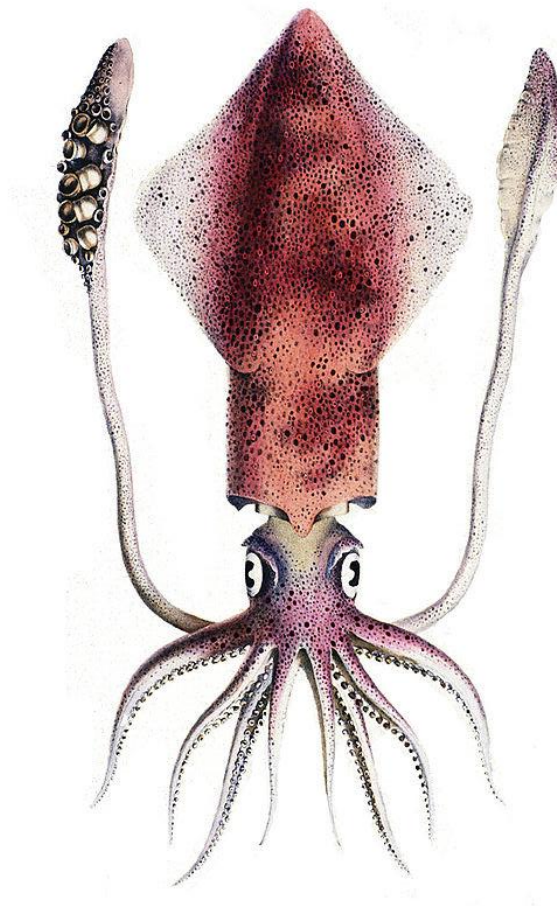


# Fisheries Research & Management Plan

## Summary of Recommendations and Next Steps for



## Squid in the North of Devon & Severn IFCA's District



Inshore Fisheries and  
Conservation Authority

**NORTH  
DEVON  
BIOSPHERE**



**European Union**

European Structural  
and Investment Funds

## Fisheries Research & Management Plans

As part of the [North Devon Marine Pioneer](#), the Devon and Severn Inshore Fisheries and Conservation Authority (D&S IFCA) and the North Devon Biosphere have produced an initial series of innovative Fisheries Research & Management Plans (FRMPs) for five commercially important species/ species groups in the north of D&S IFCA's District.

The FRMPs use existing information and stakeholder engagement to investigate whether a localised, ecosystem-based approach to management is possible and beneficial for each species. Each plan makes a series of research and management recommendations that need to be addressed to facilitate a transition to the most appropriate management approach for the fishery.

### Squid

Several species of squid are commonly found and fished in UK waters, including along the coast of North Devon. The most commercially important of these species are the veined squid (sometimes called the long-finned) and the European squid.

It is not currently possible to carry out a detailed assessment of squid fisheries or the status of stocks because of the lack of information on the ecology and distribution of squid species in the Northeast Atlantic. There is currently no restrictive management in place for squid, which are not heavily fished; however, this will need to be reviewed as squid fisheries are expected to expand as traditionally targeted fish stocks continue to decline.

Squid stocks around the UK are largely unexploited and there are currently only a few targeted squid fisheries. There is a squid fishery in the Bristol Channel off North Devon, but this has declined in recent years and fishers have reported a drastic fall in squid numbers in the area. Fishers say they continue to look for and attempt to catch squid each year, but the fishery has almost disappeared.

### Recommendations

Recommendations have been grouped into 'research' and 'management'. Many of the recommendations are interconnected and would need to be delivered as a whole for them to be effective. In general, it is likely that funding will need to be sought by relevant parties to enable the research. Specific details should be discussed early in project development.

The detail of each recommendation and the supporting evidence are available in the full FRMP. The research recommendations are also available on D&S IFCA's website and will be shared periodically with interested parties to encourage collaborative research between fishers, scientists and managers that is relevant to management and policy.

## RESEARCH

### **Establish detailed knowledge on squid stocks, ranges, and movements – *High Priority***

There is a lack of ecological knowledge regarding squid stocks at all scales in the UK. This makes squid particularly difficult to manage as fisheries need to be directed without much understanding about how fishing effort impacts the stocks. As squid fisheries are expected to

expand in the future, it is essential to fill these knowledge gaps to inform fisheries management and ensure future exploitation is sustainable.

#### **Next steps:**

- Any future monitoring or research should be designed in collaboration with IFCA and fishers to ensure local knowledge is utilised, and with Cefas and ICES to ensure the data is suitable for input to stock assessments.
- Findings can help inform future squid Fisheries Management Plans (FMPs), and contribute to delivery of the ecosystem and scientific evidence objectives of the Fisheries Act 2020.

### **Establish understanding of relationship between environmental factors and squid distributions – *High Priority***

Understanding how squid populations react to environmental processes and conditions and the impact this has on squid distributions is essential for managing the species. These knowledge gaps must be filled before the fisheries expand so that managers have the necessary information to sustainably manage squid in a rapidly changing ocean. This information will also allow managers to predict the future health of squid stocks and adapt management to avoid overexploitation.

#### **Next steps:**

- There are opportunities for researchers to explore the viability and distribution of future fisheries under scenarios of stock health, climate change and management approaches.
- This research would help inform stock assessments and sustainable fisheries management and FMPs, and contribute to delivery of the scientific evidence, climate change, sustainability and ecosystem objectives of the Fisheries Act 2020.

### **Involve fishers in the planning of future research – *High Priority***

Fishers' expertise and local knowledge has been invaluable in investigating local squid fisheries and arriving at the recommendations in this FRMP. Management should work with fishers to co-plan and co-deliver future research.

