

A high-angle, close-up photograph of the ocean's surface. The water is a deep, dark blue with white foam from a boat's wake. A thick, braided rope is visible in the lower-left foreground, extending towards the center. The text is overlaid on the lower-left portion of the image.

Data Limited stocks:
**organisations and
activities**

Introduction

The aim of this document is to provide an overview of the activities concerned with improving information on fish stocks defined as data limited stocks (DLS.) The focus is on DLS of commercial interest to the UK seafood sector, but includes all stocks in waters around the UK where a full analytical assessment is not possible.

An overview is provided of the main methods being developed and the projects aimed at improving DLS assessment and management, together with the level of assessment which has been carried out at the individual stock level.

This document lists:

- Organisations engaged in the evolution of assessment methods for DLS of fish and shellfish:
 - International (Table 1)
 - UK - by devolved administration (Table 2)
 - Local organisations (Table 3)
- Tables 4 and 5 list the Fisheries Improvement Projects (FIPS) aimed at improving the assessment and management of these stocks, ultimately moving them towards Marine Stewardship Council (MSC) certification.

ICES stocks (ICES, 2012) are divided into six categories depending on the amount and type of information available to scientists for making an assessment of a stock's state and the level of exploitation:

- Category 1: stocks with full analytical assessments and forecasts are possible.
- Category 2: stocks with analytical assessments and forecasts that are only treated qualitatively (where for example forecasts are available as trends only).

Categories three to six, which are the focus in this document, are graded as data-limited and where only various pieces of the jigsaw are available:

- Category 3: advice is given on these stocks using indices of abundance usually from research vessel surveys.
- Category 4: advice is given on the bases of specialised modelling methods that use time series of catch data.
- Category 5: only commercial landings data are available.
- Category 6: only by-catch data are available.

Assessments of stocks in categories five and six are advised on the basis of previous years' catches.

Table 6-9 shows the stocks grouped by international Council for Exploration of the Sea (ICES) 'Ecoregion' and ranked by category in the ICES data-limited assessment framework and its target category where available:

- Whitefish (Table 6)
- Pelagic (Table 7)
- Elasmobranch (sharks, skates and rays (Table 8)
- Crustacea (Table 9)

Results

The results show that many of the whitefish and some of the elasmobranch stocks are in category three, where indexes of abundance are available. However, many of the elasmobranch stocks are reliant on category five and six assessments which use only catch data and in many cases relatively short time-series of up to seven years, since species identification in the landings for skates and rays has only been implemented since 2010.

Tables 10-13 lists stocks for which there is no ICES assessment and the extent to which they and other agencies have carried out work leading to improved knowledge of the stock, referring back to Tables 1, 2 and 3.

These results show that for many of the data-limited stocks around the UK coast, there has been progress in making data-limited assessments. These are subject to continuing improvements by ICES and its expert groups in developing assessment methods. Outside the ICES' framework, national and local government and universities have also developed and implemented assessment methods for stocks.

There are opportunities for improving the assessment and management of these stocks which the stakeholder FIPS are engaged in through the projects co-ordinated by MSC and Seafish (Tables 4 and 5). For certain stocks, such as common skate, crab and lobster, information on their biology and exploitation is limited. Here the research programmes listed in Table 2 are relevant. Of particular note are the projects carried out under the Defra elasmobranchs programme which are a partnership between the government, fishers and scientists.

References

Additional links in tables:

ICES. (2012). *ICES Implementation of Advice for Data Limited Stocks in 2012 in its 2012 Advice ICES CM 2012/ACOM 68*. Copenhagen, Denmark. Retrieved from

[http://www.ices.dk/sites/pub/Publication Reports/Expert Group Report/acom/2012/ADHOC/DLS Guidance Report 2012.pdf](http://www.ices.dk/sites/pub/Publication%20Reports/Expert%20Group%20Report/acom/2012/ADHOC/DLS%20Guidance%20Report%202012.pdf)

