



Brown Crab (*Cancer pagurus*)

Central North Sea Offshore Fishery

Preassessment Report & Action Plan

June 2024

Report Information

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Prepared by: R Cappell, G. Scarcella, G. Gaudian, & L. Perry

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Glossary

| Acronym | Definition |
|------------------|---|
| B_{lim} | Limit reference point for spawning stock biomass (ICES definition) |
| B_{MGT} | Management Plan |
| B_{MSY} | Spawning stock biomass (SSB) that results from fishing at FMSY for a long time (ICES definition) |
| B_{pa} | Precautionary reference point for spawning stock biomass (ICES definition) |
| CAB | Conformity Assessment Body |
| CEFAS | Centre for Environment, Fisheries and Aquaculture Science. |
| CEO | Chief Executive Officer |
| CFP | Common Fisheries Policy |
| CFPO | Cornish Fish Producers Organisation |
| CSA | Consequence Spatial Analysis |
| DEFRA | Department for Environment, Food and Rural Affairs |
| EFCA | European Fisheries Control Agency |
| EMODNET | European Marine Observation and Data Network |
| ETP | Endangered, Threatened and Protected |
| FIP | Fishery Improvement Project |
| F_{lim} | Limit reference point for fishing mortality (ICES definition) |
| F_{MSY} | Fishing mortality consistent with achieving Maximum Sustainable Yield (ICES definition) |
| $F_{MSYProxy}$ | Proxy indicator |
| F_{pa} | Precautionary reference point for fishing mortality (ICES definition) |
| ICES | International Council for the Exploration of the Sea |
| IFCA | Inshore Fisheries and Conservation Authorities |
| IUU | Illegal, Unreported and Unregulated fishing |
| JDP | Joint Deployment Plans |
| JNCC | Joint Nature Conservation Committee |
| LTL | Low Trophic Level |
| MAP | Multi Annual Plan |
| MCS | Monitoring, Control and Surveillance |
| MMO | Marine Management Organisation |
| MPA | Marine Protected Area |
| MSC | Marine Stewardship Council |
| MSFD | Marine Strategy Framework Directive |
| MSY | Maximum Sustainable Yield. The largest average catch or yield that can continuously be taken from a stock under existing environmental conditions (ICES definition) |
| $MSY_{Btrigger}$ | A biomass reference point that triggers a cautious response within the ICES MSY framework (ICES definition) |



| | |
|--------------------------------|---|
| MSY B _{trigger proxy} | An MSY proxy indicator (ICES definition) |
| NFFO | National Federation of Fishermen's Organisation |
| NWWAC | North Western Waters Advisory Council |
| PRI | Point where recruitment is impaired |
| PSA | Productivity Susceptibility Assessment |
| RBF | Risk Based Framework |
| SCF | Specialised Committee on Fisheries (UK/EU) |
| SFSAG | Scottish Fisheries Sustainable Accreditation Group |
| SICA | Scale Intensity Consequence Analysis |
| SSB | Spawning Stock Biomass. Total weight of all sexually mature fish in the stock (ICES definition) |
| STECF | Scientific, Technical and Economic Committee for Fisheries |
| SWFPO | South Western Fish Producer Organisation Ltd. |
| TAC | Total Allowable Catch |
| TBB | Bottom Beam Trawler |
| VME | Vulnerable Marine Ecosystem |
| VMS | Vessel Monitoring System |
| WGCSE | Working Group for the Celtic Seas Ecoregion (|
| WGNSSK | Working Group on the Assessment of Demersal Stocks in the North Sea and Skagerrak |
| XSA | Extended Survivors Analysis; Stock assessment method. |

Executive summary

This report presents a Marine Stewardship Council (MSC) pre-assessment of the UK brown crab (*Cancer pagurus*) Central North Sea Offshore fishery.

The principle aims of the pre-assessment are to:

- Review fishery-specific data;
- Define the appropriate Units of Assessment (UoAs);
- Review the performance of the fishery against the MSC certification requirements;
- Present pre-assessment scoring and supporting rationales.

This pre-assessment involves providing a provisional evaluation against MSC Performance Indicators (PIs) and Scoring Guideposts (SGs), to inform how the fishery fares against the MSC standard and which PIs are likely to be scored at assessment within the following categories: fail (i.e. score <60), pass with conditions (60-79) or pass without conditions (≥ 80). A pre-assessment does not attempt to duplicate a full assessment against the MSC standard, which requires precise scoring and extensive stakeholder consultation phases. Where information is lacking, precautionary scoring is applied.

The pre-assessment uses the MSC Pre-Assessment process as a gap analysis to determine current status, identify improvements and inform development of an Action Plan to raise the scores determined in the Pre-assessment over a defined period to a point at which the fishery could enter MSC assessment. The process is designed to ultimately improve the sustainability of the fishery.

Data & background information were sourced from published reports and some consultation with operators in the fishery. No site visits involving more extensive stakeholder consultation have been undertaken. The comparatively quick pre-assessment exercise does not go into the level of detailed and rigorous scrutiny, which is undertaken as part of a full MSC assessment. For this reason, it cannot be guaranteed that the outcome of a full assessment process can be predicted with absolute accuracy. There may still be some unforeseen additional issues that arise once a fuller public consultation exercise is undertaken as part of any full assessment.

P1 main strengths:

- Evaluation of stock status with LCA, good data collection programme.

P1 main weakness:

- Status below MSY level,
- lack of data from some portions of the fleet for use in the assessment,
- limited HCRs and HS not responsive of the status of the stock.

P2 main strength:

- Detailed sediment maps for the Central North Sea area, created and regularly updated through EMODNET;
- Considerable research into the wider ecosystem of the North Sea, which is ongoing and part of an ecosystem management strategies implemented in the region

P2 main weakness:

- There is no catch profile nor independent observer data in order to evaluate in-scope species, including bait species and quantities of bait used;
- As there is no catch profile nor independent observer data, it is not possible to evaluate ETP/OOS species – although it is known from similar crab fisheries that there are ETP/OOS interaction with the crab fishery.

Additional comments regarding P2:



Please see comment in the background Section on habitat, which indicates that an RBF might be triggered, following the requirements of v3 of the Fisheries Standard.

P3 main strengths:

- Robust general fisheries management framework in EU and UK
- Cooperation between EU & UK is established and shown to be functioning

P3 main weaknesses:

- Lack of fishery-specific management for EU waters
- UK Crab & Lobster Fisheries Management Plan for English waters only; proposes an approach, but lacks fishery-specific detail and does not align with stock area.

A draft action plan is presented responding to the above weaknesses.

We recommend that, given the fishery involves multiple national jurisdictions with vessels visiting from other jurisdictions, the proposed actions should be progressed at international level and alignment of actions with those involved with the other North Sea crab FIP(s).

Depending on the pace and scope of UK crab management (i.e. regionalising the FMP arrangements), actions could be progressed via an EU/UK project on sustainable North Sea crab fisheries.

1. Report details

1.1 Aims and constraints of the pre-assessment

This report provides a pre-assessment evaluation of the Central North Sea Offshore Crab Fishery against the Marine Stewardship Council (MSC) standard for sustainable fisheries. This preassessment has been undertaken by Poseidon for an industry group to inform potential future Fishery Improvement Projects (FIP).

The MSC pre-assessment process involves a provisional evaluation of the fishery against MSC Performance Indicators (PIs) and Scoring Guideposts (SGs), to inform how the fishery fares against the MSC standard and whether each PI is likely to fall within the following categories:

- » fail (i.e. score <60)
- » pass with conditions (60-79)
- » pass without conditions (≥ 80).

A pre-assessment does not attempt to duplicate a full assessment against the MSC standard, which requires precise scoring, a site visit and defined public consultation phases to gather information.

1.2 Version details

Table 1 Fisheries Programme Documents Versions

| Document | Version number / Type |
|--|-----------------------|
| MSC Fisheries Certification Process | Version 3.0 |
| MSC Fisheries Standard | Version 3.0 |
| Assessment tree | <i>Default</i> |
| MSC General Certification Requirements | Version 2.5 |
| MSC Reporting Template | Version 2.0 |
| MSC Pre-Assessment Reporting Template | Version 4.0 |

2.Units of Assessment

The following Units of Assessment (UoA) are proposed:

Table 2: Units of Assessment (UoA)

| UoA 1 | Description |
|--|--|
| Species | Brown crab (<i>Cancer pagurus</i>) |
| Stock | ICES Division IV.b (Central North Sea Crab Fishery Unit) |
| Fishing gear type(s) and, if relevant, vessel type(s) | Pots |
| Client group | Fishing Vessels operating under the following companies: <ol style="list-style-type: none"> 1. Blue Sea Fishing Company (UK) 2. Brown & Bright (UK) 3. McBride (IE) 4. Hitramat (NO) 5. Ocean Fleet (NL) |
| Other eligible fishers | Other UK, EU and NO vessels fishing with pots in EU waters of the Central North Sea, outside 12 nautical miles |
| Geographical area | ICES sub-area IVb: Central North Sea. Dutch waters (outside 12nmiles) within the Central North Sea Crab Fishery Unit, Danish waters (outside 12nmiles) within the Central North Sea Crab Fishery Unit, German waters (outside 12nmiles) within the Central North Sea Crab Fishery Unit, |
| Justification for choosing the Unit of Assessment | Fishery operates within the Central North Sea Crab Fishery Unit in EU waters outside 12nmiles, as defined and assessed by Cefas, UK. UoA includes all potting vessels fishing in the Central North Sea offshore area. Vessels of the five fishing companies comprising the client group (UoC), is understood to comprise the great majority of landings from this area. |

2.1.1 Fisheries profile

There are five Crab Fishery Units (CFU) that have been defined for England and twelve Crab and Lobster Fishery Units defined for Scotland. These units are based upon the understanding of larval distributions and development, hydrographic conditions and distribution of the fisheries. Each CFU encompasses waters covered by international, national and local legislation which may be different within each region.



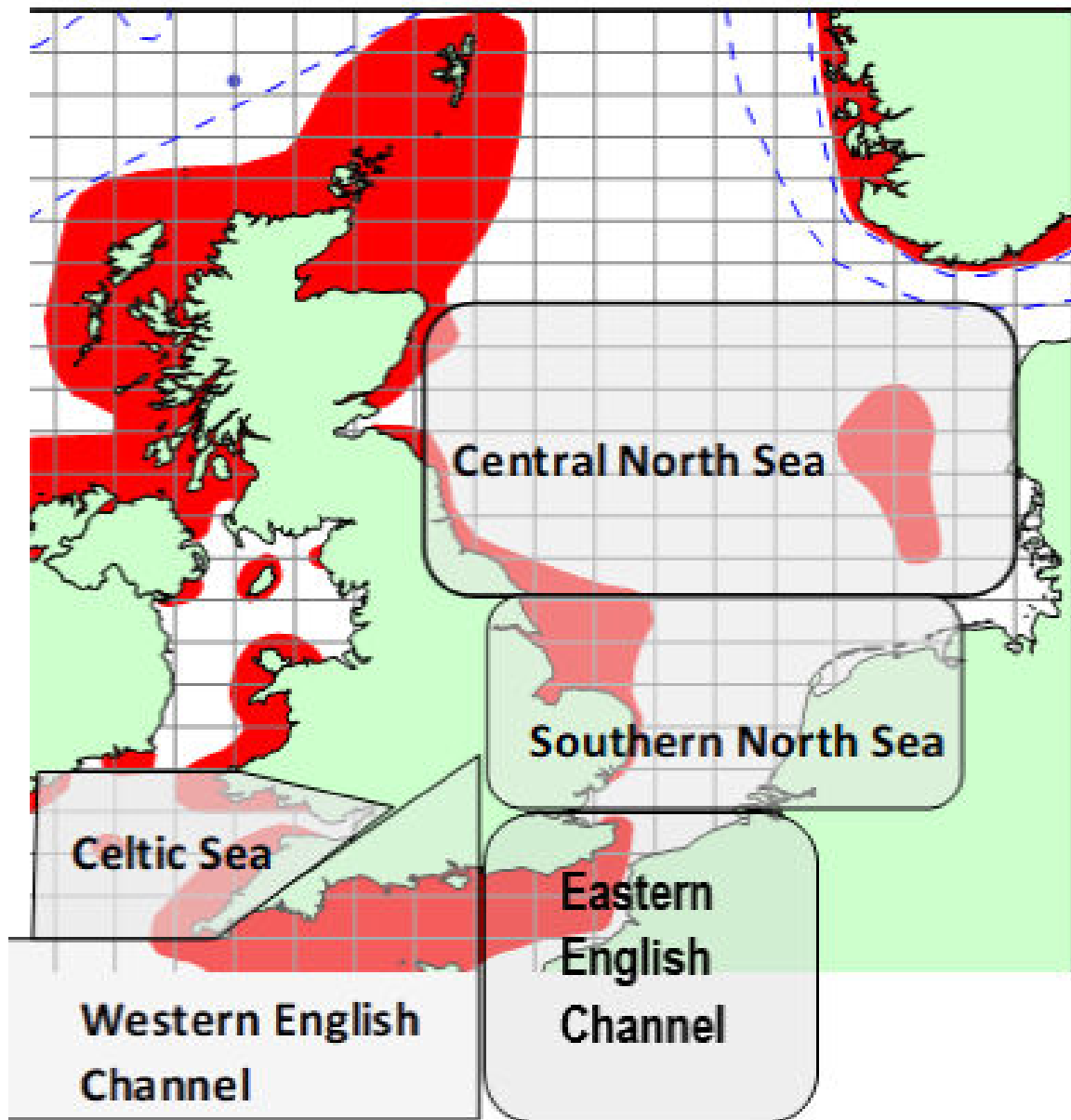


Figure 1: The CFU's used for the assessment regions. Source: CEFAS, 2020.

The offshore crab fishery in the Eastern Central North Sea has grown over the past three decades from 1 or 2 UK vessels, to now involve the 13 vessels from five fishing companies (see Table 3). All are vivier crabbers, i.e. storing live catch, fishing with pots (either ink-well type or parlour pot/creel type, see section 4.5.2).

Under a gentlemen's agreement, each operator places their pots within defined areas described by GPS positions. Trips last several days with the catch being kept alive in onboard vivier tanks. Operators individually record landings and number of pots hauled per day, but only landings are required to be reported to management authorities. It is estimated that just over 6,000 tonnes of crab are landed by these vessels (client group pers. comm) from this area, landing into Eemshaven (NL) or Hvide Sande (DK) and into UK, Irish and Norwegian ports on their return home.

Operators report an increase in effort in the fishery, both in terms of number of vessels and pots per vessel:

Table 3 Client group vessel list and country of registration, gear type and landing ports

| Blue Sea Fishing Company (UK company) | | | | |
|--|-------------------|---------------|----------------------|----------------------|
| <i>Boat Name</i> | <i>Registered</i> | <i>Length</i> | <i>Pot Type</i> | <i>Landing ports</i> |
| Amadeus | UK | 24 | Ink Well | Eemshaven |
| Tyodus | UK | 16 | Ink well / Creel* | Eemshaven |
| | | | *with escape hatches | |
| Brown and Bright (UK Company) | | | | |
| <i>Boat Name</i> | | <i>Length</i> | <i>Pot Type</i> | <i>Landing ports</i> |
| Amberlisa | UK | 19 | Creels | Eemshaven |
| Ebonnie | UK | 16 | Creels | Eemshaven |
| La Creole | UK | 16 | Creels | Eemshaven |
| HeatherK | UK | 15 | Creels | Eemshaven |
| | | | | |
| MacBride (Republic of Ireland Co) | | | | |
| <i>Boat Name</i> | | <i>Length</i> | <i>Pot Type</i> | <i>Landing ports</i> |
| Peadar Elaine | IE | 21 | Creels | Eemshaven |
| Heather Jane | IE | 21 | Creels | Eemshaven |
| Amy Jane | IE | 19 | Creels | Eemshaven |
| | | | | |
| Hitramat (Norwegian Co) | | | | |
| <i>Boat Name</i> | | <i>Length</i> | <i>Pot Type</i> | <i>Landing ports</i> |
| WLA 222 (was Evan Emma) | NO | 21 | Creels | Hvide Sande |
| Noronya | NO | 19 | Creels | Hvide Sande |
| | | | | |
| Ocean Fleet (Netherlands Co) | | | | |
| <i>Boat Name</i> | | <i>Length</i> | <i>Pot Type</i> | <i>Landing ports</i> |
| Dayagelle | UK | 17 | Creels | Hvide Sande |
| Our Hazel | UK | 19 | Creels | Hvide Sande |
| | | | | |

Vessels: There have been recent Danish and Polish vessels fishing in the north of the area, who may look to claim some of this ground. Additionally smaller inshore potting vessels from the nearest coastal areas make occasional visits into the area, but the vivier vessels account for the great majority of effort and landings from the area.

Pots: The number of pots that can be carried is limited by the size of vessel and the number that can be hauled per day is also limited. But the number placed on the ground is not limited in the same way. There are reports of vivier vessels loading their own areas with more pots and expanding their 'claimed' areas. There is no reliable data on pot numbers, but the client group suggests their vessels may work close to 40,000 pots in this offshore area.



3. Traceability

An MSC assessment will require traceability in the fishery to be fully considered.

3.1 Traceability - initial review and planning

Table 4 Traceability within the fishery

| |
|---|
| The proposed point of change of ownership of product to any party not covered by the fishery assessment |
| <i>Change in ownership may be at point of landing (if not landing to own company) or at first sale.</i> |
| The proposed point from which subsequent Chain of Custody (CoC) is required |
| <i>First-sale may not be at point of landing if catch is stored at company premises.</i> |
| The plan for reviewing traceability at the initial assessment site visit |
| <i>Consultation with operators, fishing companies and buyers. Accompanying documents evidencing systems are in place.</i> |

4. Pre-assessment results

4.1 Pre-assessment results overview

4.1.1 Overview

Table 5 Performance Indicator Level Scores

| UoA 1 Offshore North Sea crab | | | | | |
|-------------------------------|------------------------------------|----------------------------|--|--------|-------|
| Principle | Component | Performance Indicator (PI) | | Weight | Score |
| One | Outcome | 1.1.1 | Stock status | 0.500 | 60-79 |
| | | 1.1.2 | Stock rebuilding | 0.500 | <60 |
| | Management | 1.2.1 | Harvest strategy | 0.250 | 60-79 |
| | | 1.2.2 | Harvest control rules & tools | 0.250 | 60-79 |
| | | 1.2.3 | Information & monitoring | 0.250 | 60-79 |
| | | 1.2.4 | Assessment of stock status | 0.250 | >80 |
| Two | In-Scope species | 2.1.1 | Outcome | 0.333 | 60-79 |
| | | 2.1.2 | Management strategy | 0.333 | <60 |
| | | 2.1.3 | Information/Monitoring | 0.333 | <60 |
| | ETP/Out of Scope Species | 2.2.1 | Outcome | 0.333 | 60-79 |
| | | 2.2.2 | Management strategy | 0.333 | <60 |
| | | 2.2.3 | Information/Monitoring | 0.333 | <60 |
| | Habitats | 2.3.1 | Outcome | 0.333 | >80 |
| | | 2.3.2 | Management strategy | 0.333 | 60-79 |
| | | 2.3.3 | Information strategy | 0.333 | >80 |
| | Ecosystem | 2.4.1 | Outcome | 0.333 | >80 |
| | | 2.4.2 | Management strategy | 0.333 | >80 |
| | | 2.4.3 | Information | 0.333 | 60-79 |
| Three | Governance and policy | 3.1.1 | Legal &/or customary framework | 0.333 | >80 |
| | | 3.1.2 | Consultation, roles & responsibilities | 0.333 | >80 |
| | | 3.1.3 | Long term objectives | 0.333 | >80 |
| | Fishery specific management system | 3.2.1 | Fishery specific objectives | 0.250 | 60-79 |
| | | 3.2.2 | Decision making processes | 0.250 | <60 |
| | | 3.2.3 | Compliance & enforcement | 0.250 | >80 |
| | | 3.2.4 | Monitoring & management performance evaluation | 0.250 | <60 |

4.1.2 Recommendations

Several specific actions are proposed in the draft Action Plan. We recommend that, given the fishery involves multiple national jurisdictions with vessels visiting from other jurisdictions, the proposed actions should be



progressed at international level and alignment of actions with those involved with the other North Sea crab FIP(s).

Depending on the pace and scope of UK crab management (i.e. regionalising the FMP arrangements), actions could be progressed via an EU/UK project on sustainable North Sea crab fisheries.

4.2 Summary of potential conditions by Principle

Table 6 Summary of Performance Indicator Level Scores

| Principle of the Fisheries Standard | Number of PIs with draft scoring ranges <60 | Number of PIs with draft scoring ranges 60-79 |
|---|---|---|
| Principle 1 – Stock status | 1 | 4 |
| Principle 2 – Minimising environmental impacts | 4 | 4 |
| Principle 3 – Effective management | 2 | 1 |

4.3 Summary of Performance Indicator level scores

Table 7: Summary of Performance Indicator level scores

Principle 1

| Performance Indicator | Draft scoring range | Data deficient? |
|---|---------------------|-----------------|
| 1.1.1 – Stock status | 60 – 79 | No |
| Rationale or key points | | |
| The status of the stock is uncertain and seems to be below MSY level. Male stock is just at PRI, but with the females well above the PRI, the entire stock achieves SG60. | | |
| Performance Indicator | Draft scoring range | Data deficient? |
| 1.1.2 – Stock rebuilding | >60 | Yes |
| Rationale or key points | | |
| From the available evidence there is not a rebuilding plan. | | |
| Performance Indicator | Draft scoring range | Data deficient? |
| 1.2.1 – Harvest Strategy | 60 – 79 | Yes |
| Rationale or key points | | |
| The HS is not responsive of the status of the stock and there is not direct evidence that the HS is working. | | |
| Performance Indicator | Draft scoring range | Data deficient? |
| 1.2.2 – Harvest control rules and tools | 60 – 79 | Yes |
| Rationale or key points | | |
| There are not well-defined HCRs in place, which consider the uncertainties. Also, there is not evidence indicates that the tools in use are appropriate and effective in achieving the exploitation levels required under the HCRs. | | |
| Performance Indicator | Draft scoring range | Data deficient? |
| 1.2.3 – Information and monitoring | 60-79 | No |
| Rationale or key points | | |
| The data collection programme is acceptable, but the coverage (i.e. not including data from all the offshore vessels and EU coastal fisheries) is not currently providing adequate information for the HS and stock assessment. | | |
| Performance Indicator | Draft scoring range | Data deficient? |
| 1.2.4 – Assessment of stock status | ≥ 80 | No |
| Rationale or key points | | |
| The evaluation of the status of the stock is accurate and most recent assessment includes data from vessels fishing in offshore area. | | |

Principle 2

| Performance Indicator | Draft scoring range | Data deficient? |
|--|---------------------|-----------------|
| 2.1.1 – In-scope species outcome | 60 – 79 | No |
| Rationale or key points | | |
| <i>A full catch profile informed by observer data of bycatch and survivability, as well as detailed information on bait species and quantities used.</i> | | |
| Performance Indicator | Draft scoring range | Data deficient? |
| 2.1.2 – In-scope species management strategy | <60 | |
| Rationale or key points | | |
| <i>A full catch profile informed by observer data of bycatch and survivability, as well as detailed information on bait species and quantities used.</i> | | |
| <i>Evidence of a non-retention policy for shark species has to be provided</i> | | |
| Performance Indicator | Draft scoring range | Data deficient? |
| 2.1.3 – In-scope species information | <60 | |
| Rationale or key points | | |
| It is currently not possible to score this PI, as there is no catch profile available across the fishery, nor any detailed information on bait used. | | |

| Performance Indicator | Draft scoring range | Data deficient? |
|---|---------------------|-----------------|
| 2.2.1 – ETP/OOS species outcome | 60 – 79 | No |
| Rationale or key points | | |
| Detailed catch profile and independent observer data is needed to evaluate this PI. | | |
| Performance Indicator | Draft scoring range | Data deficient? |
| 2.2.2 – ETP/OOS species management strategy | <60 | |
| Rationale or key points | | |
| <i>A full catch profile informed by observer data of bycatch and survivability, including ETP/OOS species</i> | | |
| <i>Evidence of a non-retention policy for shark species has to be provided</i> | | |
| <i>Detailed information is needed on how lost gear is managed and whether the pots / creels contain a biodegradable panel for eg.</i> | | |
| Performance Indicator | Draft scoring range | Data deficient? |
| 2.2.3 – ETP/OOS species information | <60 | |



Rationale or key points

A catch profile as well as independent observer records would be needed to score this PI. The evidence requirements are considerable, as laid out in the Toolbox v1.1 (see Table B1 in the toolkit, and follow steps through from there)

| Performance Indicator | Draft scoring range | Data deficient? |
|---------------------------------|---------------------|-----------------|
| 2.3.1 – Habitats outcome | >80 | Yes* |

Rationale or key points

*Current interpretation of the Fishery Standard requires an RBF for habitat outcome- please see rationale text as to why RBF seems to be necessary.

However, should score >80: habitat information is good, potting gear impact is known to be relatively light. Part of area is also subject to occasional trawling.

| Performance Indicator | Draft scoring range | Data deficient? |
|--|---------------------|-----------------|
| 2.3.2 – Habitats management strategy PI 2.3.2 | 60 – 79 | Yes |

Rationale or key points

Detailed location of the fishery in relation to sensitive areas and Natura 2000 sites and relevant habitat management requirements; evidence of how gear loss is managed amounting to a partial strategy across all crab vessels in this fishery.

| Performance Indicator | Draft scoring range | Data deficient? |
|-------------------------------------|---------------------|-----------------|
| 2.3.3 – Habitats information | <60 / 60 – 79 / ≥80 | Yes / No |

Rationale or key points

Not Scored – see 2.3.3R

| Performance Indicator | Draft scoring range | Data deficient? |
|---|---------------------|-----------------|
| 2.3.3R – Habitats information if CSA is used to score PI 2.3.1 | ≥80 | |

Rationale or key points

Version 3 requirements currently indicate this would be scored using RBF, involving fishers and relevant stakeholders (management organisations working on habitat mapping);

This may change with revisions expected on the evidence requirements framework (ERF) and from the information currently available, we expect that this PI would meet SG80.

| Performance Indicator | Draft scoring range | Data deficient? |
|----------------------------------|---------------------|-----------------|
| 2.4.1 – Ecosystem outcome | ≥80 | No |

Rationale or key points

Information is adequate to meet SG80



| Performance Indicator | Draft scoring range | Data deficient? |
|--|---------------------|-----------------|
| 2.4.2 – Ecosystem management strategy | ≥80 | |
| Rationale or key points | | |
| There is adequate information to meet SG80 | | |
| Performance Indicator | Draft scoring range | Data deficient? |
| 2.4.3 – Ecosystem information | 60 – 79 | |
| Rationale or key points | | |
| Lacking detailed information specific to the fishery e.g. cumulative impacts where the crab fishery operates; catch profile over time, including observer data and indirect impacts on ETP/OOS species (e.g. removal of prey species). | | |

Principle 3

| Performance Indicator | Draft scoring range | Data deficient? |
|--|---------------------|-----------------|
| 3.1.1 – Legal and/or customary framework | ≥80 | No |
| Rationale or key points | | |
| EU and national-level management systems are supported by effective legal systems and effective co-operation with other parties (the UK in this case). All have effective dispute resolution mechanisms and legislation formally commits to the legal rights created explicitly or established by custom of people dependent on fishing for food and livelihood. | | |
| Performance Indicator | Draft scoring range | Data deficient? |
| 3.1.2 – Consultation, roles, and responsibilities | ≥80 | No |
| Rationale or key points | | |
| Organisations are explicitly defined and well understood for all areas. The Advisory Councils, including the North Sea Advisory Council, provide advice to the European Commission on management matters and the EC may also provide a response to the advice provided. All interested and affected parties, e.g. fishermen, trade- and processors, ENGOs, scientists, are encouraged to participate in dialogue and consultation of the high-level fisheries management system. | | |
| Performance Indicator | Draft scoring range | Data deficient? |
| 3.1.3 – Long term objectives | ≥80 | No |
| Rationale or key points | | |
| Article 2 of the CFP sets out clear long-term objectives that guide decision-making. The UK Fisheries Act 2020 has MSY and precautionary objectives in line with the MSC criteria. The JFS sets out the fishery policy authorities interpretation of the eight objectives set out in the Act and how they will deliver them. | | |
| Performance Indicator | Draft scoring range | Data deficient? |
| 3.2.1 – Fishery-specific objectives | 60 – 79 | No |
| Rationale or key points | | |
| Short-term objectives consistent with achieving required outcomes under Principles 1 and 2, including short-term management measures that respond to the state of the stock, is lacking for the North Sea brown crab fishery. As at EU level, short-term P1 objectives are currently lacking for the UK North Sea crab fishery. <i>Fishery-specific objectives need to be developed.</i> | | |
| Performance Indicator | Draft scoring range | Data deficient? |
| 3.2.2 – Decision-making processes | <60 | No |
| Rationale or key points | | |
| The fishery management arrangements (MLS and general licensing) are not sufficient to respond to serious issues such as stock decline and effort increase via pot numbers per vessel and new vessels entering the offshore fishery. These issues have been identified through monitoring and consultation, as evidenced by the long list of areas requiring action in the AC Joint Advice on Brown Crab Fisheries <i>The establishment of a fishery-specific management system is required to enable effective decision-making processes.</i> | | |

| Performance Indicator | Draft scoring range | Data deficient? |
|---|---------------------|-----------------|
| 3.2.3 – Compliance and enforcement | ≥80 | No |
| Rationale or key points | | |
| <p>The national administrations include resources and MCS systems that are applied to the fishery albeit at a low level. There is some evidence that would be available from the control authorities (submission of logbooks, sales notes with corroboration through VMS & inspection) and IFCA's to demonstrate compliance with the current management system (which is somewhat limited in the extent of its measures) and the provision of information important to the management of the fishery.</p> | | |
| Performance Indicator | Draft scoring range | Data deficient? |
| 3.2.4 – Monitoring and management performance evaluation | <60 | No |
| Rationale or key points | | |
| <p>DG MARE's recent response to the joint ACs advice on North Sea crab management shows there has been some internal consideration, but this cannot be said to amount to an internal review.</p> <p><i>Some internal review of the North Sea crab fishery in EU waters is required. When fishery-specific management is developed, this should be subject to regular internal review and occasional external review.</i></p> | | |

4.4 Principle 1

4.4.1 Biology and life history of brown crab (*Cancer pagurus*) and stock delineation In the North Sea

The edible crab (*Cancer pagurus* Linnaeus, 1758) is found across a range extending from Scandinavia to Portugal. The boundaries that define the stock of edible crab are not well understood. Both male and female crabs exhibit significant movement, with females, in particular, shown to cover substantial distances during spawning activities. During the winter brooding period, egg-carrying females are generally inactive, but the eggs hatch in the spring and summer. After spending approximately five weeks in the plankton, crab larvae settle on the seabed. The growth of crabs is influenced by the frequency of moulting and the size increase during each moulting event. Typically, it takes about four to five years for a juvenile crab to reach commercial size. Mating activity peaks in the summer, coinciding with the female's moulting, and spawning occurs in late autumn or winter.

The species occurs from the intertidal area in rocky or sandy bottom to a depth of 100 m, common at depths 6 to 40 m. Regularly it is found just above low tide mark and in estuary. The species is carnivore (trophic level 3.1) and it is not an LTL stock.

The reproduction biology of the edible crab involves a complex lifecycle. Egg-carrying females are inactive over the winter brooding period, but their eggs hatch in spring and summer. After about five weeks in the plankton, crab larvae settle on the seabed. Growth depends on moulting frequency and size increase, taking approximately four to five years for juveniles to reach commercial size. Mating peaks in summer after the female moults, with spawning occurring in late autumn or winter. The intricacies of the reproductive process highlight the importance of understanding larval distributions, hydrographic conditions, and fishery distribution in managing edible crab populations. The size at first maturity is estimated around 9 cm of Carapace Width (CW) in males and 11 cm in females. Male adult crabs tend not to undertake migrations. Adults feed primarily on benthic invertebrates such as bivalves, small crustaceans and barnacles.

Detailed reviews of the biology and life history of *Cancer pagurus* can be found in Edwards (1979) and Neal and Wilson (2008). The species is not considered a Key LTL stock in accordance with MSC v.2.2.

A Defra-funded study (Bannister, 2009) analysed the genetic structure of brown crab samples from 32 locations around the North Sea, Channel, and Ireland. There was no genetic distinction between the Channel, Celtic Sea, southern Irish Sea and SW Ireland, but crabs in these areas are distinct from crabs off the north coast of Ireland and in the North Sea. Within regions, samples showed genetic patchiness that was not constant geographically or over time. This reduces the chance of finding local stocks, or of using the genetic signature of larvae to identify their origin. The most distinct samples came from localized bays (e.g. Gulmarsfjord, Sweden; Newlyn and Brittany in the Channel) where local circulation presumably favours a degree of isolation. The genetic structure revealed by this study is on a wider scale than the assessment areas that have been adopted in England & Wales and Scotland for other than genetic reasons, e.g. for data collection reasons, or because fishing métiers are associated with groups of fishing grounds or landing places, or because there are local differences in growth rate or size of maturity that may not affect the results of assessments.

