typical species of the Atlantic salt meadow and associated transitional vegetation communities is maintained; v. The abundance of the notable species of the Atlantic salt meadow and associated transitional vegetation communities is maintained; vi. The structural variation of the salt marsh sward (resulting from grazing) is maintained within limits sufficient to satisfy the requirements of conditions iv and v above and the requirements of the Ramsar and SPA features; vii. The characteristic stepped morphology of the salt marshes and associated creeks, pills, drainage ditches and pans, and the estuarine processes that enable their development, is maintained; and viii. Any areas of Spartina anglica salt marsh (SM6) are capable of developing naturally into other saltmarsh communities. Subject to natural processes, the conservation objective **for the "Reefs" feature** is to maintain the feature in favourable condition, in particular: i. The total extent and distribution of Sabellaria reef is maintained; ii. The community composition of the Sabellaria reef is maintained; iii. The full range of different age structures of Sabellaria reef are present; and iv. The physical and ecological processes6 necessary to support Sabellaria reef are maintained. Subject to natural processes, the conservation objective **for the "River lamprey Lampetra fluviatilis" feature** is to maintain the feature in favourable condition, in particular: i. The migratory passage of both adult and juvenile river lamprey through the Severn Estuary between the Bristol Channel and any of their spawning rivers is not obstructed or impeded by physical barriers, changes in flows, or poor water quality; ii. The size of the river lamprey population in the Severn Estuary and the rivers which drain into it, is at least maintained and is at a level that is sustainable in the long term; iii. The abundance of prey species forming the river lamprey's food resource within the estuary, is maintained; and iv. Toxic contaminants in the water column and sediment are below levels which would pose a risk to the ecological objectives described above. Subject to natural processes, the conservation objective for the "**Sea lamprey Petromyzon marinus" feature** is to maintain the feature in favourable condition, in particular: i. The migratory passage of both adult and juvenile sea lamprey through the Severn Estuary between the Bristol Channel and any of their spawning rivers is not obstructed or impeded by physical barriers, changes in flows, or poor water quality; ii. The size of the sea lamprey population in the Severn Estuary and the rivers which drain into it, is at least maintained as is at a level that is sustainable in the long term; iii. The abundance of prey species forming the sea lamprey's food resource within the estuary, is maintained; and iv. Toxic contaminants in the water column and sediment are below levels which would pose a risk to the ecological objectives described above. Subject to natural processes, the conservation objective **for the "Twaite shad Alosa fallax" feature** is to maintain the feature in favourable condition, in particular: i. The migratory passage of both adult and juvenile twaite shad through the Severn Estuary between the Bristol Channel and their spawning rivers is not obstructed or impeded by physical barriers, changes in flows or poor water quality; ii. The size of the twaite shad population within the Severn Estuary and the rivers draining into it is at least maintained and is at a level that is sustainable in the long term; iii. The abundance of prey species forming the twaite shad's food resource within the estuary, in particular at the salt wedge, is maintained; and iv. Toxic contaminants in the water column and sediment are below levels which would pose a risk to the ecological objectives described above.

International Designations	Conservation Objective
Severn Estuary SPA	**England (Natural England, 2016a):** The conservation objective for the sites is to *"Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring;* ▪ *The extent and distribution of the habitats of the qualifying features* ▪ *The structure and function of the habitats of the qualifying features* ▪ *The supporting processes on which the habitats of the qualifying features rely* ▪ *The population of each of the qualifying features, and,* ▪ *The distribution of the qualifying features within the site."* The qualifying features of the SPA are: ▪ A037 *Cygnus columbianus bewickii*; Bewick's swan (Non-breeding) ▪ A048 *Tadorna tadorna*; Common shelduck (Non-breeding) ▪ A051 *Anas strepera*; Gadwall (Non-breeding) ▪ A149 *Calidris alpina alpina*; Dunlin (Non-breeding) ▪ A162 *Tringa totanus*; Common redshank (Non-breeding) ▪ A394 *Anser albifrons albifrons*; Greater white-fronted goose (Non-breeding) ▪ Waterbird assemblage
	Wales (Natural England and CCW, 2009): Subject to natural processes, the conservation objective for **the "Bewick's swan population and its supporting habitats"** feature is to maintain the feature in favourable condition, in particular: i. The 5 year peak mean population size for the Bewick's swan population is no less than 289 individuals; ii. The extent of saltmarsh at the Dumbles is maintained; iii. The extent of inter-tidal mudflats and sandflats at Frampton Sands, Waveridge Sands and the Noose is maintained; iv. The extent of vegetation with an effective field size of >6 ha and with unrestricted bird sightlines >500 m at feeding, roosting and refuge sites are maintained; v. Greater than 25% cover of suitable soft leaved herbs and grasses in winter season throughout the transitional saltmarsh at the Dumbles is maintained; and vi. Aggregations of Bewick's swan at feeding, roosting and refuge sites are not subject to significant disturbance. Subject to natural processes, the conservation objective **for the "European white-fronted goose population and its supporting habitats"** feature is to maintain the feature in favourable condition, in particular: i. The 5 year peak mean population size for the wintering European white fronted goose population is no less than 3,002 individuals; ii. The extent of saltmarsh at the Dumbles is maintained; iii. The extent of inter-tidal mudflats and sandflats at Frampton Sands, Waveridge Sands and the Noose is maintained; iv. Greater than 25% cover of suitable soft-leaved herbs and grasses is maintained during the winter on saltmarsh areas; v. Unrestricted bird sightlines of >200 m at feeding and roosting sites are maintained; and vi. Aggregations of European white-fronted goose at feeding or roosting sites are not subject to significant disturbance.

International Designations	Conservation Objective
Severn Estuary SPA	Subject to natural processes, the conservation objective **for the "Dunlin population and its supporting habitats**" feature is to maintain the feature in favourable condition, in particular: i. The 5 year peak mean population size for the wintering dunlin population is no less than 41,683 individuals; ii. The extent of saltmarsh and associated strandlines is maintained; iii. The extent of inter-tidal mudflats and sandflats is maintained; iv. The extent of hard substrate habitats is maintained; v. The extent of vegetation with a sward height of <10 cm is maintained throughout the saltmarsh; vi. The abundance and macro-distribution of suitable invertebrates in inter-tidal mudflats and sandflats is maintained; vii. The abundance and macro-distribution of suitable invertebrates in hard substrate habitats is maintained; viii. Unrestricted bird sightlines of >200 m at feeding and roosting sites are maintained; and ix. Aggregations of dunlin at feeding or roosting sites are not subject to significant disturbance. Subject to natural processes, the conservation objective **for the "Redshank population and its supporting habitats"** feature is to maintain the feature in favourable condition, in particular: i. The 5 year peak mean population size for the wintering redshank population is no less than 2,013 individuals; ii. The extent of saltmarsh and associated strandlines is maintained; iii. The extent of inter-tidal mudflats and sandflats is maintained; iv. The extent of hard substrate habitats is maintained; v. The extent of vegetation with a sward height of <10 cm throughout the saltmarsh is maintained; vi. The abundance and macro-distribution of suitable invertebrates in inter-tidal mudflats and sandflats is maintained; vii. The abundance and macro-distribution of suitable invertebrates in hard substrate habitats is maintained; viii. Unrestricted bird sightlines of >200 m at feeding and roosting sites are maintained; and ix. Aggregations of redshank at feeding or roosting sites are not subject to significant disturbance. Subject to natural processes, the conservation objective **for the "Shelduck population and its supporting habitats" feature** is to maintain the feature in favourable condition, in particular: i. The 5 year peak mean population size for the wintering shelduck population is no less than 2,892 individuals; ii. The extent of saltmarsh is maintained; iii. The extent of inter-tidal mudflats and sandflats is maintained; iv. The extent of hard substrate habitats is maintained; v. The abundance and macro-distribution of suitable invertebrates in inter-tidal mudflats and sandflats is maintained; vi. Unrestricted bird sightlines of >200 m at feeding and roosting sites are maintained; and vii. Aggregations of shelduck at feeding or roosting sites are not subject to significant disturbance. Subject to natural processes, the conservation objective **for the "Gadwall population and its supporting habitats"** feature is to maintain the feature in favourable condition, in particular: i. The 5 year peak mean population size for the wintering gadwall population is no less than 330; ii. The extent of inter-tidal mudflats and sandflats is maintained; iii. Unrestricted bird sightlines of >200 m at feeding and roosting sites are maintained; and iv. Aggregations of gadwall at feeding or roosting sites are not subject to significant disturbance.