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Map

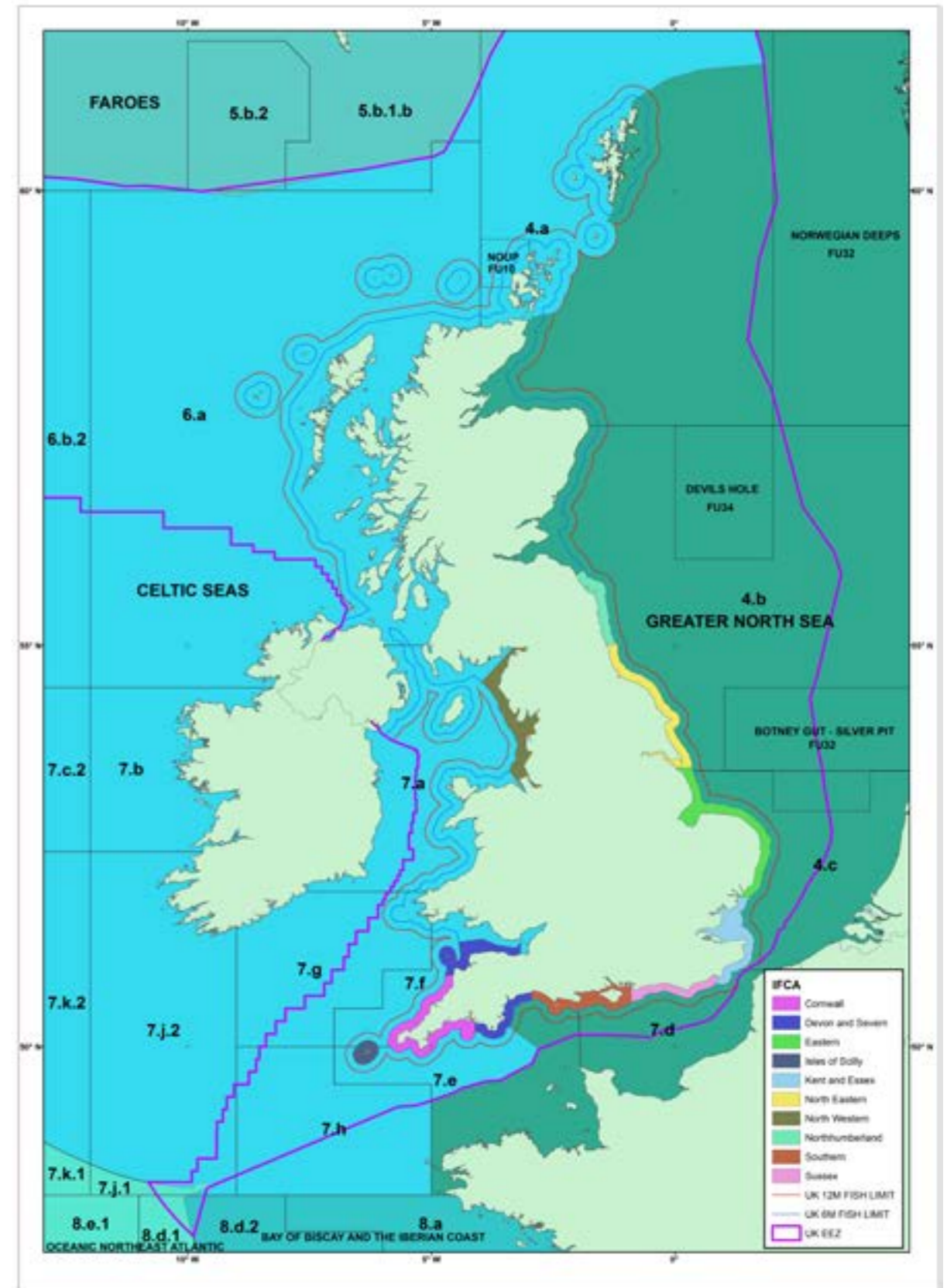


Figure 1 Map showing ICES Ecoregions, Subareas and Divisions, UK Exclusive Economic Zone, UK 12 and 6 nautical mile limits and IFCA areas inside the 6 nautical mile limits