4.4.2 The harvest strategy of edible crab in England

The management of the edible crab fishery in England is organized into five distinct Crab Fishery Units (CFU; Figure 1), each defined based on factors such as larval distributions, development, hydrographic conditions, and geographical distribution of the fisheries. These CFUs are strategically designed to encompass waters subject to diverse international, national, and local legislation, allowing for potential variations within each region. Recognizing the crucial role of the reproductive biology of edible crabs, both male and female, in fishery management is pivotal. The complex movement patterns of these crabs necessitate a deep understanding of their reproduction, including spawning activities and larval development, to ensure sustainable management. The fishery also entails considerations of crab size and growth.

Figure 2 presents the total official landings data that is used within the assessments. Due to changes in the way landings have been reported, care should be taken when comparing back through time. Data from 2010 to present have been collected in a consistent manner. The overall landings increased from 2011 until 2018, followed by a slight decrease until 2022. The spring of 2018 saw extreme cold weather throughout the country and crab began to appear in pots very late in the season. In 2020-21, Covid restrictions and adjusting to the



new requirements for exporters following the UK's exit from the EU affected fishing effort, prices and markets for crab. A mass mortality event occurred in Autumn 2021 in the North Sea, the cause of which is uncertain.

Figure 3 reveals that, despite overall increases in landings, the catch area is decreasing.

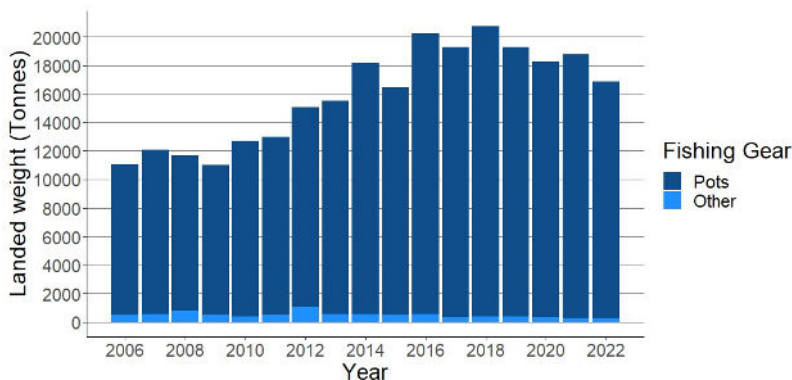


Figure 2: Official landings by English and Welsh vessels landing anywhere plus landings into England and Wales by UK vessels. Source: CEFAS, 2024.

Crustaceans lack structures for age determination, requiring an alternative assessment method. CEFAS employs a length-frequency approach, analysing changes in the shape of the length-frequency curve to infer fishing impacts. Reference points, such as 35% of virgin Spawner per Recruit (SpR) for MSY, guide managers in assessing the fishery's effectiveness and sustainability. Key uncertainties in CEFAS assessments stem from scientific understanding, representativeness of landings, and assumptions within the model. Ongoing research initiatives aim to refine population dynamics knowledge, acknowledging uncertainties but providing reliable estimates on a high-medium-low scale.

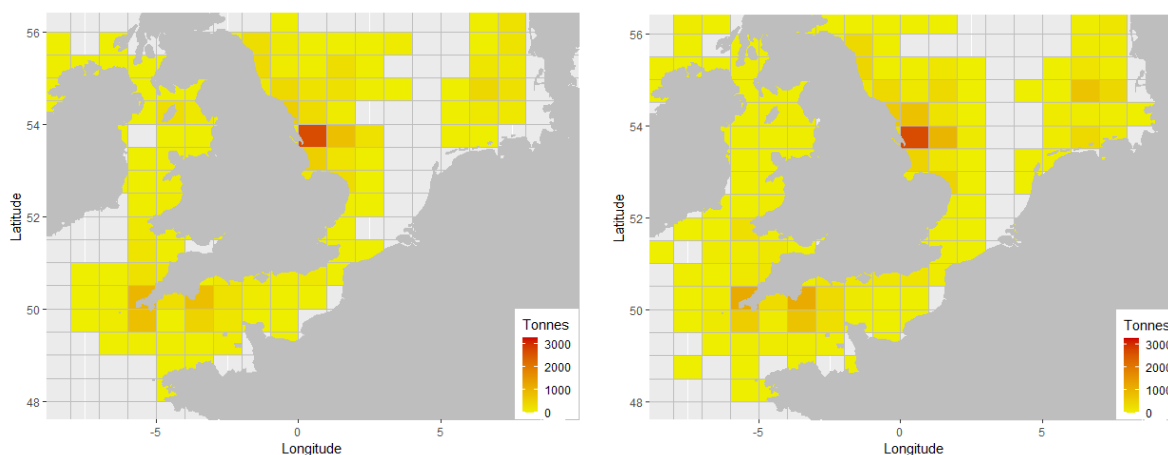


Figure 3: Live landings per ICES rectangle of English and Welsh vessels landing anywhere plus landings into England and Wales by UK vessels for 2022 (left map). Average landings per ICES rectangle from 2016 to 2021 (right map). source: CEFAS, 2024.

4.4.3 Catch Stock structure of Edible crab in the Central North Sea

The stock of edible crab in central North Sea (Figure 1) is exploited both in the English east coastal area and off the Danish coast. This stock configuration has been derived from a study carried out by CEFAS (Bannister, 2009). It has been found that large patches of brown crab larvae centred off the Humber in July 1976, 1993, and 1999 (only the 1990s data are shown in Figure 4) in areas corresponding to the distribution of relatively new fisheries for mature hen crab that developed 70 miles off the Humber in the 1970s, and subsequently in the Race Bank area further south (started by boats from Wells in the 1990s).



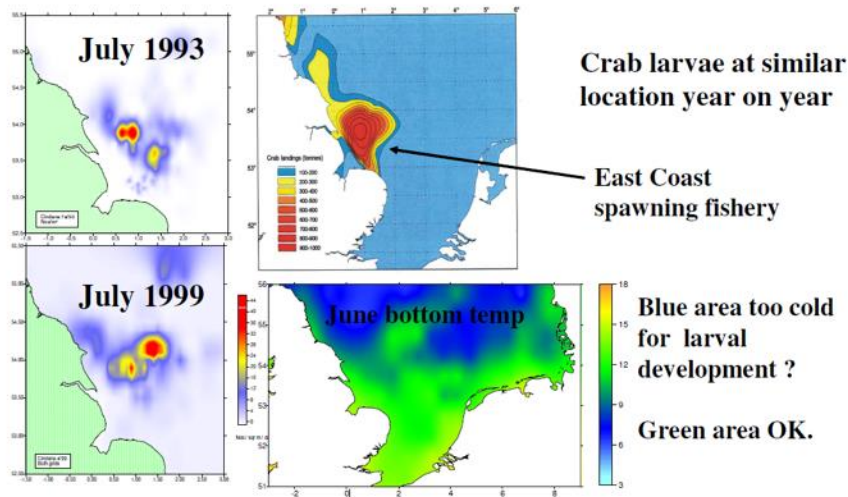


Figure 4: Larval distribution of edible crab in Central North Sea. Source: Addison, 2004.

There is little or no specific information describing where these larvae recruit to, and hence how they relate to crab caught further north off Yorkshire and Northumberland, or to the fishery further south off Norfolk (where crabs caught inshore are much smaller than elsewhere. Addison (2004) noted that north of Flamborough the water is stratified and below 8°C, at which temperature embryonic development may cease (Lindley 1987). Whereas crab larvae found further south are in warmer mixed water potentially more suitable for larval development, but from where a rapid easterly circulation may carry a proportion of them, offshore into the German Bight (Slides 41-43 in Addison, 2004). It is possible that this easterly circulation contributes recruits to the German Bight area where some UK and Irish vessels began crabbing regularly about ten years ago, and report seeing crab spawn at the surface in early summer.

4.4.4 Stock status and management of Edible crab in the Central North Sea

The last documented evaluation of Edible crab in the Central North Sea is reported in CEFAS (2024). According to this assessment, exploitation level of Edible Crab in the Central North Sea is high on males and moderate on females. Fishing mortality is between the target and limit reference points for males and females. Estimates of spawning stock biomass are between the target and limit levels for females and at the limit for males, and since 2019 have declined for both sexes. The increasing fishing mortality estimate for females is a result of the loss of the largest size animals from the catches. The status of the stock in relation to the reference points has decreased since the previous assessment in 2019, largely due to the recent decrease in biomass (Figure 5). The status of the stock showed a clear decrease compared with the previous assessment (CEFAS, 2020).

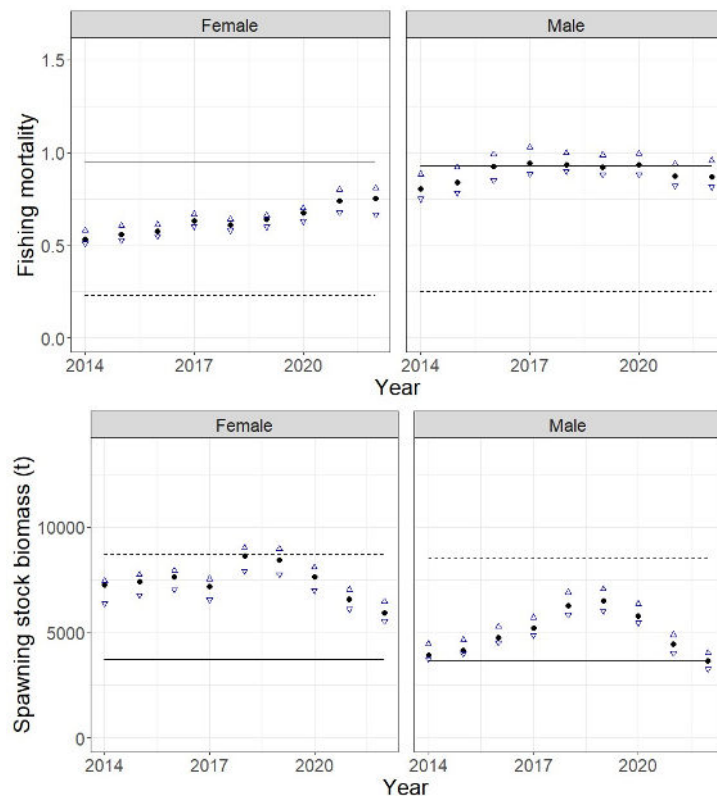


Figure 5: Fishing mortality time series with FMSY target (dashed) and maximum reference point limit (solid; upper graph); time series of biomass estimates and MSY target (dashed) and minimum reference point limit (solid; lower graph). Source, CEFAS, 2024.

Reported landings increased substantially from 2012 until 2018 with a sharp drop in 2020 and a subsequent increase (Figure 6). Effort has decreased for the <10m fleet since 2014 while effort for the >10m fleet has been increasing.

Biological sampling levels have been good with over 50 samples per year apart from slightly lower levels in 2020 predominantly due to Covid impacts. IFCA length data have been incorporated into the Central North Sea assessments for all years except for 2017-2018.

Anecdotal information suggests a recent expansion of fishing activity in both pot numbers and distribution. These factors are likely to be partially responsible for the increase in landings in 2018-2019 which the model interprets as an increase in spawning stock. The spawning stock status should therefore be treated with caution. Some technology creep is likely to have occurred as either vessels or hauling equipment have been upgraded, improve efficiency. There has also been some transition to higher capacity vessels capable of handling substantially larger numbers of pots. The inshore fishery has seen an increase in pots hauled and pots set across the North Eastern IFCA range.

As well as the more traditional fisheries off Yorkshire and Northumberland, a fishery off the Danish coast prosecuted by large nomadic English vessels has developed over the last decade. The fishery in this area has increased in range with the decline of trawling, as operators target grounds beyond 6nm. Data from the Danish coast fishery from GB registered vessels, or vessels landing into England and Wales are included in the last CEFAS assessment (CEFAS, 2024).

Covid restrictions in 2020-2021 caused a reduction in fishing effort, lower prices and fishers selling directly to the public. In autumn 2021 a mass crustacean mortality event occurred inshore near the River Tees south to Scarborough, the cause of which remains uncertain. Storm Arwen in November 2021 caused damage and loss of pots which resulted in lower landings in subsequent weeks.



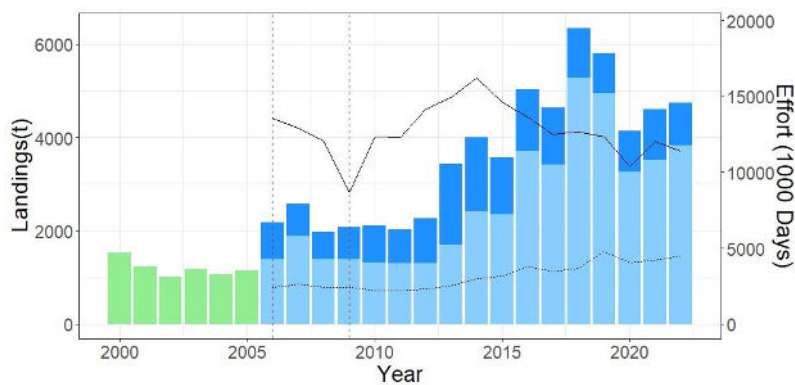


Figure 6: Live landings (in tonnes, bars) and effort (days fished, lines) for less than or equal to (\leq)10m fleet (dark blue/solid line) and greater than (>) 10m fleet (light blue/dashed line): Note: Changes in recording levels in 2006 and 2009. Source: CEFAS, 2024.

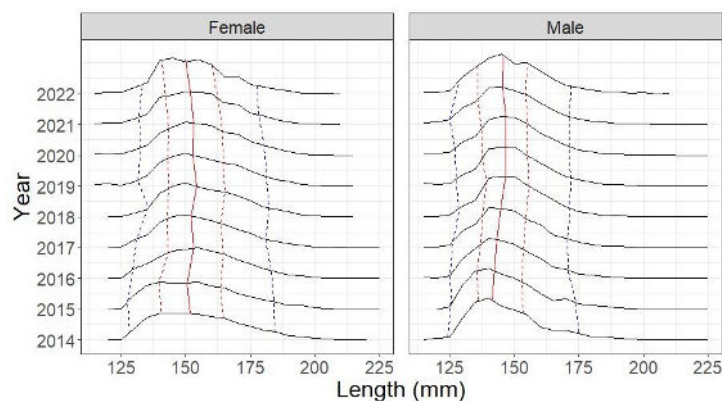


Figure 7: Length distributions (running three year average) as used in the assessments. Solid red line represents the median length; blue dashed lines represent 25th and 75th percentiles; red dashed lines represent the 5th and 95th percentiles. Source: CEFAS, 2024.

FDI data reported in Figure 8, below, shows clearly that landings for the entire subarea 4b were dominated by UK. Note that catch by Irish vessels are not included due confidentiality with the few vessels involved. Also the catch by Norwegian vessels is not part of FDI data, but these vessels are part of the client group.

Discard data available from FDI database (<https://stecf.jrc.ec.europa.eu/dd/fdi/explore-data>), show that the percentage of discards was usually below 2%.

In term of specific management measures applied for Central North Sea edible crab, UK and EU implemented a Minimum Conservation Reference Size (MCRS) of 130mm carapace width (CW) apply north of 51°N. National UK legislation also restricts the proportion of the crab landings which is detached claws caught by pots or creels to less than 1% by weight of total catch. A by-catch limit of no more than 75kg per day of crab claws taken by other gear types can be landed. Moreover, the national UK legislation restricts the number of shellfish licences available (in England and Wales) and also prohibits landing of berried and soft crabs. Local IFCA legislation varies and is detailed in Table 8.

Table 8: Regional byelaws on Central North Sea crab fisheries. *Only applicable within the previous North Eastern Sea Fisheries Committee District. Source: CEFAS, 2024.

| Type of Byelaw | Northumberland IFCA | North Eastern IFCA |
|---|---------------------|----------------------------|
| Shellfish permits | Yes | Yes* |
| Minimum Conservation Reference Size | Yes – 130mm | Yes – 140mm |
| Maximum Pot Limit | Yes - 800 | No |
| Escape Gaps | No | Yes* |
| Maximum Vessel Length | Yes -12m | Yes – 10m/14m (some areas) |
| Towed Gear Restrictions | No | No |
| Prohibits the Use of Crab for Bait | Yes | Yes |
| Prohibits the Removal of Parts of Crabs | Yes | Yes |

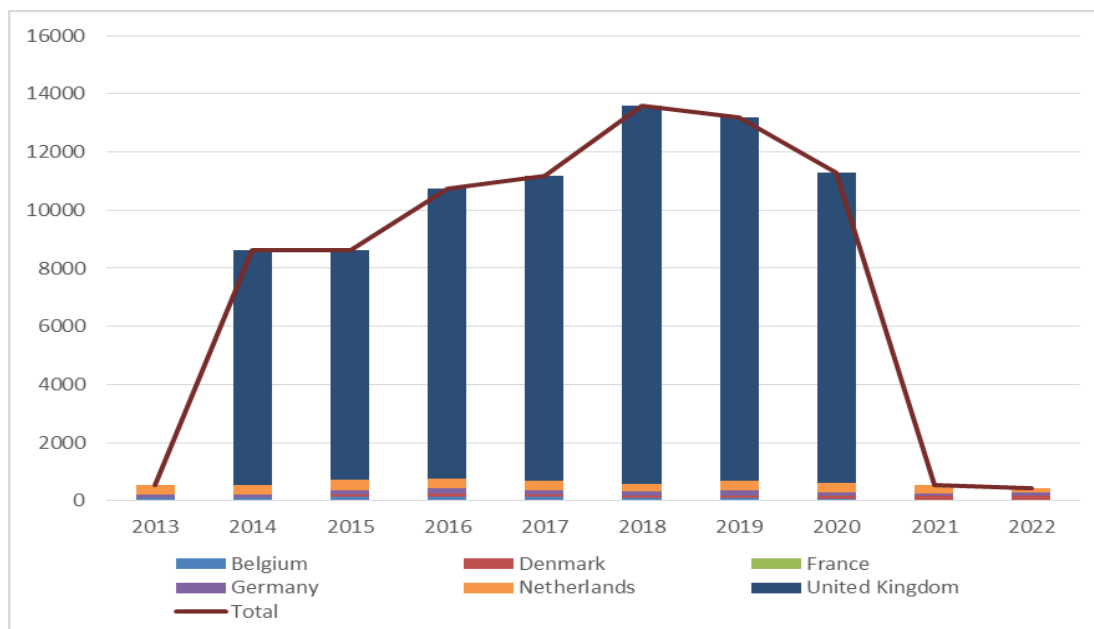


Figure 8: Landing data of edible crab in subarea 4b outside UK EEZ. UK data not reported in 2021 and 2022. Source: <https://stecf.jrc.ec.europa.eu/dd/fdi/explore-data>

4.4.5 Catch profiles

Catch profiles per nationality are reported in Figure 8. Note that catch from Irish and Norwegian vessels are not captured in FDI data, indicating that this is an underestimate of total landings.

4.4.6 Total Allowable Catch (TAC) and catch data

Catch data are presented in [Table 9](#) ~~Table 8~~. The client group has estimated total landings across the five companies for the most recent fishing season, 2023 of around 6,200 tonnes. It is not certain whether these and those of other fishing nations would amount to a total that is close to the 11,000 tonnes reported for 2020 in STECF data.

Table 9: Total Allowable Catch (TAC) and catch data

| TAC / Catch Data | Year | Amount |
|--|------|-------------------|
| TAC | - | NA |
| UoA share of TAC | - | NA |
| Total catch by UoA (most recent year) | 2023 | ≈ 6,200 tonnes* |
| Total catch by UoA (second most recent year) | 2020 | ≈ 11,000 tonnes** |

*Based on estimated landings reported by the 13 vessels operating under the 5 UoC

**FDI data, see Figure 8.



4.4.7 Principle 1 Performance Indicator scores and rationales

PI 1.1.1 – Stock status

| | | | | |
|-----------------|---|--|--|--|
| PI 1.1.1 | | The stock is at a level that maintains high productivity and has a low probability of recruitment overfishing | | |
| Scoring issue | | SG 60 | SG 80 | SG 100 |
| a | Stock status relative to recruitment impairment | | | |
| | Guidepost | It is likely that the stock is above the point of recruitment impairment (PRI). | It is highly likely that the stock is above the PRI. | There is a high degree of certainty that the stock is above the PRI. |
| | Met? | Yes | No | No |
| Rationale | | <p>CEFAS 2024 provided an estimate by sex of the spawning biomass at sea of edible crab (<i>Cancer pagurus</i>) in the Central North Sea. CEFAS also estimated a limit reference point that having fisheries operating beyond this level was considered to carry higher risk to the production of further generations. This value is defined as 15% of virgin SpR and can be considered a good PRI proxy. According to CEFAS 2024 evaluation the lower 25th percentile of biomass of female is above PRI, while the median value of male is just at the minimum reference point level therefore is only likely that the entire stock (males and females) is above the PRI, meeting only SG 60.</p> | | |
| b | Stock status in relation to achievement of maximum sustainable yield (MSY) | | | |
| | Guidepost | | The stock is at or fluctuating around a level consistent with MSY. | There is a high degree of certainty that the stock has been fluctuating around a level consistent with MSY or has been above this level over recent years. |
| | Met? | | No | No |
| Rationale | | <p>CEFAS provided an estimate by sex of the spawning biomass at sea of edible crab (<i>Cancer pagurus</i>) in the Central North Sea. CEFAS also estimated a target reference point of fishing mortality and biomass at sea in correspondence of which maximum landings can be regularly taken without causing stock collapse. The CEFAS 2024 assessment used 35% of virgin Spawner per Recruit (SpR) as the MSY level proxy, and this is commonly used around the world to estimate the fishing rate likely to deliver MSY. According to CEFAS evaluation both sexes biomass are below MSY proxy for most of the time series. Therefore, SG80 is not met</p> | | |

| Stock status relative to reference points | | | |
|---|---------------------------------------|--------------------------|--|
| | Type of reference point | Value of reference point | Current stock status relative to reference point |
| Reference point used in scoring stock relative to PRI (Sla) | PRI = SpR 15% Virgin biomass (Female) | ≈ 3800 t | ≈ 1.55 |
| | PRI = SpR 15% Virgin biomass (Male) | ≈ 3800 t | ≈ 1.00 |



| | | | |
|---|--|----------|--------|
| Reference point used in scoring stock relative to MSY (S1b) | B _{MSY} = SpR 35% Virgin biomass (Female) | ≈ 5800 t | ≈ 0.68 |
| | B _{MSY} = SpR 35% Virgin biomass (Male) | ≈ 5800 t | ≈ 0.44 |

| | |
|---|-------------------------------|
| Draft scoring range | 60-79 |
| Information gap indicator | Information sufficient |
| Data-deficient? (Risk-Based Framework needed) | No |

PI 1.1.2 – Stock rebuilding

| PI 1.1.2 | | Where the stock is reduced, there is evidence of stock rebuilding within a specified timeframe | | |
|---------------|---|--|--|---|
| Scoring issue | | SG 60 | SG 80 | SG 100 |
| a | Rebuilding timeframes | | | |
| | Guide post | A rebuilding timeframe is specified for the stock that is the shorter of 20 years or 2 times its generation time . For cases where 2 generations is less than 5 years, the rebuilding timeframe is up to 5 years. | | The shortest practicable rebuilding timeframe is specified that does not exceed 1 generation time for the stock. |
| | Met? | No | | No |
| Rationale | According to the information available and the measures implemented there no evidence of a rebuilding plan in place for the present stock. Therefore, SG 60 is not met. | | | |
| b | Rebuilding evaluation | | | |
| | Guide post | Monitoring is in place to determine whether the rebuilding strategies are effective in rebuilding the stock within the specified timeframe. | There is evidence that the rebuilding strategies are rebuilding stocks, or it is likely based on simulation modelling, exploitation rates, or previous performance that they will be able to rebuild the stock within the specified timeframe . | There is strong evidence that the rebuilding strategies are rebuilding stocks, or it is highly likely based on simulation modelling, exploitation rates, or previous performance that they will be able to rebuild the stock within the specified timeframe . |
| | Met? | NA | NA | NA |
| Rationale | As SG60 is not met in Sla the UoA fails and no further scoring is required for the PI. | | | |

| | |
|---------------------|---------------|
| Draft scoring range | <60 |
|---------------------|---------------|



Information gap indicator

More information sought

Confirm with management authority that a rebuilding plan is not in place.



PI 1.2.1 – Harvest strategy

| PI 1.2.1 | | There is a robust and precautionary harvest strategy in place | | |
|---------------|------------------------------------|--|--|--|
| Scoring issue | | SG 60 | SG 80 | SG 100 |
| a | Harvest strategy design | | | |
| | Guide post | The harvest strategy is expected to achieve stock management objectives reflected in PI 1.1.1/PI 1.1.1A SG80. | The harvest strategy is responsive to the state of the stock and the elements of the harvest strategy work together towards achieving stock management objectives reflected in PI 1.1.1/PI 1.1.1A SG80. | The harvest strategy is responsive to the state of the stock and is designed to achieve stock management objectives reflected in PI 1.1.1/PI 1.1.1A SG80. |
| | Met? | Yes | No | No |
| Rationale | | <p>The overall harvest strategy is underpinned by the CFP as well as Defra and the MMO, who are responsible for managing crab fisheries beyond 6 nautical miles in UK waters, whereas from the coast out to 6 nautical miles in English waters, responsibility lies with the Inshore Fisheries and Conservation Authorities (IFCAs). The HS includes implementing effective assessment methodologies for fishing at Maximum Sustainable Yield (MSY), and the aim is “to continue to maintain sustainable and well managed shellfish fisheries operating within a healthy marine environment.”</p> <p>The key elements of the HS are data collection, estimates of stock status, carried out by CEFAS, and management measures as effort control and MLS. A significant component of CEFAS assessment is the evaluation of the stock against pre-determined reference points which are good MSY proxies. Therefore, it expected that the management authorities would implement measures to achieve stock management objectives reflected in PI 1.1.1 SG80, meeting SG 60.</p> <p>However, the implementation of harvest control rules (HCRs) if the reference points are exceeded is not clearly established. Moreover, Defra and MMO do not apply controls to UK vessels on exploitation in the offshore fishery as well as they have no control over the offshore fishing area. Therefore, it is not possible to conclude that elements of the harvest strategy work together towards achieving stock management objectives reflected in PI 1.1.1 SG80. Thus SG 80 is not met.</p> | | |
| b | Harvest strategy evaluation | | | |
| | Guide post | The harvest strategy is likely to work based on prior experience or plausible argument. | The harvest strategy has been tested and is expected to meet the objectives reflected in PI 1.1.1/ PI 1.1.1A SG80 or there is evidence that the harvest strategy is achieving its objectives reflected in PI 1.1.1/ PI 1.1.1A SG80. | The performance of the harvest strategy has been evaluated and evidence exists to show that it is achieving the objectives reflected in PI 1.1.1/ PI 1.1.1A SG80, including being clearly able to maintain stocks at target levels. |
| | Met? | Yes | No | No |

| | | | | |
|-----------------|------------|---|---|--|
| PI 1.2.1 | | There is a robust and precautionary harvest strategy in place | | |
| Rationale | | <p>There is no indication of recruitment impairment in the last years. This can be considered a plausible argument, which would suggest that the harvest strategy is meeting its objectives and the SG60 is met therefore.</p> <p>However, there is no evidence that the HS is achieving its objectives. Therefore, SG80 is not met.</p> | | |
| | | Harvest strategy monitoring | | |
| c | Guide post | Monitoring is in place that is expected to determine whether the harvest strategy is working. | | |
| | Met? | Yes | | |
| Rationale | | <p>A requirement of the management authorities is that catch and fishing effort of the commercial fishery are recorded on log books permitting the evaluation of stock status against reference points. At-sea and shore-based monitoring provides information on stock structure such as size distribution and sex ratio. In addition, enforcement activity at both sea and on the quayside ensures that all fisheries regulations including creel limits and minimum landing size (MLS) are observed. Sufficient monitoring is carried out to determine whether the harvest strategy is working. The SG60 is met.</p> | | |
| | | Harvest strategy review | | |
| d | Guide post | | | The harvest strategy is periodically reviewed and improved as necessary. |
| | Met? | | | No |
| Rationale | | <p>There is no evidence that all the elements of the HS have been reviewed. Therefore, SG100 is not met.</p> | | |
| | | Shark finning | | |
| e | Guide post | There is a high degree of certainty that shark finning is not taking place. | | |
| | Met? | NA | | |
| Rationale | | <p>The stock is not a shark.</p> | | |
| | | Review of alternative measures | | |
| f | Guide post | There has been a review of alternative measures to minimise UoA-related mortality of unwanted catch of the target stock. | There is a review every 5 years of alternative measures to minimise UoA-related mortality of unwanted catch of the target stock and they are implemented as appropriate. | There is a review that happens every 2 years of alternative measures to minimise UoA-related mortality of unwanted catch of the target stock, and they are implemented, as appropriate. |

| | | | | |
|-----------------|------|---|-----------|-----------|
| PI 1.2.1 | | There is a robust and precautionary harvest strategy in place | | |
| | Met? | NA | NA | NA |
| Rationale | | According with CEFAS (2024) and FDI data, discarding is negligible for this species and survivability is high. Therefore this SG is not scored. | | |

| | |
|---------------------------|--|
| Draft scoring range | 60-79 |
| Information gap indicator | More information sought More information is sought about the implementation of a management plan and measures responsive of the status of the stock. |

PI 1.2.2 – Harvest control rules and tools

| | | | | |
|-----------------|--|--|---|---|
| PI 1.2.2 | | There are well-defined and effective HCRs in place | | |
| Scoring issue | | SG 60 | SG 80 | SG 100 |
| | | HCRs design and application | | |
| a | Guid e post | Generally understood HCRs are in place that are expected to reduce the exploitation rate as the PRI is approached. | Well-defined HCRs are in place that ensure the exploitation rate is reduced as the PRI is approached, and are expected to keep the stock fluctuating around a target level consistent with (or above) MSY, or for key LTL species at levels consistent with ecosystem needs. | The HCRs are expected to keep the stock fluctuating at or above a target level consistent with MSY, or another more appropriate level most of the time, taking into account the ecological role of the stock. |
| | Met? | Yes | No | No |
| Rationale | | As noted above, there is not a responsive harvest control rule in place in terms of reduction of fishing effort. When scoring at the SG60 level there is also scope within the standard to consider and give credit where HCRs may be ‘available’ (GSA2.5.2 – 2.5.5 Scoring ‘available’ HCRs at SG60). This is applicable in cases such as this where, there is no evidence of recruitment impairment of the stock. In this case, although there is no defined HCR, the fact that HCRs are effectively used in other crab fisheries (e.g. SSMO Shetland Shellfish Management Organisation, see: www.ssmo.co.uk) is evidence that also for the present stock, HCRs are expected to reduce the exploitation rate should the stocks show a depleted status, meeting SG 60. However, it is clear that the HCRs are not available in some written form that has been agreed by the management agency, ideally with stakeholders, and clearly state what actions will be taken at what specific trigger reference point levels. Therefore, SG 80 is not met. | | |
| b | The robustness of HCRs to uncertainty | | | |



| | | | | |
|-----------|---------------------------|---|---|--|
| | Guide post | | The HCRs are likely to be robust to the main uncertainties. | The HCRs take account of a wide range of uncertainties including the ecological role of the stock, and there is evidence that the HCRs are robust to the main uncertainties. |
| | Met? | | No | No |
| Rationale | | The lack of well-defined HCRs would not allow to score SG80. | | |
| c | Evaluation of HCRs | | | |
| | Guide post | There is some evidence that tools used or available to implement HCRs are appropriate and effective in controlling exploitation. | Available evidence indicates that the tools in use are appropriate and effective in achieving the exploitation levels required under the HCRs. | Evidence clearly shows that the tools in use are effective in achieving the exploitation levels required under the HCRs. |
| | Met? | Yes | No | |
| Rationale | | <p>Although there is no defined HCR, the fact that HCRs are effectively used in other crab fisheries, means that there is the availability of tools to effectively control the rate of exploitation. There is some evidence, that such tools used or available to implement HCRs are appropriate and effective in controlling exploitation. The evidences are the stability of fishing mortalities by sex in line with the limit reference point, meeting SG60.</p> <p>However, there is no evidence indicating that the tools in use are appropriate and effective in achieving the exploitation levels required under the HCRs and SG80 is not met.</p> | | |

| | |
|---------------------------|--|
| Draft scoring range | 60-79 |
| Information gap indicator | More information sought More information is needed on tools of the HCRs. |