International Designations	Conservation Objective
Severn Estuary SPA	Subject to natural processes, the conservation objective **for the "waterfowl assemblage and its supporting habitats" feature** is to maintain the feature in favourable condition, in particular: i. The 5 year peak mean population size for the waterfowl assemblage is no less than 68,026 individuals; ii. The extent of saltmarsh and their associated strandlines is maintained; iii. The extent of inter-tidal mudflats and sandflats is maintained; iv. The extent of hard substrate habitats is maintained; v. Extent of vegetation of <10 cm throughout the saltmarsh is maintained; vi. The abundance and macroscale distribution of suitable invertebrates in inter-tidal mudflats and sandflats is maintained; vii. The abundance and macroscale distribution of suitable invertebrates in hard substrate habitats is maintained; viii. Greater than 25% cover of suitable soft leaved herbs and grasses during the winter on saltmarsh areas is maintained; ix. Unrestricted bird sightlines of >500 m at feeding and roosting sites are maintained; and x. Waterfowl aggregations at feeding or roosting sites are not subject to significant disturbance.
Severn Estuary/ Môr Hafren Ramsar Site (Natural England and CCW, 2009)	Subject to natural processes, the conservation objective for the "assemblage of migratory fish species" feature is to maintain the feature in favourable condition, in particular: i. The migratory passage of both adults and juveniles of the assemblage of migratory fish species through the Severn Estuary between the Bristol Channel and any of their spawning rivers is not obstructed or impeded by physical barriers, changes in flows, or poor water quality; ii. The size of the populations of the assemblage species in the Severn Estuary and the rivers which drain into it, is at least maintained and is at a level that is sustainable in the long term; iii. The abundance of prey species forming the principle food resources for the assemblage species within the estuary, is maintained; and iv. Toxic contaminants in the water column and sediment are below levels which would pose a risk to the ecological objectives described above.
Refer to: The Severn Estuary/Môr Hafren SAC and Severn Estuary SPA outlined above with regards to "Estuaries", "Bewick's swan", "European white-fronted goose", "Dunlin", "Redshank", "Shelduck", "Gadwall" and "waterfowl assemblage" features, for all of which the conservation objective is to maintain the feature in favourable condition.	

Table C.2 Favourable condition table for the Severn Estuary/ Môr Hafren SAC – England

Summary of Conservation Objectives for Qualifying Features (Natural England, 2016a)		Summary of EIA Findings Following EIA Significance Criteria				Initial Conclusions on Favourable Condition Target
Feature	Attribute (maintain or restore…)	Potential Effect (and Section of ES)	Preventative Measures	Mitigation	Significance of Residual Impact	
Subtidal sandbanks	Extent and distribution of qualifying natural habitats and habitats of qualifying species	Change is considered to be short lived and limited in both magnitude and extent. This is due to the dynamic nature of the system, generally returning the bed to its pre-dredged condition very quickly (often within a single tide). As such no significant effects are predicted (see Sections 5.4.5, 8.3.1). As such, no adverse effect on site integrity is anticipated as a result of any changes to the extent of subtidal sandbanks.	Best practice procedures and standard mitigation measures (Section 3.5). Continuation of morphological monitoring, initiation of cargo grading monitoring (see Section 20.2).	-	-	No failure of target given the predicted scale of change
	Structure and function (including typical species) of qualifying natural habitats	The area is species poor. The species that are present are well adapted to living in a dynamic and disturbed tide swept environment and so are disturbance-tolerant, have high recoverability rates and are capable of rapidly recolonizing disturbed habitats (see Sections 8.3.1, 8.3.2 and 8.3.3). As such no adverse effect on site integrity as a result of any changes to the structure and function of subtidal sandbanks communities are predicted.	Best practice procedures and standard mitigation measures (Section 3.5). Initiation of cargo grading monitoring (see Section 20.2).	-	-	No failure of target given the predicted scale of change
	Structure and function of the habitats of qualifying species	N/A				
	Supporting processes on which qualifying natural habitats and the habitats of qualifying species rely	Overall, it is considered highly unlikely that the extraction of aggregate from Area 531 will result in any LSE on the physical processes of the wider study area (see Section 5.4.5). As such, no adverse effect on site integrity is anticipated as a result of any potential changes to physical processes within the estuary.	Best practice procedures and standard mitigation measures (Section 3.5). Continuation of morphological monitoring (see Section 20.2).	-	-	No failure of target given the predicted scale of change
	Populations of qualifying species	N/A				
	Distribution of qualifying species	N/A				
Estuaries	Extent and distribution of qualifying natural habitats and habitats of qualifying species	Not applicable as extent and distribution of estuary not affected (see Sections 5.4 and 8.3).				
	Structure and function (including typical species) of qualifying natural habitats	The area is species poor. The species that are present are well adapted to living in a dynamic and disturbed tide swept environment and so are disturbance-tolerant, have high recoverability rates and are capable of rapidly recolonizing disturbed habitats (see Sections 8.3.1, 8.3.2 and 8.3.3). As such no adverse effect on site integrity as a result of any changes to the structure and function of subtidal sandbanks communities are predicted.	Best practice procedures and standard mitigation measures (Section 3.5). Initiation of cargo grading monitoring (see Section 20.2).	-	-	No failure of target given the predicted scale of change

Summary of Conservation Objectives for Qualifying Features (Natural England, 2016a)		Summary of EIA Findings Following EIA Significance Criteria				Initial Conclusions on Favourable Condition Target
Feature	Attribute (maintain or restore...)	Potential Effect (and Section of ES)	Preventative Measures	Mitigation	Significance of Residual Impact	
Estuaries	Structure and function of the habitats of qualifying species	N/A				
	Supporting processes on which qualifying natural habitats and the habitats of qualifying species rely	Overall, it is considered highly unlikely that the extraction of aggregate from Area 531 will result in any LSE on the physical processes of the wider study area (see Section 5.4.4). As such, no adverse effect on site integrity is anticipated as a result of any potential changes to physical processes within the estuary.	Best practice procedures and standard mitigation measures (Section 3.5). Continuation of morphological monitoring (see Section 20.2).	-	-	No failure of target given the predicted scale of change
	Populations of qualifying species	N/A				
	Distribution of qualifying species	N/A				
Intertidal mudflats and sandflats	Extent and distribution of qualifying natural habitats and habitats of qualifying species	Not applicable as the predicted scale of change caused by the dredging activity is not expected to cause any impacts to intertidal mudflats and sandflats (see Section 8.3.1).				
	Structure and function (including typical species) of qualifying natural habitats					
	Structure and function of the habitats of qualifying species					
	Supporting processes on which qualifying natural habitats and the habitats of qualifying species rely					
	Populations of qualifying species					
	Distribution of qualifying species					
Reefs	Extent and distribution of qualifying natural habitats and habitats of qualifying species	*Sabellaria* individuals have been found in grab samples in the study area and wider study area but due to their substratum preference, it would be highly unlikely for *Sabellaria* reefs to be located on the sandy substrate within Area 531 which is to be targeted for dredging (Section 8.3.1).	Review of full-coverage sidescan data prior to dredging commencing (incl. 500 m buffer) (see Section 20.2).	Implementation of non-dredging exclusion zones if reefs identified (including buffer).	Insignificant	No failure of target given the predicted scale of change
	Structure and function (including typical species) of qualifying natural habitats	*Sabellaria* reefs would not be affected by plume effects as it is assumed that these would be surrounded by sufficiently proportioned exclusions zones should any be found during pre-dredge and consequent monitoring surveys (Section 8.3.1).				
	Structure and function of the habitats of qualifying species	N/A				