Table 1

International organisations developing or carrying out assessments

Organisations	Activities
FAO	<p>Rosenberg et al 2014 DEVELOPING NEW APPROACHES TO GLOBAL STOCK STATUS ASSESSMENT AND FISHERY PRODUCTION POTENTIAL OF THE SEAS. Tested various catch based methods and looked at a global food web assessment to estimate global fish production potential: http://www.fao.org/3/i3491e/i3491e.pdf</p> <p>See also training in data limited tuna assessments: http://www.fao.org/in-action/commonoceans/news/detail-events/en/c/887806/</p>
ICES (International Council for Exploration of the Sea)	<p>Workshop on the Development of Quantitative Assessment Methodologies based on life-history traits, exploitation characteristics, and other relevant parameters for data-limited stocks (WKLIFE). This series of workshops (eight workshops held since 2012) is the main venue for ICES' research and development of the data-limited approach. In 2014 around 64% of the 256 stocks for which management advice is provided by ICES were assessed using these methods: http://www.ices.dk/community/groups/Pages/WKLIFEVIII.aspx</p> <p>A list of all the ICES stocks by 2014 ICES data category can be found in Annex 8 page 273 of the WKLIFE4 document, together with the target category set at that time: http://www.ices.dk/sites/pub/Publication%20Reports/Expert%20Group%20Report/acom/2014/WKLIFE4/wklifeV_2014.pdf</p> <p>See also Tables 6-9 this document</p> <p>Other ICES activities; a number of working groups and workshops have been involved in data limited assessments. Of interest to particular species are: WGScallop http://www.ices.dk/community/groups/Pages/WGScallop.aspx WGCEP (Squid, cuttlefish, octopus) http://www.ices.dk/community/groups/Pages/WGCEPH.aspx WGCAN (brown shrimp) http://www.ices.dk/community/groups/Pages/WGCAN.aspx</p>
University of British Columbia Fisheries Centre and the Natural Resources Defense Council	<p>Data-limited toolkit: www.datalimitedtoolkit.org See also http://www.datalimitedtoolkit.org/wp-content/uploads/2018/10/Carruthers_et_al-2018-Methods_in_Ecology_and_Evolution.pdf</p>

² Seafish (William Lart) participated in 6 of these

Table 2

National UK organisations engaged in assessments

Organisations	Activities
Cefas (on behalf of Defra)	<p>Crab and lobster assessments - in English waters; length-based assessments: https://www.gov.uk/government/publications/crab-and-lobster-stock-assessment-2017</p> <p>C-BASS Population study on sea bass - although there is a full ICES assessment on the main sea bass stock in central and southern North Sea, Irish Sea, English Channel, Bristol Channel, and Celtic Sea there is a need to understand more about the biology, dynamics and fisheries: http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=2&ProjectID=18963</p> <p>Fisheries Science Partnerships - Involve fishermen in commissioning science projects that will benefit the industry through improved fisheries data or stock assessments and through innovative ideas on gear technology. https://www.gov.uk/government/organisations/centre-for-environment-fisheries-and-aquaculture-science/about/research#fisheries-science-partnership-fsp</p> <p>Elasmobranchs - series of research projects carried out to better understand elasmobranch biology and management in relation to the EU Common Fisheries Policy, the national shark, skate and ray conservation plan, maintenance of viable and sustainable fisheries and biodiversity under the Marine Strategy Framework Directive: http://randd.defra.gov.uk/Default.aspx?Module=More&Location=None&ProjectID=19725</p> <p>King Scallops - CEFAS are currently developing stock assessment methods and applying them to English Channel scallop stocks: https://www.gov.uk/government/publications/aseessment-of-scallops-stocks-201617</p> <p>Spiny lobster - (crawfish) lifecycle: https://www.frontiersin.org/articles/10.3389/fmars.2018.00058/full</p> <p>Sprat and sardines - along with other small pelagics (eg anchovy and herring) are included in the Cefas PELTIC acoustic survey around the SW of England. Working with fishermen in a Fisheries-Science partnership in the western English Channel to extend the acoustic survey inshore using calibrated echo-sounders on fishing vessels.</p> <p>Whelks - in English waters; studies on size at maturity: http://randd.defra.gov.uk/Default.aspx?Module=More&Location=None&ProjectID=17916</p>