PI 1.2.3 – Information and monitoring



| PI 1.2.3 | | Relevant information is collected to support the harvest strategy | | |
|---------------|-----------------------------|---|---|---|
| Scoring issue | | SG 60 | SG 80 | SG 100 |
| a | Range of information | | | |
| | Guide post | Some relevant information related to stock structure, stock productivity, and fleet composition is available to support the harvest strategy. | Sufficient relevant information related to stock structure, stock productivity, fleet composition, and other data are available to support the harvest strategy. | A comprehensive range of information (on stock structure, stock productivity, fleet composition, stock abundance, UoA removals, and other information such as environmental information), including some that may not be directly related to the current harvest strategy, is available. |
| | Met? | Yes | No | No |
| Rationale | | <p>Some information is available on stock structure (see: Bannister, 2009), stock productivity (see: CEFAS, 2020, 2024, ICES, 2023), fleet composition, effort distribution and other biological data as sex ratio and size composition by year. Such data would support the HS providing the element to carry out a stock assessment, meeting SG 60.</p> <p>However, the data are not considered to be sufficient because they are not including information on the Danish fishery, which should be available to inform the current harvest strategy and SG 80 is not met.</p> | | |
| b | Monitoring | | | |
| | Guide post | Stock abundance and UoA removals are monitored and at least 1 indicator is available and monitored with sufficient frequency to support the harvest strategy. | Stock abundance and UoA removals are regularly monitored at a level of accuracy and coverage consistent with the harvest strategy , and 1 or more indicators are available and monitored with sufficient frequency to support the harvest strategy. | All information required by the harvest strategy is monitored with high frequency and a high degree of certainty, and there is a good understanding of the inherent uncertainties in the information (data) and the robustness of assessment and management in dealing with this uncertainty. |
| | Met? | Yes | No | No |
| Rationale | | <p>Stock abundance data from CPUE and UoA removals are regularly monitored by CEFAS at a level of accuracy and coverage consistent with the harvest control rule (i.e.: availability of size data to control the MLS). In addition more than one indicator is used to support the HCRs (mean size by sex), meeting SG 60.</p> <p>However, the coverage of stock removals used in the assessment (specifically the monitoring of removals in the Eastern North Sea offshore fishery) is not sufficient to inform the harvest strategy. Also it is not clear if there is a good understanding of inherent uncertainties in the data. Therefore, SG 80 is not met.</p> | | |

| Comprehensiveness of information | | | |
|---|------------|--|---|
| c | Guide post | | There is good information on all other fishery removals from the stock. |
| | Met? | | Yes |
| Rationale | | According to the data presented in CEFAS (2024) as well as in FDI database all fishery removals are monitored, also from other EU countries. CEFAS is also working with the MMO to ensure that landings statistics are as complete and accurate as possible and working with the IFCAs to ensure maximum efficiency and best practice in data collection, meeting SG 80. | |

| | |
|---------------------------|---|
| Draft scoring range | 60-79 |
| Information gap indicator | More information sought on the exploitation in the area off Danish coast. |

PI 1.2.4 – Assessment of stock status



| PI 1.2.4 | | There is an assessment of the stock status | | |
|---------------|---|---|--|--|
| Scoring issue | | SG 60 | SG 80 | SG 100 |
| a | Appropriateness of assessment to stock under consideration | | | |
| | Guide post | | The assessment is appropriate for the stock and for the harvest strategy. | The assessment takes into account the major features relevant to the biology of the species and the nature of the UoA. |
| | Met? | | Yes | No |
| Rationale | | <p>The methodology used in CEFAS assessment is a Length Cohort Analysis, which follows the change in shape of the length-frequency (numbers at length) from one year to the next (see: Jones (1990) for further details). As animals get older, they grow and die, the interplay of these two vital functions dictating how many animals at a given size there are in the population. Armed with knowledge of the growth rate of animals and the rate of natural death (M) assumed to be 0.2, the shape of the length-frequency curve can be used to infer the rate at which the fishery is removing individuals. Data from the Danish coast fishery from UK registered vessels, or vessels landing into England and Wales are included in CEFAS 2024 assessment. Therefore the assessment approach can be considered appropriate for the stock and the harvest strategy meeting SG 80.</p> <p>However, the assessment does not take into account major features relevant to the biology (i.e., ageing) of the species and the nature of the UoA (i.e., gear selectivity) and SG100 is not met.</p> | | |
| b | Assessment approach | | | |
| | Guide post | The assessment estimates stock status relative to generic reference points appropriate to the species category. | The assessment estimates stock status relative to reference points that are appropriate to the stock and can be estimated. | |
| | Met? | Yes | Yes | |
| Rationale | | <p>The CEFAS 2024 assessment used 35% of virgin Spawner per Recruit (SpR) as the MSY level proxy, and this is commonly used around the world to estimate the fishing rate likely to deliver MSY. A second point termed a limit reference point has also been calculated and having fisheries operating beyond this level is considered to carry higher risk to the production of further generations. This value is defined as 15% of virgin SpR. Therefore, SG 60 and 80 are met.</p> | | |
| c | Uncertainty in the assessment | | | |
| | Guide post | The assessment identifies major sources of uncertainty. | The assessment takes uncertainty into account. | The assessment evaluates stock status relative to reference points in a probabilistic way. |
| | Met? | Yes | Yes | No |

| | | | |
|-----------|---|---|--|
| Rationale | The Length Cohort Analysis, takes the into account key uncertainties as the understanding of growth and natural death rates and the representativeness of the landings used to collect length samples. Therefore, SG 60 and 80 are met. However, the results are not provided in probabilistic way and SG 100 is not met. | | |
| d | Evaluation of assessment | | |
| | Guide post | | The assessment has been tested and shown to be robust. Alternative hypotheses and assessment approaches have been rigorously explored. |
| | Met? | | No |
| Rationale | There is no evidence that other approaches and alternative hypotheses have been rigorously explored. Therefore SG 100 is not met. | | |
| e | Peer review of assessment | | |
| | Guide post | The assessment of stock status is subject to peer review. | The assessment has been internally and externally peer reviewed. |
| | Met? | Yes | No |
| Rationale | Cefas has a research program which continually searches to review and improve the understanding of processes governing population dynamics and there are currently projects focussing on growth and mortality rates. Therefore, there is a sort of internal review, meeting SG 80. However there is no evidence of external review and SG 100 is not met. | | |

| | |
|---------------------------|---|
| Draft scoring range | ≥ 80 |
| Information gap indicator | Information sufficient to score PI |

4.5 Principle 2

4.5.1 Principle 2 background

This PA has been conducted under version 3 of the MSC Fisheries Standard, which was released in October 2022. For further details please refer to the finer details of the new standard here:

The MSC Fisheries Standard version 3 | Marine Stewardship Council and MSC Fisheries Standard v3.0.

Briefly, for Principle 2, there are 4 components to evaluate: In-scope species, ETP/OOS species, Habitat, and Ecosystem. Reference(s): Fisheries Standard v3.0 SA3.1.2, SA3.1.5 and decision tree outlined in Figure SA3

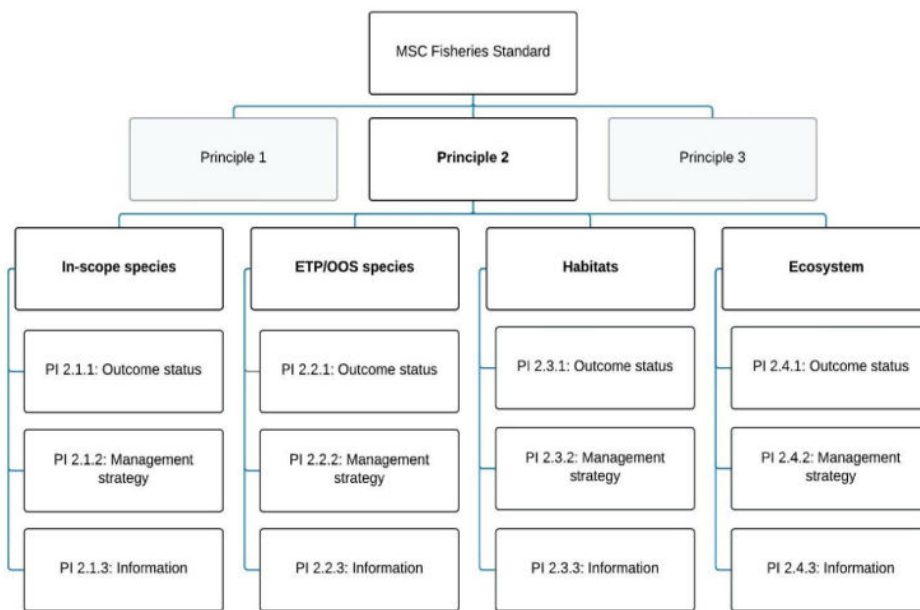


Figure 9 Principle 2 Assessment tree structure (Source: [MSC Fisheries Standard v3.0](#))

The designation of species into the various components follows a decision tree as outlined in Figure SA3 in the Fisheries Standard v3.0.

4.5.2 Information on the fishery

The information available for this PA, to determine In-scope and OOS/ETP species, was derived from interviews with several crab fishers. This information is qualitative, there was very limited quantitative data available on catch, bycatch and location of activity.

Fishing Gear

Brown crab are caught using static gear, two main shapes of trap are used to target brown crabs: the inkwell-shaped trap and a standard D-shaped trap with entrances on either side or on top (Figure 10). D-shaped traps (also called creels) with parlour sections (separate sections designed to retain catch) are also used. Different traps are favoured by individual fishers across different areas of the UK and further afield.

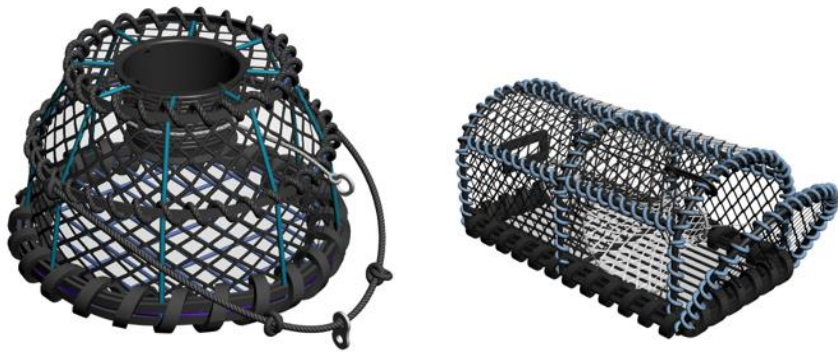


Figure 10 Potting gear types: inkwell (left) and D-shaped creel. (source: Seafish)

It is not known whether the design routinely incorporates a biodegradable panel to avoid ghost fishing of lost gear. According to one interview, almost all crab fishers use horizontal creels, only one fisher (according to the interviewee) uses inkwell creel design. It is thought that the inkwell design is easier to use and allows crabs to escape – so no ghost fishing of crabs.

Each vessel can carry up to 3,000 pots (client interviews Feb 2024). Generally, pots are set in fleets or strings, which consist of up to 150 pots per string, which sit on the sea floor in a line. Weights or anchors are attached to either end of this string/fleet with marker buoys or flags at either end, as well as GPS position is taken. Pots are baited to attract crab, and then left for a period of time, i.e 'soak time', which can be from 24 hours to 5 days, weather and time in season permitting. The longer pots are left the more chance of the bait running out and the increase in risk of fighting and predation between animals trapped within the pot. The pots are hauled by on-board hydraulic haulers.

Gear loss

Interviewees indicated that loss of pots is relatively small, there is an expectation to lose about 100-200 pots per year. This could be due to pots getting stuck on substrate and coming undone from toggle system if not attached properly (due to inexperience of crew, for example). Occasionally there can be gear conflict with a beam trawler, which may be operating in the same area and communication between the vessels has failed. Then the trawler can damage a pot line resulting in loss of pots. This is rare, communication between different fishers is generally good (client interview, Feb 2024)

4.5.3 In Scope Species

In-scope species are designated 'main' or 'minor' following a process outlined in SA3.5.2 onwards (of the Fisheries Standard v3.0), whereby 'main' means:

- a) that the catch of a species by the UoA comprises 5% or more by weight of the total catch of all species by the UoA, or
- b) the species is classified as "less resilient" and the catch of the species by the UoA comprises 2% or more by weight of the total catch of all species by the UoA

All other in-scope species that are not considered "main" are "minor" species; the UoA's impact is considered "negligible" for "minor species" that make up < 2% of total UoA catch.

No quantitative catch profile was available for this fishery. Interviews with fishers indicate that there is very little bycatch, all undersized, soft and berried female crabs are released immediately back into the sea. Occasionally there is bycatch of cod or other whitefish, which is either released or retained for the pot. A summary of recent studies on survivability of discards in a range of fisheries has been published by STECF (2014) and ICES WGMEDS (2020). In general, the studies showed that elasmobranchs, specifically species of ray, have the highest and most consistent levels of discard survival. Survival rates are typically in excess of 50% across all gears and greater than 80% in many cases. Considering that the crab pots are deployed in relatively shallow water (between 20-50m), and specimen are not necessarily damaged when brought up (unless attacked by crabs), this further aids survivability after quick release back into the sea.



Bait is evaluated as in-scope species. Interviews indicate that the kind of bait used consists of fish frames (from farmed salmon), as well as horse mackerel (scad), redfish, gurnard, herring and fish unfit for human consumption, obtained from market. It was stated that about 75% of the bait used is from processors and 25% from market. One interviewee indicated that they use about 1 tonne of bait per day (over several 1000 traps). All bait needs to be frozen and specially boxed to make it easy to use.

As part of an assessment of this crab fishery, a more quantitative catch profile would need to be available, down to species level, as well as greater detail on bait, such as total amount used across the fishery, to make it possible to determine whether particular bait species will meet main/minor in-scope criteria. The source of the bait species would need to be known too, i.e. where those market-based species have been caught, in order to trace it back to the stock.

4.5.4 ETP/Out of scope species

Using the decision tree ([Error! Reference source not found. Figure 2](#)) and SA3.1.4 (of MSC FCR v3), ETP/OOS species are determined as follows:

- a. Species impacted by the UoA that are classified as amphibians, reptiles, birds, or mammals (hereafter known as Out-of-Scope, OOS, species).
- b. Species impacted by the UoA that are classified as fish or invertebrates and are listed in any of the following, subject to modifications if relevant as per SA3.1.4.1–4:
 - i. Appendix 1 of the Convention on International Trade in Endangered Species (CITES).
 - ii. Appendix 2 of CITES.
 - iii. Appendix 1 of the Convention on the Conservation of Migratory Species of Wild Animals (CMS).
 - iv. Appendix 2 of CMS.
 - v. The International Union for Conservation of Nature (IUCN) Red List of Threatened Species and classified globally as “Critically Endangered (Cr)”.
 - vi. The IUCN Red List of Threatened Species and classified globally as “Endangered (En)”.
 - vii. National ETP legislation.

The new v3.0 fisheries standard includes guidance and interpretations as to how to decide which species are ETPs, but for the purpose of this PA, the criteria listed above are the main ones and shall suffice.

The species that fall within the scope of the MSC definition of ETP species include the species listed in Annex II of the EC Habitats Directive (92/43/EC) and the Wild Birds Directive (2009/147/EC). Furthermore, seabirds are also protected under the Wildlife and Countryside Act 1981¹. The species listed in this legislation could be vulnerable to encounter crab trap gears/ entanglement, and are: -

- Bottlenose dolphins (*Tursiops truncatus*)
- Harbour porpoise (*Phocoena phocoena*)
- Harbour seals (*Phoca vitulina*)
- Grey seals (*Halichoerus grypus*)
- Basking shark (*Cetorhinus maximus*)
- Angel shark (*Squatina squatina*) – in: WCA 1981 update
- White skate (*Rostroraja alba*) – in: WCA 2981 update
- Twait shad (*Alosa fallax*)
- Allis shad (*Alosa alosa*)
- Eel (*Anguilla anguilla*)

¹ [Wildlife and Countryside Act 1981 \(legislation.gov.uk\)](http://legislation.gov.uk)

- Marine turtles (several species)
- Seabird species

Eels are protected under the Natural Environment and Rural Communities Act 2006 as a species of Principle Importance for the purpose of conserving of biodiversity; they are also protected under the European Eel Regulation (EC) 1100/2007 and the Eels England and Wales Regulations 2009. On the IUCN Redlist it is currently recorded as Critically Endangered 'CR' (assessed 2018)²

Article 20 ("Prohibited species") of the current EU Regulation (2023/194)³ for setting fishing opportunities lists the following 'prohibited species' relevant to the NS fisheries in this PA:

- Common skate (Blue skate *Dipturus batis* & Flapper skate *Dipturus intermedius* complex area 4, 6, 7;
- Tope shark (*Galeorhinus galeus*) area 4, 6, 7;
- Porbeagle (*Lamna nasus*) – all waters;
- Whale shark (*Rhincodon typus*) – all waters;
- Spurdog / picked dogfish (*Squalus acanthias*) area 4, 6, 7;
- Starry ray (*Amblyraja radiata*) in 4, 7d, 3a;
- Birdbeak dogfish (*Deania calcea*) in United Kingdom and Union waters of ICES subarea 4;
- Leafscale gulper shark (*Centrophorus squamosus*), area 4;
- Portuguese dogfish (*Centroscymnus coelolepis*) in United Kingdom and Union waters of ICES subarea 4;
- Kitefin shark (*Dalatias licha*) in United Kingdom and Union waters of ICES subarea 4;
- Thornback ray (*Raja clavata*) in Union waters of ICES division 3a;

According to the regulation, 'when accidentally caught, species referred to above shall not be harmed. Specimens shall be promptly released' (EU Regulation 2023/194). This requirement over-rides the landing obligation for the target fisheries. An important exemption from this requirement is provided for spurdog (*Squalus acanthias*), for this species, the EU permit vessels that are participating in a "by-catch avoidance programme" that has been approved by STECF to land up to 2 tonnes of spurdog per month providing that those spurdog were dead at the time the fishing gear was hauled.

The current EU Technical Regulation (1241/2019) to protect cetaceans requires the use of Acoustic Deterrent Devices ("ADDs") for vessels of over 12m LOA using any bottom-set gillnet or entangling net; and it requires cetacean monitoring schemes to be established for vessels of over 15m LOA. Seals are known to take bait from pots (Client interview, Feb 2024), but there are no reports of impacts to seals resulting for this activity. One potential impact, known to be a significant issue in some pot fisheries is entanglement in ropes. Protected species potentially affected may therefore be of fish (notably basking shark), seals and cetaceans There have been no recorded incidents of entanglement with the fishing gear (anchor ropes on pot lines) of cetaceans or seals (Client interviews, Feb 2024).

Harbour porpoise and bottlenose dolphin are listed under Annex II of the Habitats Directive, requiring the designation of Special Areas of Conservation (SAC) to protect a representative range of their habitats. For cetaceans, there are permissible thresholds, or sustainable take levels, in use, based on criteria defined by international agreements: ASCOBANS (Agreement on the Conservation of Small Cetaceans of the Baltic and North Seas) advises for example that the maximum annual bycatch of Harbour porpoises should not exceed 1.7% of the population in that year; the IWC (International Whaling Commission) states that if the number of small cetaceans captured is greater than 1% of their total population size, then this should cause concern. The ASCOBANS limit is increasingly accepted as being most relevant for most small cetaceans, although ASCOBANS is moving towards a more precautionary approach to reduce the bycatch to less than 1% of the

² [Anguilla anguilla \(European Eel\) \(iucnredlist.org\)](https://www.iucnredlist.org)

³ [Publications Office \(europa.eu\)](https://eur-lex.europa.eu)



best available abundance estimate. No such limits have been proposed for some other ETP species including Basking shark, which have the potential to interact with the fishery.

In general, populations of endangered, threatened and protected (ETP) species are highly studied and well understood in the North Sea, but information (including nil returns) is lacking on ETP interactions with crab fishing gear. Overall the level of interaction between this crab pot fishery and ETP/OOS species is considered not to be significant, but additional information and wider consultation is required to confirm this.

This crab fishery is conducted in international waters in the North Sea, outwith UK waters. Therefore all relevant EU marine protection designations apply, including for UK vessels (note, the UK left the EU as of January 1st 2021).

4.5.5 Habitat

The requirements to meet Performance Indicators for the Habitat component have changed somewhat in v3 of the Fisheries Standard. The bar has been raised for fisheries that interact with benthic habitats. To achieve MSC certification, fisheries must demonstrate they are not causing serious or irreversible harm to the structure and function of seafloor - or 'benthic' - habitats. To help fisheries understand and reduce their impacts, the MSC has developed the Benthic Impacts Tool. The tool was developed in collaboration with the University of Bangor and uses sophisticated modelling software to help predict the impact of fishing gear and vessels on the seafloor. This tool is not mandatory, however, and primarily suggested for demersal trawl type gears.

In v3 of the Fisheries Standard, habitats are divided into more sensitive or less sensitive types, whereby a less sensitive habitat is a habitat that would be able to recover to at least 80% of its unimpacted structure and function within 20 years if fishing were to cease entirely. A more sensitive habitat is a habitat that would be unable to recover to at least 80% of its unimpacted structure and function within 20 years if fishing were to cease entirely. Habitats designated as FAO Vulnerable Marine Ecosystems (VMEs) are "more" sensitive habitats.

A habitat is determined to be "less" or "more" sensitive, irrespective of its protection status.

Triggering RBF

Please note that in v3 of the Standard the RBF for habitat is more likely to be triggered, according to Table 5 in the toolbox ([Table 10-Table 8](#); Criteria for selecting tools):

Table 10 Criteria for selection tools - Extract from table 5 in MSC Fisheries Standard Toolbox v1.1

| Performance Indicator (PI) | Criteria | Next steps |
|----------------------------|---|---|
| 2.3.1 Habitats outcome | <p>1. Quantitative information on the substratum, geomorphology, and biota (SGB) of the habitats encountered is not available, or</p> <p>2. Gear specific, quantitative information of impact of the UoA on habitats encountered is not available. This information shall include knowledge of regeneration ability that is specific to the UoA and/or provided by relevant research which considers impact of the gear(s) on habitats in the relevant area.</p> | <p>If one or both criteria are met, use Tool A (Risk-Based Framework) for this PI and consult Table A1 for implications of using Tool A on other PIs. Option to use Tool C (Benthic Impact Tool) to inform scoring of PI 2.3.1, SI (a).</p> |

It is not clear what 'quantitative information' means here, with regards to SGB – a clarification has been sought from the MSC. With regards to the second criterion, this will likely be met by very few fisheries: currently (under v2.01) the habitat outcome PI is scored using peer-reviewed research and analysis which may have been conducted on relevant habitat types elsewhere, as well as meta-analyses of habitat impact and recovery considered relevant to a fishery under assessment. Under v3 such studies/ research will no longer be considered relevant, triggering the RBF.



However, the v3 Fisheries standard/ ERF/ Toolbox is currently (as of March 2024) undergoing some additional checks, which may mean that an RBF may not be necessary after all by the time this crab fishery is going through a full assessment. So please watch this space.

Sediment map and fishing effort

The type of commonly encountered habitat depends on the habit of brown crab (*C. pagurus*), including their feeding behaviour. As already described under Principle 1 above, brown crab They inhabit rocky ground, particularly under boulders, mixed coarse ground and muddy sand offshore, from the shallow sublittoral to depths around 100m. They hide in cracks and under rocks and buried in soft sediment and emerge to forage for food.⁴ Adults of *C. pagurus* are nocturnal, hiding buried in the substrate during the day, but foraging at night up to 50m from their hideouts. Their diet includes a variety of crustaceans and molluscs (including the gastropods *Nucella lapillus* and *Littorina littorea*, and the bivalves *Ensis*, *Mytilus edulis*, for example). It may stalk or ambush motile prey, and may dig large pits to reach buried molluscs. The main predator of *C. pagurus* is the octopus, which may even attack them inside the crab pots that fishermen use to trap them.

The following maps show the distribution of the sediment types in the area of the crab fishery (Figure 11 Figure 4) and fishing effort, which together give a broader overview of the kind of substrate encountered by the crab pots and the intensity of the encounter.

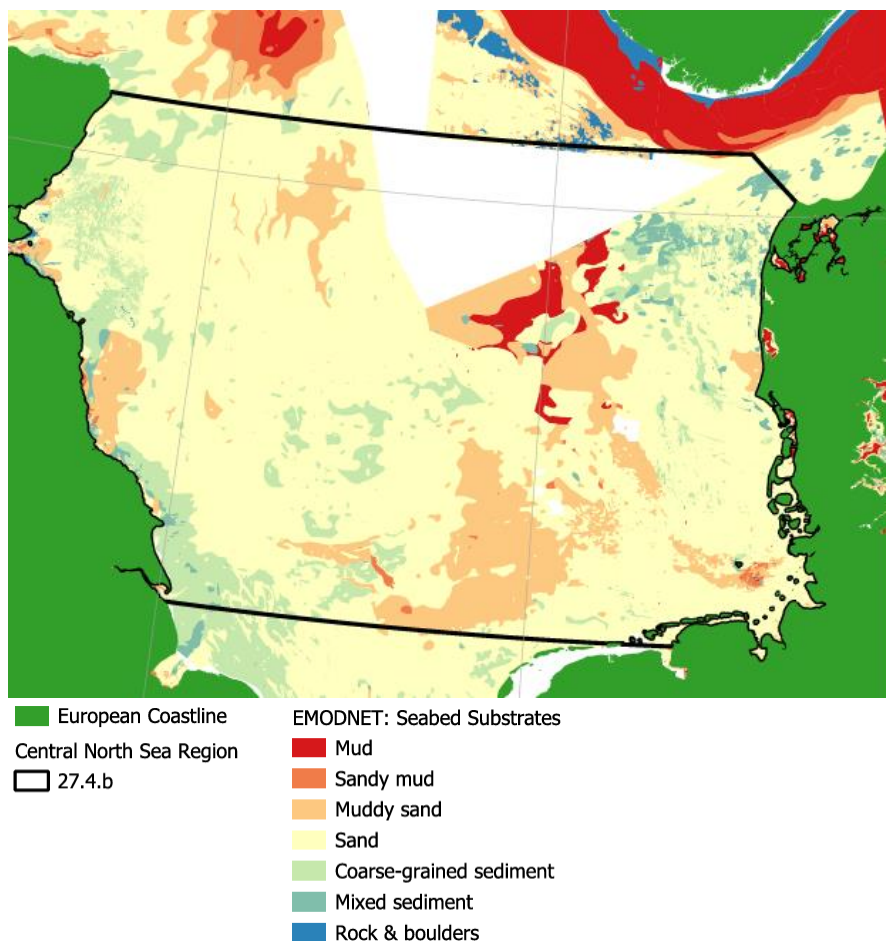


Figure 11 Central North Sea sediment type distribution (Source: EMODNET)

⁴ [Brown / Edible Crab - IFCA North West \(nw-ifca.gov.uk\)](http://nw-ifca.gov.uk)



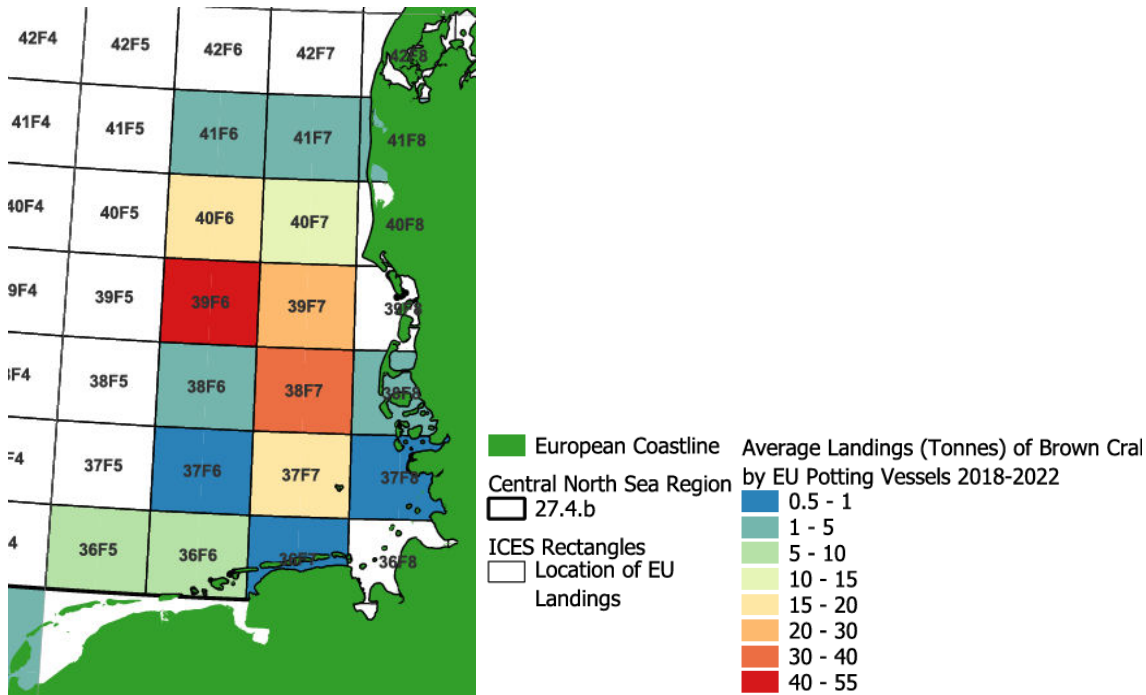


Figure 12 Central North Sea Average Landings by EU crab potting vessels, 2018-2022 (Source: Poseidon Feb 2024)

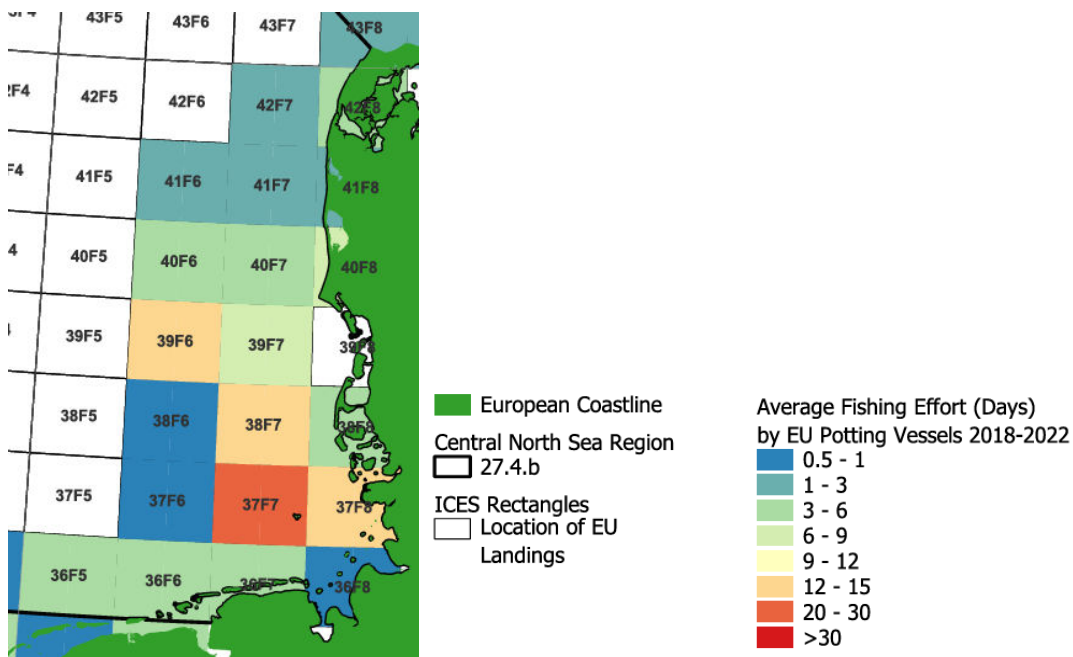


Figure 13 Central North Sea Average Fishing effort (days) by EU crab potting vessels 2018-2020 (Source: Poseidon, Feb 2024)

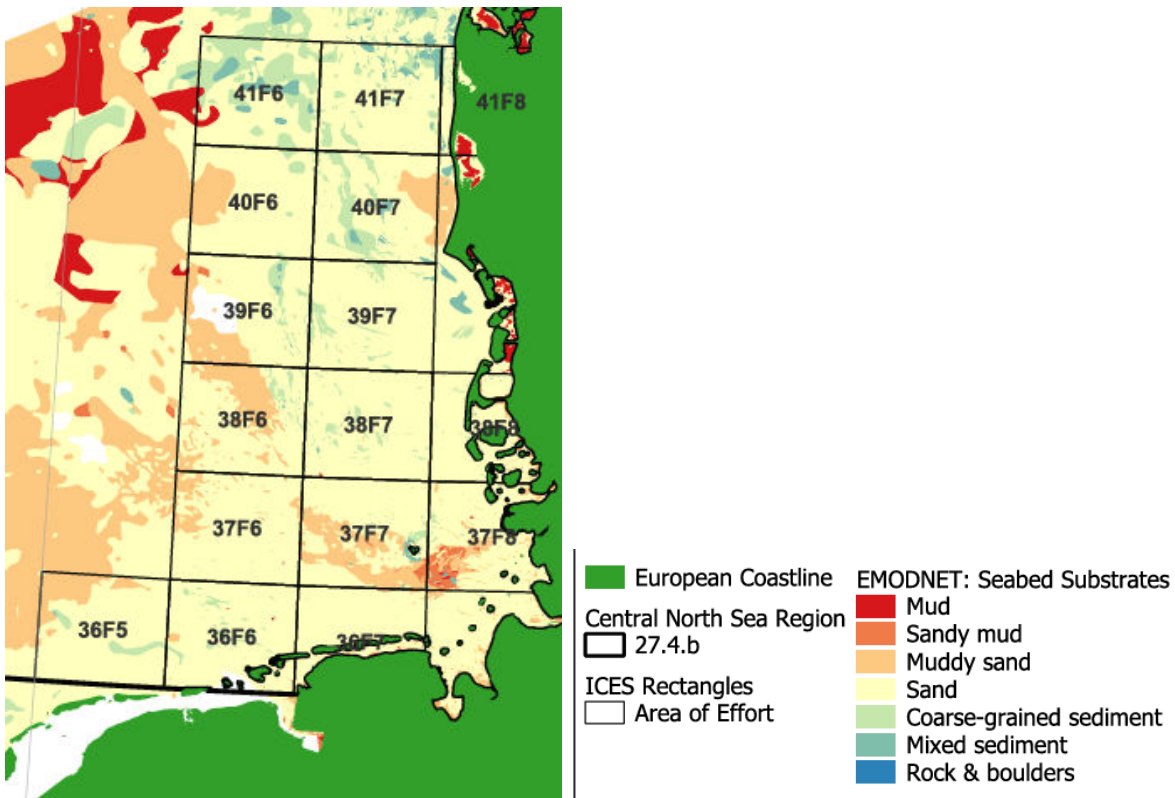


Figure 14 Central North Sea average landings by EU crab potting vessels in relation to underlying seabed sediments, 2018-2022 (Source: Poseidon Feb 2024)

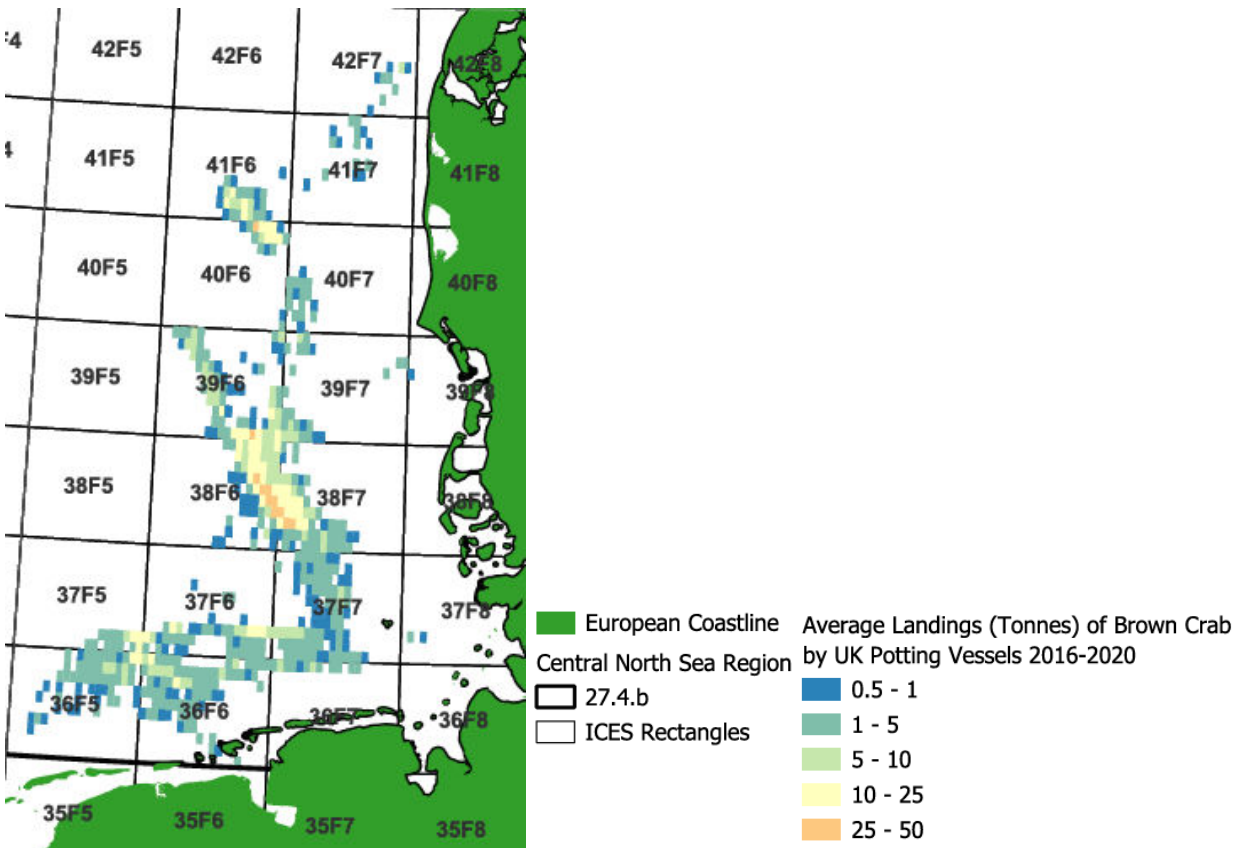


Figure 15 Average landings (tonnes) of brown crab by UK potting vessels, 2016-2020 (Source: Poseidon Feb 2024)

Protected Areas within the crab fishing area



There are several Natura 2000 sites within the vicinity of the brown crab fishing area. These areas are part of the Danish and the German network, based on the Birds Directive as well as the Habitats Directive.

