



Devon and Severn IFCA
Response to MMO Consultation for
MLA/2012/00259/6

5th April 2021

Introduction and Scope of Response

Devon and Severn Inshore Fisheries and Conservation Authority (D&S IFCA) is the statutory manager of sea fisheries from baselines out to six nautical miles in English waters as shown in Figure 1. The ten regional IFCAs have a shared vision to:

“lead, champion and manage a sustainable marine environment and inshore fisheries, by successfully securing the right balance between social, environmental and economic benefits to ensure healthy seas, sustainable fisheries and a viable industry.”

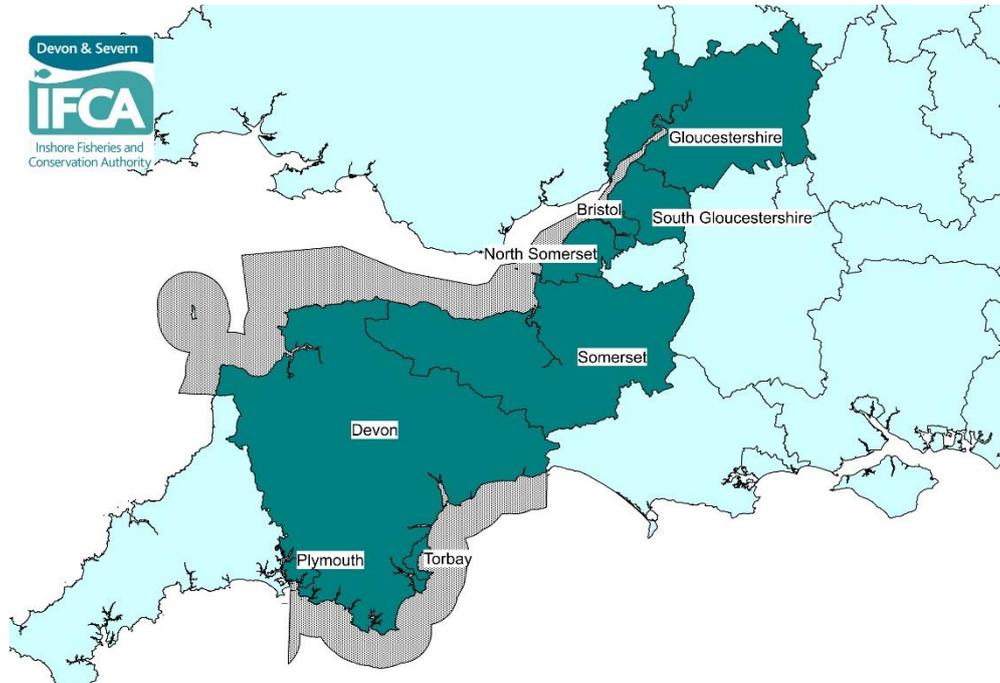


Figure 1. Map of Devon and Severn IFCA's District, showing in grey the sea area from baselines to 6nm (or the median line with Wales).

The powers and duties of all IFCAs are provided by the Marine and Coastal Access Act (MaCAA, 2009), in which the main legal duties are described in section 153: IFCAs must manage the exploitation of sea fisheries resources in their District, balancing the social and economic benefits of exploiting these resources with the need to protect the marine environment, or help it recover from exploitation. Under section 154 of MaCAA, IFCAs must seek to ensure the conservation objectives of any MCZs in the District are furthered. Additionally, under the Conservation of Habitats and Species Regulations 2017 (as amended), IFCAs are deemed to be relevant authorities for European Marine Sites (SACs and SPAs).

The D&S IFCA's response, below, focuses on sea fish and their habitats rather than migratory fish (salmon, sea trout, river and sea lamprey, twaite and allis shad and European eel). The Environment Agency is responsible for managing migratory fish and the relevant fisheries.