Table 2

National UK organisations engaged in assessments

Marine Scotland	<p>Crabs and lobsters - using length based methods: https://data.marine.gov.scot/sites/default/files//SMFS%200814_0.pdf</p> <p>King scallops - using analytical assessments to assess scallop stocks of the East and North East Coasts of Scotland, Shetland, North West Coast of Scotland, and West of Kintyre. There are insufficient data from the Clyde, the Irish Sea and Orkney assessment areas to perform analytical assessments or evaluate stock trends: https://www.gov.scot/Topics/marine/marine-environment/species/fish/shellfish/scallop</p> <p>See latest assessment: https://data.marine.gov.scot/sites/default/files//SMFS%200821.pdf</p> <p>And most recent survey: https://blogs.gov.scot/marine-scotland/2018/07/06/scallop-stock-assessment/</p>
Welsh Government	<p>Razor clams assessment by NAFC Shetland: https://www.nafc.uhi.ac.uk/t4-media/one-web/nafc/research/document/Fraser-et-al-2018-Razor-clams-in-Wales-report.pdf</p> <p>See also University of Bangor Welsh fisheries</p>

Table 3

Local UK: anti-clockwise around England, Wales and Northern Ireland.
 See Association of Inshore Fisheries and Conservation Authorities (IFCAs)
 (<http://www.association-ifca.org.uk/>) for links to IFCAs

Northumberland IFCA	Assessments of lobster fisheries in relation to management measures
North East IFCA	Mostly environmental assessments related to habitat mapping, cockle stock assessments (Humber and Tees)
The Holderness Coast Fishing Industry Group	Are actively involved in research on crustacean fisheries (work with University of Hull and others); they have their own research vessel: http://www.eastyorkshirecoast.com/14-content/the-coast-at-work/51-the-holderness-coast-fishery.html
Eastern IFCA	Annual crab and lobster assessment, mussels and cockles in The Wash (under The Wash fishery Order) numerous environmental assessments: http://www.eastern-ifca.gov.uk/research-environment-plans-strategies-reports/
Shrimp Producers Organisation Ltd	Brown shrimp in The Wash; as a part of the MSC certification of brown shrimp in The Wash; an approach to stock assessment is being designed: http://www.washshrimp.co.uk/
Kent & Essex IFCA	SUMARiS Sustainable Management of Rays and Skates project "The SUMARiS project aims to put together the necessary knowledge and evidence in order to implement a species specific cross-border management strategy for rays and skates fishery in the English Channel and the North Sea, in particular by setting up common and cross-border management": https://www.kentandessex-ifca.gov.uk/im-interested-in/research/rays-and-skates/
Sussex IFCA	Small fish survey, oyster stock assessment, cuttlefish and black bream research, fishing effort distribution: https://www.sussex-ifca.gov.uk/research-and-science
Southern IFCA	Estuarine and harbour fish survey, oyster stock survey, Poole harbour clam and cockle surveys; aim to assess to MSY (related to MSC certification): http://www.southern-ifca.gov.uk/research-and-evidence-reports
Devon and Severn IFCA	Cockle survey in Exe estuary, mussel surveys in Exe, Taw-Torridge, discussion of local management in relation to the Ecosystem approach: https://www.devonandsevernifca.gov.uk/Resource-library/H-Environment-and-Research
Cornwall IFCA	Analysis of fisheries returns for crab, lobster and crawfish fisheries: https://secure.toolkitfiles.co.uk/clients/17099/sitedata/Research_Reports/Shellfish_Reports/Shellfish-return-report-2016-FINAL.pdf Analysis of bird bycatch data in relation to proposed Special Protection Area: http://publications.naturalengland.org.uk/file/4536761935462400