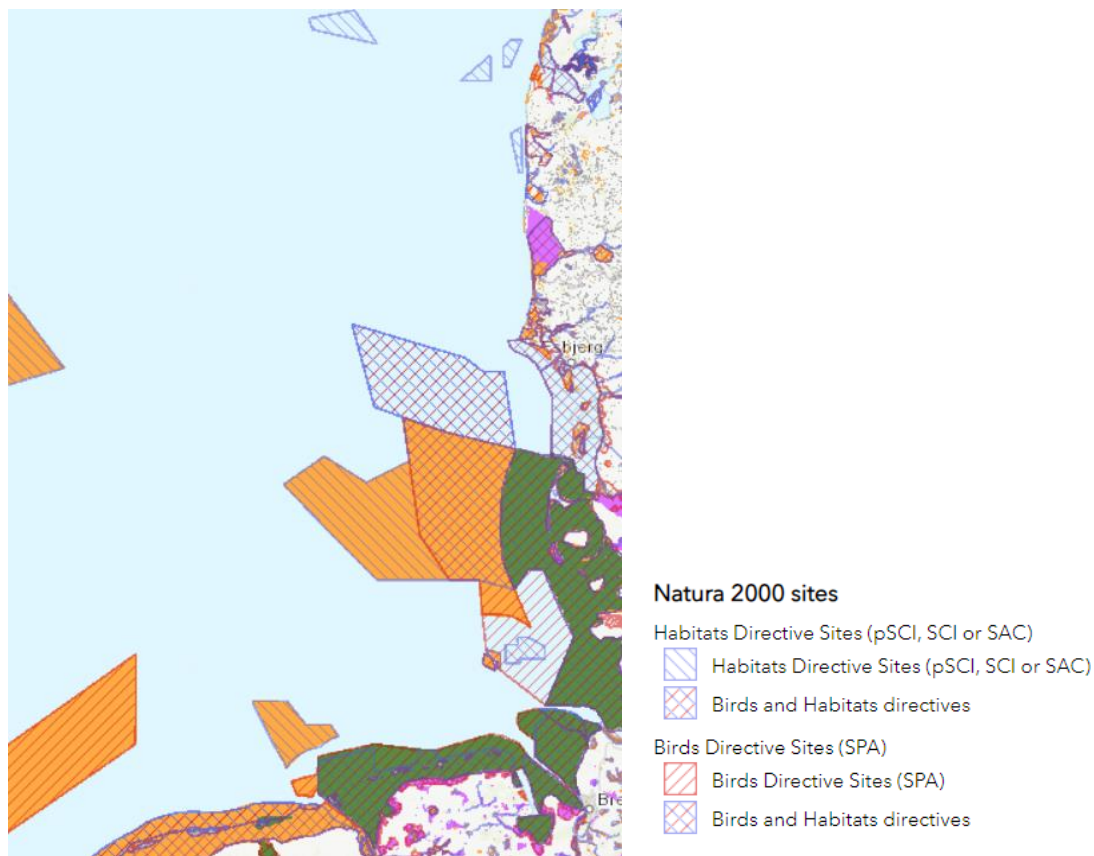
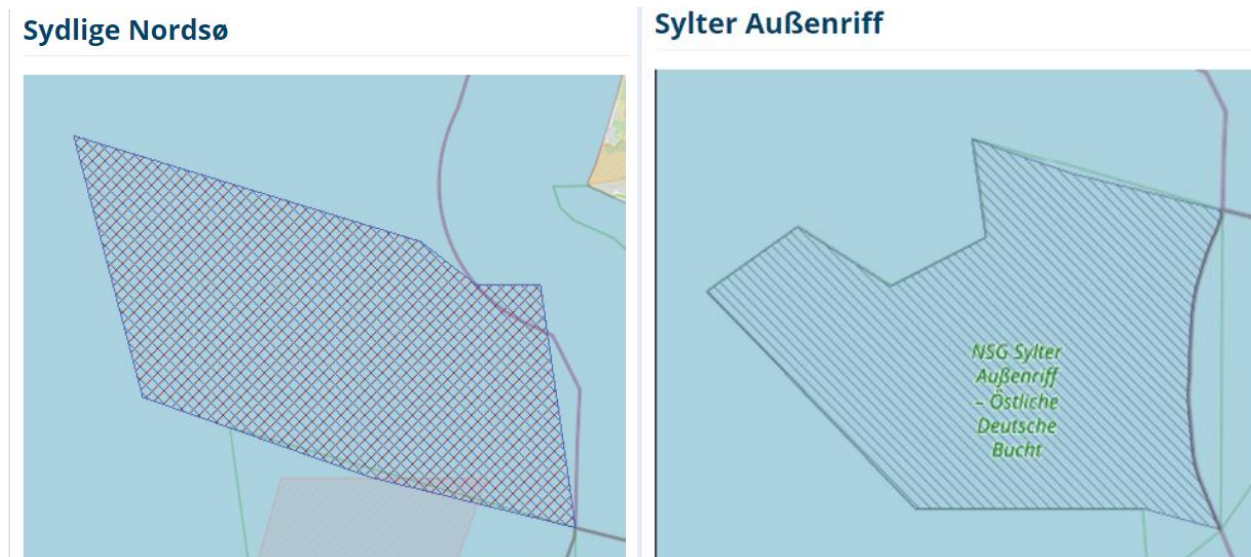


Figure 16 Natura 2000 sites within the range of the brown crab fishery in the Central North Sea
 (Source: [European protected sites — European Environment Agency \(europa.eu\)](http://european-protected-sites-european-environment-agency.europa.eu))



Sydlige Nordsø – designated for 13 species (11 bird species and 2 marine mammals); 1 habitat type – sandbank slightly covered by seawater at all times ([EUNIS -Site factsheet for Sydlige Nordsø \(europa.eu\)](http://eunis-european-environment-agency.europa.eu))

Sylter Aussenriff designated for 10 bird species, 3 fish species and 2 marine mammal species, as well as 2 habitat types (sandbank covered with seawater at all times and reefs) [EUNIS -Site factsheet for Sylter Außenriff \(europa.eu\)](http://eunis-european-environment-agency.europa.eu)

Impact of crab pots on benthic habitat



The extent of bottom impacts from pots depends on the type of bottom habitat where the setting and retrieval of pots occurs (NMFS 2004⁵). Although they are a bottom gear, they have contact with a substantially smaller area of the seafloor than dredges or trawls. Pots can affect habitat, however, because they do not always remain entirely stable on the seafloor. In the case of this fishery, they can get dragged across the seafloor when being removed, especially during a storm or when pots may be stuck in the sand (Morgan and Chuenpagdee 2003)⁶. Morgan and Chuenpagdee (2003) conducted a study to gauge the relative severity of impacts associated with all commercial fishing gears and compare and rank the overall ecological impact of each gear type. They found that pots generally have a “medium impact” on physical structure and a “low impact” on biological habitat (seafloor organisms).

Eno et al. (2001)⁷ studied the effects of pots set over a wide range of sediment types in Scottish waters. They observed that mud communities fully recovered from pot impact within 72–144 hours of pot removal. Hauling the pots along the ocean bottom during pot removal left a track in the sediments, but biological abundance within the area was not affected. Soft sediments are less likely to be impacted than hard structures that rise above the seafloor (Quandt 1999)⁸. The impact of fishing gear on habitat also depends on the spatial scale of the fishery, because although each pot may have a small impact, the cumulative effect of thousands of pots can be larger (Morgan and Chuenpagdee 2003).

The impact of pot fishing on benthic habitat was researched by the University of Bangor (Hinz et al 2012⁹) and concluded that ‘the physical damage caused by pots to the seabed is insignificant compared to mobile fishing gears; that ‘the contact area of individual pots with the seabed is very small (0.2-1m²); that ‘investigations of the environmental impacts of pots found few signs of damage to benthic habitats and species’.

Despite the widespread use of passive fishing gear, there appear to be few studies on the impacts of traps on benthos. A study by Schweitzer et al (2018¹⁰) indicated that all traps in the line (here a 384m long line of 20 fish traps, for lobster and bass) were dragged along the bottom and damaged living epifauna, suggesting that the real impacts of trap lines may have been underestimated.

The cumulative impact of crab pots on chalk outcrops has recently been observed to cause significant damage within a marine conservation zone – please see below under Cromer Shoal Chalk beds MPZ ([2020 10 15 Cromer Shoal Media Release.pdf \(eastern-ifca.gov.uk\)](#))

The extent of overlap and therefore the likely impact of pot fishing on sensitive habitats present in the UoA area needs to be accurately defined (e.g. via VMS data) for all scale of vessel in the fishery, as this must be quantified under version 3 of the standard.

⁵ <https://alaskafisheries.noaa.gov/sites/default/files/analyses/crabeis0804-chapters.pdf>

⁶ Morgan, L.E. and R. Chuenpagdee. 2003. Shifting Gears: Addressing Collateral Impacts of Fishing Methods in U.S. Waters. Accessed on: October 9, 2006. http://www.mcabi.org/publications/pub_pdfs/Chuenpagdee_et_al_2003.pdf

⁷ Eno, N.C., D.S. MacDonald, J.A.M. Kinnear, S.C. Amos, C.J. Chapman, R.A. Clark, F.P.D. Bunker, and C. Munro. 2001. Effects of crustacean traps on benthic fauna. ICES Journal of Marine Science 58:11-20.

⁸ Quandt, A. 1999. Assessment of fish trap damage on coral reefs around St. Thomas, USVI. Independent project report, UVI.

⁹ <http://fisheries-conservation.bangor.ac.uk/wales/documents/Theimpactofpotfishingonthemarineenvironment.pdf>

¹⁰ Schweitzer, C. C., Lipcius, R. N., and Stevens, B. G. Impacts of a multi-trap line on benthic habitat containing emergent epifauna within the Mid-Atlantic Bight. 2018. – ICES Journal of Marine Science, 75: 2202–2212.



4.5.6 Ecosystem

The crab fishery in this Pre-assessment is in the Central North Sea, ICES area 4b, which is part of the Greater North Sea ecoregion (Figure 17; ICES 2021 Ecosystem overview Greater North Sea)¹¹.

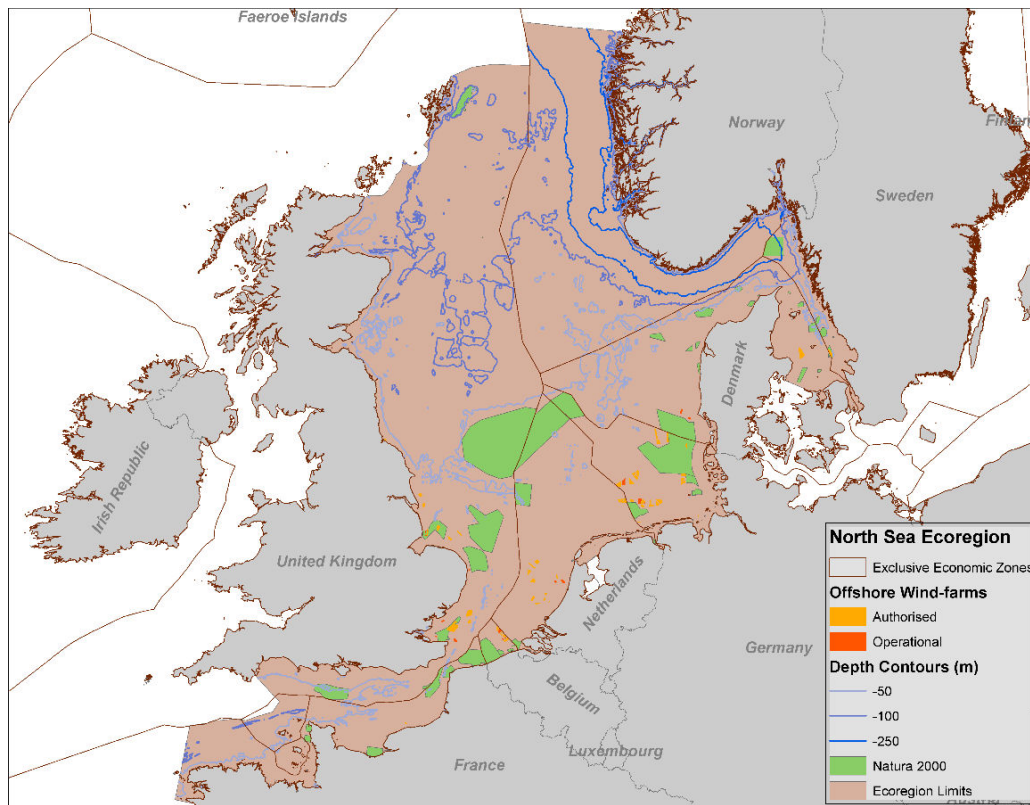


Figure 17 Greater North Sea ecoregion (ICES 2021 Greater North Sea ecosystem overview)

The North Sea is characterized by episodic changes in the productivity of key components of the ecosystem. Phytoplankton, zooplankton, and demersal and pelagic fish have all exhibited such cycles in variability. The changes have been described as regime shifts; a notable example is the composition of the zooplankton community, which changed both in terms of species and size composition in the late 1980s and again around 2000. The temperature trends of the North Sea are linked to these ecosystem changes. Whilst the mechanisms underlying this link are not known, it is clear that the temperature cycle of the North Atlantic (the Atlantic Multidecadal Oscillation, AMO) affects the North Sea.

Fishing has reduced the number of large fish in the North Sea ecosystem (mostly cod *Gadus morhua*, saithe *Pollachius virens*, ling *Molva molva*, sturgeon *Acipenser sturio*, and some elasmobranchs). In historical times, the large whale populations of the North Sea were depleted or extirpated by hunting. Whilst the impact of these removals on the ecosystem functioning is not clearly understood, it should be assumed that the North Sea ecosystem is currently in a perturbed state. Several of these elasmobranch species are now considered threatened or endangered by OSPAR and IUCN and are still caught as bycatch in fisheries. However, it is clear that fishing effort has reduced in the North Sea since the 2002 CFP reforms; this can now be detected in the reduction of fishing mortality in most assessed fish stocks and an increase in the amount of larger fish present. The majority of assessed fish stocks are now fished at or below MSY fishing mortality targets (FMSY). There have been reports of a shift from pelagic to benthic production (ICES 2021 Greater North Sea ecosystem overview). Mackinson & Daskalov (2007)¹² developed an ecosystem model of the North Sea in order to support fisheries management. The ICES Working Group on Multispecies Assessment Methods has begun to compare results from North Sea Ecopath and Ecosim models with results from multi-species VPA

¹¹ ICES. 2021. Greater North Sea Sea Ecoregion – Ecosystem overview. In Report of the ICES Advisory Committee, 2021. ICES Advice 2021, Section 9.1, <https://doi.org/10.17895/ices.advice.9434>.

¹² Mackinson, S. and Daskalov, G., 2007. An ecosystem model of the North Sea to support an ecosystem approach to fisheries management: description and parameterisation. Sci. Ser. Tech Rep., Cefas Lowestoft, 142: 196pp.

assessments (ICES WGECO, 2019), whereby it is attempted to embed the model targets within the assessments of Good Environmental Status. Indicator assessments of Good Environmental Status for the demersal fish community are typically based on time-series of change in surveys (see OSPAR Intermediate Assessment 2017, <https://oap.ospar.org/en/ospar-assessments/intermediate-assessment-2017/>).

The North Sea is one of the most studied seas in the world, with a relatively long time series of observational data. Monitoring programmes for most ecosystem components (plankton, fish, seabirds, marine mammals), are frequently co-ordinated through OSPAR and ICES assisted by various EU Framework programmes. Around the North Sea there are a number of long-running time-series monitoring various oceanographic parameters including water temperature, salinity, phytoplankton and zooplankton. General summaries of geography, geology, hydrography, nutrient status, biology, anthropogenic pressures and contaminants of the North Sea can be found for example in OSPAR (OSPAR quality status report 2010¹³, and OSPAR intermediate assessments 2017¹⁴) and ICES ecosystem overview reports, the most recent one published in 2023 – with an extensive reference list.

Key signals of the ecoregion have been summarised by ICES (2022) in the Ecosystem Overview report for the Greater North Sea, and are reproduced here:

Human activities and their pressures

- *Fishing continues to be the main threat to ecosystem health. This is despite a decrease in fishing pressure in recent decades as can be observed from two of its main pressures, i.e. species extraction and physical seabed disturbance. A further reduction in fishing pressure is likely to improve the status of the majority of the ecosystem components.*
- *Shipping is responsible for the majority (53%) of the introductions of non-indigenous-species, mainly through ballast water and hull fouling, and has clearly increased over the past two decades. Aquaculture is the next important activity, responsible for a further 18% of introductions. Effects of this pressure may include: the out-competing native species, the fouling of aquaculture and fishing gear, and fish kills through toxin production.*
- *Energy production activities such as oil and gas extraction industries are still among the main activities impacting the ecosystem through pressures like contaminants and physical habitat loss. Pressures from oil and gas industries are expected to decrease, while pressures caused by offshore windfarms are expected to increase with the ongoing energy transition.*

State of the ecosystem

- *Fishing-induced physical disturbance is estimated to have resulted in an overall decrease of invertebrate benthic biomass of approximately 20% in the ecoregion compared to an unfished state. This impact is patchy and may be as high as 90% in the most heavily fished areas.*
- *The stock sizes of most groups of commercial species are now overall above levels that can provide the MSY; however, some individual species within these groups may still be below MSY levels.*
- *Seabird abundance appears to be declining; reasons for this may include changes in migration patterns as well as reductions in breeding success and lower survival.*
- *The numbers of two main seal species in the ecoregion – grey seal (*Halichoerus grypus*) and harbour seal (*Phoca vitulina*) – have increased from an all-time low in the 1970s, with large population changes over the past decades caused by two major outbreaks of the phocine distemper virus. Trends in the abundance of cetaceans are less known.*

Climate change

- *Climate change is causing warming of surface water temperature. This has already changed spatial distribution of several plankton and fish species within the ecoregion and is likely to continue. Further cascading effects are likely to occur throughout the ecosystem with consequences on the spatial distribution of fisheries. Marine spatial planning should therefore consider this when planning infrastructure such as wind farms or implementing MPAs. Environmental and socio-economic context.*

¹³ https://qsr2010.ospar.org/en/ch12_02.html

¹⁴ <https://oap.ospar.org/en/ospar-assessments/intermediate-assessment-2017>



-
- *Eutrophication was impacting the ecoregion in previous decades, peaking in the 1980s; however, the introduction of measures to reduce riverine input of nutrients since then has reduced this pressure to the point of no major concern.*
 - *The current trend of increased fuel prices and resulting decrease of fishing with bottom-towed gears is likely to result in a further reduction of the extraction of demersal fish and disturbance of seabed habitats. If this also results in a shift toward less fuel-intensive fisheries, such as gillnets, than this is likely to result in increased bycatch risk of seabirds and marine mammals including longer-term effects from lost and abandoned fishing gear.*
 - *In targeting specific fisheries with additional management interventions it is worth considering that small-scale coastal fisheries contribute 10% of value landed but have regional importance in terms of employment (18% FTE) and revenue (11%).*

4.5.7 Principle 2 Performance Indicator scores and rationales

PI 2.1.1 – In-scope species outcome

| | | | | |
|---------------|--|--|--|--|
| PI 2.1.1 | The UoA aims to maintain in-scope species above the PRI and does not hinder recovery of in-scope species if they are below the PRI | | | |
| Scoring issue | SG 60 | SG 80 | SG 100 | |
| a | Main in-scope species stock status | | | |
| | Guide post | <p>Main in-scope species are likely to be above the PRI.</p> <p>or</p> <p>If the species is below the PRI, it is likely that the UoA does not hinder recovery and rebuilding.</p> | <p>Main in-scope species are highly likely to be above the PRI.</p> <p>or</p> <p>If the species is below the PRI, there is evidence of recovery, or it is highly likely that the UoA does not hinder recovery and rebuilding.</p> | There is a high degree of certainty that main in-scope species are fluctuating around a level consistent with MSY. |
| | Met? | Yes | No | |
| Rationale | | | | |
| b | Minor in-scope species stock status | | | |
| | Guide post | | | <p>Minor in-scope species are highly likely to be above the PRI.</p> <p>or</p> <p>If below the PRI, there is evidence that the UoA does not hinder the recovery and rebuilding of minor in-scope species.</p> |
| | Met? | | | No |
| Rationale | <p>SI a) According to SA3.5.3, if there are no main in-scope species, the this SI scores 100 It is likely that bait would be the only main in-scope species. Regarding bait, please see GSA3.1.5c Fisheries Standard v3 – “<i>Bait is always assessed as a scoring element within the in-scope species component since use of ETP/OOS species is not consistent with the MSC’s intent. Wild-caught bait, whether caught within the fishery or purchased from elsewhere, needs to be considered in an assessment because all aspects of the fishery need to be sustainable, including those relating to the stocks of the bait species. Therefore, the team should present rationale that even purchased bait comes from well-managed and healthy stocks</i>”.</p> <p>However, there is little quantitative information available on the amount of bait used across the fishery, nor the actual species.</p> <p>So from a scoring point of view – if it turns out that ‘bait’ is a minor in-scope species only, then SIa meets SG100. If it turns out to be ‘main’ (ie whereby one particular bait species meets ≥5% of the total catch of brown crab), then it depends on the stock status of that bait species whether SG80 or SG100 is met.</p> <p>SI b) Anecdotally (interviews with some of the fishers working in this crab fishery), there is little bycatch in this crab fishery. There is no actual quantitative information on the amount of bycatch, nor what species. It is likely that several different species are by-caught; depending on the stock status each of which may or may not meet SG100.</p> <p>With the information available, it is not possible to score this PI properly.</p> | | | |

| | |
|---|--|
| Draft scoring range | 60-79 |
| Information gap indicator | No |
| Data-deficient? (Risk-Based Framework needed) | Information gap: <i>A full catch profile informed by observer data of bycatch and survivability, as well as detailed information on bait species and quantities used.</i> |

PI 2.1.2 – In-scope species management strategy

| | | | | |
|-----------------|--|--|---|--|
| PI 2.1.2 | | There is a strategy in place that is designed to maintain or to not hinder rebuilding of in-scope species | | |
| Scoring issue | | SG 60 | SG 80 | SG 100 |
| a | Management strategy in place | | | |
| | Guide post | There are measures in place for the UoA, if necessary , that are expected to maintain or to not hinder rebuilding of the main in-scope species at/to the in-scope species outcome SG60 level. | There is a partial strategy in place for the UoA, if necessary , that is expected to maintain or to not hinder rebuilding of the main in-scope species at/to the in-scope species outcome SG80 level. or Where in-scope species outcome fails to meet the SG80, a demonstrably effective strategy is in place between all MSC UoAs that categorise this species as main in-scope to ensure that they collectively do not hinder recovery and rebuilding. | There is a strategy in place for the UoA for managing main and minor in-scope species at the in-scope species outcome SG80 level. |
| | Met? | Yes | Yes | |
| Rationale | | <p>SI a) Depending on whether a particular 'bait' species used is main or minor, this SI is scored accordingly. It is likely that where the bait species is 'main, that it will come from a managed stock (interviews with fishers listed scad, gurnard, mackerel, herring as species used for bait). If none of these are main in-scope species, then the SI a) would meet SG80 automatically. SG100 looks at both main and minor in-scope species.</p> <p>Based on information from similar crab fisheries in the North Sea, there is little bycatch, all of which is returned to the sea, mostly live.</p> | | |
| b | Management strategy effectiveness | | | |
| | Guide post | The measures, if necessary , are considered likely to work for the main in-scope species, based on plausible argument. | There is some evidence that the measures/partial strategy, if necessary , is achieving the objectives for main in-scope species set out in scoring issue (a), based on some information directly about the UoA and/or species involved. | There is evidence that the partial strategy/strategy is achieving the objectives set out in scoring issue (a), based on information directly about the UoA and/or species involved. |
| | Met? | Yes | Yes | |
| Rationale | | <p>SI b) The bycatch management consists of returning all bycatch to the sea, none is retained, none is currently recorded. The crab pot design is aimed a catching certain sized crab, any smaller crab is usually returned to the sea.</p> <p>For the crab stock fishery the following main management measures are in place, which indirectly impact the kind of bycatch that might be caught in this fishery:</p> <ul style="list-style-type: none"> • EC legislation sets a minimum landing size of 130mm for crabs in the North Sea south of 56°N and 140mm North of 56°N. It also restricts the proportion of the crab landings which is detached claws caught by pots or creels to less than 1% by weight of total catch. A by- | | |

| | | | | |
|-----------|--|--|---|---|
| PI 2.1.2 | There is a strategy in place that is designed to maintain or to not hinder rebuilding of in-scope species | | | |
| | <p>catch limit of no more than 75kg per day of crab claws taken by other gear types can be landed.</p> <ul style="list-style-type: none"> National legislation restricts the number of shellfish licences available (in England and Wales) and also prohibits landing of berried and soft crabs <p>From the information currently available, it is not possible to score this SI – in that if there is no main in-scope species, then SG60/80 would score 80 automatically, as SG100 for minor has to be scored</p> | | | |
| c | Review of alternative measures | | | |
| | Guide post | There is a review of alternative measures to minimise UoA-related mortality of unwanted catch of main in-scope species | There is a review at least once every 5 years of alternative measures to minimise UoA-related mortality of unwanted catch of main in-scope species and they are implemented, as appropriate. | There is a review that happens every 2 years of alternative measures to minimise UoA-related mortality of unwanted catch of all in-scope species, and they are implemented, as appropriate. |
| | Met? | NA | NA | NA |
| Rationale | SIc) all unwanted bycatch is returned to the sea. Bait is not considered 'unwanted' in this context, as it is part of the fishing methodology | | | |
| d | Shark finning | | | |
| | Guide post | There is a high degree of certainty that shark finning is not taking place. | | |
| | Met? | No | | |
| Rationale | SI d) There is no catch profile available for this pre-assessment. Although similar crab fisheries have shown that there are no shark species in the by-catch, this cannot be stated with certainty in this fishery, as the area of fishing is different. If shark is recorded in the bycatch then SA2.4.4b applies, whereby the Evidence Requirements Framework requires a high degree of accuracy that a non-retention policy is in place (see Table B1 in ERF toolbox v1.1) | | | |
| e | Ghost gear management strategy | | | |
| | Guide post | There are measures in place for the UoA, if necessary , that are expected to minimise ghost gear and its impact on all in-scope species. | There is a partial strategy in place for the UoA, if necessary , that is expected to minimise ghost gear and its impact on all in-scope species. | There is a strategy in place for the UoA, if necessary , that is expected to minimise ghost gear and its impact on all in-scope species. |
| | Met? | NA | NA | NA |
| Rationale | <i>The Scoring Issue is only scored when the equivalent ghost gear SI within ETP/OOS is not scored.</i> | | | |

| | |
|---------------------------|--------------------------------|
| Draft scoring range | <60 |
| Information gap indicator | More information sought |

| | |
|--|---|
| | <p>A full catch profile informed by observer data of bycatch and survivability, as well as detailed information on bait species and quantities used.</p> <p>Evidence of a non-retention policy for shark species has to be provided</p> |
|--|---|

PI 2.1.3 – In-scope species information

| | | | | |
|--|------------|--|--|---|
| PI 2.1.3 | | Information is adequate to determine the impact of the UoA on in-scope species and the effectiveness of management measures or strategies in place | | |
| Scoring issue | | SG 60 | SG 80 | SG 100 |
| Information adequacy for assessment of impact on main in-scope species | | | | |
| a | Guide post | Information is adequate to broadly understand the impact of the UoA on the stock status of main in-scope species. | Information is adequate to estimate the impact of the UoA on the stock status of main in-scope species with a high degree of accuracy . | Information is adequate to estimate the impact of the UoA on the stock status of main in-scope species with a very high degree of accuracy . |
| | Met? | No | No | No |
| Rationale | | <p>There is no detailed catch profile available across this fishery. Interviews only provided anecdotal information. There are no quantities and detailed break down of species/quantities for bait used (bait is scored as in-scope).</p> <p>Regarding bait, please see GSA3.1.5c Fisheries Standard v3 – “<i>Bait is always assessed as a scoring element within the in-scope species component since use of ETP/OOS species is not consistent with the MSC’s intent. Wild-caught bait, whether caught within the fishery or purchased from elsewhere, needs to be considered in an assessment because all aspects of the fishery need to be sustainable, including those relating to the stocks of the bait species. Therefore, the team should present rationale that even purchased bait comes from well-managed and healthy stocks</i>”.</p> | | |
| Information adequacy for assessment of impact on minor in-scope species | | | | |
| b | Guide post | | | Information is adequate to estimate the impact of the UoA on the stock status of minor in-scope species with a high degree of accuracy . |
| | Met? | | | No |
| Rationale | |) there is no detailed catch profile available across this fishery. Interviews only provided anecdotal information. There are no quantities and detailed break down of species/quantities for bait used (bait is scored as in-scope). | | |
| Information adequacy for management strategy | | | | |
| c | Guide post | Information is adequate to support measures to manage main in-scope species. | Information is adequate to support a partial strategy to manage main in-scope species. | Information is adequate to support a strategy to manage all in-scope species and evaluate with a high degree of certainty whether the strategy is achieving its objective. |
| | Met? | No | No | |
| Rationale | | there is no detailed catch profile available across this fishery. Interviews only provided anecdotal information. There are no quantities and detailed break down of species/quantities for bait used (bait is scored as in-scope). | | |

| | |
|---------------------------|--|
| Draft scoring range | <60 |
| Information gap indicator | More information sought It is currently not possible to score this PI, as there is no catch profile available across the fishery, nor any detailed information on bait used. |

PI 2.1.3R – In-scope species information if RBF is used to score PI 2.1.1 – delete if not applicable