Summary of response

Several individuals and organisations have called for D&S IFCA to request that the MMO refers this application to Ministers. It is the understanding of D&S IFCA that for this request to be considered, the application must meet three criteria as follows:

- it falls in band 3 of MMO's licence charging scheme, covering the larger and more complex projects
- it is for an activity taking place wholly or partly in English waters up to 6 nautical miles from the coast
- it could have a significant effect and raise issues appropriate for examination in an inquiry

This application clearly meets the first two of these criteria, and raises issues appropriate for examination in an inquiry. Furthermore, it is D&S IFCA's view, as evidenced throughout this response, that pathways exist for significant impact on the marine environment, particularly that of the Severn Estuary Special Area of Conservation. It is also D&S IFCA's view that the application materials provided are not a sufficient basis for the Applicant to conclude that the proposed activities would not have a significant effect.

The remainder of this response outlines D&S IFCA's concerns regarding this application, and the additional evidence and assessments that D&S IFCA deems are important in order to make an informed response on this application. D&S IFCA requests (a) that the Applicant provide the additional evidence and assessments, and (b) that these documents form the basis of a subsequent round of consultation during which it would be possible, if necessary, for D&S IFCA or LPAs to request that the MMO refers the application to Ministers. If it is not possible to satisfy both conditions (a) and (b), then D&S IFCA considers this consultation response (dated 5th April 2021) to represent a formal request for the MMO to refer this application (reference MLA/2012/00259/6) to Ministers.

Though this response outlines a range of concerns regarding the application, the following represent the additional evidence and assessments that D&S IFCA deems important for subsequent consultation activities:

- (i) A thorough assessment, including through Habitats Regulations Assessment, of the potential impacts on the fish assemblage that is a sub-feature of the Severn Estuary SAC's Estuaries feature,
- (ii) All assessments to make use of more appropriate sediment sampling data, including more recent sampling (e.g. from the 2020 campaign) and sampling from appropriate depths, instead of relying on samples taken in 2017 and earlier,
- (iii) A more thorough assessment, including through HRA, of the potential impacts on *Sabellaria*,
- (iv) More thorough and conservative consideration of cumulative and in-combination effects,
- (v) Formal advice from Natural England on (a) the HRA provided for this consultation and (b) the updated HRA, and
- (vi) Appropriate consideration of alternatives to disposal at sea.

D&S IFCA would also like to request that, as the consultation process progresses, the Applicant provides a detailed response to each of the issues raised in this response, and how they have been dealt with.

Severn Estuary SAC fish assemblage and the Applicant's HRA

There is a lack of consideration of effects of underwater noise and sedimentation on the fish assemblage that is a sub-feature of the SAC's designated Estuary feature. This assemblage includes over 100 species of fish, including many commercially and recreationally important species that are known to be present in the vicinity of Hinkley Point and the proposed Disposal Site (e.g. cod, bass, whiting, thornback ray, dover sole, conger, dogfish, pouting and flounder). The lack of consideration must be addressed through more rigorous assessment, including of behavioural impacts and their consequences at the population level.

The revised assessment should be conducted for all activities but, to give an example for the disposal of dredged material, the Applicant states that the natural suspended sediment concentrations and currents are so large, and vary so widely on a tidal basis, that any changes resulting from disposal are dwarfed and become negligible. The Applicant goes on to state that "*This indicates that fish are able to tolerate the daily patterns of suspended sediment transport within the estuary.*" In this case, the Applicant does not appear to fully consider the implications of the daily and tidal *patterns* of sediment transport: fish movements in estuaries can vary on a tidal basis, and the Applicant does not assess possible dependence of fish on periods of lower suspended sediment concentrations that could be affected by the disposal of dredged material. The background and implications of this are expanded upon below.