Summary of Conservation Objectives for Qualifying Features (Natural England, 2016a)		Summary of EIA Findings Following EIA Significance Criteria				Initial Conclusions on Favourable Condition Target
Feature	Attribute (maintain or restore...)	Potential Effect (and Section of ES)	Preventative Measures	Mitigation	Significance of Residual Impact	
Reefs	Supporting processes on which qualifying natural habitats and the habitats of qualifying species rely	*Sabellaria* reefs would not be affected by plume effects as it is assumed that these would be surrounded by sufficiently proportioned exclusions zones (in consultation with regulators) should any be found during pre-dredge and consequent monitoring surveys (see Section 8.3.1).	Review of full-coverage sidescan data prior to dredging commencing around the edges of the sandbank/ sheet.	Implementation of non-dredging exclusion zones if reefs identified (including buffer).	Insignificant	No failure of target given the predicted scale of change
	Populations of qualifying species	N/A				
	Distribution of qualifying species	N/A				
Atlantic salt meadows	Extent and distribution of qualifying natural habitats and habitats of qualifying species	Not applicable as the predicted scale of change caused by the dredging activity is not expected to cause any potential impacts to intertidal saltmarshes (see Section 5.4 and 8.3.1). Both the Middle and Welsh Grounds provide a sheltering effect to the intertidal and saltmarsh habitats in the lee of the banks. The bank morphology is not considered to be impacted by aggregate dredging activities (alone or in combination) and therefore no reduction in this sheltering effect is expected.				
	Structure and function (including typical species) of qualifying natural habitats					
	Structure and function of the habitats of qualifying species					
	Supporting processes on which qualifying natural habitats and the habitats of qualifying species rely					
	Populations of qualifying species					
	Distribution of qualifying species					
Sea lamprey; River lamprey and Twaite shad.	Extent and distribution of qualifying natural habitats and habitats of qualifying species	Not applicable, as these fish only pass through the study area whilst on migration, and the proposed activity does not overlap with the river habitats of these migratory fish species.				
	Structure and function (including typical species) of qualifying natural habitats					
	Structure and function of the habitats of qualifying species					
	Supporting processes on which qualifying natural habitats and the habitats of qualifying species rely	Given a limited sensitivity to high suspended sediment loads, together with the localised, small scale changes of water quality (Section 9.3.2) and noise levels (Section 9.3.3) predicted as part of the dredging and the mobile nature of lamprey and twaite shad, no adverse effects are anticipated (Section 9.3). With regard to prey, no significant change to food chains is anticipated, therefore no adverse effects are predicted (Section 9.3.1).	Best practice procedures and standard mitigation measures (Section 3.5). Initiation of cargo grading monitoring (see Section 20.2).	-	-	No failure of target given the predicted scale of change
	Populations of qualifying species					
	Distribution of qualifying species					

Table C.3 Favourable condition table for the Severn Estuary/ Môr Hafren SAC – Wales

Summary of Natural England and Countryside Council Wales Conservation Objectives (NE and CCW, 2009)				Summary of EIA Findings Following EIA Significance Criteria				Initial Conclusions on Favourable Condition Target
Feature	Sub-feature	Attribute	Target	Potential Effect (and Section of ES)	Preventative Measures	Mitigation	Significance of Residual Impact	
Estuaries		Extent	No decrease in extent due to man induced changes from the established baseline	Not applicable as the extent of the estuary will not be affected (see Sections 5.4 and 8.3).-				
	All sub-features	Morphology	The intra- and inter-estuarine tidal prism/cross section relationship should not deviate significantly from an established baseline subject to natural processes	Overall, it is considered highly unlikely that the increased, and longer, extraction of aggregate from Area 531, will result in any LSE on the physical processes of the wider study area. Tidal prism is not predicted to be significantly affected, nor is morphology (see Section 5.4). Regular, detailed monitoring is in place (and will continue) to confirm this. Thus, no adverse effect on site integrity is anticipated.	Best practice procedures and standard mitigation measures (Section 3.5). Continuation of established morphological monitoring (see Section 20.2).	-	-	No failure of target given the predicted scale of change
		Tidal regime and flows	No decrease in tidal range subject to natural processes. Tidal currents should not deviate significantly from an established baseline subject to natural processes. Riverine flows (Rivers Wye, Usk and Severn) and estuarine flows must be sufficient to ensure WFD target of GES is met.	Overall, it is considered highly unlikely that the increased, and longer, extraction of aggregate from Area 531, will result in any LSE on the physical processes of the wider study area. Tidal range is not predicted to be affected, nor are riverine flows. Whilst some changes local to Area 531 are predicted, tidal flows will not significantly change in the wider study area (see Section 5.4.4).	Best practice procedures and standard mitigation measures (Section 3.5). Continuation of established morphological monitoring (see Section 20.2).	-	-	No failure of target given the predicted scale of change

Summary of Natural England and Countryside Council Wales Conservation Objectives (NE and CCW, 2009)				Summary of EIA Findings Following EIA Significance Criteria				Initial Conclusions on Favourable Condition Target
Feature	Sub-feature	Attribute	Target	Potential Effect (and Section of ES)	Preventative Measures	Mitigation	Significance of Residual Impact	
Estuaries				As such, no adverse effect on site integrity is anticipated as a result of any potential changes to physical processes within the estuary.				
		Sediment Budget	No decrease in sediment budget from the established baseline	A sediment budget for the Middle Grounds (including North Middle Ground) has calculated that the average volume of the area is 1.8 billion m^3 (see Section 5.2.3). This is several orders of magnitude greater than the presently permitted extraction volume. Also, as noted in Section 5.4.5, monitoring has to date not revealed an ongoing negative trend due to the aggregate extraction currently taking place at the three licence areas on the North Middle Ground, and there is believed to be some (limited) sediment input into the system related to winter storms (see Section 5.4.5). No adverse effect to the sediment budget is predicted, meaning that no adverse effect on site integrity is anticipated.	Best Practice Procedures and Best practice procedures and standard mitigation measures (Section 3.5). Continuation of established morphological monitoring (see Section 20.2).	-	-	No failure of target given the predicted scale of change
		Sediment size, range and distribution	Sediment size distribution should not deviate from an established baseline	Cargo gradings taken at Area 470 indicate that the sediment continues to be generally sandy in nature. In addition, there are no	Best practice procedures and standard mitigation measures (Section 3.5). Continuation of	-	-	No failure of target given the predicted scale of change

Summary of Natural England and Countryside Council Wales Conservation Objectives (NE and CCW, 2009)				Summary of EIA Findings Following EIA Significance Criteria				Initial Conclusions on Favourable Condition Target
Feature	Sub-feature	Attribute	Target	Potential Effect (and Section of ES)	Preventative Measures	Mitigation	Significance of Residual Impact	
Estuaries				predicted significant changes to tidal regime nor sediment transport (see Section 5.4). Given this and established industry best practice measures, no adverse effect of site integrity is anticipated.	morphological monitoring, cargo grading monitoring (see Section 20.2).			
		Water quality-physio-chemical parameters	Physio-chemical parameters should not pose a risk to the ecology of the habitats and species of the SAC, SPA and Ramsar. Levels should comply with targets established under the EA Review of Consents and the WFD.	The overall impact on existing water quality has been assessed as insignificant (see Section 6.3). As such, no adverse effect on site integrity is anticipated as a result of physio-chemical parameters of water quality.	Best practice procedures and standard mitigation measures (Section 3.5).	-	-	No failure of target given the predicted scale of change
		Phytoplankton	Growth of phytoplankton does not cause an undesirable disturbance to the estuary habitats and species. Levels should comply with targets established under the EA Review of the Consents and the WFD.	Not applicable as it is considered that there is no potential for an impact pathway between the scheme and phytoplankton.				
		Macroalgae	Average macroalgal cover and density should not compromise the ecology of the estuary habitats and species. Levels should comply with targets established under the EA Review of the Consents and the WFD.	Not applicable as it is considered that there is no potential for an impact pathway between the scheme and macroalgae within the estuary.				
		Toxic contaminations	Toxic contaminants in water column and sediment should be below levels	The overall potential change to toxic contamination levels	Best practice procedures and standard mitigation measures (Section 3.5).	-	-	No failure of target given the predicted scale

Summary of Natural England and Countryside Council Wales Conservation Objectives (NE and CCW, 2009)				Summary of EIA Findings Following EIA Significance Criteria				Initial Conclusions on Favourable Condition Target
Feature	Sub-feature	Attribute	Target	Potential Effect (and Section of ES)	Preventative Measures	Mitigation	Significance of Residual Impact	
Estuaries			which would pose a risk to the ecology of the estuary habitats and species. Levels should comply with targets established under the EA Review of the Consents and the WFD	has been assessed as insignificant (see Section 6.3.3). As such, no adverse effect on site integrity is anticipated as a result of toxic contamination.				of change
		Airborne nutrient and contaminants	No exceedence of critical loads for: Sulphur dioxide - 20 µg/m^3, Nitrous Oxides - 30 µg/m^3, Ozone - 3000 ppb, Ammonia - 3 µg/m^3, Nutrient Nitrogen - 30-40 kg/ha/yr.	The overall change to air quality has been assessed as insignificant (see Section 16.3). As such, no adverse effect on site integrity is anticipated as a result of airborne contamination.	Best practice procedures and standard mitigation measures (Section 3.5).	-	-	No failure of target given the predicted scale of change
	Subtidal sandbanks	Extent, variety and spatial distribution of estuarine habitat communities	These are assessed as separate 'features' below.					
	Inter-tidal mudflat and sandflat communities							
	Atlantic salt meadow (and associated transition habitats)							
	Reefs of *Sabellaria alveolata*							
	Hard substrate habitats and their notable communities	Extent and variety	No decrease in extent or range of types of hard substrate habitats and their notable communities from the established baseline subject to natural processes.	Not applicable as it is considered that there is no potential for an impact pathway between the scheme and hard substrate habitats and their notable communities within the estuary (see Figure 8.1).				
		Spatial Distribution	Macroscale distribution of notable communities should					