Note – only use this when RBF is used to score PI 2.1.1 for the UoA (MSC Fisheries Standard Toolbox Table A3).

| | | | |
|------------------|---|---|--|
| PI 2.1.3R | Information on the nature and amount of in-scope species taken is adequate to determine the risk posed by the UoA and the effectiveness of the strategy to manage in-scope species | | |
| Scoring issue | SG 60 | SG 80 | SG 100 |
| a | Information adequacy for assessment of impact on main in-scope species | | |
| | Guide post | Qualitative information is adequate to estimate productivity and susceptibility attributes for main in-scope species. | Some quantitative information is adequate to assess productivity and susceptibility attributes for main in-scope species. |
| | Met? | Yes / No / NA | Yes / No / NA |
| Rationale | | | |
| b | Information adequacy for assessment of impact on minor in-scope species | | |
| | Guide post | | Some quantitative information is adequate to estimate the impact of the UoA on minor in-scope species with respect to status. |
| | Met? | | Yes / No |
| Rationale | | | |
| c | Information adequacy for management strategy | | |
| | Guide post | Information is adequate to support measures to manage main in-scope species. | Information is adequate to support a partial strategy to manage main in-scope species. |
| | Met? | Yes / No | Yes / No |
| Rationale | | | |

| | |
|---------------------------|---|
| Draft scoring range | <60 / 60-79 / ≥80 |
| Information gap indicator | More information sought / Information sufficient to score PI <i>If more information is sought, include a description of what the information gap is and what is information is sought</i> |

PI 2.2.1 – ETP/OOS species outcome

| | | | | |
|-----------------|-----------------------|--|--|---|
| PI 2.2.1 | | The direct effects of the UoA do not hinder recovery of the ETP/OOS unit to favourable conservation status | | |
| Scoring issue | | SG 60 | SG 80 | SG 100 |
| a | Direct effects | | | |
| | Guide post | The direct effects of the UoA are unlikely to hinder recovery of the ETP/OOS unit to favourable conservation status. | The direct effects of the UoA are highly unlikely to hinder recovery of the ETP/OOS unit to favourable conservation status. | There is a high degree of certainty that the direct effects of the UoA do not hinder recovery of the ETP/OOS unit to favourable conservation status. |
| | Met? | Yes | No | No |
| Rationale | | <p>Interactions of ETP/OOS species are known from records in other crab fisheries, indicating that interaction with ETP species occurs, albeit in small numbers. There was no catch profile available from across this fishery, nor any independent observer data. It cannot therefore be stated whether there are interactions with ETP/OOS species and to what extent, although such interactions in other crab fisheries, where recorded, indicated a small number of interactions with several ETP species whereby the specimen were released back into the sea.</p> <p>Anecdotal information from interviews for this fishery under pre-assessment suggest that seals are occasionally attracted to the creels/pots, but the interaction did not result in injury or damage.</p> <p>Information on gear interaction with marine mammals is based on interviews, anecdotal information indicates that no interaction has been observed, although buoy rope entanglement with marine mammals is known about in trap fisheries (Northridge et al 2010). However, Northridge et al (2010) showed that such interactions are rare. Similarly with marine turtles (Penrose et al 2007)</p> <p>It is thought that direct effects of the UoA on ETP/OOS is small and unlikely to hinder the recovery of these species, SG60 is met. However, as there is no quantitative catch profile, nor independent observer data, SG 80 is not met</p> | | |

| | |
|---|---|
| Draft scoring range | 60-79 |
| Information gap indicator | <p>More information sought</p> <p>Detailed catch profile and independent observer data is needed to evaluate this PI. In the absence of any data the RBF would have to be applied.</p> |
| Data-deficient? (Risk-Based Framework needed) | Yes / No |

PI 2.2.2 – ETP/OOS species management strategy

| | | | | |
|---------------|--|---|--|--|
| PI 2.2.2 | | The UoA has precautionary management strategies in place designed to: <ul style="list-style-type: none"> • Ensure that incidental catches of the ETP/OOS unit are minimised and where possible eliminated • Ensure that the UoA does not hinder recovery to Favourable Conservation Status. | | |
| Scoring issue | | SG 60 | SG 80 | SG 100 |
| a | Management strategy in place | | | |
| | Guide post | There are measures in place, if necessary , that are expected to minimise the UoA-related mortality of the ETP/OOS unit and achieve the ETP/OOS outcome SG80 level of performance. | There is a strategy in place, if necessary , that is expected to minimise the UoA-related mortality of the ETP/OOS unit and achieve the ETP/OOS outcome SG80 level of performance. | There is a comprehensive strategy in place that is expected to minimise the UoA-related mortality of the ETP/OOS unit and achieve the ETP outcome SG80 level of performance. |
| | Met? | Yes | No | No |
| Rationale | | <p>For the ETP management PI there is a requirement at the SG80 level for a ‘strategy’. In other words, the management threshold is higher for ETP than for other Principle 2 components. Permissible thresholds, or sustainable take levels are in place for cetaceans. No such limits appear to be in place for other ETP species such as Basking shark, which have the potential to interact with the crab fishery.</p> <p>In the area within this fishery operates there are several Natura 2000 sites (see background under Habitat), designated to protect a representative range of habitats of species listed under listed under Annex II of the Habitats Directive. However, from the information available, it is not clear how or whether these Natura 2000 sites with ETP interest features have any bearing on crab fishing practice, e.g. avoidance of disturbance.</p> <p>Interviews with fishers in this crab fishery stated that any bycaught non-target species are released back into the water. However, there is no catch profile available to assess such interactions. There does not appear to be any observer data, which would record marine mammal gear interactions for example.</p> <p>Therefore, the only measure in place to reduce impact on ETP/OOS is the immediate release of un-wanted catch back into the water. There does not appear to be a coherent management strategy in place to manage crab gear impact on ETPs.</p> | | |
| b | Management strategy effectiveness | | | |
| | Guide post | | Evidence indicates that the measures, strategy or comprehensive strategy have reduced or minimised the mortality of the ETP/OOS unit. | |
| | Met? | | No | |
| Rationale | | <p>For the ETP management PI there is a requirement at the SG80 level for a ‘strategy’. In other words, the management threshold is higher for ETP than for other Principle 2 components. Permissible thresholds, or sustainable take levels are in place for cetaceans. No such limits appear to be in place for other ETP species such as Basking shark, which have the potential to interact with the crab fishery.</p> <p>In the area within this fishery operates there are several Natura 2000 sites (see background under Habitat), designated to protect a representative range of habitats of species listed under listed under Annex II of the Habitats Directive. However, from the information available, it is not clear how or whether these Natura 2000 sites with ETP interest features have any bearing on crab fishing practice, e.g. avoidance of disturbance.</p> <p>Interviews with fishers in this crab fishery stated that any bycaught non-target species are released back into the water. However, there is no catch profile available to assess such interactions. There</p> | | |

| | | | |
|-----------|--|---|--|
| PI 2.2.2 | <p>The UoA has precautionary management strategies in place designed to:</p> <ul style="list-style-type: none"> • Ensure that incidental catches of the ETP/OOS unit are minimised and where possible eliminated • Ensure that the UoA does not hinder recovery to Favourable Conservation Status. | | |
| | <p>does not appear to be any observer data, which would record marine mammal gear interactions for example.</p> <p>Therefore, the only measure in place to reduce impact on ETP/OOS is the immediate release of un-wanted catch back into the water. There does not appear to be a coherent management strategy in place to manage crab gear impact on ETPs.</p> <p>SI b) Furthermore, as there is no catch profile or any observer based records from the crab fishery, it cannot be stated that whatever the fishery has introduced as measures has reduced ETP /OOS mortality (NB – this will be difficult to assess directly, even with extensive data).</p> <p>The scoring of this issue could be difficult, in that it may not be possible to close out a condition: Evidence of management strategy effectiveness in PI 2.2.2 SIb is a new requirement for v.3. Unless ETP/OOS unit mortalities are ‘negligible’ (i.e., including = scoring ≥ 80 for PI 2.2.3.a using the ERF) or ‘minimised’ (i.e., = scoring ≥ 80 for PI 2.2.1.a / RBF and scoring 100 for PI 2.2.2.a) then to meet PI 2.2.2 SIb SG80 the team shall include evidence of ‘<i>demonstrable reductions in ETP/OOS mortalities since implementation of the measures</i>’. In this, GSA3.9 states “The MSC’s intent is that if the <i>demonstrable reductions are likely to be caused by declines in abundance rather than the measures implemented by the fishery, this would not be considered evidence of demonstrable reductions and SG80 would not be met.</i>” In essence, to meet SG80, information is needed on both UoA mortalities over time and the status of the specific ETP/OOS population over the same time period. However, quantifying interactions with rare or clumped species requires high levels of independent monitoring, and it is rare for the status of ETP/OOS populations to be reported on regularly. This requirement sets a very high or even unreachable bar.</p> | | |
| c | Review of alternative measures to minimise mortality of the ETP/OOS unit | | |
| | Guide post | | <p>There is a review at least once every 5 years of the alternative measures to minimise UoA-related mortality of the ETP/OOS unit and they are implemented as appropriate for the ETP/OOS unit.</p> |
| Met? | | No | No |
| Rationale | <p>This SI may not be relevant for this fishery. ETP interactions are rare which suggests that reviews and research on alternative measures to minimise ETP mortality are not relevant. It is more relevant to implement existing practical measures (eg biodegradable panel) to form part of a strategy.</p> | | |
| d | Shark finning | | |
| | Guide post | <p>There is a high degree of certainty that shark finning is not taking place.</p> | |
| Met? | No | | |
| Rationale | <p>There is no catch profile available for this pre-assessment. Although similar crab fisheries have shown that there are no shark species in the by-catch, this cannot be stated with certainty in this fishery, as the area of fishing is different. Where shark ETP is recorded in the bycatch, or</p> | | |

| | | | | |
|-----------|---|---|---|---|
| PI 2.2.2 | <p>The UoA has precautionary management strategies in place designed to:</p> <ul style="list-style-type: none"> • Ensure that incidental catches of the ETP/OOS unit are minimised and where possible eliminated • Ensure that the UoA does not hinder recovery to Favourable Conservation Status. | | | |
| | <p>interaction with shark ETPs have been observed, then SA2.4.4b applies, whereby the Evidence Requirements Framework requires a high degree of accuracy that a non-retention policy is in place (see Table B1 in ERF toolbox v1.1). Shark finning is not a tradition in North Sea fisheries, but evidence is required to show this is so.</p> | | | |
| e | Ghost gear management strategy | | | |
| | Guide post | There are measures in place, if necessary , for the UoA that are expected to minimise ghost gear and its impact on the ETP/OOS unit. | There is a partial strategy in place for the UoA, if necessary , that is expected to minimise ghost gear and its impact on the ETP/OOS unit. | There is a strategy in place for the UoA, if necessary , that is expected to minimise ghost gear and its impact on the ETP/OOS unit. |
| | Met? | No | No | No |
| Rationale | <p><i>This SI shall only be scored when there are ETP/OOS scoring elements (SA3.9.5.b).</i></p> <p><i>Interviews with fishers indicate that crab pots/creels can be lost at sea, due to either gear interaction with other vessels or human inexperience. It is not clear whether all lost pots are retrieved, although every effort is made to retrieve lost pots as soon as possible (Client interview, Feb 2024). A study by Northridge et al (2010) showed that creel losses amounted to 7-8% of those fished per boat per year. On average this is about 90 creels per year per boat. There is little data on gear losses across the Central North Sea crab fishery under pre-assessment, although one interviewee stated that they lose about 100-200 pots /year. No information was available on gear design to show that the pots/traps have a biodegradable panel. As there is no quantitative information on gear impact with ETP/OOS (ie, are any ETP/OOS interacting with the gear, how much, which species?), it cannot be stated that there are measures in place to minimise ghost gear impact on ETP/OOS.</i></p> | | | |

| | |
|---------------------------|---|
| Draft scoring range | <60 |
| Information gap indicator | <p>More information sought</p> <p><i>A full catch profile informed by observer data of bycatch and survivability, including ETP/OOS species</i></p> <p><i>Evidence of a non-retention policy for shark species has to be provided</i></p> <p>Detailed information is needed on how lost gear is managed and whether the pots / creels contain a biodegradable panel for eg.</p> |

PI 2.2.3 – ETP/OOS species information

| | | | |
|---------------|--|---|---|
| PI 2.2.3 | Information is adequate to determine the impact of the UoA on the ETP/OOS unit and the effectiveness of management measures or strategies in place | | |
| Scoring issue | SG 60 | SG 80 | SG 100 |
| a | Information adequacy for assessment of impacts | | |
| | Guid e post | Information is adequate to broadly understand the impact of the UoA on the ETP/OOS unit. | Information is adequate to estimate the impact of the UoA on the ETP/OOS unit, and to estimate whether the UoA may be a threat to its recovery, with a high degree of accuracy . |

| | | | | |
|---|------------|--|---|---|
| PI 2.2.3 | | Information is adequate to determine the impact of the UoA on the ETP/OOS unit and the effectiveness of management measures or strategies in place | | |
| | Met? | No | No | |
| Rationale | | there is no quantitative or even adequate qualitative information available from across the fishery, either self -recorded, or through independent observers, to give any indication of the extent of interactions of this fishery with ETP/OOS species. Therefore it is not possible at this stage to gain an insight of the impact of the UoA on ETP/OOS species, not even broadly. One could extrapolate from other crab fisheries in the North Sea, but these are usually conducted near-shore, rather than the central North Sea, which would give a different species interaction profile. | | |
| Information adequacy for management strategy | | | | |
| b | Guide post | Information is adequate to support measures to manage impacts on the ETP/OOS unit. | Information is adequate to support a strategy to manage impacts on the ETP/OOS unit, and to measure trends to evaluate the effectiveness of the measures to minimise mortality. | Information is adequate to support a comprehensive strategy to manage impacts on the ETP/OOS unit, and to evaluate the effectiveness of the measures to minimise mortality with a high degree of certainty . |
| | Met? | No | No | No |
| Rationale | | there is no quantitative or even adequate qualitative information available from across the fishery, either self -recorded, or through independent observers, to give any indication of the extent of interactions of this fishery with ETP/OOS species. Therefore it is not possible at this stage to gain an insight of the impact of the UoA on ETP/OOS species, not even broadly. One could extrapolate from other crab fisheries in the North Sea, but these are usually conducted near-shore, rather than the central North Sea, which would give a different species interaction profile. | | |

| | |
|---------------------------|--|
| Draft scoring range | <60 |
| Information gap indicator | More information sought A catch profile as well as independent observer records would be needed to score this PI. The evidence requirements are considerable, as laid out in the Toolbox v1.1 (see Table B1 in the toolkit, and follow steps through from there) |

PI 2.2.3R – ETP/OOS species information if RBF is used to score PI 2.2.1 – delete if not applicable

Note: Only use this when RBF is used to score PI 2.2.1 for the UoA (MSC Fisheries Standard Toolbox Table A4).

| | | | | |
|------------------|---|---|---|---|
| PI 2.2.3R | | Relevant information is collected to support the management of UoA impacts on the ETP/OOS unit, including: <ul style="list-style-type: none"> • Information for the development of the management strategy. • Information to assess the effectiveness of the management strategy. • Information to determine the outcome status of the ETP/OOS unit. | | |
| Scoring issue | | SG 60 | SG 80 | SG 100 |
| a | Information adequacy for assessment of impacts | | | |
| | Guide post | Qualitative information is adequate to estimate productivity and susceptibility attributes for the ETP/OOS unit. | Some quantitative information is adequate to assess productivity and susceptibility attributes for the ETP/OOS unit. | |
| | Met? | Yes / No | Yes / No | Yes / No |
| Rationale | | | | |
| b | Information adequacy for management strategy | | | |
| | Guide post | Information is adequate to support measures to manage impacts on the ETP/OOS unit. | Information is adequate to support a strategy to manage impacts on the ETP/OOS unit, and to measure trends to evaluate the effectiveness of the measures to minimise mortality. | Information is adequate to support a comprehensive strategy to manage impacts on the ETP/OOS unit, and to evaluate the effectiveness of the measures to minimise mortality with a high degree of certainty . |
| | Met? | Yes / No | Yes / No | Yes / No |
| Rationale | | | | |

| | |
|---------------------------|---|
| Draft scoring range | <60 / 60-79 / ≥80 |
| Information gap indicator | More information sought / Information sufficient to score PI <i>If more information is sought, include a description of what the information gap is and what is information is sought</i> |

PI 2.3.1 – Habitats outcome

| PI 2.3.1 | | The UoA does not cause serious or irreversible harm to habitat structure and function, considered on the basis of the area covered by the governance body(ies) responsible for fisheries management in the area(s) where the UoA operates | | | | | | | | |
|----------------------------|---|---|--|--|----------------------------|----------|------------|------------------------|---|--|
| Scoring issue | | SG 60 | SG 80 | SG 100 | | | | | | |
| a | Less sensitive habitats | | | | | | | | | |
| | Guide post | The UoA is unlikely to reduce structure and function of less sensitive habitats to a point where there would be serious or irreversible harm . | The UoA is highly unlikely to reduce structure and function of less sensitive habitats to a point where there would be serious or irreversible harm . | There is evidence that the UoA is highly unlikely to reduce structure and function of less sensitive habitats to a point where there would be serious or irreversible harm . | | | | | | |
| | Met? | RBF ? | RBF ? | | | | | | | |
| Rationale | | <p>Despite detailed sediment and habitat information being available for the Central North Sea, as well as extensive studies and research on gear impacts on habitats, it is likely that the RBF for habitat will be triggered, according to Table 5 in the toolbox (Criteria for selecting tools):</p> <table border="1"> <thead> <tr> <th>Performance Indicator (PI)</th> <th>Criteria</th> <th>Next steps</th> </tr> </thead> <tbody> <tr> <td>2.3.1 Habitats outcome</td> <td> <p>1. Quantitative information on the substratum, geomorphology, and biota (SGB) of the habitats encountered is not available, or</p> <p>2. Gear specific, quantitative information of impact of the UoA on habitats encountered is not available. This information shall include knowledge of regeneration ability that is specific to the UoA and/or provided by relevant research which considers impact of the gear(s) on habitats in the relevant area.</p> </td> <td>If one or both criteria are met, use Tool A (Risk-Based Framework) for this PI and consult Table A1 for implications of using Tool A on other PIs. Option to use Tool C (Benthic Impact Tool) to inform scoring of PI 2.3.1, SI (a).</td> </tr> </tbody> </table> <p>Extract from Table 5 in MSC Fisheries Standard Toolbox v1.1 It is not clear what 'quantitative information' means here, with regards to SGB – a clarification has been sought from the MSC. With regards to the second criterion, this will likely be met by very few fisheries: currently (under v2.01) the habitat outcome PI is scored using peer-reviewed research and analysis which may have been conducted on relevant habitat types elsewhere, as well as meta-analyses of habitat impact and recovery considered relevant to a fishery under assessment. Under v3 such studies/ research will no longer be considered relevant, triggering the RBF. However, the v3 Fisheries standard/ ERF/ Toolbox is currently (as of March 2024) undergoing some additional checks, which may mean that an RBF may not be necessary after all by the time this crab fishery is going through a full assessment. So please watch this space.</p> | | | Performance Indicator (PI) | Criteria | Next steps | 2.3.1 Habitats outcome | <p>1. Quantitative information on the substratum, geomorphology, and biota (SGB) of the habitats encountered is not available, or</p> <p>2. Gear specific, quantitative information of impact of the UoA on habitats encountered is not available. This information shall include knowledge of regeneration ability that is specific to the UoA and/or provided by relevant research which considers impact of the gear(s) on habitats in the relevant area.</p> | If one or both criteria are met, use Tool A (Risk-Based Framework) for this PI and consult Table A1 for implications of using Tool A on other PIs. Option to use Tool C (Benthic Impact Tool) to inform scoring of PI 2.3.1, SI (a). |
| Performance Indicator (PI) | Criteria | Next steps | | | | | | | | |
| 2.3.1 Habitats outcome | <p>1. Quantitative information on the substratum, geomorphology, and biota (SGB) of the habitats encountered is not available, or</p> <p>2. Gear specific, quantitative information of impact of the UoA on habitats encountered is not available. This information shall include knowledge of regeneration ability that is specific to the UoA and/or provided by relevant research which considers impact of the gear(s) on habitats in the relevant area.</p> | If one or both criteria are met, use Tool A (Risk-Based Framework) for this PI and consult Table A1 for implications of using Tool A on other PIs. Option to use Tool C (Benthic Impact Tool) to inform scoring of PI 2.3.1, SI (a). | | | | | | | | |
| b | More sensitive habitats | | | | | | | | | |
| | Guide post | The UoA is unlikely to reduce structure and function of more sensitive habitats to a point where there would be serious or irreversible harm . | The UoA is highly unlikely to reduce structure and function of more sensitive habitats to a point where there would be serious or irreversible harm . | There is evidence that the UoA is highly unlikely to reduce structure and function of more sensitive habitats to a point where there would be serious or irreversible harm . | | | | | | |
| | Met? | Yes | No | | | | | | | |
| Rationale | | <i>The Scoring issue need not be scored if there are no "more sensitive habitats".</i> | | | | | | | | |

| PI 2.3.1 | <p>The UoA does not cause serious or irreversible harm to habitat structure and function, considered on the basis of the area covered by the governance body(ies) responsible for fisheries management in the area(s) where the UoA operates</p> | | | | | | |
|----------------------------|---|---|----------|------------|------------------------|---|---|
| | <p><i>Despite detailed sediment and habitat information being available for the Central North Sea, as well as extensive studies and research on gear impacts on habitats, it is likely that the RBF for habitat will be triggered, according to Table 5 in the toolbox (Criteria for selecting tools):</i></p> <table border="1" data-bbox="347 353 1099 808"> <thead> <tr> <th>Performance Indicator (PI)</th> <th>Criteria</th> <th>Next steps</th> </tr> </thead> <tbody> <tr> <td>2.3.1 Habitats outcome</td> <td> <p>1. Quantitative information on the substratum, geomorphology, and biota (SGB) of the habitats encountered is not available, or</p> <p>2. Gear specific, quantitative information of impact of the UoA on habitats encountered is not available. This information shall include knowledge of regeneration ability that is specific to the UoA and/or provided by relevant research which considers impact of the gear(s) on habitats in the relevant area.</p> </td> <td> <p>If one or both criteria are met, use Tool A (Risk-Based Framework) for this PI and consult Table A1 for implications of using Tool A on other PIs. Option to use Tool C (Benthic Impact Tool) to inform scoring of PI 2.3.1, SI (a).</p> </td> </tr> </tbody> </table> <p><i>Extract from Table 5 in MSC Fisheries Standard Toolbox v1.1</i></p> <p><i>It is not clear what 'quantitative information' means here, with regards to SGB – a clarification has been sought from the MSC. With regards to the second criterion, this will likely be met by very few fisheries: currently (under v2.01) the habitat outcome PI is scored using peer-reviewed research and analysis which may have been conducted on relevant habitat types elsewhere, as well as meta-analyses of habitat impact and recovery considered relevant to a fishery under assessment. Under v3 such studies/ research will no longer be considered relevant, triggering the RBF. However, the v3 Fisheries standard/ ERF/ Toolbox is currently (as of March 2024) undergoing some additional checks, which may mean that an RBF may not be necessary after all by the time this crab fishery is going through a full assessment. So please watch this space.</i></p> <p>SI b) Regarding the impact of the fishery on more sensitive habitats, it is unlikely that the fishery will reduce their structure and function to the point of irreversible harm, considering that the fishery operates primarily in sandy/muddy areas (habitat of target species) and avoids rugose habitats (gear getting stuck). According to available sediment maps of the Central North Sea where the fishery operates, no reefs or other sensitive habitats have been identified in that area. The VMS positions of all vessels in this crab fishery are known and can be related to underlying sediment. It is therefore likely that SG60 is met. Highly unlikely would require UoA specific impact research.</p> | Performance Indicator (PI) | Criteria | Next steps | 2.3.1 Habitats outcome | <p>1. Quantitative information on the substratum, geomorphology, and biota (SGB) of the habitats encountered is not available, or</p> <p>2. Gear specific, quantitative information of impact of the UoA on habitats encountered is not available. This information shall include knowledge of regeneration ability that is specific to the UoA and/or provided by relevant research which considers impact of the gear(s) on habitats in the relevant area.</p> | <p>If one or both criteria are met, use Tool A (Risk-Based Framework) for this PI and consult Table A1 for implications of using Tool A on other PIs. Option to use Tool C (Benthic Impact Tool) to inform scoring of PI 2.3.1, SI (a).</p> |
| Performance Indicator (PI) | Criteria | Next steps | | | | | |
| 2.3.1 Habitats outcome | <p>1. Quantitative information on the substratum, geomorphology, and biota (SGB) of the habitats encountered is not available, or</p> <p>2. Gear specific, quantitative information of impact of the UoA on habitats encountered is not available. This information shall include knowledge of regeneration ability that is specific to the UoA and/or provided by relevant research which considers impact of the gear(s) on habitats in the relevant area.</p> | <p>If one or both criteria are met, use Tool A (Risk-Based Framework) for this PI and consult Table A1 for implications of using Tool A on other PIs. Option to use Tool C (Benthic Impact Tool) to inform scoring of PI 2.3.1, SI (a).</p> | | | | | |

| | |
|---|--|
| Draft scoring range | RBF/ 60-79 |
| Information gap indicator | <p>More information sought</p> <p>Current interpretation of the Fishery Standard requires an RBF for habitat outcome.</p> |
| Data-deficient? (Risk-Based Framework needed) | Yes |

PI 2.3.2 – Habitats management strategy

| | | | | |
|---------------|--|--|---|---|
| PI 2.3.2 | | There is a strategy in place that is designed to ensure the UoA does not pose a risk of serious or irreversible harm to the habitats | | |
| Scoring issue | | SG 60 | SG 80 | SG 100 |
| a | Management strategy in place | | | |
| | Guide post | There are measures in place, if necessary , that are expected to achieve the habitat outcome SG80 level. | There is a partial strategy in place, if necessary , that is expected to achieve the habitat outcome SG80 level or above. | There is a strategy in place for managing the impact of all MSC UoAs/non-MSC fisheries on habitats. |
| | Met? | Yes | No | |
| Rationale | | <p>There are limited measures currently in place regarding licensing that may be considered to limit effort to some extent, but there is no limit on pots per licensed vessel and other measures like MLS (minimum landing size) do not have consequences for benthic impact by the fishery. Indeed, it appears that over the past few years more vessels have been entering the fishery. Studies show that static gears such as crab pots can impact sensitive habitats (such as seagrass beds, maerl beds, Sabellaria reefs), depending on intensity and frequency, but there appears to be no information that such sensitive habitats are present further offshore in the Central North Sea, where the crab fishery operates.</p> <p>There are several Natura 2000 areas located in the vicinity of where the fishery operates, although it is not clear from the information available regarding the location of the crab fishing vessels as to whether they actually operate in those Natura 2000 sites.</p> <p>Regarding interaction with other MSC/non-MSC fisheries, such areal overlap is avoided in order to prevent gear interactions, such as trawl gears ploughing through a line of crab pots. Interviews with fishers seem to indicate that there is good communication with trawlers who may operate in the same area but at different seasons. A full assessment would need to look into possible protection measures in overlapping areas by other fisheries, in addition to those already in place as part of Natura 2000 sites.</p> | | |
| b | Management strategy effectiveness | | | |
| | Guide post | The measures, if necessary , are considered likely to work, based on plausible argument . | There is some evidence that the measures/partial strategy, if necessary , is achieving the objectives set out in SI (a), based on information directly about the UoA and/or habitats involved. | There is evidence that the partial strategy/strategy is achieving the objectives set out in SI (a), based on information directly about the UoA and/or habitats involved. |
| | Met? | Yes | No | |
| Rationale | | <p>There are limited measures currently in place regarding licensing that may be considered to limit effort to some extent, but there is no limit on pots per licensed vessel and other measures like MLS (minimum landing size) do not have consequences for benthic impact by the fishery. Indeed, it appears that over the past few years more vessels have been entering the fishery. Studies show that static gears such as crab pots can impact sensitive habitats (such as seagrass beds, maerl beds, Sabellaria reefs), depending on intensity and frequency, but there appears to be no information that such sensitive habitats are present further offshore in the Central North Sea, where the crab fishery operates.</p> <p>There are several Natura 2000 areas located in the vicinity of where the fishery operates, although it is not clear from the information available regarding the location of the crab fishing vessels as to whether they actually operate in those Natura 2000 sites.</p> <p>Regarding interaction with other MSC/non-MSC fisheries, such areal overlap is avoided in order to prevent gear interactions, such as trawl gears ploughing through a line of crab pots. Interviews with fishers seem to indicate that there is good communication with trawlers who may operate in the same area but at different seasons. A full assessment would need to look into possible</p> | | |

| | | | | |
|---------------------------|---|---|---|---|
| PI 2.3.2 | There is a strategy in place that is designed to ensure the UoA does not pose a risk of serious or irreversible harm to the habitats | | | |
| | protection measures in overlapping areas by other fisheries, in addition to those already in place as part of Natura 2000 sites. | | | |
| c | Compliance with management requirements and other MSC UoAs'/non-MSC fisheries' measures to protect more sensitive habitats | | | |
| | Guide post | Information is adequate to broadly understand compliance in the UoA with management requirements to protect more sensitive habitats. | Information is adequate to determine , with a high degree of accuracy , compliance in the UoA with both its management requirements and protection measures afforded to more sensitive habitats by other MSC UoAs/non-MSC fisheries, where relevant . | Information is adequate to determine , with a very high degree of accuracy , compliance in the UoA with both its management requirements and with protection measures afforded to more sensitive habitats by other MSC UoAs/ non-MSC fisheries, where relevant . |
| | Met? | Yes | No | |
| Rationale | <p><i>There are limited measures currently in place regarding licensing that may be considered to limit effort to some extent, but there is no limit on pots per licensed vessel and other measures like MLS (minimum landing size) do not have consequences for benthic impact by the fishery. Indeed, it appears that over the past few years more vessels have been entering the fishery. Studies show that static gears such as crab pots can impact sensitive habitats (such as seagrass beds, maerl beds, Sabellaria reefs), depending on intensity and frequency, but there appears to be no information that such sensitive habitats are present further offshore in the Central North Sea, where the crab fishery operates.</i></p> <p><i>There are several Natura 2000 areas located in the vicinity of where the fishery operates, although it is not clear from the information available regarding the location of the crab fishing vessels as to whether they actually operate in those Natura 2000 sites.</i></p> <p><i>Regarding interaction with other MSC/non-MSC fisheries, such areal overlap is avoided in order to prevent gear interactions, such as trawl gears ploughing through a line of crab pots. Interviews with fishers seem to indicate that there is good communication with trawlers who may operate in the same area but at different seasons. A full assessment would need to look into possible protection measures in overlapping areas by other fisheries, in addition to those already in place as part of Natura 2000 sites.</i></p> | | | |
| d | Ghost gear management strategy | | | |
| | Guide post | There are measures in place, if necessary , for the UoA that are expected to minimise ghost gear and its impact on all habitats. | There is a partial strategy in place for the UoA, if necessary , that is expected to minimise ghost gear and its impact on all habitats. | There is a strategy in place for the UoA, if necessary , that is expected to minimise ghost gear and its impact on all habitats. |
| | Met? | Yes | No | |
| Rationale | Interviews with fishers indicated that there are measures in place on board the vessels to avoid the loss of crab pots altogether, such as careful training for deployment of the gear, location devices (GIS) of the gear which makes it possible to locate lost crab lines. In order to meet SG80 the fishery has to show that such measures are in place on all vessels in the fishery, furthermore showing that a partial strategy would include cooperation between vessels to retrieve lost gears. | | | |
| Draft scoring range | | 60-79 | | |
| Information gap indicator | | More information sought | | |

| | |
|--|--|
| | Detailed location of the fishery in relation to sensitive areas and Natura 2000 sites and relevant habitat management requirements; evidence of how gear loss is managed amounting to a partial strategy across all crab vessels in this fishery |
|--|--|

PI 2.3.3 – Habitats information

| PI 2.3.3 | | Information is adequate to determine the impact of the UoA on habitats, including changes in the risk posed by the UoA over time | | |
|---------------|--|--|---|--|
| Scoring issue | | SG 60 | SG 80 | SG 100 |
| a | Information quality | | | |
| | Guide post | The types and distribution of habitats are broadly understood . | The nature, distribution, and vulnerability of habitats in the UoA area are known at a level of detail relevant to the scale and intensity of the UoA. | The distribution of habitats is known over their range, with particular attention given to the occurrence of vulnerable habitats. habitats is known over their range, with particular attention to the occurrence of vulnerable habitats. |
| | Met? | Yes / No | Yes / No | Yes / No |
| Rationale | | As RBF applied, PI2.3.3R is scored instead | | |
| b | Information adequacy for assessment of impacts | | | |
| | Guide post | Information is adequate to broadly understand the impacts of gear use on habitats. | Information is adequate to estimate the impacts of the UoA on habitats with a high degree of accuracy . | Information is adequate to estimate the impacts of the UoA on habitats with a very high degree of accuracy . |
| | Met? | Yes / No | Yes / No | Yes / No |
| Rationale | | As RBF applied, PI2.3.3R is scored instead | | |
| c | Monitoring | | | |
| | Guide post | | Adequate information continues to be collected to detect any increase in risk to habitats. | Changes in habitat distributions over time are measured. |
| | Met? | | Yes / No | Yes / No |
| Rationale | | | | |

| | |
|---------------------------|--|
| Draft scoring range | NA |
| Information gap indicator | More information sought / Information sufficient to score PI NA |