The Applicant's assertions of high sediment loads, and the sediment concentrations most often quoted, appear to be based on near-bed loads, whereas (i) the sediment plume will affect all parts of the water column, and (ii) the mid-water and near-surface loads are much lower, especially on neap tides. In the EIA, the Applicant states that "*If it is assumed that the [disposal activity] will typically occur at current speeds which are on average around 1 m/s then the initial concentration in the plume at the disposal site, over and above background levels, will be around 1,800 mg/l. This means even the initial plume concentration at source is small compared to the natural variation in background suspended sediment concentration*". Though the Applicant is correct that this initial plume concentration is comparable with the natural *variation*, this plume concentration is still much greater than the observed surface and mid-depth suspended sediment concentrations at Portishead during the ebb on a neap tide (Figure 3.5; EIA) and is similar to surface suspended sediment concentrations at Portishead during the ebb on a spring tide (Figure 3.4; EIA). The Applicant states that disposal will occur on the ebb, so this is an important comparison that is not sufficiently highlighted or discussed in the Applicant's documentation.

On a related point, the Applicant stresses that the Disposal Site is an existing sediment disposal site, and that "*disposal activity is therefore already part of the baseline when considering fish movement/migration. Given the history of disposal at the Disposal Site, it can be logically assumed that fish in the Severn Estuary are unlikely to be affected by continued sediment disposal activity*". However, the existing disposal activity at this site is known to be declining, which could improve conditions for fish. There is an issue of shifting baselines and potential for environmental gain here (due to declining use of the disposal site) that the Applicant has not accounted for: recent impacts to the marine environment should not be used as justification for ongoing harm to the marine environment. Similar assumptions have been made about water quality in general at this Disposal Site.

An additional related example is the Applicant's statement that "*The spatial extent of the sediment plume following disposal will not cause a complete blockage for migration that covers the full width of the estuary. Rather, based on a worst-case calculation, only 8.5% of the estuary would experience elevated suspended sediment concentrations, leaving 91.5% with residual baseline conditions.*" However, this inappropriately assumes that the whole cross-section of the estuary is equally suitable for movement by all fish species, not accounting for habitat preferences that may exist (e.g. in areas closer inshore), or behavioural cues that otherwise cause avoidance of particular areas (e.g. avoidance of areas of high shipping intensity or other human uses of the marine environment).

Sediment assessments and use of best available evidence

This variation application has been made on the basis of data from 2017 and earlier on the level of contamination in the sediment to be dredged. The Applicant states that 2020 data has been collected but not yet analysed. The Revision 6 Report, document 100700648, states that "*A sediment sampling campaign in the proposed dredge areas has been carried out in 2020 to determine whether any change in possible contaminant levels of the sediment has occurred. These results will be made available to the MMO once published, however initial findings suggest contamination levels have not changed from those recorded in the 2017 survey*". Recent updates to the various documents submitted by the Applicant appear to suggest that some analyses of the 2020 data have been performed, but Appendix 9A of the Environmental Statement further states that samples from 2020 "[...] will be analysed to determine the concentrations of metals, organotins, polycyclic aromatic hydrocarbons (PAHs) and polychlorinated biphenyls (PCBs) and the results compared with Cefas Action Levels (MMO, 2015). Particle size analysis (PSA) will be carried out in accordance with NE Atlantic Marine Biological Analytical Quality Control Scheme (NMBAQC) best practice guidance". This suggests the relevant analyses have not been performed. D&S IFCA's position is that regulators and consultees should not be required to respond or make a decision without the best available up-to-date evidence.

The Environmental Statement also states that "*The 2020 campaign included sample collection at greater depths (up to 9 m)*" (paragraph 3.4.7). However, Appendix 9A of the same document states that samples were taken on the surface via 6 grab samples, and 29 core samples to maximum depths of 6 m/7.5 m. There are many inconsistencies such as this that need to be clarified so that the documents are not misleading, and so that appropriate comments can be made on the application. Furthermore, as the dredging will be carried out to bedrock, ideally the sediment sampling should also be carried out to bedrock using core samples. The Applicant has otherwise argued (in the Revision 6 Report, document 100700648) that "*the 2017 survey highlighted that any contaminants are located in the top layers of the seabed, which are constantly reworked due to the strong tidal regimes on site and so any contamination levels are unlikely to have significantly changed*". However, it is not clear how this conclusion can have been reached: Appendix 9A of the Environmental Statement shows that 2017 sampling only used surface grab samples, so it would not be possible to compare contamination of surface layers with those further down.