Summary of Natural England and Countryside Council Wales Conservation Objectives (NE and CCW, 2009)				Summary of EIA Findings Following EIA Significance Criteria				Initial Conclusions on Favourable Condition Target
Feature	Sub-feature	Attribute	Target	Potential Effect (and Section of ES)	Preventative Measures	Mitigation	Significance of Residual Impact	
Estuaries			not deviate significantly from the established baselines subject to natural processes.					
		Community composition	No decline in community quality due to changes in species composition or loss of typical species from an established baseline.					
	Assemblage of fish species	Abundance	No significant reduction in overall diversity of species or in individual populations against an established baseline	Given the highly localised, small scale changes predicted as part of the dredging and the mobile nature of fish, no adverse effects are anticipated for the general assemblage (see Section 9.3); for sandeel there is a potential for insignificant to minor adverse localised impacts due to direct removal (see Section 9.3.4). However, this is not considered to be of a scale so as to have an adverse effect on site integrity related to the assemblage of fish species.	Best practice procedures and standard mitigation measures (Section 3.5).	-	-	No failure of target given the predicted scale of change
	Assemblage of waterfowl Species	Abundance	No significant reduction in overall diversity of species or in individual populations against an established baseline	See Table C.5				
	Assemblage of vascular plant species	Abundance of saltmarsh species	No significant reduction in overall diversity of species or in individual populations against an established baseline	This is assessed as a separate 'feature' below.				

Summary of Natural England and Countryside Council Wales Conservation Objectives (NE and CCW, 2009)				Summary of EIA Findings Following EIA Significance Criteria				Initial Conclusions on Favourable Condition Target
Feature	Sub-feature	Attribute	Target	Potential Effect (and Section of ES)	Preventative Measures	Mitigation	Significance of Residual Impact	
Estuaries		Abundance of Eel grass	No significant reduction in overall diversity of species or in individual populations against an established baseline					
Subtidal Sand-banks	All Sub-features	Extent of feature	No decrease in extent of subtidal sandbanks features from an established baseline, subject to natural processes.	Change is considered to be short lived and limited in both magnitude and extent. This is due to the dynamic nature of the system, generally returning the bed to its pre-dredged condition very quickly (often within a single tide).. As such no significant effects are predicted (see Sections 5.4.5, 8.3.1). As such, no adverse effect on site integrity is anticipated.	Best practice procedures and standard mitigation measures (Section 3.5). Continuation of morphological monitoring, initiation of cargo grading monitoring (see Section 20.2).	-	-	No failure of target given the predicted scale of change
		Extent of subtidal sandbank communities	No decrease in extent of the communities from an established baseline subject to natural processes.	The area is species poor. The species that are present are well adapted to living in a dynamic and disturbed tide swept environment and so are disturbance-tolerant, have high recoverability rates and are capable of rapidly recolonizing disturbed habitats (see Sections 8.3.1, 8.3.2 and 8.3.3), and as such no adverse effect on site integrity is anticipated.	Best practice procedures and standard mitigation measures (Section 3.5). Continuation of morphological monitoring, initiation of cargo grading monitoring (see Section 20.2).	-	-	No failure of target given the predicted scale of change
		Distribution of subtidal sandbank communities	No significant change in the macro scale distribution of the communities from an established baseline subject to natural processes	The area is species poor. The species that are present are well adapted to living in a dynamic and disturbed tide swept	Best practice procedures and standard mitigation measures (Section 3.5). Continuation of	-	-	No failure of target given the predicted scale of change

Summary of Natural England and Countryside Council Wales Conservation Objectives (NE and CCW, 2009)				Summary of EIA Findings Following EIA Significance Criteria				Initial Conclusions on Favourable Condition Target
Feature	Sub-feature	Attribute	Target	Potential Effect (and Section of ES)	Preventative Measures	Mitigation	Significance of Residual Impact	
Subtidal Sand-banks				environment and so are disturbance-tolerant, have high recoverability rates and are capable of rapidly recolonizing disturbed habitats (see Sections 8.3.1, 8.3.2 and 8.3.3). As such no adverse effect on site integrity is anticipated.	morphological monitoring, initiation of cargo grading monitoring (see Section 20.2).			
		Community composition	No decline in community quality due to changes in species composition or loss of typical species from an established baseline subject to natural processes	The area is species poor. The species that are present are well adapted to living in a dynamic and disturbed tide swept environment and so are disturbance-tolerant, have high recoverability rates and are capable of rapidly recolonizing disturbed habitats (see Sections 8.3.1, 8.3.2 and 8.3.3). As such no adverse effect on site integrity is anticipated.	Best practice procedures and standard mitigation measures (Section 3.5). Continuation of morphological monitoring, initiation of cargo grading monitoring (see Section 20.2).	-	-	No failure of target given the predicted scale of change
		Sediment character	No major change in composition of sediment type across the feature against an established baseline subject to natural processes.	Cargo gradings taken at Area 470 indicate that the sediment continues to be generally sandy in nature. In addition, there are no predicted significant changes to tidal regime nor sediment transport (see Section 5.4). Given this and established industry best practice measures, no adverse effect of site integrity is anticipated.	Best practice procedures and standard mitigation measures (Section 3.5). Continuation of morphological monitoring, initiation of cargo grading monitoring (see Section 20.2).	-	-	No failure of target given the predicted scale of change

Summary of Natural England and Countryside Council Wales Conservation Objectives (NE and CCW, 2009)				Summary of EIA Findings Following EIA Significance Criteria				Initial Conclusions on Favourable Condition Target
Feature	Sub-feature	Attribute	Target	Potential Effect (and Section of ES)	Preventative Measures	Mitigation	Significance of Residual Impact	
Subtidal Sand-banks		Topography	No major alteration of topography of the subtidal sandbank feature against an established baseline.	Regular, monitoring has to date not revealed an ongoing negative trend due to the aggregate extraction currently taking place at the North Middle Ground, and there is believed to be some (limited) sediment input into the system related to winter storms (see Section 5.4.5). As such no adverse effect on site integrity is anticipated as a result of any changes to subtidal sandbank topography.	Best practice procedures and standard mitigation measures (Section 3.5). Continuation of morphological monitoring, initiation of cargo grading monitoring (see Section 20.2).	-	-	No failure of target given the predicted scale of change
Mudflats and sandflats	All Sub-features	Extent of the feature	No decrease in extent from an established baseline, subject to natural processes.	Not applicable as the predicted scale of change caused by the dredging activity is not expected to cause any impacts to intertidal mudflats and sandflats (see Section 8.3.1).				
		Extent and variety of the mudflats and sandflats communities	No decrease in the extent or range of types of communities from an established baseline, subject to natural processes					
Mudflats and sandflats		Distribution of mudflats and sandflats communities	Macro scale distribution of communities should not deviate significantly from an established baseline, subject to natural processes.					
		Community composition	No decline in community quality due to changes in species composition or loss of typical species from an established baseline, subject to natural processes.					
		Topography	Inter-tidal profile should not deviate significantly from an established baseline, subject to natural processes					