#### **Next steps:**

- D&S IFCA is well-placed to facilitate fisher/researcher collaboration and will investigate what is needed to make this standard practice (for example, collaborations will require standardised protocols and terms of reference, including for shared use of vessels and research equipment).

### **Investigate current and historical ecosystem roles and interactions of squid – *Medium Priority***

Squid are important prey for many species including harbour porpoise – a vulnerable species that is designated and protected in several MPAs (e.g. Bristol Channel Approaches SAC).

Effective ecosystem-based management of human activities will require knowledge of how these activities affect the ecosystem roles of squid. In connection to this, local fishers have reported a decline in squid populations in the Bristol Channel area and have suggested that this is because of a growth in spurdog populations that are preying on the squid.

#### Next steps:

- There is an opportunity for PhD research in partnership with D&S IFCA and local fishers to investigate squid-spurdog interactions and the impact these have on fisheries.
- The findings from these projects would help inform management and support delivery of the ecosystem and scientific evidence objectives of the Fisheries Act 2020.

#### **Investigate reported disappearance of squid from the Bristol Channel – *Medium Priority***

It is vital to establish the drivers of recently observed declines in squid in the Bristol Channel. Management need to understand whether this is due to predation, fishing, natural population fluctuations or environmental factors, and if it is an isolated event.

#### Next steps:

- There is an opportunity for PhD research in partnership with D&S IFCA and local fishers to investigate the drivers of local-scale squid abundance and distribution and the impact these have on fisheries.
- The findings from these projects would help inform management and support delivery of the ecosystem and scientific evidence objectives of the Fisheries Act 2020.

## MANAGEMENT

#### **Improve integration between fisheries management and marine planning – *High Priority***

Fisheries and environmental management need to be better integrated and more appropriately considered within marine spatial planning, licencing, and permitting processes. This is particularly important in the Bristol Channel and Severn estuary due to high levels of commercial interest, for example in aggregate extraction and renewable energy development.

#### Next steps:

- Findings from the recommended research in this FRMP should be incorporated into regional Marine Plans through discussions with D&S IFCA and the MMO.
- This would aid delivery of the Government's 25 Year Environment Plan and Fisheries Act 2020 objectives, including utilising an ecosystem approach and prioritising sustainability.

#### **Develop a best practice framework for commercial squid fishing – *Medium Priority***

Squid fisheries are extremely challenging to manage compared to most finfish species as their short life cycles mean managers have little information about the exploitable adult stock. A

different management approach to traditional finfish fisheries may be needed to manage squid sustainably and effectively.

**Next steps:**

- Managers should develop a best practice framework to enable sustainable squid fishing based on the results of the research recommended above.
- A well-evidenced best practice framework would support delivery of the sustainability objective of the Fisheries Act 2020.

**Improve landings data collection for squid species – *Medium Priority***

Reliable data on squid mortality is essential for the effective management of fisheries. There is currently a lack of basic ecological knowledge on a local scale, particularly after the declines in squid reported in the Bristol Channel.

**Next steps:**

- The IFCA's are well-placed to facilitate improvements in landings data for squid to increase species-specific understanding of squid distribution and abundance at local to national scales. Additional data requirements should be evaluated in collaboration with those who are best placed to use them for stock/distribution assessments e.g., Cefas/ICES.
- When specific data needs are identified, such as mandatory species-level recording of squid catch, a pilot or trial study should be undertaken in collaboration with local fishers as part of D&S IFCA's Annual Plan.

**Improve communication and engagement with fishers to establish stronger fisheries enforcement presence in the north of D&S IFCA's District – *Medium Priority***

To enable enforcement officers to better tackle non-compliance and illegal fishing in the north of D&S IFCA's District there needs to be comprehensive reporting of illegal activity from fishers in the area and improved communication between officers, fishers, and other local stakeholders.

**Next steps:**

- D&S IFCA to improve collaboration and engagement through activities such as virtual roadshows for ports, sectoral meetings and further FRMP interviews. More information about planned activities is available in the D&S IFCA's Annual Plan and Communications Strategy, accessible via the D&S IFCA website.

**Identify potential future squid fisheries and forecast stock health – *Low Priority***

This information is needed to apply the ecosystem approach to managing the fisheries and will highlight how squid are affected by human activities and other species. Future fisheries will most likely be in areas where squid are abundant and may be most welcome as

displacement fisheries in areas where there have been recent declines or restrictive measures implemented on traditional finfish species.

#### Next steps:

- Management should use the findings from the recommended research listed above and interaction with local fishers to identify potential future squid fisheries and then gather detailed ecological information.
- It is unlikely that this work will be possible before information is gathered on how squid distributions are influenced by climate, environmental conditions and food web interactions.
- Findings from this work would be crucial for inclusion in squid FMPs and would enable managers to adopt the ecosystem approach when managing fisheries in the future.

#### Additional information

You can download the full FRMP here –

<https://www.devonandsevernifca.gov.uk/Environment-and-Research/Fisheries-Research-Management-Plans/FRMP-Documents>

If you would like to speak to someone about the information in this plan, please get in touch using the details below:

#### Martin Peverley

Fisheries Research & Management Plan Officer

E-mail: [M.Peverley@devonandsevernifca.gov.uk](mailto:M.Peverley@devonandsevernifca.gov.uk)

D&S IFCA is developing a second series of FRMPs for a range of species across the D&S IFCA's District. More information is available from the Fisheries Research and Management Plan Officer, or at <https://www.devonandsevernifca.gov.uk/Environment-and-Research/Fisheries-Research-Management-Plans>

Cover image – European squid (*Loligo vulgaris*) (Verany, 1835, [https://commons.wikimedia.org/wiki/File:Loligo\\_vulgaris2.jpg](https://commons.wikimedia.org/wiki/File:Loligo_vulgaris2.jpg) [unedited])