The 2017 sediment sample analysis showed that all proposed dredge areas had Effect Range-Low (ERL) exceedances of Low Molecular Weight (LMW) and High Molecular Weight (HMW) PAH. There were three minor Effect Range-Median (ERM) exceedances for LMW PAH, which occurred in surface sediments at outfall stations. All exceedances occurred in surface sediment, with the exception of station OS11-B, where the ERL for LMW PAH was

also exceeded at a depth of 1m (though it should be noted that, according to Appendix 9A of the ES, all 2017 sampling used only surface grab samples to an unknown depth).

In addition, for some parameters, Cefas Action Level (AL) 1 was exceeded. Cefas' guidance states that in a licencing context, dredged material with contaminant levels between AL1 and AL2 requires further consideration and testing before a decision can be made. Cefas AL2 values are among the least conservative of the OSPAR countries (i.e. they have the second highest values). If AL2 is used as the primary criterion for whether sediments are approved for disposal at sea then the Cefas AL2 has the potential for failing to prevent disposal at sea licences for sub-lethally or acutely toxic sediments. D&S IFCA was unable to identify any information in the Applicant's submission that compared the levels of arsenic, chromium, mercury, lead, nickel, and zinc found in samples at the dredge locations with the "baseline" levels at the proposed disposal site itself. As such, it is not clear on what basis disposal at sea has been deemed acceptable.

The guidance is clear that between Cefas Action Level 1 and 2 further consideration is required "*before a decision is made, typically through comparison with local background levels and consideration of the disposal operation*". This local comparison does not appear to have been completed, yet the Applicant's own documents state that the Severn Lower Water Framework Directive (WFD) body has failed in terms of its chemical status. Therefore, there needs to be more consideration as to whether it is appropriate to dispose of potentially contaminated materials in this area.

Furthermore, Table 3.7 of the Applicant's WFD assessment concluded that the activity would not disturb sediment with contaminants above Cefas Action Level 1. However, no consideration has been given to the fact that the activity is depositing sediments that exceed AL1, and that this is essentially the same process, potentially releasing chemicals into the environment.

Impacts on Sabellaria

D&S IFCA is concerned about the apparent lack of consideration given to the *Sabellaria* sub-feature of the Severn Estuary SAC (*Sabellaria alveolata* on variable salinity sublittoral mixed sediment (subtidal); *S. alveolata* reefs on sand-abraded eulittoral rock (contiguous subtidal and intertidal)). According to the relevant Regulation 33 advice package, the conservation objective to maintain the *Sabellaria* in favourable condition will be met when (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 processes necessary to support *Sabellaria* reef are maintained. It is also important to note (given potential impacts on multiple areas of Sabellaria) that the Regulation 33 package advises that the populations of Sabellaria within the Severn (subtidal, and intertidal) should be regarded as a metapopulation, and that the ability to contribute larvae to metapopulation is established as a key measure of the reef feature.

The lack of consideration of impacts on *Sabellaria* is particularly exemplified by the exclusion of *Sabellaria* from the HRA except when considering in-combination effects (which themselves are not dealt with thoroughly or conservatively enough). There are clear pathways for impact on *Sabellaria* from the dredging activity directly, from sediment plumes and from anchoring (and anchor wires) during the construction phase – including anchoring

by dredge vessels, gravel pontoons, barges and crew support vessels. These are not given sufficient consideration either alone or in combination.

It is clear from the Environmental Statement that pathways exist for dredging to directly impact the local *Sabellaria* populations, and the Applicant makes some attempt to address this. However, it should be highlighted that other projects in the Severn Estuary SAC have been more conservative (and appropriate) in their approach to avoiding impacts on *Sabellaria*. For example, a recent aggregate dredging proposal committed to a review of full-coverage side-scan sonar data prior to any dredging activity, and the establishment of non-dredging exclusion zones where *Sabellaria* was found to be present. The MMO should strive to achieve consistency across projects by demanding the same approach in this case.