Summary of Natural England and Countryside Council Wales Conservation Objectives (NE and CCW, 2009)				Summary of EIA Findings Following EIA Significance Criteria				Initial Conclusions on Favourable Condition Target
Feature	Sub-feature	Attribute	Target	Potential Effect (and Section of ES)	Preventative Measures	Mitigation	Significance of Residual Impact	
Mudflats and sandflats		Sediment character	Average particle size analysis parameters should not deviate significantly from an established baseline.					
			Average organic carbon content should not deviate significantly from an established baseline.					
			Average black layer depth should not deviate significantly from an established baseline.					
Atlantic salt meadows	All sub-features	Extent of the Atlantic salt meadow communities and associated transitional vegetation communities	No decrease in extent of Atlantic salt meadow and associated transitional vegetation communities from the established baseline subject to natural processes	Not applicable as the predicted scale of change caused by the dredging activity is not expected to cause any potential impacts to intertidal saltmarshes (see Section 5.4 and 8.3.1). Both the Middle and Welsh Grounds provide a sheltering effect to the intertidal and saltmarsh habitats in the lee of the banks. The bank morphology is not considered to be impacted by aggregate dredging activities (alone or in combination) and therefore no reduction in this sheltering effect is expected.				
		Extent of the Atlantic salt meadow communities and associated transitional vegetation communities	No decrease in extent of Atlantic salt meadow and associated transitional vegetation communities from the established baseline subject to natural processes					
		Distribution of the Atlantic salt meadow communities and associated transitional vegetation communities	The macro scale distribution of communities should not deviate significantly from an established baseline subject to natural processes.					
		Extent of *Spartina anglica*	No increase in total extent of more than 10% over monitoring period					
		Zonation of	The range of variation of					

Summary of Natural England and Countryside Council Wales Conservation Objectives (NE and CCW, 2009)				Summary of EIA Findings Following EIA Significance Criteria				Initial Conclusions on Favourable Condition Target
Feature	Sub-feature	Attribute	Target	Potential Effect (and Section of ES)	Preventative Measures	Mitigation	Significance of Residual Impact	
Atlantic salt meadows		vegetation	zonation of saltmarsh communities around the estuary should not deviate significantly from an established baseline, subject to natural processes.					
		Species composition	Frequency of typical species of characteristic low to mid marsh communities should not deviate significantly from an established baseline.					
			Frequency of typical species of characteristic mid to upper marsh communities should not deviate significantly from an established baseline.					
			Frequency of typical species of characteristic high marsh communities should not deviate significantly from an established baseline.					
			Frequency of typical species of characteristic pioneer marsh communities should not deviate significantly from an established baseline.					
		Abundance of locally occurring scarce and notable plant species	No decrease in abundance of scarce and notable species from an established baseline.					
		Sward structure	The extent and distribution of vegetation communities exhibiting different sward heights should not deviate significantly from an established set of limits. The					

Summary of Natural England and Countryside Council Wales Conservation Objectives (NE and CCW, 2009)				Summary of EIA Findings Following EIA Significance Criteria				Initial Conclusions on Favourable Condition Target
Feature	Sub-feature	Attribute	Target	Potential Effect (and Section of ES)	Preventative Measures	Mitigation	Significance of Residual Impact	
Atlantic salt meadows			limits will be defined to ensure that the requirements of the typical and notable plants species and birds species designated within the Severn Estuary SPA and Ramsar, can be met					
		Morphology	No anthropogenic alteration of established morphological features from an established baseline.					
Reefs		(Total) Extent and distribution	No reduction in the extent and distribution of the reef from an established baseline	*Sabellaria* individuals have been found in grab samples in the study area and wider study area but due to their substratum preference, it would be highly unlikely for *Sabellaria* reefs to be located on the sandy substrate within Area 531 which is to be targeted for dredging (Section 8.3.1). However, a review of full-coverage sidescan data is planned prior to dredging commencing around the edges of the sandbank/ sheet. If found ,*Sabellaria* reefs would be surrounded by sufficiently proportioned exclusions zones (in consultation with regulators) (Section 8.3.1).	Review of full-coverage sidescan data prior to dredging commencing (incl. 500 m buffer) (see Section 20.2).	Implementation of non-dredging exclusion zones if reefs identified (including buffer).	-	No failure of target given the predicted scale of change
		Community composition	New samples of reef show no significant decline in community composition from baseline records					
		Age structure	Different phases from newly settled worms through vigorous fast growing reef to older hummocks are present					
		Physical and ecological processes	No change in the abundance of suitable sediments grades within the defined reef zones against an established baseline					
			No change in overall extent	*Sabellaria* individuals have	Review of full-	Implementation	-	No failure of

Summary of Natural England and Countryside Council Wales Conservation Objectives (NE and CCW, 2009)				Summary of EIA Findings Following EIA Significance Criteria				Initial Conclusions on Favourable Condition Target
Feature	Sub-feature	Attribute	Target	Potential Effect (and Section of ES)	Preventative Measures	Mitigation	Significance of Residual Impact	
Reefs			of available suitable substrates within the defined reefs zone against an established baseline No decrease in the abundance of *Sabellaria* larvae against an established baseline No decrease in the abundance of suspended detritus within the water column of the defined reef zone against an established baseline	been found in grab samples in the study area and wider study area but due to their substratum preference, it would be highly unlikely for *Sabellaria* reefs to be located on the sandy substrate within Area 531 which is to be targeted for dredging (Section 8.3.1). However, a review of full-coverage sidescan data is planned prior to dredging commencing around the edges of the sandbank/ sheet. If found ,*Sabellaria* reefs would be surrounded by sufficiently proportioned exclusions zones (in consultation with regulators) (Section 8.3.1).	coverage sidescan data prior to dredging commencing (incl. 500 m buffer) (see Section 20.2).	of non-dredging exclusion zones if reefs identified (including buffer).		target given the predicted scale of change
River Lamprey (*Lampetra fluviatilis*) and Sea Lamprey (*Petromyzon marinus*)		Migratory access (Barriers to migration)	Water quality is sufficient to support migratory passage. Levels (for temperature, salinity, turbidity, pH, and dissolved oxygen) should comply with targets established under the EA Review of Consents and the WFD.	Given a limited sensitivity to high suspended sediment loads, together with the localised, small scale changes of water quality (Section 9.3.2) predicted as part of the dredging and the mobile nature of lamprey, no adverse effects are anticipated (Section 9.3).	Best practice procedures and standard mitigation measures (Section 3.5).	-	-	No failure of target given the predicted scale of change
			Flows from the river into the estuary must be sufficient to allow migration.	Not applicable as the continuation of dredging at Area 531 will have no impact on any rivers flowing into the estuary	Best practice procedures and standard mitigation measures (Section 3.5).	-	-	No failure of target given the predicted scale of change

Summary of Natural England and Countryside Council Wales Conservation Objectives (NE and CCW, 2009)				Summary of EIA Findings Following EIA Significance Criteria				Initial Conclusions on Favourable Condition Target
Feature	Sub-feature	Attribute	Target	Potential Effect (and Section of ES)	Preventative Measures	Mitigation	Significance of Residual Impact	
River and Sea Lamprey				therefore no adverse effects on site integrity as a result of lamprey migration is anticipated (see Section 5).				
			No artificial barriers significantly impairing, adults from reaching existing and historical spawning grounds, or juveniles from moving downstream.	The only potential for a barrier to occur for migrating lamprey is via changes to SSC. Any change to SSC is considered to be a of similar magnitude to those which occur naturally as a result of variation in tidal conditions, therefore no adverse effects on site integrity are anticipated (see Section 9.3.2)	Best practice procedures and standard mitigation measures (Section 3.5).	-	-	No failure of target given the predicted scale of change
		Population size	No decline in number of returning adults from established baseline	Given the highly localised, small scale changes of water quality (Section 9.3.2) and noise levels (Section 9.3.3) predicted as part of the dredging and the mobile nature of lamprey, no adverse effects on site integrity are anticipated (see Section 9.3).	Best practice procedures and standard mitigation measures (Section 3.5).	-	-	No failure of target given the predicted scale of change
		Ammocoete population in tributary rivers	River population targets for the Usk and Wye must be met	The wider study area does not overlap with rivers and as such no potential impact pathways to the ammocoete population in the tributary rivers have been identified.	Best practice procedures and standard mitigation measures (Section 3.5).	-	-	No failure of target given the predicted scale of change
		Prey species	No significant reduction in	Area 531 is an	Best practice	-	-	No failure of