PI 2.3.3R – Habitats information if CSA is used to score PI 2.3.1 – delete if not applicable

Note – only use this when RBF is used to score PI 2.3.1 for the UoA (MSC Fisheries Standard Toolbox v1.0 Table A5).

| PI 2.3.3R | | Information is adequate to determine the risk posed to habitats by the UoA and the effectiveness of the strategy to manage impacts on the habitats | | |
|---------------|---|---|--|---|
| Scoring issue | | SG 60 | SG 80 | SG 100 |
| a | Information quality | | | |
| | Guide post | Qualitative information is adequate to estimate the types and distribution of habitats. | Some quantitative information is available and is adequate to estimate the types and distribution of habitats. | The distribution of habitats is known over their range, with particular attention to the occurrence of vulnerable habitats. |
| | Met? | Yes | Yes | Yes |
| Rationale | | <p>The information requirements of the RBF cannot be pre-empted here – as such an analysis is conducted together with relevant stakeholders including fishers and management authorities involved in habitat mapping.</p> <p>However, there is extensive information on sediment habitat distribution in the area where the fishery operates, including regularly updated mapping (see EMODNET data, as referred to in the background information). There is also detailed information on vessel location within the area of fishing, giving information on fishing intensity. The available sediment maps do not seem to indicate any sensitive habitats, which would need to be checked with stakeholders.</p> <p>There do not appear to be any relevant gear impact studies in the area where the fishery operates. Such impacts can however be deduced from research conducted elsewhere.</p> <p>Adequate information continues to be collected, both in terms of vessel distribution and fishing intensity, as well as benthos sediment information updates.</p> <p>From the information currently available, it may well be that this PI would meet SG80.</p> | | |
| b | Information adequacy for assessment of impacts | | | |
| | Guide post | Qualitative information is adequate to estimate the consequence and spatial attributes of habitats. | Some quantitative information is available and is adequate to estimate the consequence and spatial attributes of habitats. | Qualitative information is adequate to estimate the consequence and spatial attributes of habitats. |
| | Met? | Yes | Yes | Yes |
| Rationale | | <p>The information requirements of the RBF cannot be pre-empted here – as such an analysis is conducted together with relevant stakeholders including fishers and management authorities involved in habitat mapping.</p> <p>However, there is extensive information on sediment habitat distribution in the area where the fishery operates, including regularly updated mapping (see EMODNET data, as referred to in the background information). There is also detailed information on vessel location within the area of fishing, giving information on fishing intensity. The available sediment maps do not seem to indicate any sensitive habitats, which would need to be checked with stakeholders.</p> <p>There do not appear to be any relevant gear impact studies in the area where the fishery operates. Such impacts can however be deduced from research conducted elsewhere.</p> <p>Adequate information continues to be collected, both in terms of vessel distribution and fishing intensity, as well as benthos sediment information updates.</p> | | |

| | | | |
|------------------|---|--|--|
| PI 2.3.3R | Information is adequate to determine the risk posed to habitats by the UoA and the effectiveness of the strategy to manage impacts on the habitats | | |
| | From the information currently available, it may well be that this PI would meet SG80. | | |
| c | Monitoring | | |
| | Guide post | Adequate information continues to be collected to detect any increase in risk to habitats. | Changes in habitat distributions over time are measured. |
| | Met? | Yes | |
| Rationale | <p>The information requirements of the RBF cannot be pre-empted here – as such an analysis is conducted together with relevant stakeholders including fishers and management authorities involved in habitat mapping.</p> <p>However, there is extensive information on sediment habitat distribution in the area where the fishery operates, including regularly updated mapping (see EMODNET data, as referred to in the background information). There is also detailed information on vessel location within the area of fishing, giving information on fishing intensity. The available sediment maps do not seem to indicate any sensitive habitats, which would need to be checked with stakeholders.</p> <p>There do not appear to be any relevant gear impact studies in the area where the fishery operates. Such impacts can however be deduced from research conducted elsewhere.</p> <p>Adequate information continues to be collected, both in terms of vessel distribution and fishing intensity, as well as benthos sediment information updates.</p> <p>From the information currently available, it may well be that this PI would meet SG80.</p> | | |

| | |
|---------------------------|---|
| Draft scoring range | ≥80 |
| Information gap indicator | <p>More information sought</p> <p>This will be scored using RBF, together with fishers and relevant stakeholders (management organisations working on habitat mapping)</p> |

PI 2.4.1 – Ecosystem outcome

| | | | | |
|-----------------|-------------------------|---|--|--|
| PI 2.4.1 | | The UoA does not cause serious or irreversible harm to the key elements underlying ecosystem structure and function | | |
| Scoring issue | | SG 60 | SG 80 | SG 100 |
| a | Ecosystem status | | | |
| | Guide post | The UoA is unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be serious or irreversible harm. | The UoA is highly unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be serious or irreversible harm. | There is evidence that the UoA is highly unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be serious or irreversible harm. |
| | Met? | Yes | Yes | |
| Rationale | | <p>Studies have shown that the static crab trap gear has relatively limited impact on benthic habitat (Morgan & Chuenpadgee 2003; Eno et al 2001; see background Section 7.5.1 for further details). The target species is not a key low trophic species and its removal is managed through fisheries technical measures such as minimum size. There are relatively small amounts of bycatch, due to the type of fishing gear; few ETP interactions have been recorded in the bycatch.</p> <p>Ecosystem elements are: a) the features of an ecosystem considered most crucial to the ecosystem’s characteristic nature and dynamics; b) the features most crucial to maintaining the integrity of its structure and functions and the key determinants of its resilience and productivity.</p> <p>The removal of the target species is expected to be the most significant impact of the fishery. The impact of this on the ecosystem are considered highly unlikely to disrupt its structure and functioning. For example, other species may be expected to continue the role of detritivores in the food web.</p> <p>The crab fishery is highly unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be serious or irreversible harm. SG80 is met.</p> | | |

| | |
|---|---|
| Draft scoring range | ≥80 |
| Information gap indicator | Information sufficient to score PI |
| Data-deficient? (Risk-Based Framework needed) | No |

PI 2.4.2 – Ecosystem management strategy

| | | | | |
|---------------|-------------------------------------|---|--|--|
| PI 2.4.2 | | There are measures in place to ensure the UoA does not pose a risk of serious or irreversible harm to ecosystem structure and function | | |
| Scoring issue | | SG 60 | SG 80 | SG 100 |
| a | Management strategy in place | | | |
| | Guide post | There are measures in place, if necessary , which considers the potential impacts of the UoA on the key elements underlying ecosystem structure and function. | There is a partial strategy in place, if necessary , that is expected to achieve the Ecosystem outcome SG80 level. | There is a strategy in place for managing the impact of the UoA on the key elements underlying ecosystem structure and function. |
| | Met? | Yes | Yes | |
| Rationale | | <p>European law, post-Brexit transcribed into UK legislation via the TCA (Trade and Cooperation Agreement 2020 Trade and Cooperation Agreement between UK and EU – CP 426 (publishing.service.gov.uk)), designed to protect the marine environment and marine ecosystems is the Marine Strategy Framework Directive 2008/56/EC, which in conjunction with the Habitats Directive (92/43/EEC) and Birds Directive (79/409/EEC) (NB: both these Directives have been updated and expanded upon since) is playing an important role in limiting fishery related ecosystem impacts. The overarching goal of the Directive is to achieve ‘Good Environmental Status’ (GES) by 2020 across Europe’s marine environment, including the establishment of a network of Marine Protected Areas by 2020.</p> <p>The relevant descriptors to achieve Good Environmental Status (GES), as defined in the Marine Strategy Framework Directive (Directive 2008/56/EC), in relation to the Central North Sea and adjoining areas ecosystem health and function, include for example: Elements of food webs ensure long-term abundance and reproduction (Descriptor 4); The sea floor integrity ensures functioning of the ecosystem (Descriptor 6). Other descriptors deal with marine litter and concentration of pollutants, which affect the marine ecosystem health and function.</p> <p>The habitat protection measures established by the EC Natura 2000 network represent a further element of the strategy to prevent serious or irreversible harm to marine ecosystems in the UoA areas. The effect of fishery removals is addressed under the TAC and quota management system for individual relevant fish species that has been established by the CFP and the Multi Annual Plans (MAP). TACs are set under the MAP at a level compatible with MSY (Article 4); and all fishery-related mortality is taken into account to ensure that impacts on fish stocks (and here the Greater North Sea ecosystem) are within appropriate limits.</p> <p>However, there is currently no overarching management plan for Brown crab in the Central North Sea. Following a length-based assessment to assess stock status of brown crab in the North Sea, ICES (2023) reported that exploitation in the Central North Sea is moderate and stable, and landings are increasing.</p> <p>The main management measures implemented for the stocks are:</p> <ul style="list-style-type: none"> • EC legislation sets a minimum landing size of 130mm for crabs in the North Sea south of 56°N and 140mm North of 56°N. It also restricts the proportion of the crab landings which is detached claws caught by pots or creels to less than 1% by weight of total catch. A by-catch limit of no more than 75kg per day of crab claws taken by other gear types can be landed. • National legislation restricts the number of shellfish licences available (in England and Wales) and also prohibits landing of berried and soft crabs <p>However, any bycatch related to this fishery is small and has to be returned to the sea immediately; there are measures in place which managed gear loss (such as marking of gear, GIS, retrieval procedures); and being a static gear, impact on habitat is limited (as shown in relevant studies elsewhere), as the fishery operates predominantly in sedimentary habitats which are less sensitive.</p> <p>Overall, there is evidence that the crab fishery is part of the ecosystem management of the wider North Sea, SG80 is met.</p> | | |

| | | | | |
|-----------|--|--|---|--|
| PI 2.4.2 | | There are measures in place to ensure the UoA does not pose a risk of serious or irreversible harm to ecosystem structure and function | | |
| b | Management strategy effectiveness | | | |
| | Guide post | The measures, if necessary , are considered likely to work, based on plausible argument. | There is some evidence that the measures/partial strategy, if necessary , is achieving the objectives set out in scoring issue (a), based on some information directly about the UoA and/or the ecosystem involved. | There is evidence that the partial strategy/strategy is achieving the objectives set out in scoring issue (a) based on information directly about the UoA and/or ecosystem involved. |
| | Met? | Yes | Yes | |
| Rationale | | | | |

| | |
|---------------------------|---|
| Draft scoring range | ≥80 |
| Information gap indicator | Information sufficient to score PI |

PI 2.4.3 – Ecosystem information

| | | | | |
|---------------|---|---|--|--|
| PI 2.4.3 | | There is adequate knowledge of the ecosystem and the main impacts of the UoA on key ecosystem elements | | |
| Scoring issue | | SG 60 | SG 80 | SG 100 |
| a | Information quality | | | |
| | Guide post | Information is adequate to identify the key elements of the ecosystem. | Information is adequate to broadly understand the key elements of the ecosystem. | |
| | Met? | Yes | Yes | |
| Rationale | | There is good information on the marine ecosystem in the North Sea (ICES 2022 Greater North Sea ecoregion overview) and this is updated regularly | | |
| b | Investigation of UoA impacts | | | |
| | Guide post | Main impacts of the UoA on the key ecosystem elements can be inferred from existing information | Main impacts of the UoA on the key elements of the ecosystem have been investigated in detail. | Main interactions between the UoA and the key ecosystem elements have been investigated in detail. |
| | Met? | Yes | No | |
| Rationale | | The main impacts of the UoA on these key ecosystem elements can be inferred from existing information, but have not been investigated in detail in the area where the crab fishery operates (for example cumulative impact of the crab pots on habitats over time; extent of ETP interactions including marine mammals) | | |
| c | Understanding of component functions | | | |
| | Guide post | | The main functions of the components in the ecosystem are known. | The impacts of the UoA on the components are identified and the main functions of these components in the ecosystem are understood. |
| | Met? | | Yes | |
| Rationale | | The main functions of the components are known, through for example ecosystem modelling (Mackinson & Daskalov, 2007) | | |
| d | Monitoring | | | |
| | Guide post | | Adequate data continue to be collected to detect any increase in risk level. | Information is adequate to support the development of strategies to manage ecosystem impacts. |
| | Met? | | No | |
| Rationale | | The data on the fishery that is collected is not adequate to evaluate an increase in risk levels (i.e. no catch profile from the crab fishery was available for this pre-assessment – and according to interviewees, no such data is collected, including no observer data, to inform ecosystem management) | | |

| | |
|---------------------|--------------|
| Draft scoring range | 60-79 |
|---------------------|--------------|

Information gap indicator

More information sought

Detailed investigation on cumulative impacts on habitat in area where the crab fishery operates; catch profile over time, including observer data and interaction with ETP/OOS species.

If more information is sought, include a description of what the information gap is and what information is sought

4.6 Principle 3

4.6.1 Principle 3 background

The management situation for this fishery is complex as the client group vessels (the UoC) are from multiple jurisdictions (UK, Ireland, Norway) fishing in other jurisdictions (the EEZs of Denmark, the Netherlands and Germany). Some inshore vessels from these neighbouring coastal states do fish the offshore area to a limited extent (which may be considered eligible fishers for the UoA).

Principle 1 must consider removals from the whole stock, which is currently defined as a wider area. The edible crab stock in the Central North Sea crab fishery unit (CFU) defined in Cefas (2020) as being within UK waters and EU waters (Figure 1). The CFU does not align with national boundaries, regional IFCA boundaries, nor the Crab & Lobster Fisheries Management Plan (FMP) which only covers English waters (Figure 18). In terms of jurisdiction the stock area spans:

- The Eastern North Sea offshore fishery in EU waters of EU member states outside 12 nautical miles (the focus of Principle 2);
- English waters outside 6 nautical miles (managed by MMO and within the Crab & Lobster FMP scope)
- English waters within 6 nautical miles (managed by IFCA and within the Crab & Lobster FMP scope)
- Scottish waters within 6 nautical miles (managed by Scottish Government Marine Directorate and outside the Crab & Lobster FMP scope)

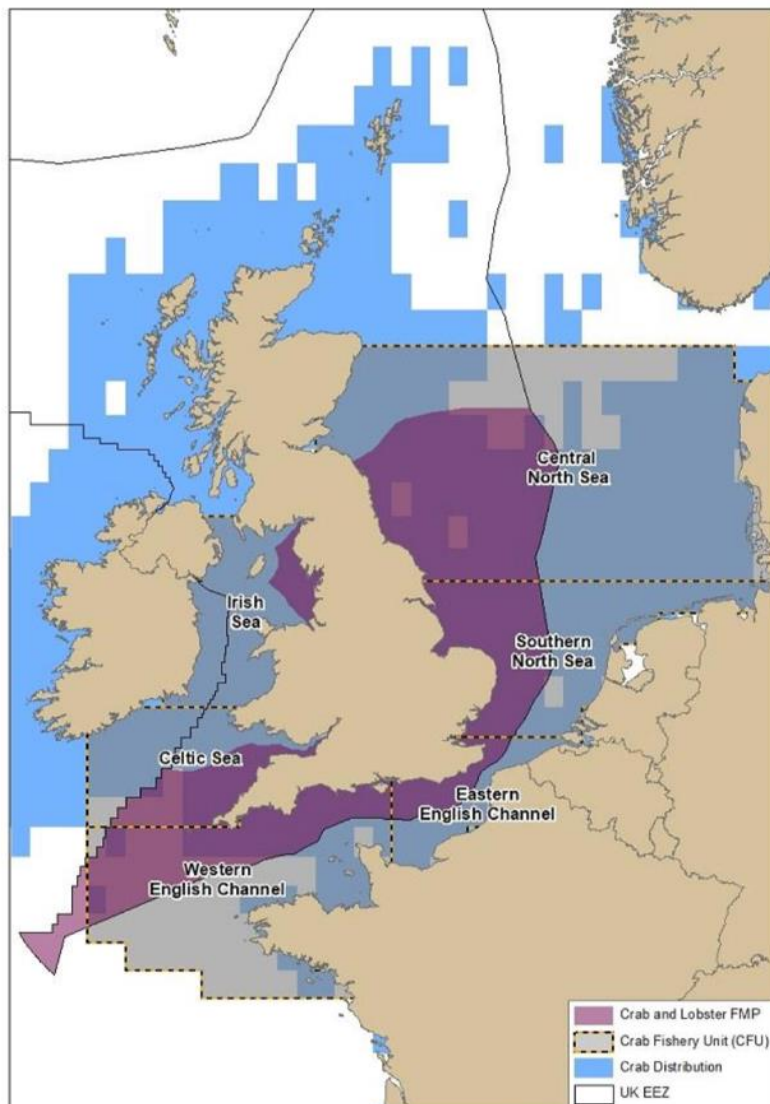


Figure 18 Distribution of crab around the UK, CFUs and the FMP (source: Defra, 2023)

To ensure the sustainable management of the stock (**Principle 1**), consideration of the inshore and offshore components of the crab stock in UK waters in the western North Sea is required.

Principle 2 of this pre-assessment focuses on the vessels operating in the offshore crab fishery in waters outside 12 nautical miles of Denmark, the Netherlands and Germany.

Principle 3 takes account of the management arrangements in EU waters of the North Sea outside 12 nautical miles, the national jurisdictions of the vessels involved and where Principle 1 (stock management) aspects are considered, the fishery in UK waters.

Details of UK fisheries management and specifically, UK crab management are provided in **Appendix A**.

4.6.2 General Fisheries Management in EU Waters

In European Union waters fisheries management falls under the Common Fisheries Policy. The Common Fisheries Policy (CFP) is the mechanism and set of rules through which European fishing fleets and fish stocks are managed. The CFP applies to all EU member states, including non-coastal states. It gives all European fishing fleets equal access to EU waters to create fair competition. It aims to ensure that European fishing is sustainable, balancing the desire to maximise catches with conserving fish stocks. As a general rule, all registered EU fishing vessels have equal access to waters and resources throughout the Union, although a number of temporary exceptions to this rule are in place but will expire by the end of 2032.

Each coastal state has the right to manage natural resources in its Exclusive Economic Zone, but under the CFP, the fishing area of all EU states is considered one zone. Under the CFP fisheries are managed by:

- controlling which vessels can access different areas of the sea
- limiting the length of time at sea or number of vessels in a fleet able to go out to sea at any one time
- regulating the gears and methods fishermen use.
- Setting the quotas set on each type of fish are known as total allowable catch (TAC).

Quotas and regulations are proposed and implemented by the Agriculture and Fisheries configuration of the Council of the European Union and the European Commission.

EU fisheries control and technical measures (Council Regulation EC No. 2019/1241) are the main management measures applied to EU fishing vessels and those fishing in EU waters, they include:

- Mandatory fishing licences.
- Access restrictions - exclusive access to national fleets within 3 nm; restricted access to other EU member states within 3-12 nm; access to all EU vessels and licensed non-EU vessels outside 12nm.
- Satellite Vessels Monitoring Systems (VMS) – required on all vessels >12 m.
- Automatic Identification System (AIS) for all vessels >15 m.
- Logbooks and landing declarations – for vessels ≥10 m.
- Electronic logbooks for vessels ≥12m.
- Mutual administrative assistance between Member States.

The EU has agreements in place with Norway and the UK that gives access for their vessels under certain conditions (compliance with EU rules and data sharing) and provides an annual licence to those vessels.

Long-term Objectives

The current iteration of the CFP (EU Reg. 1380/2013) sets out the following objectives apply to EU waters and EU fleets:

1. The CFP shall ensure that fishing and aquaculture activities are environmentally sustainable in the long-term and are managed in a way that is consistent with the objectives of achieving economic, social and employment benefits, and of contributing to the availability of food supplies.

2. The CFP shall apply the precautionary approach to fisheries management, and shall aim to ensure that exploitation of living marine biological resources restores and maintains populations of harvested species above levels which can produce the maximum sustainable yield.

In order to reach the objective of progressively restoring and maintaining populations of fish stocks above biomass levels capable of producing maximum sustainable yield, the maximum sustainable yield exploitation rate shall be achieved by 2015 where possible and, on a progressive, incremental basis at the latest by 2020 for all stocks.

3. The CFP shall implement the ecosystem-based approach to fisheries management so as to ensure that negative impacts of fishing activities on the marine ecosystem are minimised, and shall endeavour to ensure that aquaculture and fisheries activities avoid the degradation of the marine environment.

4. The CFP shall contribute to the collection of scientific data.

5. The CFP shall, in particular:

(a) gradually eliminate discards, on a case-by-case basis, taking into account the best available scientific advice, by avoiding and reducing, as far as possible, unwanted catches, and by gradually ensuring that catches are landed;

(b) where necessary, make the best use of unwanted catches, without creating a market for such of those catches that are below the minimum conservation reference size;

(c) provide conditions for economically viable and competitive fishing capture and processing industry and land-based fishing related activity;

(d) provide for measures to adjust the fishing capacity of the fleets to levels of fishing opportunities consistent with paragraph 2, with a view to having economically viable fleets without overexploiting marine biological resources;

(e) promote the development of sustainable Union aquaculture activities to contribute to food supplies and security and employment;

(f) contribute to a fair standard of living for those who depend on fishing activities, bearing in mind coastal fisheries and socio-economic aspects;

(g) contribute to an efficient and transparent internal market for fisheries and aquaculture products and contribute to ensuring a level-playing field for fisheries and aquaculture products marketed in the Union;

(h) take into account the interests of both consumers and producers;

(i) promote coastal fishing activities, taking into account socioeconomic aspects;

(j) be coherent with the Union environmental legislation, in particular with the objective of achieving a good environmental status by 2020 as set out in Article 1(1) of Directive 2008/56/EC, as well as with other Union policies.

Relevant environmental objectives also include those under the Marine Strategy Framework Directive (MSFD). The MSFD (EU Directive 2008/56/EC) is a strategy for marine environmental protection. MSFD will constitute the environmental pillar of the new EU Maritime Policy and requires Europe's Oceans to achieve "good ecological status". MSFD foresees the creation of "European Marine Regions" and "Sub-Regions" to act as "management units" for its implementation and requires member states to co-operate on developing the marine strategies for their waters that lie within these regions. Measures to "achieve or maintain good environmental status" must be developed to achieve the 2020 targets.

MSFD embraces the ecosystem-based approach to managing all human activities in the marine. It will enable a sustainable use of marine goods and services and promote adaptive management of the oceans. It will undergo a 6-year cycle of revision & review and will seek to ensure cooperation between Member States and regional conventions (e.g. OSPAR). The MSFD states that "The Common Fisheries Policy, including in the future reform, should take into account the environmental impacts of fishing and the objectives of this Directive".

Control and Enforcement in EU Waters

The EU fisheries control system operates to ensure that the rules of the common fisheries policy are applied and implemented in practice across the EU.

Control measures include

- the **monitoring and registration of catches** that are extracted from the seas and oceans by the EU fishing fleet
- controls on **access to waters** (e.g. fishing licences)
- **fishing effort** (e.g. vessels tonnage and engine power)
- **technical measures** (e.g. rules on fishing gears)

Fisheries rules and control systems are set at EU level, but each EU country is responsible for enforcing them through their own national control systems that comply with the Fisheries Control System.

EU countries must have inspection and enforcement measures in place to identify infringements and sanction offenders at every stage of the supply chain: from catching to landing and first sale and all the way to the retail sale.

Within the EU fisheries control system, the European Commission, European Fisheries Control Agency (EFCA) and National competent authorities have obligations to comply with, ensure control, enforcement and inspection of the rules of the common fisheries policy (CFP).

National authorities and the European Fisheries Control Agency are responsible for coordinating and conducting key actions including the monitoring and inspection of fishing activity in the EU. The EFCA also work to encourage closer collaboration and exchange of best practice between EU countries, EFCA organises joint control campaigns where inspectors from different EU countries, as well as non-EU countries join forces. The EFCA also provide training and the sharing of best practises on fisheries inspections and control related issues between EU countries.

The European Commission controls and evaluates the application of the rules of the common fisheries policy by EU countries. This task is performed through audits, verifications, inspections and inquiries.

When the Commission finds that national authorities are not enforcing fisheries control rules properly, there are various options exist to remedy the identified shortcomings. These include

- initiation of an **administrative inquiry** with the concerned EU country. This may require the EU country to investigate and resolve the identified irregularities and, if necessary, provide the European Commission with additional information.
- establishment of an **action plan**. This is a collaborative process where the Commission and the EU country resolve the issues through the implementation of a structured roadmap to address the identified shortcomings within a specific time frame.
- informal **dialogue** with the EU countries concerned through the EU Pilot.
- launch of **infringement procedures** which may result in proceedings before the European Union Court of Justice.

In addition, the European Commission may interrupt, and eventually suspend the funding provided under the European Maritime, Fisheries and Aquaculture Fund (EMFAF). In cases where a Member State has exceeded quota allocations, the European Commission may impose a deduction from future fishing opportunities.

National Authorities

Denmark

The Danish Fisheries Agency (Fiskeristyrelsen) is part of the Ministry of Food, Agriculture and Fisheries Denmark (Ministeriet for Fødevarer, Landbrug og Fiskeri) and is the authority responsible for monitoring and enforcing EU and national fisheries conservation policies. The agency carries out shore and sea-based inspections. The National Institute of Aquatic Resources (Institut for Akvatiske Ressourcer or DTU Aqua) provides scientific advice on fisheries to the national government and EU.

The CFP is enacted into law through the Danish Fisheries Act (Bekendtgørelse af fiskerilov).

The Danish Nature Agency (Naturstyrelsen) is the authority responsible for the government's policies concerning the environment and nature conservation. This includes the administration of Natura 2000 sites established under the Habitats and Birds Directive. The Habitats and Bird Directive is also implemented through the Nature Conservation Act.

Netherlands

Fisheries comes under the responsibility of the Ministry of Agriculture, Nature and Food Quality (Ministerie van Landbouw, Natuur en Voedselkwaliteit) and The Dutch Food and Safety Authority (Nederlandse Voedsel- en Warenautoriteit (NVWA)) is the department responsible for compliance with EU and national regulations.

The Fisheries Act (Visserijwet, 1963) transposes EU requirements and enacts national regulations, i.e., the Rules of Sea and Coastal Fishery Reglement Zee- en Kustvisserij), Implementation rules for the fishery (Uitvoeringsregeling Visserij), and the nature law Natuurbeschermingswet (Nb-wet), implementing Natura 2000 goals and setting out the rules including areas closed to fishing.

The registration of fishing vessels is administered in the Nederlands Register van Vissersvaartuigen (NRV) (Dutch register of fishing vessels), and is published online.

The Institute for Marine Resources and Ecosystem Studies (Wageningen Marine Research, WMR) is the government science provider. The Nature Conservation Act (Natuurbeschermingswetvergunning) is applied by the Ministry of Agriculture, Nature and Food Quality.

Germany

In Germany, there are two levels of government responsible for sea fisheries management: the federation (national level) and the Länder (federal states, provinces, or regional level).

The Federal Ministry of Food and Agriculture 35 (Bundesministerium für Ernährung und Landwirtschaft - BMEL) is the competent authority on fisheries and aquaculture at the federal level. It drafts policies, guidelines, promotes actions especially at the EU level and enacts fisheries law.

The CFP is enacted into law by the Marine Fisheries Act (Seefischereigesetz).

BMEL relies on a number of federal research institutes for fisheries advice. The Thünen Institute 38 is in charge of marine and fisheries issues and includes the Institute of Sea Fisheries (Institute für Seefischerei), the Institute of Fisheries Ecology (Institute für Fishereiökologie).

There is also a national / federal and state / Länder structure to nature conservation. The German Federal Agency for Nature Conservation (Bundesamt für Naturschutz – BfN) is the German government's scientific authority with responsibility for national and international nature conservation, reporting to the German Ministry for the Environment, Nature Conservation, Buildings and Nuclear Safety (Bundesministerium für Umwelt, Naturschutz, Nukleare Sicherheit und Verbraucherschutz (BMUV)).

The Federal Nature Conservation Act transposes the Habitats Directive. Implementation of Natura 2000 within territorial waters is the responsibility of the Länder and monitoring and reporting on the status of these protected areas is the responsibility of BfN.

The Trade and Cooperation Agreement (TCA) between the EU and UK

Following the UK's withdrawal from the EU in 2020, the Trade and Cooperation Agreement was signed and agreed between the EU and UK, which sets out preferential arrangements in areas such as fisheries. The TCA between the United Kingdom (UK) and the European Union (EU) includes the objective of cooperating with a view to ensuring that fishing activities for shared stocks in their waters are environmentally sustainable in the long term and contribute to achieving economic and social benefits and requires the Parties to hold consultations annually to agree the total allowable catches (TACs) for listed stocks listed under the TCA.

Under the Agreement 25% of the overall existing EU quota in UK waters will be transferred to the UK over a five-and-a-half-year period to 30 June 2026, with percentages changes agreed for the total allowable catch (TAC) for each fish stock in each fishing area. Mutual access to UK/EU waters is now gained through a licencing system for individual fishing vessels, with the UK and EU now submitting to each other a list of

vessels that require a licence to fish in the respective waters, and that these should be approved by the other party.

Under the TCA a Specialised Committee on Fisheries has been created which is co-chaired by a representative of the EU and of the UK. This meets at least once a year unless the co-chairs decide otherwise, with the committee discussions focus on the implementation and functioning of the fisheries heading in the Trade and Cooperation Agreement. This includes a focus on the technical measures and in-year quota transfers.

Under the Agreement the EU and UK will negotiate every year (after the five and a half year transition period is over) on TACs for each of the 87 stocks listed in the Agreement. For the first five years the TCA sets out the changes to EU and UK percentage share of each stock. For some stocks there will be significant changes, and some will not change at all.

Mutual access will continue in the 6 to 12 nautical mile area in the fishing zones south, southeast and southwest of the UK (ICES zones 4c and 7d—g) for non-quota stock; together with access to non-quota stocks in each other's Exclusive Economic Zone (EEZ). Both are based on historical activity between 2012-2016. The Agreement set out that the UK and EU would submit to each other a list of vessels that require a licence and that these should be approved by the other party.

For non-quota stock species such as edible brown crab, the EU and UK agreed not to apply the tonnages provided for in the TCA in 2024 but will instead continue to closely monitor non-quota stocks fished by their respective fleets in the waters of the other party. In the event that either the UK or EU reaches 80% of its total before the end of 2024, both will meet and consider next steps.

For the purposes of monitoring landings of non-quota species, an obligation under Article 507 of the TCA (data-sharing), the UK and EU continue to exchange landings data (for vessels from the EEZ and territorial waters of the other Party, and at a species level) at monthly intervals on or before the 25th day of each calendar month, covering the previous calendar month.

The TCA includes arrangements for compensation if either the UK or the EU reduces or withdraws access to its waters, allowing the imposition of tariffs on fisheries products, and parties can suspend access to waters, or more broadly parts or the whole of the trade provisions of the TCA, where the other party is in breach of the fisheries heading of the Agreement.

For both EU and UK, the TCA objective for fisheries is set to “exploit shared stocks at rates intended to maintain and progressively restore populations of harvested species above biomass levels that can produce the maximum sustainable yield” (UK-EU 2020); having regard to:

- (a) applying the precautionary approach to fisheries management;
- (b) promoting the long-term sustainability (environmental, social and economic) and optimum utilisation of shared stocks;
- (c) basing conservation and management decisions for fisheries on the best available scientific advice, principally that provided by the International Council for the Exploration of the Sea (ICES);
- (d) ensuring selectivity in fisheries to protect juvenile fish and spawning aggregations of fish, and to avoid and reduce unwanted bycatch;
- (e) taking due account of and minimising harmful impacts of fishing on the marine ecosystem and taking due account of the need to preserve marine biological diversity;
- (f) applying proportionate and non-discriminatory measures for the conservation of marine living resources and the management of fisheries resources, while preserving the regulatory autonomy of the Parties;
- (g) ensuring the collection and timely sharing of complete and accurate data relevant for the conservation of shared stocks and for the management of fisheries;
- (h) ensuring compliance with fisheries conservation and management measures, and combating illegal, unreported and unregulated fishing; and
- (i) ensuring the timely implementation of any agreed measures into the Parties' regulatory frameworks.

The UK has committed to adhere to the North Sea Multi-annual Plan (MAP) until an alternative arrangement is established. The North Sea MAP provides management objectives for by-catch species when fishing for the listed demersal species, which may therefore include brown crab. However, the focus of this MAP is on demersal fish stocks and for bycatch species it effectively reinforces the CFP objectives of applying the precautionary approach in achieving MSY, eliminating discards and adopting an ecosystem approach.

Consultation Roles and Responsibilities

The European Commission established Advisory Councils with a membership of multiple stakeholders including industry and environmental NGOs associated with specific sea basins and themes. The North Sea Advisory Council has been established for over 20 years an executive committee of over 25 members that meets 3 times a year. NSAC currently has 26 General Assembly members, of which 19 represent fishing industry interests, and 7 other interest groups (OIGs).

As with all other Advisory Councils, the North Sea AC Executive Committee membership must represent a 60% / 40% balance between organisations with fishing interests and other interest groups. This gives fishing members 15 seats and other interest groups 10 seats in the Executive Committee. Of the 15 seats for fishing members in the NSAC, 11 are currently occupied, leaving 4 vacancies and of the 10 seats for other interest groups, 3 are occupied, leaving 7 vacancies.¹⁵

NSAC has developed joint advice on crab fisheries with other ACs – see below.

4.6.3 Fisheries-Specific Management

Fishery-specific management for this fishery is considered in terms of the jurisdiction of the fishing area and the vessels operating in the fishery. The 13 vessels in the client group currently operating in the fishery are UK (8) Irish (3) and Norwegian (2) registered vessels. Other EU vessels also operate in the fishery.