In addition, there appears to be insufficient consideration of the potential impacts (on *Sabellaria*) of sediment plumes associated with the dredging activity. For example, previously-dredged areas are assumed to have experienced infill which will have to be re-dredged. The Applicant does not appear to consider that this material is likely composed of unconsolidated fine/ very fine silty sediment, and will therefore contain a large percentage of pore/interstitial water (the Applicants assumes that this maintenance dredge material is soft silt with some fine sand, though this is based on a 2009 BEEMS report; the use of this older data is questionable). The pore/interstitial water could be a major contributor to large dredge plumes when the dredging of those areas recommences. There is *Sabellaria* reef (both high and low percentage cover) in close proximity to the areas to be dredged which should be given greater consideration in this regard.

The high and low percentage cover *Sabellaria* reef is also proposed to be subjected to anchoring during the activities, as outlined in Appendix K of the Report to Support Variation of L/2013/00178. However, this Report and the HRA overlook important points: firstly, the scale of the proposed activities mean that it is unlikely that each anchoring location will be used only once (this is not made clear by the Applicant, but would create cumulative effects); secondly, the assessment of anchoring impacts should account for movement of the anchor on the seafloor (including during the hauling phase); thirdly, the assessment of anchoring impacts should also account for movement of the anchor chains/wires associated with vessel movements and changes in water levels as the tide changes.

A reason given for not disposing of dredge material locally (near to HPC) is that *Sabellaria* reefs are present within 3.5km of the intake and outfall structures. The Applicant states that *"Whilst not predicted to be adversely affected by the dredging works or construction itself, in-situ disposal of both the capital and maintenance dredge material in the vicinity could (potentially) affect these features"*. However, intertidal *Sabellaria* is known to occur within 300 m of the proposed Disposal Site boundary yet it is assumed not to be affected. More thorough assessment and explanation of this discrepancy is required, though it is clear that the Applicant assumes that potential sediment plumes will be insignificant against the high background levels of turbidity. Indeed, on this basis, the Applicant's EIA states that *"It is normally the case that numerical modelling is essential to understanding the effects of sediment plumes arising from dredging or disposal, but at this location the use of numerical modelling is not necessary to identify that plumes from the proposed disposal activities will not be identifiable against the background turbidity"*. D&S IFCA maintains that this assumption is not sufficient to conclude no significant effect on intertidal *Sabellaria* and, by extension, the health of the *Sabellaria* metapopulation and SAC site integrity. This is particularly true because, although *Sabellaria alveolata* has been reported to survive short-term burial for days and even weeks in the south west of the UK (as a result of storms that

altered sand levels up to 2m), they were killed by longer-term burial. The disposal activity is proposed to occur for several months, and the implications of this do not appear to have been considered, nor do the implications of burial by sediments other than sand that are present in the material proposed to be dredged.

Finally, the Applicant appears ready to highlight the “cyclical” and “dynamic” nature of reef formation when dismissing potential impacts of dredging, sediment plumes and anchoring (in the Environmental Statement), but does not appear to consider the corollary of this: that areas seen to have low or no cover of *Sabellaria* during previous surveys may have built up more substantial *Sabellaria* cover prior to dredging and anchoring. Overall, the Applicant’s consideration of impacts on *Sabellaria* are not sufficiently conservative or precautionary.

D&S IFCA has taken a precautionary approach to the management of fishing activities throughout its District, including in the Severn Estuary SAC, where the operation of demersal towed gear is prohibited. The available evidence highlights the impact of towed demersal gears as a potentially significant threat to *Sabellaria*. Although different fishing gears are likely to have variable levels of impact, and there is limited peer-reviewed empirical data demonstrating impacts, these factors were not considered to outweigh a precautionary approach to management. The precautionary approach to management was deemed particularly apt given the context of known declines of this feature in the OSPAR region, and the dynamic nature of the distribution of *Sabellaria* reef, which increases uncertainties associated with spatial management of activities to avoid impacts on the sub-feature. Though the use of demersal towed gear in the Severn Estuary SAC was thought to be low, on the basis of the evidence reviewed, D&S IFCA concluded that the prohibition of towed demersal fishing activities would prevent the deterioration of this sub-feature. Therefore, D&S IFCA prohibited the use of demersal towed fishing gear in the Severn Estuary SAC via the Mobile Fishing Permit Byelaw.