Summary of Natural England and Countryside Council Wales Conservation Objectives (NE and CCW, 2009)				Summary of EIA Findings Following EIA Significance Criteria				Initial Conclusions on Favourable Condition Target
Feature	Sub-feature	Attribute	Target	Potential Effect (and Section of ES)	Preventative Measures	Mitigation	Significance of Residual Impact	
River and Sea Lamprey			abundance of key prey species against an established baseline	impoverished habitat and so provides a limited prey resource for lampreys. No significant change to food chains is anticipated, therefore no adverse effects are predicted (see Section 9.3.1)	procedures and standard mitigation measures (Section 3.5).			target given the predicted scale of change
Twaite Shad (*Alosa fallax*)		Migratory access (barrier to movement)	Water quality is sufficient to support migratory passage. Levels (for temperature, salinity, turbidity, pH, and dissolved oxygen) should comply with targets established under the EA Review of Consents and the WFD.	Given a limited sensitivity to high suspended sediment loads, together with the localised, small scale changes of water quality (Section 9.3.2) predicted as part of the dredging and the mobile nature of shad, no adverse effects are anticipated (Section 9.3).	Best practice procedures and standard mitigation measures (Section 3.5).	-	-	No failure of target given the predicted scale of change
			Flows from the river into the estuary must be sufficient to allow migration	Not applicable as the continuation of dredging at Area 531will have no impact to any rivers flowing into the estuary therefore no adverse effects to shad migration is anticipated (see Section 5).	Best practice procedures and standard mitigation measures (Section 3.5).	-	-	No failure of target given the predicted scale of change
			No artificial barriers significantly impairing, adults from reaching existing and historical spawning grounds, or juveniles from moving downstream.	Barriers that could occur for migrating shad include changes to SSC and noise. Any change to SSC is considered to be of similar magnitude to those which occur naturally as a result of variation in tidal conditions. Although shad are classified as being sensitive to noise, the	Best practice procedures and standard mitigation measures (Section 3.5).	-	-	No failure of target given the predicted scale of change

Summary of Natural England and Countryside Council Wales Conservation Objectives (NE and CCW, 2009)				Summary of EIA Findings Following EIA Significance Criteria				Initial Conclusions on Favourable Condition Target
Feature	Sub-feature	Attribute	Target	Potential Effect (and Section of ES)	Preventative Measures	Mitigation	Significance of Residual Impact	
Twaite Shad				overall exposure and magnitude of noise levels associated with dredging are considered to be negligible (Section 9.3.3.). Therefore no adverse effects on site integrity are anticipated.				
		Population size (returning adults)	No drop in the annual run size greater than would be expected from variations in natural mortality alone	Given the highly localised, small scale changes predicted as part of the dredging and the mobile nature of fish, no adverse effects on site integrity are anticipated (see Section 9.3).	Best practice procedures and standard mitigation measures (Section 3.5).	-	-	No failure of target given the predicted scale of change
		River population	River population targets for the Usk and Wye must be met	The wider study area does not overlap with the rivers and as such no potential impact pathways have been identified to shad populations in the rivers	Best practice procedures and standard mitigation measures (Section 3.5).	-	-	No failure of target given the predicted scale of change
		Prey species	No significant reduction in abundance of key prey species against an established baseline	Juvenile Twaite Shad feed on invertebrates and estuarine zooplankton. As they develop they start to feed on crustaceans and small fish (Maitland and Hatton-Ellis, 2003). Area 531 is an impoverished habitat and so provides a limited prey resource for Twaite. Changes to food chains is considered to be negligible and no adverse effects on site integrity are anticipated (see Section 9.3.1)	Best practice procedures and standard mitigation measures (Section 3.5).	-	-	No failure of target given the predicted scale of change

Table C.4 Favourable condition table for Severn Estuary/ Môr Hafren SPA - England

Summary of Conservation Objectives for Qualifying Features (Natural England, 2016b)		Summary of EIA Findings Following EIA Significance Criteria				Initial Conclusions on Favourable Condition Target
Feature	Attribute (maintain or restore…)	Potential Effect (and Section of ES)	Preventative Measures	Mitigation	Significance of Residual Impact	
Bewick's Swan	Extent and distribution of the habitats of the qualifying species	Not applicable as the predicted scale of change caused by the dredging activity is not expected to cause any potential impacts to intertidal habitats on which this species relies (see Section 5.4 and 8.3.1).				
	Structure and function of the habitats of qualifying species					
	Supporting processes on which habitats of qualifying species rely					
	Populations of qualifying species	The study area is only used by very low numbers of waterbirds and marine birds. Due to the negligible exposure of birds to the potential impacts, all potential impact pathways have been assessed as insignificant (see Section 10.2 and 10.3). As such no adverse effect on site integrity is anticipated as a result of any potential impacts on Bewicks Swan.	Best practice procedures and standard mitigation measures (Section 3.5).	-	-	No failure of target given the predicted scale of change
	Distribution of qualifying species	The dredging will not change the overall extent of the intertidal habitat which is available as a feeding resource for water birds (see Sections 5.4, 8.3 and 10.3). In addition, the study area is only used by very low numbers of waterbirds and marine birds. All associated potential impact pathways have been assessed as insignificant (see Section 10.2 and 10.3). As such no adverse effect on site integrity is anticipated as a result of any potential impacts on Bewicks Swan.	Best practice procedures and standard mitigation measures (Section 3.5).	-	-	No failure of target given the predicted scale of change
Common Shelduck	Extent and distribution of the habitats of the qualifying species	Not applicable as the predicted scale of change caused by the dredging activity is not expected to cause any potential impacts to intertidal habitats on which this species relies (see Section 5.4 and 8.3.1).				
	Structure and function of the habitats of qualifying species					
	Supporting processes on which habitats of qualifying species rely					
	Populations of qualifying species	The study area is only used by very low numbers of waterbirds and marine birds. Due to the negligible exposure of birds to the potential impacts, all potential impact pathways have been assessed as insignificant (see Section 10.2 and 10.3). As such no adverse effect on site integrity is anticipated as a result of any potential impacts on Common Shelduck.	Best practice procedures and standard mitigation measures (Section 3.5).	-	-	No failure of target given the predicted scale of change

Summary of Conservation Objectives for Qualifying Features (Natural England, 2016b)		Summary of EIA Findings Following EIA Significance Criteria				Initial Conclusions on Favourable Condition Target
Feature	Attribute (maintain or restore…)	Potential Effect (and Section of ES)	Preventative Measures	Mitigation	Significance of Residual Impact	
Common Shelduck	Distribution of qualifying species	The dredging will not change the overall extent of the intertidal habitat which is available as a feeding resource for water birds (see Sections 5.4 and 8.3.1 and 10.3). In addition, the study area is only used by very low numbers of waterbirds and marine birds. All associated potential impact pathways have been assessed as insignificant (see Section 10.2 and 10.3). As such no adverse effect on site integrity is anticipated as a result of any potential impacts on Common Shelduck.	Best practice procedures and standard mitigation measures (Section 3.5).	-	-	No failure of target given the predicted scale of change
Gadwall	Extent and distribution of the habitats of the qualifying species	Not applicable as the predicted scale of change caused by the dredging activity is not expected to cause any potential impacts to intertidal habitats on which this species relies (see Section 5.3 and 8.2).				
	Structure and function of the habitats of qualifying species					
	Supporting processes on which habitats of qualifying species rely					
	Populations of qualifying species	The study area is only used by very low numbers of waterbirds and marine birds. Due to the negligible exposure of birds to the potential impacts, all potential impact pathways have been assessed as insignificant (see Section 10.2 and 10.3). As such no adverse effect on site integrity is anticipated as a result of any potential impacts on Gadwall.	Best practice procedures and standard mitigation measures (Section 3.5).	-	-	No failure of target given the predicted scale of change
	Distribution of qualifying species	The dredging will not change the overall extent of the intertidal habitat which is available as a feeding resource for water birds (see Sections 5.4 and 8.3.1 and 10.2). In addition, the study area is only used by very low numbers of waterbirds and marine birds. All associated potential impact pathways have been assessed as insignificant (see Section 10.2 and 10.3). As such no adverse effect on site integrity is anticipated as a result of any potential impacts on Gadwall.	Best practice procedures and standard mitigation measures (Section 3.5).	-	-	No failure of target given the predicted scale of change
Dunlin	Extent and distribution of the habitats of the qualifying species	Not applicable as the predicted scale of change caused by the dredging activity is not expected to cause any potential impacts to intertidal habitats on which this species relies (see Section 5.4 and 8.3.1).				
	Structure and function of the habitats of qualifying species					
	Supporting processes on which habitats of qualifying species rely					