The offshore crab fishery in the Eastern North Sea is outside the 12 nautical miles, but within the EEZs of EU Member States Denmark, Germany and the Netherlands and so all operate under the CFP. As a non-quota species, there is no TAC and effort is controlled by national vessel licensing (and for UK vessels see TCA arrangements above). This results in some limits to overall effort, but there is no limit on the number of pots that each vessel can fish with.

Regulations of relevance to this crab fishery in EU waters are summarised below:

- (1) In Union waters in ICES division 4a. In ICES Divisions 4b and 4c, a minimum conservation reference size of 130 mm shall apply.
- (2) In an area in ICES divisions 4b and 4c limited by a point at 53°28'22" N, 0°09'24" E, on the coast of England, a straight line joining this point with 53°28'22" N, 0°22'24" E, the 6-mile boundary of the United Kingdom, and a straight line connecting a point at 51°54'06" N, 1°30'30" E, with a point on the coast of England at 51°55'48" N, 1°17'00" E, a minimum conservation reference size of 115 mm shall apply.
- (3) For edible crabs caught in pots or creels, a maximum of 1 % by weight of the total catch of edible crab may consist of detached claws. For edible crabs caught with any other fishing gear, a maximum of 75 kg of detached crab claws may be landed.

ICES hosts a WGCRAW working group that collates and develops scientific information on the crab fisheries throughout Europe. For this specific fishery, the Cefas assessment of the Central North Sea CFU (see Principle 1) is the only published assessment. While this recognises this offshore Eastern North Sea fishery within that CFU, it does not include data from this fishery in its assessment. The TCA includes data sharing provisions between the UK and EU and while vessels report to home administrations and EU landing ports, there is no evidence in published assessments that data is collated and used to inform stock assessment and management of the fishery.

Since 2016, The North Western Waters Advisory Council (NWWAC), the North Sea Advisory Council (NSAC) and the Market Advisory Council (MAC) have continually addressed various aspects relating to brown crab fisheries management, supply chain issues and markets, starting with the NWWAC establishing a first Focus

¹⁵ <https://www.nsrac.org/our-members/>

Group to address the unresolved issue of transnational management in 2016. Advice was published on data collection and assessment for brown crab in 2017 and on brown crab management in 2020. In 2019, the MAC adopted advice on the testing of cadmium levels in brown crab exported to the People's Republic of China. Following the 2020 advice, the NWWAC, MAC and NSAC jointly established a Focus Group on Brown Crab which produced advice on production and marketing of Brown Crab in the EU in 2021¹⁶.

Issues identified in this advice relating to the sustainable management of brown crab fisheries in the North Western Waters and the North Sea as well as relating to the EU market and international trade remain unresolved. Therefore, a new joint Focus Group was established between the NWWAC, NSAC and MAC which began its work in October 2022 to specifically progress these issues. The joint NWWAC/NSAC/MAC Focus Group Brown Crab held workshops in 2023 in Paris with the participation of 41 industry and OIG representatives from 6 Member States (Denmark, France, Germany, Ireland, The Netherlands, Poland) as well as Norway and the United Kingdom in order to discuss management measures, impacts of offshore renewable energy (ORE) developments on brown crab fisheries, potential communication tools, specific socio-economic challenges for stakeholders in this fishery, and supply chain issues including potential guidelines for industry regarding exports to Asian countries. They produced a list of recommendations:

Management

- To allow for best management, full stock assessments must be carried out across the remit areas of the NWWAC and NSAC. These should include evaluation of fishing effort (i.e., number of vessels, number of pots, seasonal or full year), and not only landings.
- The Advisory Councils strongly recommend that the minimum landing size is harmonised across all EU Member States and if possible, agreed with the UK via the Specialised Committee on Fisheries.
- The ACs recommend a minimum landing size of 150mm carapace width in all fisheries with the exception of recognised local fisheries (e.g., Cromer Crab) which have a proven record of not exceeding a lower maximum size over many years.
- Landing of berried females, soft and moulting crabs should be prohibited in all fisheries.
- Landing of clawed crab should be prohibited in all fisheries with the exception of those described in [Regulation \(EU\) 2019/1241](#)
- Using crab as whelk bait should be restricted to fresh-frozen by-product from processing. No fresh crab should be used. Instead, the use of spider crab (Maja) and other specifically developed bait, for example from the RECCRU [2] project and other similar projects, should be implemented. In a recognised small-scale seasonal fishery for brown crab by vessels <12m, where whole crab is landed and claws removed, crab bodies can be returned to the vessel and used as bait by the operators.
- Seasonal closures should be explored both on a sea basin approach and from a gear-by-gear approach.
- The number of pots per boat should be limited.
- Use of parlour traps (casier à parloir) in the Channel should be prohibited for the catching of brown crab.
- The ACs welcome all sustainability initiatives for the industry, including Fisheries Improvement Projects and call on the Commission and Member States to encourage and support these initiatives.

¹⁶ <https://thefishingdaily.com/latest-news/nwwac-nsac-and-mac-issue-joint-advice-on-brown-crab/>

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- The ACs recommend that a joint effort be made in the North Sea to establish an overview of the current fishing effort with a stop to new entrants and/or increased effort. In order to stop the further deterioration and over-exploitation of crab populations, the ACs urge the Commission to direct Member States to prohibit any new entrants to join the fishery as well as to stop the increase in fishing effort via the existing fleet, until the stocks have been fully scientifically assessed. [3]
 - All crab pots should include measures to prevent ghost fishing, for example biodegradable panels. Financial assistance should be provided with additional research into efficacy and viability carried out.

Research

- Data is urgently needed on brown crab populations regarding size/sex/season at EU level. The ACs urge the Commission to make a special request to ICES and the Member States to prioritise research on this.
- Data gaps relating to landings compared to effort, number of boats and days at sea must be addressed. The ACs recommend that the Commission request Member States to add this to their data collection and would welcome the inclusion of data of brown crab by-catch and from recreational fisheries to establish if there is any potential impact.
- More research is needed on migration patterns especially of female crab as these remain poorly understood.
- Research is urgently needed on the impacts of EMF on the lifecycle and behaviour of brown crab.
- Research on the impacts of climate change effects on brown crab must be prioritised, for example the arrival of new predators such as octopus. In addition, the increase of parasites on both adult and juvenile crab and their possible effect on spawning and recruitment should be investigated. This research should also establish if there is a change to stock boundaries due to climate change effects, as well as changes to larval phases due to possible changes in ocean currents.
- The ACs call on the Commission to urgently request ICES to review all available data for brown crab stocks in the NWWAC and NSAC remit areas and identify data gaps.

In December 2023 the European Commission's DG MARE provided the following response to the joint advice¹⁷:

DG MARE is fully aware of the complexity of managing NQS, which frequently concern data-poor species with variable management measures at national / regional level.

In this context, it is worth emphasising the challenges posed by the interplay in the management of EU-UK shared NQS, with parallel initiatives at EU-level (e.g. Joint Focus Group Brown Crab), UK-level (Fisheries Management Plan for crab and lobster) and ongoing commitments in the EU-UK Specialised Committee on Fisheries (MultiYear Strategies for conservation and management of NQS).

¹⁷ <https://www.nsrac.org/wp-content/uploads/2023/09/02-2324-Reply-to-NWWAC-NSAC-MAC-Joint-Advice-on-Brown-Crab.pdf>

We are aware of the reported threats to brown crab stock status, including reduced recruitment and increased fishing pressure, as well as emerging issues resulting from new diseases / parasites and effects from climate change. We therefore fully agree that it is crucial to improve the current knowledge and fill information / data gaps on brown crab stocks and fisheries, including through EU funded research projects. In addition, the Commission also encourages stakeholder initiatives to improve fisheries sustainability, especially when underpinned by robust scientific evidence, such as those included in the present recommendations.

Likewise, the Commission supports proposals to evaluate and monitor the fishing effort and respective spatial-temporal distribution, as an approach to eventually limit the fishing effort through closures in the crab fishery. Such work could also help assess the possible impacts of spatial squeeze and displacement of fishing effort stemming from other activities, such as offshore renewable energy structures.

I would like to conclude by reiterating my support to your initiatives aiming at improving the current information on this fishery and stock status, which demonstrate your commitment to refining fisheries management and enhancing the sustainability of the fishing sector. I also welcome your continued engagement in the discussions on NQS in the Specialised Committee on Fisheries, given the shared responsibility for these stocks.

The above illustrates the significant gaps in current brown crab management and the science to support it, but also stakeholder recognition of these and a desire to see these gaps addressed. It is less clear who will take the lead on the required actions as the Commission response indicates support (and potentially funding) stakeholder initiatives, but it does not commit to undertaking the work itself.

4.6.4 Principle 3 Performance Indicator scores and rationales – delete if not applicable

PI 3.1.1 – Legal and/or customary framework

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| PI 3.1.1 | | <p>The management system exists within an appropriate and effective legal and/or customary framework which ensures that it:</p> <ul style="list-style-type: none"> • Is capable of delivering sustainability in the UoA(s); • Observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and • Incorporates an appropriate dispute resolution framework | | |
| Scoring issue | | SG 60 | SG 80 | SG 100 |
| Compatibility of laws or standards with effective management | | | | |
| a | Guide post | There is an effective national legal system and a framework for cooperation with other parties, where necessary, to deliver management outcomes consistent with MSC Principles 1 and 2. | There is an effective national legal system and organised and effective cooperation with other parties , where necessary, to deliver management outcomes consistent with MSC Principles 1 and 2. | There is an effective national legal system and binding procedures governing cooperation with other parties that deliver management outcomes consistent with MSC Principles 1 and 2. |
| | Met? | Yes | Yes | Yes |
| Rationale | | <p>There is an effective national legal system and organised and effective cooperation with other parties, where necessary, to deliver management outcomes consistent with MSC Principles 1 and 2 and an over-arching legal framework at national and EU level which has the capacity to deliver effective fisheries management.</p> <p>The European Common Fisheries Policy (CFP) is an overarching and comprehensive legal, control and management framework for the management of European Fisheries. The main aims of the CFP are the sustainable exploitation of European fish stocks. The EU has partnership agreements with non-EU countries to manage straddling stocks and the exploitation of non-EU stocks by EU fishing vessels. The CFP was reviewed under the Irish presidency of the EU Council and the new CFP (EU 1380/2013) came into effect on 1/1/2014.</p> <p>The CFP is translated into National Law by the competent authorities in each member state (MS). In the Republic of Ireland (IE) this is the Department of Agriculture, Food and the Marine (DAFM). Vessels are granted permits to fish for crabs in Irish Waters through licences issued by DAFM.</p> <p>Co-operative roles between the EU and the UK are defined in the Trade & Cooperation Agreement (TCA); it provides for annual negotiations on total allowable catches and related issues each year between the UK and the EU for shared stocks. Whilst the UK has exited the EU with resulting amendments to UK legislation, it retains a robust framework in relation to P1 and in relation to P2 through several pieces of legislation. Norway also has a robust regulatory framework with annual agreement with the EU ensuring agreed, licenced access into EU waters for certain vessels with the requirement they adhere to EU regulations and data is shared between authorities.</p> <p>This illustrates organised and effective co-operation on shared stocks – SG80 is met.</p> | | |
| Resolution of disputes | | | | |
| b | Guide post | The management system incorporates or is subject by law to a mechanism for the resolution of legal disputes arising within the system. | The management system incorporates or is subject by law to a transparent mechanism for the resolution of legal disputes which is | The management system incorporates or is subject by law to a transparent mechanism for the resolution of legal disputes, which is |
| | Met? | | | |

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| PI 3.1.1 | <p>The management system exists within an appropriate and effective legal and/or customary framework which ensures that it:</p> <ul style="list-style-type: none"> • Is capable of delivering sustainability in the UoA(s); • Observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and • Incorporates an appropriate dispute resolution framework | | | |
| | | | <p>considered to be effective in dealing with most issues and that is appropriate to the context of the UoA.</p> | <p>appropriate to the context of the fishery and has been tested and proven to be effective.</p> |
| | Met? | Yes | Yes | Yes |
| Rationale | <p>The EU legal system provides for resolution of disputes between actors from the same or different EU member state. The Court of Justice for the European Union ensures EU law is interpreted and applied in the same way in all EU countries, and settles legal disputes between national governments and EU institutions. It can also, in certain circumstances, be used by individuals, companies or organisations to take action against an EU institution, if they feel it has somehow infringed their rights.</p> <p>The national judicial systems of the Member States provide effective transparent mechanisms for the resolution of legal disputes.</p> <p>Section 19 of the Danish Fisheries Act, 2006 incorporates transparent mechanisms for resolution of appeals and complaints (i.e., disputes) about fisheries management decisions made by delegated authorities and/or the Fisheries Minister. The national judicial system also provides a means of appeal and resolution. There are two recent examples: (i) The Danish Society for Nature Conservation challenged a decision to allow mussel dredging in a Natura 2000 area; the EU Commission opened a procedure against Denmark but the case was dropped due to lack of merit before it went to the EU court in Strasbourg. (ii) Three Danish vessels that were caught fishing in area outside 12 nm that Sweden and Denmark had closed appealed the decision in the Danish court system and lost in the High court of appeal.</p> <p>Section 16 of the German Fisheries Act (Seefischereigesetz), provides for a dispute resolution process. The public judicial system also offers a route for appeal to a dispute and ultimately recourse to the EU court of justice.</p> <p>In the Netherlands an established and tested legal framework exists. The Fisheries Act (Visserijwet 1963) establishes an institutional framework, and within this there are transparent mechanisms for resolution of legal disputes.</p> <p>UK-EU bilateral negotiations defined in the Trade and Cooperation Agreement (TCA) between the two parties have been shown to function. So far these have proven to be effective e.g. in determining fishing opportunities and agreeing technical measures. In the event of a dispute in relation to the application of the TCA, the TCA provides for a dispute resolution procedure in article FISH.14.</p> <p>The management system incorporates and is subject by law to a transparent mechanism for the resolution of legal disputes that is appropriate to the context of the fishery, and has been tested and proven to be effective, thereby meeting the SG 100.</p> | | | |
| c | Respect for rights | | | |
| | Guide post | <p>The management system has a mechanism to generally respect the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.</p> | <p>The management system has a mechanism to observe the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.</p> | <p>The management system has a mechanism to formally commit to the legal rights created explicitly or established by custom of people dependent on fishing for food and livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.</p> |
| | Met? | Yes | Yes | Yes |

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| PI 3.1.1 | <p>The management system exists within an appropriate and effective legal and/or customary framework which ensures that it:</p> <ul style="list-style-type: none"> • Is capable of delivering sustainability in the UoA(s); • Observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and • Incorporates an appropriate dispute resolution framework |
| Rationale | <p>The EU CFP which governs the management of all European fisheries specifically states that the management of fisheries in Europe will be sustainable and will ensure that there are sufficient stocks of fish to allow future generations to fish (EU 1380/2013). The CFP shall ensure that fishing and aquaculture activities contribute to long-term environmental, economic, and social sustainability.</p> <p>Furthermore, the CFP should contribute to increased productivity, to a fair standard of living for the fisheries sector including small-scale fisheries. National legislation mirrors this commitment to environmental and social sustainability which is evident in national legislation:</p> <p>In Denmark, it is illegal to hold a license (or quota) without being a commercial fisherman (which means at least 60% of your income is from fishing). This means that the legal ownership and control stays in the coastal fishing communities (because licenses/quotas cannot be held by nonfishermen/non-fishing companies).</p> <p>In Germany, historic rights at a European and national level are recognised in legislation and therefore guarantees a fair distribution of fishing rights. These include the coastal fisheries regulations of the individual coastal states (Lower Saxony, Schleswig-Holstein and Mecklenburg-Vorpommern).</p> <p>In the Netherlands, the Dutch Ministry of Agriculture, Nature and Food Quality has commitments to the legal rights of people dependent on fishing. Furthermore, fishing licenses issued by all the member states have conditions that specify gear and operational requirements that may directly or indirectly contribute and be consistent with MSC Principles 1 and 2.</p> <p>The UK Fisheries Act (2020) includes the following objectives:</p> <p>(7) The “equal access objective” is that the access of UK fishing boats to any area within British fishery limits is not affected by—</p> <p>(a) the location of the fishing boat’s home port, or</p> <p>(b) any other connection of the fishing boat, or any of its owners, to any place in the United Kingdom.</p> <p>(8) The “national benefit objective” is that fishing activities of UK fishing boats bring social or economic benefits to the United Kingdom or any part of the United Kingdom.</p> <p>Therefore, it is considered that the EU and national-level management systems have mechanisms to formally commit to the legal rights created explicitly or established by custom of people dependent on fishing for food and livelihood in a manner consistent with the objectives of MSC Principles 1 and 2, thereby meeting SG 100.</p> |

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| Draft scoring range | ≥80 |
| Information gap indicator | <p>Information sufficient to score PI</p> <p><i>Confirm jurisdictions and nationality of vessels to be included.</i></p> |

PI 3.1.2 – Consultation, roles, and responsibilities

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|-----------------|-----------------------------------|--|--|---|
| PI 3.1.2 | | The management system has effective consultation processes that are open to interested and affected parties. The roles and responsibilities of organisations and individuals who are involved in the management process are clear and understood by all relevant parties | | |
| Scoring issue | | SG 60 | SG 80 | SG 100 |
| a | Roles and responsibilities | | | |
| | Guide post | Organisations and individuals involved in the management process have been identified. Functions, roles, and responsibilities are generally understood . | Organisations and individuals involved in the management process have been identified. Functions, roles, and responsibilities are explicitly defined and well understood for key areas of responsibility and interaction. | Organisations and individuals involved in the management process have been identified. Functions, roles, and responsibilities are explicitly defined and well understood for all areas of responsibility and interaction. |
| | Met? | Yes | Yes | Yes |
| Rationale | | <p>Section 4.6 of this report describes the organisations involved in fisheries management at EU and national level for the relevant Member State jurisdictions. These are explicitly defined and well understood for all areas. SG100 is met</p> <p>In the UK fisheries is a devolved matter with arrangements agreed in the Joint Fisheries Statement (JFS). Defra sets UK fisheries policy for English waters with the MMO & IFCA's implementing that policy as management authorities. IFCA's operate out to 6nmiles and beyond this responsibility lies with the MMO in the English EEZ. The MMO acts as a policy and legal advisor on the process of making IFCA byelaws. The Scottish Government's Marine Directorate works alongside Defra to set fisheries policy for UK and Scottish waters, with the marine directorate implementing that policy as the management authority. Scientific advice is provided by ICES on shared stocks with additional input to UK authorities by Cefas on various fisheries matters; by the Joint Nature Conservancy Council (JNCC) for UK offshore waters and by Natural England as statutory consultee on wildlife and habitat conservation matters including protected sites & species. SG100 is met.</p> | | |
| b | Consultation processes | | | |
| | Guide post | The management system includes consultation processes that obtain relevant information from the main affected parties, including local knowledge , to inform the management system. | The management system includes consultation processes that regularly seek and accept relevant information, including local knowledge . The management system demonstrates consideration of the information obtained. | The management system includes consultation processes that regularly seek and accept relevant information, including local knowledge . The management system demonstrates consideration of the information and explains how it is used or not used . |
| | Met? | Yes | Yes | No |
| Rationale | | <p>At an EU level the reform of the CFP involved consultation with all stakeholders including the industry, the public and members of environmental NGOs. All national policies which influence fisheries management and conservation are subject to Strategic Environmental Assessment (SEA) which details the potential environmental impact of the policy. Public comments are invited from all interested parties during this process.</p> <p>The Advisory Councils, including the North Sea Advisory Council, provide advice to the European Commission on management matters and the EC may also provide a response to the advice provided (including brown crab fisheries – see section 4.6.3).</p> <p>For the UK: Scientific advice and international collaboration on fisheries science continues with the UK's MoU signed with ICES (UK was always an independent member of ICES) in which Cefas, England's scientific advisory body on fisheries, and Marine Scotland Science, Scotland's scientific advisory body on fisheries, remain active participants. Changes to legislation and the development</p> | | |

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| PI 3.1.2 | The management system has effective consultation processes that are open to interested and affected parties. The roles and responsibilities of organisations and individuals who are involved in the management process are clear and understood by all relevant parties | | |
| | of fishery management plans are subject to UK government consultation processes which provides opportunity for interested parties to be involved consultation on Joint Fisheries Statements and Fisheries Management Plans. SG80 is met. The above arrangements do not require that the management system explains how information is used or not used and SG100 is not met. | | |
| c | Participation | | |
| | Guide post | The consultation process provides opportunity for all interested and affected parties to be involved. | The consultation process provides opportunity and encouragement for all interested and affected parties to be involved, and facilitates their effective engagement. |
| | Met? | Yes | Yes |
| Rationale | All interested and affected parties, e.g. fishermen, trade- and processors, ENGOs, scientists, are encouraged to participate in dialogue and consultation of the high-level fisheries management system. As well as regular public consultation on regulatory reform, e.g. through “Have Your Say” ¹⁸ , the EU Commission has created and funded the Advisory Councils (ACs) as a means to encourage, aid and help consultation. These various processes provides opportunity and encouragement for all interested and affected parties to be involved, and facilitates their effective engagement thereby meeting the SG 100. | | |

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| Draft scoring range | ≥80 |
| Information gap indicator | Information sufficient to score PI |

¹⁸ https://ec.europa.eu/info/law/better-regulation/have-your-say_en

PI 3.1.3 – Long term objectives

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| PI 3.1.3 | The management policy has clear long-term objectives to guide decision-making that are consistent with the MSC Fisheries Standard, and incorporates the precautionary approach | | | |
| Scoring issue | SG 60 | SG 80 | SG 100 | |
| a | Objectives | | | |
| | Guide post | Long-term objectives to guide decision-making, consistent with the MSC Fisheries Standard and the precautionary approach , are implicit within management policy . | Clear long-term objectives that guide decision-making, consistent with the MSC Fisheries Standard and the precautionary approach , are explicit within management policy . | Clear long-term objectives that guide decision-making, consistent with the MSC Fisheries Standard and the precautionary approach , are explicit within and required by management policy. |
| | Met? | Yes | Yes | Yes |
| Rationale | (see section 4.6.2). The precautionary approach is explicit within the CFP. All EU member state fisheries policy is established in accordance with the CFP. It is therefore considered that clear long-term objectives that guide decision-making, consistent with MSC fisheries standard and the precautionary approach, are explicit within and required by management policy, thereby meeting the SG 100. SG100 is met. | | | |

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| Draft scoring range | ≥80 |
| Information gap indicator | Information sufficient to score PI |

PI 3.2.1 – Fishery-specific objectives

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| PI 3.2.1 | The fishery-specific management system has clear, specific objectives designed to achieve the outcomes expressed by MSC Principles 1 and 2 | | | |
| Scoring issue | SG 60 | SG 80 | SG 100 | |
| a | Objectives | | | |
| | Guide post | Objectives , which are broadly consistent with achieving the outcomes expressed by MSC Principles 1 and 2, are implicit within the fishery-specific management system. | Short and long-term objectives , which are consistent with achieving the outcomes expressed by MSC Principles 1 and 2, are explicit within the fishery-specific management system. | Well-defined and measurable short- and long-term objectives , which are demonstrably consistent with achieving the outcomes expressed by MSC Principles 1 and 2, are explicit within the fishery-specific management system. |
| | Met? | Yes | No | No |
| Rationale | The CFP ensures that the operation and management of the fishery is guided by rules and policies to support sustainable exploitation. Generally, and as expressed in CFP, EU policy and in the MSFD, the objectives for fisheries are to achieve average biomass levels consistent with MSY and to control fishing mortality rates to achieve MSY. The three EU Member States (DK, DE, NL) are obliged to meet the objectives set out by the EU's CFP for the management of fisheries in their waters. Their national fisheries and nature conservation related acts also confirm their commitment and/or specify complimentary objectives that are consistent with achieving the outcomes expressed in MSC Principles 1 and 2. (SG60 is met). | | | |

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| PI 3.2.1 | The fishery-specific management system has clear, specific objectives designed to achieve the outcomes expressed by MSC Principles 1 and 2 |
| | <p>However short-term objectives consistent with achieving required outcomes under Principles 1 and 2, including short-term management measures that respond to the state of the stock, is lacking for the North Sea brown crab fishery and SG80 is not met.</p> <p>The UK Fisheries Act and Marine Strategy set environmental objectives that are consistent with achieving P2 outcomes. Fishery-specific management for North Sea crab is currently framed by the Fisheries Act and for English Waters is being further developed by the Crab & Lobster FMP (SG60 is met). The Fisheries Act explicitly states objectives that are consistent with achieving Principles 1 & 2. But as at EU level, short-term P1 objectives are currently lacking for the North Sea crab fishery and so SG80 is not met.</p> |

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| Draft scoring range | 60-79 |
| Information gap indicator | Information sufficient to score PI <i>Fishery-specific objectives need to be developed.</i> |

PI 3.2.2 – Decision-making processes

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| PI 3.2.2 | The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives, and has an appropriate approach to actual disputes in the fishery | | | |
| Scoring issue | SG 60 | SG 80 | SG 100 | |
| a | Decision-making processes | | | |
| | Guide post | There are some decision-making processes in place that result in measures and strategies to achieve the fishery-specific objectives. | There are established decision-making processes that result in measures and strategies to achieve the fishery-specific objectives. | |
| | Met? | Yes | No | |
| Rationale | <p>There are general decision-making processes within the European Union that have specifically considered this fishery, including reviewing recent considerations by the Advisory Council Working Group on brown crab and ICES WGCRAb. To date, this has resulted in some management measures such as Minimum Landing Sizes and vessel licensing (SG60 is met). But it is evident from the correspondence between the ACs and DG MARE that fishery-specific decision-making processes are not established (to develop fishery-specific objectives) and the general considerations have not resulted in measures and strategies to achieve fishery-specific objectives (SG80 not met).</p> <p>For UK waters, general fishery management arrangements through Defra, the MMO and the IFCA are well established for English North Sea waters and the Scottish Government's Marine Directorate for Scottish waters. For non-quota stocks, decision-making processes are set out in the JFS and some arrangements are proposed in the Crab & Lobster Fishery Management Plan. But the potential regional (e.g. North Sea) management is yet to be established and the FMP covers English waters only. Therefore decision-making processes to achieve fishery-specific objectives are not currently in place. While the IFCA do have established decision-making processes for English inshore waters, these alone would not be sufficient to achieve the fishery-specific objectives once these are determined. SG80 is not met.</p> | | | |
| b | Responsiveness of decision-making processes | | | |
| | Guide post | Decision-making processes respond to serious issues identified in relevant research, monitoring, evaluation, and | Decision-making processes respond to serious and other important issues identified in relevant research, monitoring, and | Decision-making processes respond to all issues identified in relevant research, monitoring, evaluation, and |

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| PI 3.2.2 | | The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives, and has an appropriate approach to actual disputes in the fishery | | |
| | | consultation, in a transparent, timely and adaptive manner, and take some account of the wider implications of decisions. | evaluation, and consultation, in a transparent, timely, and adaptive manner, and take account of the wider implications of decisions. | consultation, in a transparent, timely, and adaptive manner, and take account of the wider implications of decisions. |
| | Met? | No | | |
| Rationale | | <p>The fishery management arrangements (MLS and general licensing) are not sufficient to respond to serious issues such as stock decline and effort increase via pot numbers per vessel and new vessels entering the offshore fishery. These issues have been identified through monitoring and consultation, as evidenced by the long list of areas requiring action in the AC Joint Advice on Brown Crab Fisheries (SG60 is not met).</p> <p>A portion of the Central North Sea stock is within UK offshore and inshore waters and decision making processes are in place to respond to serious issues (SG60 is met). Management of English inshore waters is more responsive as IFCAs have the ability to introduce emergency byelaws shows that they can be responsive to serious and other important issues in a timely and adaptive manner (SG80 met). However, this level of responsiveness is not evident for English offshore waters or for inshore Scottish waters and SG80 is unlikely to be met.</p> | | |
| Use of precautionary approach | | | | |
| c | Guide post | | Decision-making processes use the precautionary approach and are based on best available information. | |
| | Met? | | Yes | |
| Rationale | | As explicitly stated in the CFP and the various national fisheries acts, decision-making processes should be in line with the objectives including use of the precautionary approach. SG80 is met. | | |
| Accountability and transparency of management system and decision-making process | | | | |
| d | Guide post | Some information on the fishery's performance and management action is generally available on request to stakeholders. | Information on the fishery's performance and management action is available on request , and explanations are provided for any actions or lack of action associated with findings and relevant recommendations emerging from research, monitoring, evaluation, and review activity. | Formal reporting to all interested stakeholders provides comprehensive information on the fishery's performance and management actions and describes how the management system responded to findings and relevant recommendations emerging from research, monitoring, evaluation, and review activity. |
| | Met? | Yes | No | |
| Rationale | | Information is available through the Cefas stock assessment publication, ICES WGCRAB and fisheries statistics, which are available on their respective websites. Other information held by national authorities may be available through Freedom of Information requests (SG60 is met). However, the December 2023 DG MARE response to the AC joint advice on brown crab, shows no evidence that explanations are provided for actions or a lack of action in relation to the fishery and so SG80 is not met. | | |
| e | Approach to disputes | | | |

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| PI 3.2.2 | | The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives, and has an appropriate approach to actual disputes in the fishery | | |
| | Guide post | Although the management authority or fishery may be subject to continuing court challenges, it is not indicating a disrespect or defiance of the law by repeatedly violating the same law or regulation necessary for the sustainability of the fishery. | The management system or UoA is attempting to comply in a timely fashion with judicial decisions arising from any legal challenges. | The management system or UoA acts proactively to avoid legal disputes or rapidly implements judicial decisions arising from legal challenges. |
| | Met? | Yes | Yes | |
| Rationale | | There is no evidence that the management authorities are subject to any court challenges or breaching any of the other legal requirements listed in SG60. There is no evidence that the fishery or management system is subject to any legal challenges and there are legislative requirements to comply with judicial decisions.SG80 is met. | | |

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| Draft scoring range | <60 |
| Information gap indicator | More information sought <i>The establishment of a fishery-specific management system is required to enable effective decision-making processes.</i> |

PI 3.2.3 – Compliance and enforcement

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|---------------|---------------------------------|---|--|--|
| PI 3.2.3 | | Monitoring, control, and surveillance (MCS) mechanisms ensure the management measures in the UoA are enforced and complied with | | |
| Scoring issue | | SG 60 | SG 80 | SG 100 |
| a | MCS system | | | |
| | Guide post | MCS mechanisms exist within the UoA. | An MCS system exists within the UoA. | A comprehensive MCS system is well-established within the UoA. |
| | Met? | Yes | Yes | No |
| Rationale | | The national administrations include resources and MCS systems that are applied to the fishery. Given the low level of involvement of their national vessels and the limited areas of control (MLS, licensing), national authorities are likely to consider the fishery a relatively low priority for inspection activities, but operators report that inspections by national authorities at sea and at port of landing do occur. SG80 is met. | | |
| b | Sanctions | | | |
| | Guide post | Sanctions to address non-compliance exist within the UoA. | Sanctions to deal with non-compliance exist, that are appropriate to the UoA, and are applied. | Comprehensive sanctions to address non-compliance exist, that are appropriate to the UoA, and are consistently applied. |
| | Met? | Yes | Yes | No |
| Rationale | | There is no evidence provided on sanctions related to the vessels operating in the fishery, though operators all stated that inspections do occur. Noncompliance is dealt with accordingly through official warnings, fines and endorsement of fishing licenses depending on the severity of the offence. SG80 is met. | | |
| c | Compliance (information) | | | |
| | Guide post | Information is adequate to broadly understand compliance in the UoA. | Information is adequate to estimate compliance in the UoA with a high degree of accuracy. | Information is adequate to estimate compliance in the UoA with a very high degree of accuracy. |
| | Met? | Yes | Yes | No |
| Rationale | | There is some evidence that would be available from the control authorities (submission of logbooks, sales notes with corroboration through VMS & inspection) and IFCAs to demonstrate compliance with the current management system (which is somewhat limited in the extent of its measures) and the provision of information important to the management of the fishery SG 60 & SG80 is met. Level of inspection/control in the fishery is not sufficient to provide a very high degree of accuracy (SG 100 not met) | | |
| d | Compliance (outcome) | | | |
| | Guide post | Systematic non-compliance of regulations specific to governing sustainable fishing practices on the water is not evident within the UoA. | Majority of regulations, including all regulations specific to governing sustainable fishing practices on the water, are likely to be complied with. | Majority of regulations, including all regulations specific to governing sustainable fishing practices on the water, are consistently complied with. |
| | Met? | Yes | Yes | Yes |
| Rationale | | There has been no evidence provided or identified by the team of systematic non-compliance within these fisheries. They are likely to be complied with (SG80 met) and the landings information and log books that are inspected along with catch provide evidence to show they are consistently complied with (SG100 met). | | |

| | |
|---------------------------|--|
| Draft scoring range | ≥80 |
| Information gap indicator | More information sought <i>Evidence direct from national control authorities would be sought</i> |

