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Katherine Blakey, MMO

21/04/2020

MLA/2019/00457 & MLA/2019/00448 Area 531 North Bristol

Dear Katherine,

Thank you again for arranging the recent telecon with representatives from CEFAS and Natural Resources Wales, held to (i) discuss the areas of conflicting advice surrounding fisheries within the consultation responses to MLA/2019/00457 & MLA/2019/00448 (aggregate dredging at Area 531 North Bristol Deep), and (ii) enable the MMO to provide the applicant with clear feedback as to changes which may be required. As highlighted, there were inconsistencies between the recommendations provided by Cefas and NRW, and those provided by me on behalf of Devon and Severn Inshore Fisheries and Conservation Authority (D&S IFCA). These inconsistencies primarily related to the evidence used in the ES for the MLAs: whereas both CEFAS Fisheries and NRW have said that

(a) the evidence base is appropriate,
(b) best available resources have been used to inform the EIA, and
(c) the descriptions of potential impacts and effects on fisheries and fish ecology are accurate and appropriate,

D&S IFCA highlighted concerns relating to the adequacy of the Environmental Statement. Our primary concerns relate to the interpretation of existing evidence, including the lack of critical review of the biases of existing data and how these data apply to the proposed site. Our consultation response stated that the ES provides very limited critical review of the primary data sources, despite the implicit sampling biases and that the survey data used is insufficient to describe the Area 531 fish community adequately. We also raised concerns about the lack of consideration given to the Annex I habitats (particularly H1110).

During our recent telecon, D&S IFCA were asked to

(i) identify whether any species known to inhabit the area had not been identified in the Environmental Statement,
(ii) determine whether recent Environment Agency Transitional and Coastal waters (EA TraC) monitoring data are sufficient evidence for the more recent state of the local fish community (given that other data referred to in the ES were approximately 20 – 50 years old), and
(iii) re-consider the evidence presented, and come back to the MMO with confirmation of D&S IFCA's subsequent response.

I will respond to these points below, which should be read in conjunction with our initial consultation response:

(i) Overall, the ES has used a range of evidence to characterise the marine fish community in the Severn Estuary and Bristol Channel. In so doing, the ES appears to have identified the species known by D&S IFCA to inhabit the area.

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However, several of these species were not detected by site-specific surveys, but have been identified through consultations with the literature and local fishermen (e.g. conger, rays, herring). This is problematic because it highlights that the survey methods used in areas near Area 531 have not been sufficient to accurately or reliably characterise the fish community. In addition, it seems likely that the high inter-survey variation in fish catch reflects not only inter-annual variation in the composition of the community, but also low reliability of the methods used in characterising the community.

(ii) D&S IFCA's initial consultation response critiqued the ES's reliance on evidence on the fish community from approximately 20-50 years ago. During the telecon, CEFAS highlighted that some EA TraC data has also been used, with data from as recently as 2017, and D&S IFCA were asked to reconsider the utility of this evidence. TraC data from Peterstone (Wales, 5 km north of Area 531) are derived from otter trawls that target bottom-dwelling fish, while TraC data from Sand Point (8 km south of Area 531) are derived from fyke net sampling. Over the last 15 years the TraC monitoring has had relatively large catches of e.g. Thornback ray (noted as a target species by fishers in Area 531, and listed as Vulnerable), in addition to commercially/ecologically valuable species such as Dover sole, cod and bass. These methods and sampling locations are perhaps not ideal for characterising the fish community present in and near to Area 531, but have caught many of the species sampled by other methods near to Area 531 (e.g. in the North Middle Ground). However, there is high interannual variation in catch composition and species' abundances and, due to the nature of the sampling methods, there is little scope for understanding seasonal variation in community composition. Again, these problems may contribute to low accuracy and reliability in characterising the fish community of Area 531, and the (seasonal) importance of the area to marine species.

(iii) Since our telecon, I have been in direct contact with Ed Skinner (Resources Project Manager at Tarmac) to request several documents which were cited in the ES for these MLAs. Having received and reviewed these additional documents, and conducted further research, I can confirm that D&S IFCA's concerns relating to the adequacy of the evidence used for the ES have not been lessened.
The ES does not consider spawning herring as a receptor, and refers to a method statement produced by the Marine Aggregate EIA Working Group, claiming that "the method statement for herring states that the south-west marine aggregate region (including Bristol Channel and Severn Estuary) should not be considered in a further detailed herring assessment due to a lack of spawning populations and suitable breeding ground". The ES then cites a MarineSpace Ltd *et al.* (2014) report to support this claim. The MarineSpace Ltd *et al.* (2014) report with which D&S IFCA have been provided does not contain any reference to herring in the south-west. Furthermore, D&S IFCA are concerned that the Marine Aggregate EIA Working Group method statement is based primarily on data from North Sea and south coast herring populations, and does not account for herring spawning locations local to the Severn (for example, Milford Haven). There is also recent evidence suggesting the presence of additional local spawning stocks and locations throughout the Severn area, including Minehead and Bridgwater Bay (D. Clarke, Swansea University). In addition, the MarineSpace Ltd *et al.* (2014) report states that "this regional study has looked at data at a macro-scale