Summary of Conservation Objectives for Qualifying Features (Natural England, 2016b)		Summary of EIA Findings Following EIA Significance Criteria				Initial Conclusions on Favourable Condition Target
Feature	Attribute (maintain or restore…)	Potential Effect (and Section of ES)	Preventative Measures	Mitigation	Significance of Residual Impact	
Dunlin	Populations of qualifying species	The study area is only used by very low numbers of waterbirds and marine birds. Due to the negligible exposure of birds to the potential impacts, all potential impact pathways have been assessed as insignificant (see Section 10.2 and 10.3). As such no adverse effect on site integrity is anticipated as a result of any potential impacts on Dunlin.	Best practice procedures and standard mitigation measures (Section 3.5).	-	-	No failure of target given the predicted scale of change
	Distribution of qualifying species	The dredging will not change the overall extent of the intertidal habitat which is available as a feeding resource for water birds (see Sections 5.4 and 8.3.1 and 10.2). In addition, the study area is only used by very low numbers of waterbirds and marine birds. All associated potential impact pathways have been assessed as insignificant (see Section 10.2 and 10.3). As such no adverse effect on site integrity is anticipated as a result of any potential impacts on Dunlin.	Best practice procedures and standard mitigation measures (Section 3.5).	-	-	No failure of target given the predicted scale of change
Common Redshank	Extent and distribution of the habitats of the qualifying species	Not applicable as the predicted scale of change caused by the dredging activity is not expected to cause any potential impacts to intertidal habitats on which this species relies (see Section 5.4 and 8.3.1).				
	Structure and function of the habitats of qualifying species					
	Supporting processes on which habitats of qualifying species rely					
	Populations of qualifying species	The study area is only used by very low numbers of waterbirds and marine birds. Due to the negligible exposure of birds to the potential impacts, all potential impact pathways have been assessed as insignificant (see Section 10.2 and 10.3). As such no adverse effect on site integrity is anticipated as a result of any potential impacts on Common Redshank.	Best practice procedures and standard mitigation measures (Section 3.5).	-	-	No failure of target given the predicted scale of change
	Distribution of qualifying species	The dredging will not change the overall extent of the intertidal habitat which is available as a feeding resource for water birds (see Sections 5.4 and 8.3.1 and 10.2). In addition, the study area is only used by very low numbers of waterbirds and marine birds. All associated potential impact pathways have been assessed as insignificant (see Section 10.2 and 10.3). As such no adverse effect on site integrity is anticipated as a result of any potential impacts on Common Redshank.	Best practice procedures and standard mitigation measures (Section 3.5).	-	-	No failure of target given the predicted scale of change

Summary of Conservation Objectives for Qualifying Features (Natural England, 2016b)		Summary of EIA Findings Following EIA Significance Criteria				Initial Conclusions on Favourable Condition Target
Feature	Attribute (maintain or restore…)	Potential Effect (and Section of ES)	Preventative Measures	Mitigation	Significance of Residual Impact	
Greater white-fronted Goose	Extent and distribution of the habitats of the qualifying species	Not applicable as the predicted scale of change caused by the dredging activity is not expected to cause any potential impacts to intertidal habitats on which this species relies (see Section 5.4 and 8.3.1).				
	Structure and function of the habitats of qualifying species					
	Supporting processes on which habitats of qualifying species rely					
	Populations of qualifying species	The study area is only used by very low numbers of waterbirds and marine birds. Due to the negligible exposure of birds to the potential impacts, all potential impact pathways have been assessed as insignificant (see Section 10.2 and 10.3). As such no adverse effect on site integrity is anticipated as a result of any potential impacts on Greater white-fronted Goose.	Best practice procedures and standard mitigation measures (Section 3.5).	-	-	No failure of target given the predicted scale of change
	Distribution of qualifying species	The dredging will not change the overall extent of the intertidal habitat which is available as a feeding resource for water birds (see Sections 5.4, 8.3.1 and 10.2). In addition, the study area is only used by very low numbers of waterbirds and marine birds. All associated potential impact pathways have been assessed as insignificant (see Section 10.2 and 10.3). As such no adverse effect on site integrity is anticipated as a result of any potential impacts on Greater white-fronted Goose.	Best practice procedures and standard mitigation measures (Section 3.5).	-	-	No failure of target given the predicted scale of change
Waterbird assemblage	Extent and distribution of the habitats of the qualifying species	Not applicable as the predicted scale of change caused by the dredging activity is not expected to cause any potential impacts to intertidal habitats on which these waterbirds rely (see Sections 5.4 and 8.3.1).				
	Structure and function of the habitats of qualifying species					
	Supporting processes on which habitats of qualifying species rely					
	Populations of qualifying species	The study area is only used by very low numbers of waterbirds and marine birds and there are no predicted impacts. All associated potential impact pathways have been assessed as insignificant (see Section 10.2 and 10.3). As such no adverse effect on site integrity is anticipated as a result of potential impacts on the population of waterbird assemblages.	Best practice procedures and standard mitigation measures (Section 3.5).	-	-	No failure of target given the predicted scale of change

Summary of Conservation Objectives for Qualifying Features (Natural England, 2016b)		Summary of EIA Findings Following EIA Significance Criteria				Initial Conclusions on Favourable Condition Target
Feature	Attribute (maintain or restore…)	Potential Effect (and Section of ES)	Preventative Measures	Mitigation	Significance of Residual Impact	
Waterbird assemblage	Distribution of qualifying species	The study area is only used by very low numbers of waterbirds and marine birds and the dredging will not change the overall extent of foraging ranges (see Section 10.3.1). All associated potential impact pathways have been assessed as insignificant (see Section 10.2 and 10.3). As such no adverse effect on site integrity is anticipated as a result of potential impacts on the distribution of waterbird assemblages.	Best practice procedures and standard mitigation measures (Section 3.5).	-	-	No failure of target given the predicted scale of change

Table C.5 Favourable condition table for Severn Estuary/ Môr Hafren SPA - Wales

Summary of Natural England and Countryside Council Wales Conservation Objectives (NE and CCW, 2009)				Summary of EIA Findings Following EIA Significance Criteria				Initial Conclusions on Favourable Condition Target
Feature	Supporting Habitat	Attribute	Target	Potential Effect (and Section of ES)	Preventative Measures	Mitigation	Significance of Residual Impact	
Internationally important Annex 1 species: Bewick's swan	Saltmarsh	Habitat extent	At The Dumbles, no decrease in extent from 76 ha	See Atlantic Saltmarsh feature in Table C.3				
		Vegetation characteristics	Greater than 25% cover during the winter season.					
		Unimpeded sightlines at feeding and roosting sites	No increase in obstructions to existing bird sightlines. Areas of vegetation with an effective field size of >6 ha					
	Inter-tidal mudflats and sandflats	Habitat extent	At Frampton Sands, Waveridge Sands and the Noose, no decrease in extent from 980 ha.	See Atlantic intertidal mudflats and sandflats feature in Table C.3				
		Unimpeded sightlines at feeding and roosting sites	No increase in obstructions to existing bird sightlines.					
	Internationally important Annex 1 species: Bewick's swan	Population size	No less than 289 individuals [i.e. the 5 year peak mean between 1988/9 - 1992/3]	Not applicable as Area 531 does not constitute feeding or roosting habitat for this species. The majority of the estuary's population winter in and around the Wildfowl & Wetlands Trust (WWT) reserve at Slimbridge (e.g. Robinson et al., 2004), which is over 40 km from Area 531.				
		Proportion of biogeographic population	1% of NW European population					
		Distribution	No decrease in use of the number of sectors and their distribution established as baseline					
		Disturbance in feeding and roosting areas	No significant reduction in numbers or displacement of wintering birds attributable to disturbance from an established baseline.					