Another example of the precautionary approach that is required, including in approaches to impacts on *Sabellaria*, is in D&S IFCA’s approach to assessment of the potential impacts of bait digging activities on *Sabellaria*. This comparison also highlights the non-precautionary approach taken with respect to *Sabellaria* in the Applicant’s documents. All existing and potential commercial fishing activities must be managed in accordance with Article 6 of the Habitats Directive; this includes digging for polychaete worm bait, which are a sea fisheries resource. Anglers and commercial diggers dig for polychaete worm bait on the shores of the Severn Estuary, and there was some concern that this exploitation of sea fisheries resources may impact on intertidal *Sabellaria* if individuals were to trample or dig on *Sabellaria* reef to access bait or digging sites. As a result, D&S IFCA conducted bait digging surveys during 2012–2015. Data from these surveys were used to inform HRAs for bait digging in the Severn Estuary SAC and SPA. The purpose of these HRAs was to assess whether or not in the view of D&S IFCA the level of effort of digging with forks had a likely significant effect on the interest features of the Severn Estuary SAC or SPA. The HRAs concluded that bait digging had no adverse effect on the integrity of the EMS interest features. In April 2019, Natural England provided D&S IFCA with advice on the HRAs, highlighting a potential impact pathway at Hinkley Point where *Sabellaria* was recorded in the lower shore during the Hinkley monitoring programme. Digging for polychaete worms occurs in the coarse sediments and boulders at this location, which could have the potential to interact with the sensitive reef formations. Natural England therefore suggested additional work was required to further evidence D&S IFCA’s conclusion that the level of activity is not sufficient to significantly affect the feature. Although this site was included in previous bait digging survey

work carried out by D&S IFCA, sampling effort was relatively low. Consequently, D&S IFCA have carried out additional bait digging surveys in order to increase confidence in the assessment of no likely significant effect of bait digging *Sabellaria*. This precautionary approach to a small-scale activity appears to be at odds with the approach taken, and conclusions reached, by the Applicant in relation to potential impacts of the proposed activities on *Sabellaria*.

Updated HRA and advice from Natural England

The HRA (and other relevant documentation) should be revised to include more appropriate consideration of potential impacts on the fish assemblage, *Sabellaria*, and in-combination impact pathways (including those highlighted throughout this document). The revised HRA should be accompanied by formal advice from Natural England, in order for consultees to be as informed as possible. The current variation application is not accompanied by Natural England's formal advice, which limits the ability of consultees to make informed comments on the application.

Alternatives to disposal at Portishead licenced disposal site

D&S IFCA notes that the information which should be included in an Environmental Statement (ES) includes the reasonable alternatives that the Applicant has studied with a comparison of their environmental effects. The Marine Works (EIA) Regulations 12(2)(b)(iv) state that an ES should include "*a description of the reasonable alternatives studied by the applicant which are relevant to the project and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the project on the environment*".

The alternatives to disposal at the Portishead licenced disposal site have not been discussed thoroughly enough to enable full consideration of this proposal. In particular, terrestrial options for recycling, reuse or disposal should be explored. These options, for UK marine dredge wastes classified as containing low to medium contamination, include shoreline re-charging, land reclamation, creation of coastal wetland habitats, remediation of marine dredge sediments and subsequent horticultural/agricultural use, and storage of dredge wastes classified as highly contaminated in bunded waste storage sites, where if necessary leachate can be monitored, and the solid material could be capped with impermeable material such as clay.