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that does not allow the necessary resolution to actually identify specific discrete and individual areas of seabed with the potential to act as Atlantic Herring spawning beds. This is mainly because Atlantic Herring spawning beds are typically small localised features." The report goes on to say that "… a study undertaken by NOAA records size ranges of Atlantic spawning beds between 0.067 km^2 and 1.39 km^2 (Reid *et al*., 1999). A second study reported for Irish waters by The Marine Institute, Fisheries Ecosystems Advisory Services, cites that the smallest beds were found predominantly in the Celtic Sea, where nine beds were not larger than 0.1 km^2. The largest bed in the Celtic Sea was recorded as 36 km^2." The largest spawning sites are unlikely to be contiguous beds given the specific spawning habitat requirements of Atlantic Herring.
The ES often cites the Ellis *et al.* (2012) report in regard to spawning and nursery habitats. Our consultation response highlighted that the underlying evidence in the Ellis *et al.* (2012) report is likely insufficient for Area 531 and its surroundings, and Coull *et al.* (1998; cited in the ES) states that "spawning distributions are under continual revision. It follows that these maps should not be seen as rigid, unchanging descriptions of presence or absence": this study recognises that spawning grounds can vary year-to-year and season-to-season.
This evidence, especially the small size of herring spawning grounds, suggests that more widespread and detailed surveys are required in order to claim that an area is or is not important for herring spawning. Of course, such surveys (e.g. grab samples and/or test dredges) should be performed at the correct time of year to detect either autumn, winter or spring spawning stocks; previous site-specific surveys have not adequately done this. If spawning or nursery ground is indeed present in the area, the primary concern relates to seabed removal and resuspension of sediments. Herring can be considered to be very sensitive to such impacts given that their eggs are deposited *in situ* on the seabed and require specific substrate for spawning. Consequently maintaining spawning habitat integrity could be a concern.

D&S IFCA are also concerned that insufficient regard is given to the sandeel population thought to exist in and around Area 531. The ES states medium to high confidence in the fish ecology impact assessment (Section 9.4); this is despite the fact that the ES identified a potential adverse impact on sandeel (for which the nearby North Middle Ground area is a spawning and nursery ground) and the ES recognised that there is "limited specifically collected data [for sandeel in the Severn Estuary]". These facts appear to be at odds with high or even medium confidence in any assessment of fish ecology impacts.

The Henderson and Bird (2010) paper cited by the ES shows that around 20% of marine species were undergoing rapid abundance changes, possibly linked to climate change; similarly, Henderson *et al.* (2011; also cited by the ES) suggested rapid changes in the Severn Estuary and Bristol Channel fish assemblages were occurring in response to rising sea temperatures. More recent evidence has also demonstrated distribution shifts for marine species around the UK in response to climate change (e.g. doi: 10.14465/2020.arc16.fsh & 10.14465/2020.arc20.fis). We are therefore in a position where the effects of activities must be scoped or predicted relative to a seemingly unstable system that is in a state of flux. This uncertainty, combined with the uncertainty surrounding the sparse ecological data utilised by the ES and high inter-sample variability, suggests that more ecological research is required to adequately characterise the fish community ecology of the target site and its surroundings.

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It is also worth highlighting that the Ellis *et al.* (2012) report cited in the ES clearly states that "If biological data layers are to be used for spatial management in the future, there needs to be a process whereby data layers are updated periodically" and that "Dedicated field surveys to more accurately delineate the current distributions of the rarest fish species and their important habitats are needed, especially if spatial management is deemed appropriate for their conservation and management".

Additionally, and importantly, in Table A.1 (Appendix A.2) of the ES (which shows the Consultation log for joint MMO/NRW scoping opinion) it is stated that "Additional sampling must be considered to fill knowledge gaps, if the evidence base is determined to not be sufficient to characterise the fish ecology at the site." D&S IFCA recommend that the evidence base is not sufficient to characterise the fish ecology at the site, and that additional sampling is required to fill knowledge gaps. Specifically, targeted and seasonal sampling is required to being to better describe the benthic, epibenthic and demersal marine assemblage, and to establish the importance (or otherwise) of the habitat for these species (including sandeel) and any pelagic species that may use the area (for example, as spawning habitat for herring).

We hope that this has helped to clarify our position, but we would welcome further comment and opportunity for discussion, particularly where CEFAS and NRW are unable to support these statements.

Yours sincerely,

James Stewart
Senior Environment Officer