Summary of Natural England and Countryside Council Wales Conservation Objectives (NE and CCW, 2009)				Summary of EIA Findings Following EIA Significance Criteria				Initial Conclusions on Favourable Condition Target
Feature	Supporting Habitat	Attribute	Target	Potential Effect (and Section of ES)	Preventative Measures	Mitigation	Significance of Residual Impact	
Internationally important populations of regularly occurring migratory species and Internationally important assemblage of waterfowl assemblage of waterfowl	Saltmarsh	Habitat extent	No decrease in extent from 1,400 ha. At The Dumbles, no decrease in extent from 76 ha.	See Atlantic Saltmarsh feature in Table C.3				
		Food availability	Presence and abundance suitable saltmarsh food plants should not deviate significantly from an established baseline					
		Vegetation characteristics	Sward height and density throughout areas used for roosting should not deviate significantly from an established baseline					
		Unimpeded sightlines at feeding and roosting sites	No increase in obstructions to existing bird sightlines.					
	Inter-tidal mudflats and sandflats	Habitat extent	No decrease in extent from 15,000 ha. At Frampton Sands, Waveridge Sands and The Noose no decrease in extent from 980 ha.	See intertidal mudflats and sandflats feature in Table C.3				
		Food availability	Presence and abundance of suitable prey species should not deviate significantly from an established baseline					
		Unimpeded sightlines at feeding and roosting sites	No increase in obstructions to existing bird sightlines.					
	Shingle and rocky shores	Habitat extent	No decrease in extent from 1,500 ha.	Not applicable as there is no potential for an impact pathway between the dredging at Area 531 and the shingle and rocky shores within the estuary (see Section 8.2.2, Table 8.1 and Figures 8.1 and 8.3).				
		Food availability	Presence and abundance of suitable food species should not deviate					

Summary of Natural England and Countryside Council Wales Conservation Objectives (NE and CCW, 2009)				Summary of EIA Findings Following EIA Significance Criteria				Initial Conclusions on Favourable Condition Target
Feature	Supporting Habitat	Attribute	Target	Potential Effect (and Section of ES)	Preventative Measures	Mitigation	Significance of Residual Impact	
Internationally important populations of regularly occurring migratory species and Internationally important assemblage of waterfowl assemblage of waterfowl			significantly from an established baseline					
		Unimpeded sightlines at feeding and roosting sites	No increase in obstructions to existing bird sightlines.					
	Internationally important populations of regularly occurring migratory species And Internationally important assemblage of waterfowl	Population size	No less than 68,026 individuals in the assemblage [i.e. the 5 year peak mean between 1988/9 - 1992/3]. For individual species - no less than the 5 year peak mean between 1988/9 - 1992/3 detailed in Table 4.	The study area is only used by very low numbers of waterbirds and marine birds and there are no predicted impacts. All associated potential impact pathways have been assessed as insignificant (see Section 10.).	Best practice procedures and standard mitigation measures (Section 3.5).	-	-	No failure of target given the predicted scale of change.
		Distribution	No decrease in use of the number of sectors and their distribution established as baseline.	The dredging will not change the overall extent of the inter-tidal habitat which is available as a feeding resource for water birds (see Section 10.3.1) and there is limited prey resource for feeding waterbirds (See Section 10.3.3). The study area is only used by very low numbers of waterbirds and marine birds and the application is for no change is usage of	Best Practice Procedures and Standard Mitigation Measures (Section 3.7).	-	-	No failure of target given the predicted scale of change.

Summary of Natural England and Countryside Council Wales Conservation Objectives (NE and CCW, 2009)				Summary of EIA Findings Following EIA Significance Criteria				Initial Conclusions on Favourable Condition Target
Feature	Supporting Habitat	Attribute	Target	Potential Effect (and Section of ES)	Preventative Measures	Mitigation	Significance of Residual Impact	
Internationally important populations of regularly occurring migratory species and Internationally important assemblage of waterfowl assemblage of waterfowl				the area. All associated potential impact pathways have been assessed as insignificant (see Section 10.3). As such no adverse effect on site integrity is anticipated as a result of potential impacts on the distribution of Internationally important populations of regularly occurring migratory species and internationally important assemblage of waterfowl.				
		Disturbance in feeding and roosting areas	No significant reduction in numbers or displacement of wintering birds attributable to disturbance from an established baseline	Very low numbers of marine birds generally use the Inner Bristol Channel and Severn Estuary with the exception of gull species which would be expected to occur in moderate numbers in Area 531. Any dredging activity will take place at high water therefore there will be no disturbance to birds feeding and roosting. All	Best Practice Procedures and Standard Mitigation Measures (Section 3.7).	-	-	No failure of target given the predicted scale of change.

Summary of Natural England and Countryside Council Wales Conservation Objectives (NE and CCW, 2009)				Summary of EIA Findings Following EIA Significance Criteria				Initial Conclusions on Favourable Condition Target
Feature	Supporting Habitat	Attribute	Target	Potential Effect (and Section of ES)	Preventative Measures	Mitigation	Significance of Residual Impact	
				associated potential impact pathways have been assessed as insignificant (see Section 10.3). As such no adverse effect on site integrity is anticipated as a result of potential impacts on the distribution of Internationally important populations of regularly occurring migratory species and Internationally important assemblage of waterfowl.				

Table C.6 Favourable condition table for Severn Estuary/ Môr Hafren Ramsar

Summary of Conservation Objectives for Qualifying Features (Natural England and CCW, 2009)				Summary of EIA Findings Following EIA Significance Criteria				Initial Conclusions on Favourable Condition Target
Feature	Supporting Habitat	Attribute	Target	Potential Effect (and Section of ES)	Preventative Measures	Mitigation	Significance of Residual Impact	
Estuaries	Largely the same as that for the Severn Estuary / Môr Hafren SAC, however, the estuarine ecosystem designated as Ramsar Sites is smaller than that of the SAC as it is restricted to the terrestrial and intertidal areas and excludes all subtidal areas. See 'Estuaries' feature in Table C.2 for details.							
Migratory fish assemblage		Migratory access (Barriers to migration)	Water quality is sufficient to support migratory passage. Levels (for temperature, salinity, turbidity and pH, and dissolved oxygen) should comply with targets established under the EA Review of Consents and the Water Framework Directive.	See 'sea lamprey', 'river lamprey' and 'twaite shad' features in Tables C.2 and C.3				
			Flows from the rivers into the estuary must be sufficient to allow migration					
			No artificial barriers significantly impairing, adults from reaching existing and historical spawning grounds, or juveniles from moving downstream.					
		Population size	No decline in number of returning adults from established baseline					
		River populations	No decline in populations of the Rivers Wye and Usk					
		Prey species	No significant reduction in abundance of key prey species against an established baseline					
Internationally important populations of waterfowl and Internationally important assemblage of waterfowl	Saltmarsh	Habitat extent	No decrease in extent from 1,400 ha. At The Dumbles, no decrease in extent from 76 ha.	See 'Atlantic saltmarsh' feature in Tables C.2 and C.3				
		Food availability	Presence and abundance of suitable saltmarsh food plants should not deviate significantly from an established baseline					
		Vegetation characteristics	Greater than 25% cover during the winter season.					
			Sward height and density throughout areas used for roosting should not deviate significantly from an established baseline					
		Unimpeded sightlines at feeding and roosting sites	No increase in obstructions to existing bird sightlines. Areas of vegetation with an effective field size of >6 ha at the Dumbles (Bewicks swan)					

Summary of Conservation Objectives for Qualifying Features (Natural England and CCW, 2009)				Summary of EIA Findings Following EIA Significance Criteria				Initial Conclusions on Favourable Condition Target
Feature	Supporting Habitat	Attribute	Target	Potential Effect (and Section of ES)	Preventative Measures	Mitigation	Significance of Residual Impact	
Internationally important populations of waterfowl and Internationally important assemblage of waterfowl	Intertidal mudflats and sandflats	Habitat extent	No decrease in extent from 15,000 ha. At Frampton Sands, Waveridge Sands and The Noose no decrease in extent from 980 ha.	See Intertidal mudflat and sandflat' feature in Tables C.2 and C.3				
		Food availability	Presence and abundance of suitable prey species should not deviate significantly from an established baseline					
		Unimpeded sightlines at feeding and roosting sites	No increase in obstructions to existing bird sightlines.					
	Shingle and rocky shores	Habitat extent	No decrease in extent from 1,500 ha.	Not applicable as the predicted scale of change caused by the dredging activity is not expected to cause any potential impacts to shingle and rocky shores (see Section 5.4 and 8.3.1).				
		Food availability	Presence and abundance of suitable food species should not deviate significantly from an established baseline					
		Unimpeded sightlines at feeding and roosting sites	No increase in obstructions to existing bird sightlines.					
		Population size	No less than 68,026 individuals in the assemblage [i.e. the 5 year peak mean between 1988/9 - 1992/3] For individual species - no less than the 5 year peak mean between 1988/9 - 1992/3	See 'waterbird assemblage' feature in Tables C.4 .and C.5.				
		Distribution	No decrease in use of the number of sectors and their distribution established as baseline					
		Disturbance in feeding and roosting areas.	No significant reduction in numbers or displacement of wintering birds attributable to disturbance from an established baseline					

C.13 References

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