Table 3

Local UK: anti-clockwise around England, Wales and Northern Ireland.
See Association of Inshore Fisheries and Conservation Authorities (IFCAs)
(<http://www.association-ifca.org.uk/>) for links to IFCAs

Isles of Scilly IFCA	Projects on larval dispersal of spiny lobsters (see CEFAS) and lobster tagging: https://www.scillyifca.gov.uk/research-projects#lobster-larval
University of Bangor	Isle of Man fisheries - king and queen scallops, crab, lobster and whelk for Isle of Man stocks and fisheries. Also includes development of methods for collection of crab size data at sea using camera technology: http://fisheries-conservation.bangor.ac.uk/iom/documents/71.pdf
University of Bangor	Welsh fisheries - finfish, crab, lobster and prawn fisheries, scallop and whelk fisheries. Most of these are individual scientific studies covering aspects of biology and habitat, the work on scallops and habitat assessments is ongoing Bangor University work on crab, lobster and prawn fisheries (<i>Palaemon serratus</i>) in Wales: http://fisheries-conservation.bangor.ac.uk/wales/index.php.en
Natural Resources Wales	Bury inlet cockles; annual survey: https://naturalresources.wales/guidance-and-advice/business-sectors/fisheries/burry-inlet-cockle-fishery/?lang=en Dee estuary cockles; annual survey: https://naturalresources.wales/guidance-and-advice/business-sectors/fisheries/dee-estuary-cockle-fishery/?lang=en
North West IFCA	Assessments relate to Habitat Regulations Assessments: https://www.nw-ifca.gov.uk/marine-protected-areas/hra/ Assessments of cockles and mussel bed are carried for fisheries management and Habitat Regulations purposes
Queens University Belfast	Understanding lobster population dynamics through genetic studies. Uses samples taken from V notched lobsters and their descendants to understand stock dynamics and management measures. Though this presentation is from 2015 the work is ongoing: http://www.shellfish.org.uk/files/Presentations/2015/PRODOHL.pdf
NAFC Marine Centre, Shetland (NAFC; North Atlantic Fisheries College)	Data-limited Fish Stocks in the Northern North Sea: data on anglerfish, ling, lemon sole, plaice, hake (<i>Merluccius merluccius</i>) and megrim. As well as recording spatially resolved catch and discard data, key biological characteristics of each of the six species including growth rates, length at maturity and spawning pattern were described: https://www.nafc.uhi.ac.uk/t4-media/one-web/nafc/research/document/data-limited-fish-stocks-in-the-northern-north-sea-final.pdf See also report to Welsh Government on razor clam fisheries
Shetland Shellfish Management Organisation (SSMO)	Manages Shetland's shellfish fisheries under a regulating order: https://www.ssmo.co.uk/about/history

Table 4

Fisheries improvement activities aimed at certification for data limited stocks under Project UK FIPs