PI 3.2.4 – Monitoring and management performance evaluation

| | | | | |
|---------------|---|--|---|---|
| PI 3.2.4 | There is a system for monitoring and evaluating the performance of the fishery-specific management system against its objectives. There is effective and timely review of the fishery-specific management system | | | |
| Scoring issue | SG 60 | SG 80 | SG 100 | |
| a | Evaluation coverage | | | |
| | Guide post | There are mechanisms in place to evaluate some parts of the fishery-specific management system. | There are mechanisms in place to evaluate key parts of the fishery-specific management system. | There are mechanisms in place to evaluate all parts of the fishery-specific management system. |
| | Met? | Yes | No | |
| Rationale | <p>A fishery-specific management system for the offshore crab fishery does not have well-defined objectives against which it could be evaluated. However, there is evidence of evaluation of some parts of the management system specific to brown crab, i.e. the minimum landing size (MLS) via the evaluation of EU's Common marketing standards¹⁹. For vessel licensing, the EU's STECF Balance group regularly reviews fleet capacity in relation to fishing opportunities. However, analysis is mainly related to fishing opportunities as defined by TACs for quota species. This suggests some parts of the management systems are subject to evaluation (SG60 met), but not key parts (SG80 not met).</p> <p>The UK has published the first iteration of the Crab & Lobster FMP as planned in the Joint Fisheries Statement (JFS). The review process detailed in the FMP Annexes (Defra 2023), can be considered an evaluation of key parts of fishery-specific management (SG80 is met).</p> | | | |
| b | Internal and/or external review | | | |
| | Guide post | The fishery-specific management system is subject to occasional internal review. | The fishery-specific management system is subject to regular internal and occasional external review . | The fishery-specific management system is subject to regular internal and external review. |
| | Met? | No | | |
| Rationale | <p>DG MARE's recent response to the joint ACs advice on North Sea crab management shows there has been some internal consideration, but this cannot be said to amount to an internal review. SG60 is not met.</p> <p>The UK Crab & Lobster FMP does commit to regular internal and occasional external review (SG80 is met). The FMP is currently a high-level document setting objectives and overall approach. It is hoped that the more regional approach advocated by stakeholders is developed.</p> | | | |

| | |
|---------------------------|--|
| Draft scoring range | <60 |
| Information gap indicator | More information sought <i>Some internal review of the North Sea crab fishery in EU waters is required. When fishery-specific management is developed, this should be subject to regular internal review and occasional external review.</i> |

¹⁹ [https://www.europarl.europa.eu/RegData/etudes/BRIE/2021/662613/EPRS_BRI\(2021\)662613_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/BRIE/2021/662613/EPRS_BRI(2021)662613_EN.pdf)

5. Draft Action Plan

This section presents an action plan intended to inform a comprehensive FIP, i.e. one that aims to progress a fishery towards achieving SG80 or above for all performance indicators. Priority actions relate to performance indicators that did not achieve SG60 with additional actions proposed for those PIs scoring below 80. For simplicity, actions address multiple PIs where possible. The actions and associated milestones, leads and required resources should be discussed and agreed by those stakeholders intending to take the fishery forward into a Fisheries Improvement Project (FIP).

| PI (SGs) | Rationale and standard requirement @ SG80 | Actions | Timescale / milestones | Potential leads & resources |
|---|--|--|--|---|
| Principle 1 | | | | |
| Priority Actions for scores below SG60: | | | | |
| Stock rebuilding: 1.1.2 <60 Also: 1.1.1: 60-79 1.2.3: 60-79 1.2.4: 60-79 | <p><i>The status of the stock is uncertain, but appears to be below MSY level.</i></p> <p>Requirement: It is highly likely that the stock is above the PRI and is at or fluctuating around a level consistent with MSY.</p> <p>If below PRI, there is a stock rebuilding plan in place.</p> | Action 1 1.1: Develop crab assessments and fishery-dependent data collection to produce MSY or MSY proxy reference points. 1.2 Determine connectivity of stocks and appropriate stock 1.3. Develop stock rebuilding plan | Over a timescale of 4 years: Yr 1: Scientists further develop crab assessment including fishery-dependent data from offshore fishery; determine stock boundaries and connectivity with Cefas, ICES scientists and crab interests. Develop stock rebuilding plan. Yr 2: Design assessment & data collection Yr 3: Continue improved data collection Yr 4: Produce revised assessments. | <p><u>Potential leads:</u> Cefas</p> <p><u>Partner:</u> client group and Defra</p> <p><u>Resources:</u> Additional resources to implement revised data collection to inform stock assessment.</p> |
| Additional Actions (for scores 60-79): | | | | |

| PI (SGs) | Rationale and standard requirement @ SG80 | Actions | Timescale / milestones | Potential leads & resources |
|----------------|--|---|--|---|
| 1.2.1 60-79 | <i>The HS is not responsive to the status of the stock and there is not direct evidence the HS is working.</i> | Action 2 2.1: Implement a harvest strategy which integrates HCRs that are responsive to the state of the stock (ideally in the framework of a specific management plan), with clear plan for reduction of exploitation in the case the stock status is below MSY level. The measures in place determined by the HCR have to be robust to the main uncertainties. 2.2: Implement the harvest strategy showing that is effective in achieving its objectives (stock status at MSY level). | Over a timescale of 5 years: Yr 1-2: develop a harvest strategy and HCRs that are responsive to the state of the stock; Yr 3: Apply the harvest strategy & HCRs. Yr 4-5: show that the harvest strategy & HCRs are responsive to the state of the stock and effective in achieving its objectives (stock at or above MSY levels). | <u>Potential leads:</u> Crab industry group. <u>Partners:</u> Defra & North Sea AC. <u>Resources:</u> Extensive engagement with industry, management and scientific groups to agree appropriate and effective HCRs. |
| 1.2.2 60-79 | <i>There are not well-defined HCRs in place, which consider the uncertainties. Also, there is not evidence indicates that the tools in use are appropriate and effective in achieving the exploitation levels required under the HCRs.</i> Requirement: 1.2.1: The harvest strategy is responsive to the state of the stock and the elements of the harvest strategy work together towards achieving stock management objectives reflected in PI 1.1.1 SG80. 1.2.2: Well defined HCRs are in place that ensure that the exploitation rate is reduced as the PRI is approached, are expected to keep the stock fluctuating around a target level consistent with (or above) MSY, or for key LTL species a level consistent with ecosystem needs. | | | |

| PI (SGs) | Rationale and standard requirement @ SG80 | Actions | Timescale / milestones | Potential leads & resources |
|--|--|---|---|---|
| Principle 2 | | | | |
| Priority Actions (for scores below SG60) | | | | |
| In-scope species management strategy & information 2.1.2 <60 2.1.3 <60 (2.1.1 60-79) ETP/OOS species management & information 2.2.2 <60 2.2.3 <60 (2.2.1 60-79) | <p>There is a partial strategy in place for the UoA, if necessary, that is expected to maintain or to not hinder rebuilding of the main in-scope species at/to the in-scope species outcome SG80 level.</p> <p>There is a partial strategy in place for the UoA, if necessary, that is expected to minimise ghost gear and its impact on all in-scope species.</p> <p>Information is adequate to estimate the impact of the UoA on the stock status of main in-scope species with a high degree of accuracy.</p> | Action 3 3.1 Produce a full catch profile informed by observer data of bycatch and survivability. 3.2 Collate quantified and evidenced information on bait species and quantities used. 3.3 Produce information on ghost gear management by the fleet is needed to support scoring SI e) at SG60. 3.4 Produce a non-retention policy for shark species | <p>Yr 1: Develop full catch profile and quantified data on bait used.</p> <p>Conduct ghost gear survey to establish scale of issue and basis for management strategy;</p> <p>Yr 2: Conduct observer programme and consultation to establish extent of (or lack of) ETP/OOS species interaction with gear.</p> <p>Develop a non-retention policy for shark species</p> <p>Develop ghost gear management strategy (if necessary as determined by survey).</p> <p>Yr 3: Implement ghost gear management strategy (if necessary).</p> | <p><u>Potential leads:</u> Client group</p> <p><u>Partners:</u> Cefas, Defra, DK, DE, NL fishing operators.</p> <p><u>Resources:</u> Data collection and observer scheme.</p> |
| Additional Actions (for scores 60-79) | | | | |

| PI (SGs) | Rationale and standard requirement @ SG80 | Actions | Timescale / milestones | Potential leads & resources |
|--|--|--|--|--|
| <p>Habitat-management 2.3.2: 60-79</p> <p>Ecosystem information 2.4.3: 60-79</p> | <p>(a) There is a partial strategy in place, if necessary, that is expected to achieve the Habitat Outcome 80 level of performance or above.</p> <p>(b) There is some evidence that the measures/partial strategy, if necessary, is achieving the objectives set out in SI (a), based on information directly about the UoA and/or habitats involved.</p> <p>c) Information is adequate to determine, with a high degree of accuracy, compliance in the UoA with both its management requirements and protection measures afforded to more sensitive habitats by other MSC UoAs/non-MSC fisheries, where relevant. [ghost gear partial strategy if necessary]</p> <p>2.4.3: (b) Main impacts of the UoA on the key elements of the ecosystem have been investigated in detail.</p> | <p>Action 4</p> <p>4.1: Detail location of the fishing activity in relation to sensitive habitats.</p> <p>4.2 Detailed investigation on cumulative impacts on habitat in area where the crab fishery operates; catch profile over time, including observer data and interaction with ETP/OOS species.</p> | <p>Over a 4yr timeframe:</p> <p>Yr 1: conduct mapping exercise of fishing activity and benthic habitats</p> <p>Yr 1-2: Conduct research into cumulative impact of fishery on ecosystem elements.</p> <p>Yr 3: identify management requirements to reduce impact of crab pots on sensitive habitats</p> <p>Yr 4: implement management requirements if necessary</p> | <p><u>Potential leads:</u> Cefas/DK, DE, NL Research institutes.</p> <p><u>Partners:</u> Client group, DK, DE, NL fishing operators.</p> <p><u>Resources:</u> data collection programme and scientific research on cumulative impacts.</p> |

| PI (SGs) | Standard requirement @ SG80 | Actions | Timescale / milestones | Potential leads & resources |
|---|--|--|---|--|
| Principle 3 | | | | |
| <p>Decision-making processes 3.2.2: <60</p> <p>Monitoring & Evaluation 3.2.4: <60</p> | <p>The fishery management arrangements (MLS and general licensing) are not sufficient to respond to serious issues such as stock decline and effort increases.</p> <p>Requirement: a): There are established decision-making processes that result in measures and strategies to achieve the fishery-specific objectives.</p> <p>SG80b: Decision-making processes respond to serious and other important issues identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take account of the wider implications of decisions.</p> <p>SG80d: Information on the fishery's performance and management action is available on request, and explanations are provided for any actions or lack of action associated with findings and relevant recommendations emerging from research, monitoring, evaluation and review activity.</p> | <p>Action 5</p> <p>5.1 Develop a fishery management plan for the Central North Sea Crab Fishery. This should include effective decision-making processes, monitoring evaluation and review of management performance.</p> <p>5.2 When fishery-specific management is developed, this should be subject to regular internal review and occasional external review.</p> | <p>Over a 5 year timeframe: Yr 1: Engage with management authorities to confirm appropriate integration of Central North Sea crab management within wider EU and UK management framework.</p> <p>Year 2: Draft FMP for crab fishery</p> <p>Year 3: Consult on draft FMP</p> <p>Year 4: Implement FMP</p> <p>Year 5: Evidence FMP is being implemented effectively</p> | <p><u>Potential leads:</u> North Sea Crab project</p> <p><u>Partners:</u> Defra/North Sea AC/ DK,DE,NL interests</p> <p><u>Resources:</u> Project management to progress actions, co-ordinate discussions and draft action plan.</p> |

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Appendix A: UK Fisheries Management

Since the UK's exit from the EU, the UK operates as an independent coastal state, with arrangements set out in the UK Fisheries Act (2020). To date the UK has retained fisheries management measures that were in place under the EU's Common Fisheries Policy (CFP).

UK fish stocks in English waters are managed by Defra, the MMO and within 6nmiles by Inshore Fisheries and Conservation Authorities (IFCAs) (Figure 19). UK fish stocks in Scottish waters are managed by the Marine Directorate, formerly Marine Scotland.

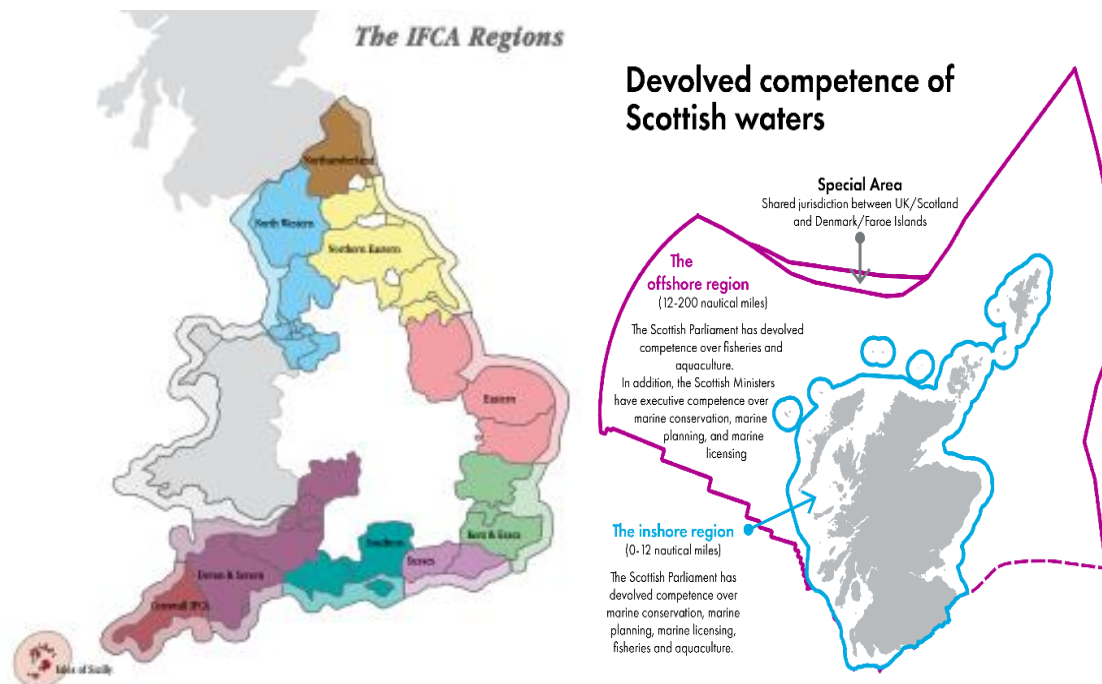


Figure 19 Map of the IFCA regions (source: Association of IFCAs) & the Scottish waters under the jurisdiction of The Marine Directorate

Legislation

The UK has exited the EU with resulting amendments to UK legislation, but retains a robust framework in relation to P1 with the UK Fisheries Act 2020 and in relation to P2 through:

- Marine & Coastal Access Act;
- [The Conservation of Habitats and Species Regulations 2017](#) for inshore and
- [The Conservation of Offshore Marine Habitats and Species Regulations 2017](#) for offshore areas. The [Wildlife and Countryside Act 1981](#) also covers some marine species that interact with fisheries.
- The UK's Habitats Regulations ([amended](#)).
- The UK Marine Strategy is implemented via the [Marine Strategy Regulations 2010](#)
- Various commitments to maintaining environmental protection made in the UK/EU TCA agreement.

The requirements under the EU Common Fisheries Policy (CFP) (EU Regulation 1380/2013) have been retained in UK legislation, including those related to the landing obligation whereby quota species are to be retained on board rather than discarded. The implementation of the landing obligation in western waters has been achieved progressively through a succession of "discard plans". The MMO publishes guidance for the fishing industry on the implementation

of the landing obligation as general requirements²⁰ and any additional specific requirements for certain gears in specified areas (e.g. for demersal and static gears in Celtic Sea, MMO 2021²¹).

The EU reviewed the implementation of the landing obligation (European Commission, 2018²²). A key conclusion of this review was that there is limited evidence of the effective implementation of the landing obligation by Member States, and that there are concerns about the capacity of national and EU agencies to monitor and enforce compliance with the landing obligation. This finding resulted in some MSC assessments raising a condition in response to this issue. The EU has continued to assess the implementation of the Landing Obligation and a study in 2021 concluded that ‘the [control] measures are not considered effective by most of the stakeholders within the current LO scheme’ (European Commission, 2021²³), which suggests that these control & enforcement issues relating to the landing obligation remain, including in UK waters. As the JFS states “at this stage, the Landing Obligation will continue to apply in each fisheries policy authority to protect the health of fish stocks and provide certainty for industry.” The MMO recently revised and updated its Compliance and Enforcement Strategy (MMO, 2020²⁴), which sets out its approach to monitoring and enforcement via a risk-based enforcement process.

Fisheries is largely a devolved matter in the UK with a Joint Fisheries Statement (JFS) by the devolved administrations, part of the wider Fisheries Framework, as stated in the Fisheries Act, and this is expected to be finalised in November 2022 following consultation. The Fisheries Framework consists of the Act and associated statutory instruments, relevant retained EU law, the JFS, Fishery Management Plans (FMPs), and the Fisheries Framework Memorandum of Understanding. The latter sets out principles on ways of working and collaboration on fisheries management between the fisheries policy authorities (Defra, 2022). The JFS defines how the fisheries policy authorities have understood the eight fisheries objectives of the Fisheries Act and how they will apply them to fisheries policy. The JFS covers sea fisheries policy and management within UK waters, and in negotiations with other coastal States. The JFS will also inform the UK’s approach to international agreements and engagement with international fora.

Management of crab fisheries in English Waters

IFCAs can and do make bylaws detailing specific fishery management measures in the areas under their jurisdiction in line with Defra guidance and oversight (Defra, 2011). The following IFCAs set out byelaws within the UoA, which mainly relate to shellfish management, but also address netting and restrictions for demersal gears in certain areas such as Marine Special Areas of Conservation (SACs):

Northumberland IFCA byelaws: <https://nifca.gov.uk/byelaws/>

Northeastern IFCA byelaws: <https://www.ne-ifca.gov.uk/byelaws>

²⁰ <https://www.gov.uk/government/publications/technical-conservation-and-landing-obligation-rules-and-regulations-2021>

²¹ [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1015122/07 - 2021 GN - Celtic Sea - Demersal towed gears v3.1.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1015122/07_-_2021_GN_-_Celtic_Sea_-_Demersal_towed_gears_v3.1.pdf)

²² <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52018SC0329&from=EN>

²³ <https://op.europa.eu/en/publication-detail/-/publication/89868cc6-015f-11ec-8f47-01aa75ed71a1>

²⁴ <https://www.gov.uk/government/publications/compliance-and-enforcement-strategy/compliance-and-enforcement-strategy>

Regulations of relevance to this crab fishery are summarised in the tables below (table across the 2 IFCAs and table 10 showing further detail including byelaws the North Eastern IFCA.

Table 11 - Regional byelaws on Central North Sea crab fisheries. Source: CEFAS, 2020

| Type of Byelaw | Northumberland IFCA | North Eastern IFCA |
|---|---------------------|------------------------------------|
| Shellfish permits | Yes | Yes* |
| Minimum Landing Size | Yes – 130mm | Yes – 140mm |
| Maximum Pot Limit | Yes - 800 | No |
| Escape Gaps | No | Yes* |
| Maximum Vessel Length | Yes -12m | Yes – 12.5m (Area B), 14m (Area A) |
| Towed Gear Restrictions | No | No |
| Prohibits the Use of Crab for Bait | Yes | Yes |
| Prohibits the Removal of Parts of Crabs | Yes | Yes |

*Only applicable within the previous North Eastern Sea Fisheries Committee District

Table 12 Regulations relevant to pot fisheries in the North Eastern IFCA district. Source: Northeastern IFCA 2024

| Regulation | Effect | Intent |
|---|---|---|
| MMO Vessel Licencing shellfish permit | Prohibits the fishing for shellfish without relevant permits | Limits entry into the fishery as no new additional permits are being issued. |
| Council Regulation 850/98 ANNEX XII for the conservation of fishery resources through technical measures for the protection of juveniles of marine organisms. | Prohibits landing of organisms below minimum legal landing sizes (115mm CW for brown crab, 87mm CL for European lobster) | Prevents removal of organisms from the fishery before reproductive maturity is reached. |
| Statutory instrument: Undersized Edible Crabs Order 2000 (2000 No. 2029) | Increases MLS for brown crab (<i>Cancer pagurus</i>) to at least 130mm CW in areas outside of the Eastern Sea Fisheries Committee district. | Increases MLS for crab in areas outside of the EIFCA district while maintaining the lower 115mm CW EU MLS for the Norfolk population. |
| Lobster and Crawfish (Prohibition of Fishing and Landing) Order 2000 | Prohibits fishing for, and landing of, lobsters and crawfish bearing a V notch or mutilated in such a manner as to obscure a V notch. | Protects brood stock that has been marked for protection using a V notch cut into the tail of the animal. |
| NEIFCA Byelaw 32: - Fish, Mollusc and Crustacea Minimum Size Byelaw | Prohibits the removal of any spider crab from the fishery below minimum legal landing size of 120 millimetres | Prevents removal of organisms from the fishery before reproductive maturity is reached. |
| NEIFCA Byelaw 22: - Permit to Fish for Lobster, Crab, Velvet Crab and Whelk Byelaw | Prohibits the fishing for shellfish without relevant permits within the area of the Northeastern Sea Fisheries Committee District | Limits entry into the fishery and manages fishing activity |
| NEIFCA Byelaw 28: - Crustacea Conservation Byelaw | Prohibits removal, retaining or landing any edible crab or part which is detached from the body of the crab, and/or which does not | Closes a loophole where parts of undersized animals could be landed potentially removing immature organisms from the |

comply with the minimum size. Prohibits the use any edible crab or velvet crab for bait, unless it is cooked offal, from individuals above minimum landing size for use in recreational fishing. Prohibits landing any edible crab which has not attained a carapace width of 140 mm. Prohibits the use of pots within Areas A and C for the purpose of fishing for crustacea, which do not comply with set escape gap requirements. Vessels above 10m in length are restricted from entering the fishery.

fishery. Prevents animals below MLS or of low value from being removed from the fishery without being landed. Prevents removal of organisms from the fishery before reproductive maturity is reached. Protection of current and future juvenile stocks and limitation of bycatch. Limits entry into the fishery and manages fishing activity

Control and Enforcement-English Waters

The national fisheries control agencies in England are the Marine Management Organisation (MMO) and the Inshore Fisheries and Conservation Authorities (IFCAs). The MMO is a government agency with responsibility for fishing throughout the English EEZ. The IFCAs are regional inshore fisheries management authorities with responsibility for fisheries and environmental management up to 6 nautical miles offshore.

At sea, in port and aerial surveillance & inspection by UK control agencies supports the MMOs remote monitoring of vessel compliance through receipt of logbook data and sales notes. Vessel Monitoring Systems (VMS) give the position of vessels, and these are mandatory for vessels over 12m in length, which would account for most vessels fishing in offshore waters. VMS for English inshore vessels is not yet in place, but is being rolled out in prioritised tranches starting with the largest (10 to 11.99m) vessels throughout 2022²⁵.

Management of crab fisheries in Scottish waters

Management of fisheries in Scottish waters is centralised under the Marine Directorate who can implement regulations entailing specific fishery management measures in the areas under their jurisdiction. The process of implementing new fishery management measures, particularly within the inshore area, is typically conducted following close engagement with Regional Inshore Fisheries Groups who operate within 6nmiles. Regional Inshore Fisheries Groups aim to improve the management of inshore fisheries by facilitating communication between the Marine Directorate and commercial fishers, and they play an important role in Scotland's fisheries by giving commercial inshore fishermen a strong voice in wider marine management developments

In the Shetland Isles the management of the fisheries is more unique. Shetland has unique devolved management of fisheries responsibility through the Shetland Regulating Order. This gives the Shetland Shellfish Management Organisation legal powers to manage; oysters, mussels, cockles, clams, lobsters, scallops, queen scallops, crabs, whelks and razorshells within Shetland's six-mile limit, through the issue of licences and the implementation of regulations and other measures, to ensure the long-term sustainability of these fisheries. Whilst fisheries regulations for the most part are uniform across Scotland, in the Shetland Isles and Orkney, fisheries regulations can differ from those in mainland Scotland.

Regulations of relevance to this crab fishery are summarised in the table below

²⁵ <https://www.gov.uk/guidance/inshore-vessel-monitoring-i-vms-for-under-12m-fishing-vessels-registered-in-england>

Table 13 Regulations relevant to pot fisheries in the Scotland. Source: Marine Scotland 2024

| Regulation | Effect | Intent |
|--|--|---|
| Marine Scotland Fishing Vessel Licence | Prohibits the fishing for shellfish without relevant permits | Limits and regulates commercial fishing activities in Scottish waters |
| A minimum size for landing edible crabs in Scotland of 150 mm carapace width (except the Shetland Islands) | Prohibits landing of organisms below minimum legal landing sizes | Prevents removal of organisms from the fishery before reproductive maturity is reached. |
| A prohibition on the landing in Scotland of berried velvet crabs (i.e. females which are bearing eggs) caught in Scottish territorial waters | Prohibits removal from the fishery any velvet crab that is or bearing eggs | Protection of current and future brood stock and prevention of poor practice in landing low quality catch. |
| A minimum landings size for landing velvet crabs in Scotland of 70 mm carapace width | Prohibits landing of organisms below minimum legal landing sizes | Prevents removal of organisms from the fishery before reproductive maturity is reached. |
| A maximum size for landing female lobster in Scotland of 145 mm carapace length (except the Orkney Islands and Shetland Islands) | Prohibits landing of organisms below minimum legal landing sizes | Protection of current and future brood stock and prevention of removal of organisms from the fishery before reproductive maturity is reached. |
| A minimum size for landing male spider crabs (<i>Maja squinado</i>) in Scotland of 130 mm carapace width | Prohibits landing of organisms below minimum legal landing sizes | Prevents removal of organisms from the fishery before reproductive maturity is reached. |
| A minimum size for landing lobster in Scotland of 87 mm carapace length (except the Shetland Islands and those areas where a different minimum size has been prescribed) | Prohibits landing of organisms below minimum legal landing sizes | Prevents removal of organisms from the fishery before reproductive maturity is reached. |
| A prohibition on the landing of crippled female lobster (i.e. missing part or all of the crusher claw, or part or all of the claw) | Prohibits fishing for, and landing of, lobsters mutilated in such a manner | Protection of current and future brood stock and prevention of poor practice in landing low quality catch. |

Control and Enforcement-Scottish Waters

The Marine Directorate is responsible for managing fishing throughout the Scottish EEZ.

At sea, in port and aerial surveillance & inspection by UK control agencies supports the Marine Directorates remote monitoring of vessel compliance through receipt of logbook data and sales notes. Vessel Monitoring Systems (VMS) give the position of vessels, and these are mandatory for vessels over 12m in length, which would account for most vessels fishing in offshore waters. VMS requirements for Scottish inshore vessels are not yet in place, but the

process of eventually rolling out VMS requirements for Scottish vessels under 12m is being consulted on during 2024 with Scottish fishers and Fishermen's Associations

Consultation Roles & responsibilities

UK fisheries management institutional arrangements continue in the same way when the UK was a member of the EU. Roles and responsibilities are well defined with fisheries a devolved matter and therefore managed by authorities in the UK's devolved authorities.

Defra sets UK fisheries policy and any additional policy for English waters, with the Marine Directorate, Marine Management Organisation (MMO) & IFCA's implementing that policy as management authorities. IFCA's operate out to 6nmiles and the MMO in the English EEZ. The MMO acts as a policy and legal advisor on the process of making IFCA byelaws. The IFCA will consult the MMO at various stages of the byelaw making process (Defra, 2011) with Natural England the statutory agency providing advice on nature conservation out to 12nm.

Scientific advice and international collaboration on fisheries science continues with UK MoU signed with ICES (UK was always an independent member of ICES).

Changes to legislation and the development of fishery management plans are subject to UK government consultation processes which provides opportunity for interested parties to be involved Consultation on Joint Fisheries Statements and Fisheries Management Plans.

For example, Schedule 1 Part of the Fisheries Act states:

- (1) The fisheries policy authorities acting jointly must—
 - (a) prepare a draft ("the consultation draft") of the relevant document,
 - (b) publish the consultation draft in such manner as they consider appropriate, and
 - (c) take such steps as they consider appropriate to secure that the consultation draft is brought to the attention of interested persons.
- (2) Each of the fisheries policy authorities must, in settling the final text of the relevant document, have regard to any representations made to them about the consultation draft.
- (3) In this paragraph "interested persons" means—
 - (a) any persons appearing to the fisheries policy authorities to be likely to be interested in, or affected by, the policies contained in the consultation draft, and
 - (b) members of the general public.

Long term objectives

The Fisheries Act 2020 and TCA agreement have MSY and precautionary objectives in line with the MSC criteria. The JFS (draft currently out for consultation) sets out the fishery policy authorities interpretation of the eight objectives set out in the Act and how they will deliver them:

(1) The 'sustainability objective' is that:

(a) fish and aquaculture activities are—

(i) environmentally sustainable in the long term, and

(ii) managed so as to achieve economic, social and employment benefits and contribute to the availability of food supplies, and

(b) the fishing capacity of fleets is such that fleets are economically viable but do not overexploit marine stocks.

(2) The 'precautionary objective' is that—

(a) the precautionary approach to fisheries management is applied, and

(b) exploitation of marine stocks restores and maintains populations of harvested species above biomass levels capable of producing Maximum Sustainable Yield (MSY).

The Act defines a precautionary approach to fisheries management as ‘an approach in which the absence of sufficient scientific information is not used to justify postponing or failing to take management measures to conserve target species, associated or dependent species, non-target species or their environment’.

(3) The ‘ecosystem objective’ is that—

(a) fish and aquaculture activities are managed using an ecosystem-based approach so as to ensure that any negative impacts on marine ecosystems are minimised and, where possible, reversed, and

(b) incidental catches of sensitive species are minimised and, where possible, eliminated.

An ecosystem-based approach is defined in the Act as ‘an approach which (a) ensures that the collective pressure of human activities is kept within levels compatible with the achievement of GES within the meaning of the Marine Strategy Regulations 2010, and (b) does not compromise the capacity of marine ecosystems to respond to human-induced changes.’

(4) The ‘scientific evidence objective’ is that—

(a) scientific data relevant to the management of fish and aquaculture activities is collected,

(b) where appropriate, the fisheries policy authorities work together on the collection of, and share, such scientific data, and

(c) the management of fish and aquaculture activities is based on the best available scientific advice.

(5) The ‘bycatch objective’ is that—

(a) the catching of fish that are below minimum conservation reference size, and other unwanted bycatch, is avoided or reduced,

(b) catches are recorded and accounted for, and

(c) bycatch that is fish is landed, but only where this is appropriate and (in particular) does not create an incentive to catch fish that are below minimum conservation reference size.

(6) The ‘equal access objective’ is that the access of UK fishing boats to any area within British fishery limits is not affected by—

(a) the location of the fishing boat’s home port, or

(b) any other connection of the fishing boat, or any of its owners, to any place in the United Kingdom.

(7) The ‘national benefit objective’ is that fishing activities of UK fishing boats bring social or economic benefits to the United Kingdom or any part of the United Kingdom. The national benefit objective means that the fisheries policy authorities will make conditions for each UK vessel they license to bring economic and/or social benefit to the UK, or any part of the UK.

(8) The ‘climate change objective’ is that—

(a) the adverse effect of fish and aquaculture activities on climate change is minimised, and

(b) fish and aquaculture activities adapt to climate change.

Fisheries Specific Management

Since exiting the EU, Defra has published a Joint Fisheries Statement with the fisheries administrations of the devolved nations and these are developing Fishery Management Plans for key species including important non-quota species like edible crab.

The Crab & Lobster Fishery Management Plan for English Waters was one of the first to be developed and was published in December 2023²⁶. It states that:

Evidence available in 2023 suggests that crab and lobster stocks are experiencing high exploitation rates which could exceed those required to maintain stocks at maximum sustainable yield (MSY). However, there are still significant gaps in our understanding of these important fisheries. While work is under way to improve the quantity and quality of data, there are still significant uncertainties and assumptions in current stock assessment methodologies, meaning outputs may be less certain. At the time of publication, accurately assessing the impact of current fishing effort on long-term stock viability is a challenge.

This FMP combines a long-term vision to achieve MSY with measures to reach and maintain this goal. The plan brings together the complete portfolio of existing management measures for crab and lobster along with all available science and evidence. It also highlights where gaps exist and what steps are required to fill those gaps to enable the necessary protection for stocks now and for the long term.

This FMP sets out a precautionary and adaptive approach to long-term management to create sustainable crab and lobster fisheries.

However, this only covers English waters and so does even not encapsulate all UK waters within the Central North Sea CFU. And at present the FMP does not detail well-defined and measurable HCRs as would be required by the MSC standard, which may emerge on a more regional basis (e.g. North Sea) in future iterations of the FMP.

Currently the following management arrangements are in place:

- There is no Total Allowable Catch (TAC) set for edible crab.
- National legislation restricts the number of shellfish licences available (in England and Wales) and also prohibits landing of berried and soft crabs.
- The UK has retained EC legislation setting a minimum landing size of 130mm for crabs in the North Sea south of 56°N. It also restricts the proportion of the crab landings which is detached claws caught by pots or creels to less than 1% by weight of total catch. A by-catch limit of no more than 75kg per day of crab claws taken by other gear types can be landed.
- A derogation to the EC legislation sets an MLS of 115mm in the Eastern IFCA area. Local IFCA legislation varies and is detailed in the table below.

²⁶ <https://consult.defra.gov.uk/fisheries-management-plans-1/crab-lobster-fmp-consultation/>



Windrush, Warborne Lane
Portmore, Lymington
Hampshire SO41 5RJ
United Kingdom

Telephone: +44 1590 610168
rod@consult-poseidon.com
<http://www.consult-poseidon.com>