D&S IFCA recognises that it is a condition of the Applicant's DCO that the disposal happens within the Severn SAC. D&S IFCA also notes that the South West Marine Plan states that disposal of sediments in the vicinity of dredging activity "*aids in retaining the material within the same sediment cell. This is a useful way of managing sediment budgets within estuaries, and therefore maintaining environmental conditions and habitats for native species*". However, in this case D&S IFCA considers that it would be appropriate for this DCO requirement to be revisited, and would suggest that the Applicant submit a change request to the DCO rather than pursuing disposal at sea, which should always be the last resort, as outlined in the waste hierarchy of the Waste Framework Directive.

D&S IFCA's rationale for this revised approach relates to concern over impacts outlined above, as well as the lack of consideration apparently given to the Annex I habitat H1110, *Sandbanks which are slightly covered by sea water all the time*. The objectives for feature H1110 include the maintenance of the variety and distribution of sediment types, and the maintenance of the gross morphology of the feature (including its depth and profile). By the

nature of dredging and disposal processes, these objectives will be directly impacted. When site integrity and functionality are considered, alongside the protection of the overarching 'estuary' feature it is also clear that this site should be given the same protection as the rest of the EMS.

D&S IFCA has previously expressed concern (and remains concerned) that aggregate extraction from the Severn Estuary SAC, licenced on a much larger scale than the dredging activities proposed here, risks significant impacts to this designated feature. As this aggregate extraction (permanent removal of sediment from the system) has been licenced, it appears that the impact to H1110 has been deemed to be non-significant by the MMO/Natural England. On that basis, there needs to be better consideration of whether the smaller amount of material dredged under this varied licence (L/2013/00178) actually needs to be retained within the SAC via disposal at a licenced disposal site. This reconsideration is particularly urgent given the potential harm arising from the disposal.

Table 3.10 of the Applicant's Water Framework Directive Report states that "*The sediment that is being disposed of at the [Portishead] Disposal Site, is the same sediment type that is already present. Critically, the provenance of the sediment being disposed is also derived from the same sediment cell, further downstream within the Severn Estuary.*" However, the proposed removal of thousands of tonnes of dredge wastes from Bridgwater Bay to be disposed of at Portishead is in fact transferring a large volume of material which had been sequestered (removed from the system via consolidation in lower layers of seabed) and injecting it into a system where it was/is not naturally present, particularly by depositing previously sub-surface clays, claystones etc on the surface of the seabed.

On a related note, there are inconsistencies between the documents submitted by the Applicant regarding erosion of deposited materials such as claystones and mudstones. The Applicant's ES states that "*some of the capital dredge material will be dredged by a backhoe dredger and may therefore be deposited as consolidated lumps. If this occurs, there is a potential for 'clumps' to initially form at the seabed which may not breakdown or disperse for a number of tides*". This suggests a reasonably short timeframe for erosion and dispersal. However, the Applicant's EIA states that claystones, mudstones *etc.* may persist for up to a year. The Applicant's WFD report than states that these materials may take up to ten years to erode and disperse. This is concerning on two fronts: firstly that the discrepancies allow for misleading statements to be made about the environmental effects of the disposal activity and, secondly, that the deposition of these materials (which may persist for 1 – 10 years) on sandbanks presents a real risk of impact to the sandbanks that are a designated feature of the SAC.

Prevention of interference with other legitimate uses of the sea

The Applicant's EIA states that "*regular placement of hundreds of thousands of wet tonnes per annum of muddy cohesive material has been undertaken at the Portishead Disposal site (LU070) for decades (Table 3.1) with no adverse observations reported, either on ecology or on navigation*". Local commercial angling charter vessels operate from nearby towns, including Portishead. Charter vessel operators have expressed concern at the impacts of dredging and disposal activities nearby, which they feel have negatively impacted catches in previous years. Because of the unsatisfactory coverage of potential impacts on fish in the ES and the potential for changes in estuaries to impact the health of sea fisheries, D&S IFCA is not wholly satisfied that the proposed dredging will not interfere with fish populations or the existing small-scale fishing activities that depend on them.