Project UK	
Project UK is an ambitious project led by Seafish and the MSC that builds on the success of Project Inshore and aims to work towards an environmentally sustainable future for UK fisheries http://www.seafish.org/industry-support/fishing/project-uk See advisory group membership: http://www.seafish.org/media/1665342/project_uk_advisory_group_members.pdf	
Project UK Fisheries Improvement Partnerships (PUKFIPS)	
Phase 1	Channel Scallops - Meeting participants ; Coombe fisheries Ltd, Devon and Severn IFCA, Falfish Ltd, MSC, New England Seafood, Seafish, South West Fish Producers Organisation (SWFPO), Scottish Whitefish Producers Association (SWFPA). Observers ; Cefas, Defra, Heriot-Watt University. Consultant ; Poseidon. http://www.seafish.org/industry-support/fishing/project-uk/project-uk-fisheries-improvements/channel-dredge-scallop-fip Expected completion Dec 2021
	Southwest crab and lobster- Meeting participants ; Falfish, Direct Seafoods, W. Harvey & Sons Lyons Seafood, Macduff Shellfish Ltd, Marine Stewardship Council, Seafish, Seafood and Eat it, South Devon and Channel Shellfishermen, Tesco, The Real Cornish Crab Company. Observers ; Cornwall IFCA, Defra, Devon and Severn IFCA, Scilly Isles IFCA, Consultant ; Poseidon https://www.seafish.org/article/southwest-crab-lobster-pot-fip Expected completion Dec 2021
	West Channel monkfish - Meeting participants ; Cornish Fish Producers Organisation, Falfish Ltd, Marks & Spencer, MMO, Oceanfish, Interfish, MSC, New England Seafood, Sainsbury's, Seafish, SWFPO, World Wildlife Fund (WWF). Observers ; Cefas, Defra. Consultant ; Poseidon. http://www.seafish.org/industry-support/fishing/project-uk/project-uk-fisheries-improvements/western-channel-monkfish-multiple-gear-fip Expected completion Dec 2021
	North Sea lemon sole and plaice - Meeting participants ; Co-operative Group Ltd, Flatfish Ltd Grimsby, Seachill, Lowestoft Fish Producer's Organisation (FPO), Marks and Spencer, MMO, MSC, New England Seafood, Sainsbury's, Scottish Whitefish Producers Association (SWFPA), Seafish, Waitrose, WWF, Youngs Seafood. Observers ; Cefas, Defra. Consultant ; Poseidon: https://www.seafish.org/article/north-sea-plaice-lemon-sole-mixed-gear-fip Expected completion Dec 2019 for plaice and Dec 2020 for lemon sole

Table 4 (continued)

Fisheries improvement activities aimed at certification for data limited stocks under Project UK FIPs

Phase 2	<p>North Sea, West of Scotland, Irish Sea scallops –Meeting participants; Anglo North Irish FPO Ltd, Fyfe FPO, Co-operative Group Ltd, Clyde Fishermen’s Association, Macduff shellfish Ltd, Marine Conservation Society, Marks and Spencer plc, Morrisons plc, New England Seafood, Northern Ireland FPO Ltd, Sainsbury’s plc, Seafish, Seafood Ecosse Ltd, Scottish Seafood Association (SSA), Scottish Fishermen’s Organisation, Scottish Fishermen’s Federation, Scottish Whitefish Producers Association (SWFPA), Tesco, Waitrose, Wildlife Link Scotland, WWF, Youngs Seafood,</p> <p>Observers; Department of Agriculture Environment and Rural Affaires, Northern Ireland, Defra, Isle of Man Government, Marine Scotland Science, Scottish Natural Heritage, University of York Consultant; Poseidon</p> <p>Expected completion June 2023</p>
	<p>North Sea, West of Scotland, Irish Sea Nephrops</p> <p>Meeting participants; Anglo North Irish FPO Ltd, Associated Seafoods, Co-operative Group Ltd, Clyde Fishermen’s Association, Lidl UK, Marks and Spencer plc, Macduff shellfish Ltd, Marine Conservation Society, Morrisons plc, New England Seafood, Northern Ireland FPO Ltd, Sainsbury’s plc, Seachill Ltd, Seafish, Seafood Ecosse Ltd, Scottish Seafood Association (SSA), Scottish Fishermen’s Organisation, Scottish Fishermen’s Federation, Tesco, Scottish Whitefish Producers Association (SWFPA), Waitrose, West of Scotland PO, Whitby Seafood Ltd, Wildlife Link Scotland, WWF, Youngs Seafood.</p> <p>Observers; Agri-Food and Biosciences Institute Northern Ireland, Defra, Department of Agriculture Environment and Rural Affaires Northern Ireland, Isle of Man Government, Marine Scotland Science, Scottish Natural Heritage, Consultant; Poseidon</p> <p>Expected completion June 2023</p>

