

## **VIID Regional Fisheries Groups (RFGs) collaborative science questions, actions and MMO/Defra/Cefas responses**

Three questions were posed by the VIID group during the April RFG meeting, these are detailed here along with the answers and suggested next steps.

- 1. *Can you share the work Cefas have been doing on the effect of windfarms on fish abundance / migration please? This was raised during the VIID meeting. Is this something that the RFG for VIID and perhaps IVc could contribute to?***

### **CEFAS Response**

Though not specific to windfarms, the FSP (Fisheries Science Partnership) did commission a report into industry generated data (document attached: Report\_Strategy for Industry generated data\_2016-17.pdf).

A recent Oceanography Special edition focussed on windfarms and fisheries – this is open access and has some UK context <https://tos.org/oceanography/issue/volume-33-issue-4>.

The papers in the issue entitled: *The impact of offshore wind farms on marine ecosystems: A review taking an ecosystems services perspective* and *Sustainable co-location solutions for offshore wind farms and fisheries need to account for socio-ecological trade-offs* provide background to the issues.

Beyond the RFG discussions, the fishing industry are voicing their concerns on the scale of future site designations:

[Can Fisheries Co-exist with Offshore Wind in the Race to Carbon Net Zero? | NFFO](#)

### **Suggested next steps:**

Further discussion would be useful; as well as confirming which aspects of fisheries the question relates to – the fishers or the fish.

- 2. The VIID group mentioned that squid fishery had sufficient scientific data on it but needed better management can you advise a way forward with this? Can you share what scientific data you have and suggest how we could use it most effectively?**

### **CEFAS Response**

Cefas' scientists are working on improving species level identification for the future but our historical data-holdings do not have good species level identification which hinders formal scientific assessment. Further discussion would be useful.

**Suggested next steps:** Defra/MMO to meet with Cefas to understand what data is available and how this will be improved going forwards.

- 3. Can any further work be done in VIID to increase the quota allocation for Undulate Ray and / or to remove or adjust the size restrictions? The abundance of fish on the ground is seen to be disproportionate to the quota available and the Undulate Rays are seen as a pest, predating on other stocks such as Thornback. The group said they would like to know more about predator prey relationships. Is there any work on this that we can provide them with?**

### **CEFAS Response**

The size limits that were associated with this stock, following an STECF review of the species and its fisheries could be reviewed if required, given that the stock is considered to be increasing.

In terms of fishing opportunities, ICES currently undertake a biennial Category 3 assessment (using survey data to provide a stock-size indicator) of undulate ray. Given the increasing stock-size indicator, ICES has advised that landings could be increased. The next stock assessment is due in 2022 and, in the absence of alternative assessments, it would be better to wait for the outcome of the next ICES' assessment (due October 2021) before recommending changes to the quota.

In terms of the dynamics of the undulate ray stock, including predator-prey interactions, a collaborative industry-science project could usefully appraise this, given that there are no robust or published studies of the stomach contents and feeding habits of undulate ray in UK waters. Such work could be either a short-term, standalone project, or subsumed within a wider project on Channel skates and rays and/or sole.

### **Suggested next steps:**

**Wait for the next stock assessment to be completed in 2022 and Cefas/MMO/Industry work together on developing a standalone project to further understand the undulate ray stock.**

A study to collect stomach contents of undulate ray could be developed. It would need the partial charter of commercial fishing vessels (and probably some extra scientific quota) in order to facilitate appropriate sampling. Such a project could usefully collect other relevant biological information from such fieldwork.

***Could Cefas advise whether there is any merit in conducting survey work into the abundance of NS sole in the inshore of area IVc? It is alleged by fishers, and appears true when looking at up take data that there has been a significant reduction in sole on the inshore grounds in the past 3-4 years. Is this something you think could be investigated further and if so how? Could we involve the RFG for Area IVc in the investigation?***

**Note – response relates to 7d too.**

### **CEFAS Response**

The issue raised for sole in the southern North Sea has also been raised in the adjacent eastern Channel (Division 7.d), with both areas subject to a recent desk-based review. The decline of sole in both areas seems to be particularly pronounced in quarter 2 (Q2), which is also the sole spawning season. The landings of sole decreased by 76% and 74% in Q2 and Q3 respectively in Division 7.d since 2010. This recent project highlighted the various issues that could usefully be researched in a dedicated project, including:

(a) Implementation of a commercial survey. Given the lack of fishery-independent data in Q2, a survey on a chartered commercial vessel (inshore beam- or otter-trawler rigged for flatfish) to collect data on sole abundance, distribution, condition etc. within the UK EEZ could be considered. Such a survey could be augmented with partial charter/observer surveys on inshore sole netters to collect additional data.

(b) Ecosystem considerations. The surveys described above may also provide a platform for collecting data on other ecosystem components which may have interactions with sole (e.g. examining the stomach content of potential predators such as undulate ray; abundance of spider crab). Additional (partial charter) trips on commercial vessels to collect further, site-specific information on sole and potential predators could also be considered, in order to augment the broader-scale survey approach.

(c) Data on the eggs, larvae and young (0-group) of sole in the inshore coastal waters off England. There is a lack of contemporary data on the earlier stages of sole in both Divisions 4.c and 7.d, which limits recruitment information for the assessment (current recruitment indices are supplied by data from the French coastal surveys only) and has been highlighted by ICES. To provide relevant data for sole, any ichthyoplankton surveys would need to be conducted in the latter half of April and during May. A reintroduction of the Young Fish Survey (YFS) in the coastal waters of Divisions 7.d and 4.c (August-September) could enable the collection of contemporary data on early life-history stages and potentially contribute to recruitment indices.

Such future work could usefully be discussed with the RFG for Area 4.c with a view to collaboration.

**Suggested next steps:**

Data collection on the eggs, larvae and young sole (option c above) is the better option but is budget dependent, requiring a minimum of three year's compared to (a) and (b) which could be completed in a year.

To work towards this it is suggested in the first instance a one-year project to (i) review current relevant data and design a potential ichthyoplankton survey, and (ii) trial the utility of using a chartered vessel to collect such samples (i.e. sample only a small part of the area in order to determine whether inshore vessels could serve as platforms for this) could be considered.

Note - these surveys are required at different times of the year, and so cannot be combined in one piece of fieldwork. Ichthyoplankton surveys would need to be done from April-May-early June (so budget needs to be in place across FYs). Young Fish Surveys would be best in September time, when young sole have recruited to the grounds.