Relevant issues associated with the Acoustic Fish Deterrent

The Applicant is known to be facing ongoing issues with Acoustic Fish Deterrent (AFD) technology and the Applicant's Water Discharge Activity permit variation application. D&S IFCA is concerned that this has not been acknowledged but could be important for (a) cumulative effects and the in-combination assessment (below), (b) the time taken until intake heads are installed, and therefore the amount of ongoing dredging that may be required, and (c) the necessity for dredging at all if the Applicant were to consider alternative cooling methods (ie. not direct once-through cooling).

Cumulative effects and in-combination assessment

As outlined in the ES that accompanied the HPC Development Project, cumulative effects are defined by the Institute of Environmental Management and Assessment (IEMA) as: "... *the impacts on the environment which result from incremental impacts of the action when added to other past, present and reasonably foreseeable future actions...*". By this definition, used throughout by the Applicant, the Applicant should be accounting for issues that may arise through changing timeframes and approaches to mitigation that are associated with ongoing discussions about the AFD, as well as in-combination effects that may arise through use of intake heads without AFD technology (no assessment has been made of changes in combination with Water Discharge Activity permit variation application).

For example, Table 11.1 of the Environmental Statement outlines the HPC sub-projects that have the potential for Project-wide cumulative effects with the Proposed Scheme. This table outlines relevant sub-projects including variations to the existing Marine Licence; however, this table is incomplete because the Applicant will be planning to vary it in relation to ongoing processes regarding the AFD technology on the intake heads. The Applicants are seeking to vary their existing permits to remove the requirement to install AFDs. This process is ongoing and subject to public inquiry via PINS in June 2021. Therefore it seems certain that the Applicant will seek to further vary this Marine Licence (L/2013/00178) either due to (i) removal of AFD (Activity of this Licence), or (ii) delays to installation of the intake heads arising through the ongoing processes regarding the AFD. These delays could give rise to a need to dredge (and dispose of dredged material) for a longer period of time than is allowed for in this application.

Given the Applicant's intention to vary the WDA and related permissions, it is D&S IFCA's position that applications such as this Marine Licence variation should not receive consideration at least until the WDA permit has been finalised following the PINS inquiry scheduled for June 2021. Only then can the cumulative and in-combination impacts, and overall intentions of the Applicant (regarding other activities specified in this Marine Licence, L/2013/00178) be fully considered.

The Applicant should also provide evidence from Bristol Port Company on proposed deposits to the Portishead disposal ground this year; this is required in order to properly consider the in-combination effects, including total additional sediment loadings. The Applicant should also be clearer on what the maximum disposal loads per day will be: the Applicant states an *average* of 2 SHB or 1 TSHD loads per day, but not the maximum.

Table 11.4 of the Environmental Statement highlights the potential for in-combination effects with lots of different projects/ aspects of the proposed project, many of which suggest minor adverse effects. There does not appear to be an overall assessment for the impact on site

integrity of the proposed project in combination with all other ongoing/planned projects at the same time.

In addition, the cumulative/in-combination assessment in relation to UXO clearance is currently incomplete and not sufficiently conservative.

Post-licencing monitoring requirements

If the dredging and disposal activities are allowed to occur, there needs to be frequent monitoring before, during and after the activities in order to allow adaptive management. This should include monitoring of suspended sediment loads in areas downstream and shoreward of the dredging and disposal sites, with cessation of activity if past a threshold sediment level based on ecological resilience. The proposed monitoring programme should be set out in detail by the Applicant (including timeframes, locations and depths, and parameters tested) and available for consideration by consultees in a subsequent consultation before approval by the MMO.

Further issues for clarification

Installation of gravel is proposed to protect against scour around the water abstraction infrastructure. Clarity is needed on how long this gravel is expected to remain *in situ*, and whether this material will need to be refreshed, replaced or otherwise replenished over the lifetime of Hinkley Point C. This is an important consideration for the current application as it affects ongoing cumulative/ in-combination assessments.