Table 5

Fisheries improvement outside PUKFIPs

<p>Cornish Sardines - the Cornish Sardine management Association has been actively involved with gathering information from the fishery, including catch length distributions bycatch and information from processors: http://www.cornishsardines.org.uk/</p>
<p>Shetland brown crab and King scallops MSC certification for Brown Crab and King Scallops since 2012: https://www.ssmo.co.uk/</p>
<p>Anglerfish (<i>Lophius piscatorius</i> and <i>L. budegassa</i>) in the North Sea, Skagerrak and West of Scotland (ICES Subareas 4,6 and Div 3a); Scottish fishery proposed FIP to be led by Seafish</p>

Table 6

ICES data-limited whitefish stocks around the British Isles with current (2018) and target data category; see Introduction for data categories, target data categories are based on ICES WKLIFE4 2014 report; see Table 1 for link. NA= target category not available. See <http://www.ices.dk/community/advisory-process/Pages/Latest-advice.aspx> for advice by stock and <http://www.ices.dk/community/advisory-process/Pages/fisheries-overviews.aspx> for overviews by ecoregion

Celtic Seas		
Stock (see map for ICES Subareas and Divisions)	Category	
	Current	Target
Plaice in Division 7.e (western English Channel)	3	1
Plaice (<i>Pleuronectes platessa</i>) in Celtic Sea (ICES Division 7f,g)	3	3
Sole (<i>Solea solea</i>) in divisions 7.h–k (Celtic Sea South, southwest of Ireland)	3	3
Black-bellied anglerfish in divisions 7.b–k, 8.a– b, and 8.d (west and southwest of Ireland, Bay of Biscay)	3	NA
Megrim in Division 6.b (Rockall)	3	NA
Plaice in divisions 7.h–k (Celtic Sea South, southwest of Ireland)	3	NA
Pollack (<i>Pollachius pollachius</i>) in Celtic Seas and English Channel (ICES Subareas 6 and 7)	4	4
Four-spot megrim in divisions 7.b–k, 8.a–b, and 8.d (west and southwest of Ireland, Bay of Biscay)	5	NA
European sea bass in West of Scotland and Ireland (ICES Divs. 6a, 6b and 7j)	6	5
Grey gurnard (<i>Eutrigla gurnardus</i>) in Celtic Sea and West of Scotland (ICES Subarea 6 and Divs. 7a-c and e-k)	6	NA
Greater North Sea		
Anglerfish (<i>Lophius piscatorius</i> and <i>L. budegassa</i>) in the North Sea, Skagerrak and West of Scotland (ICES Subareas 4,6 and Div. 3a)	3	1
Lemon sole (<i>Microstomus kitt</i>) in North Sea, Skagerrak and Kattegat, Eastern English Channel (ICES Subarea 4 and Divs. 3a,7d)	3	1

Table 6 (continued)

Turbot (<i>Scophthalmus maximus</i>) in North Sea (ICES Subarea 4)	3	1
Witch (<i>Glyptocephalus cynoglossus</i>) in Subarea 4 and divisions 3.a and 7.d (North Sea, Skagerrak and Kattegat, eastern English Channel)	3	1
Dab (<i>Limanda limanda</i>) in North Sea, Skagerrak and Kattegat(ICES Subarea 4 and Div. 3a)	3	1
Flounder (<i>Platichthys flesus</i>) in North Sea, Skagerrak and Kattegat (Div. 3a and Subarea 4)	3	3
Striped red mullet (<i>Mullus surmuletus</i>) in the North Sea, eastern English Channel, Skagerrak and Kattegat (ICES Subarea 4, Divs. 3a,7d)	3	3
Grey gurnard (<i>Eutrigla gurnardus</i>) in North Sea, eastern English Channel, Skagerrak and Kattegat (ICES Subarea 4 and Divs. 7.d and 3.a)	3	NA
Pollack (<i>Pollachius pollachius</i>) in North Sea, Skagerrak and Kattegat (ICES Subarea 4 and Division 3a)	5	3
Widely distributed		
European eel throughout its natural range	3	NA
Striped red mullet (<i>Mullus surmuletus</i>) in West of Scotland, Bay of Biscay, Southern Celtic Seas and Atlantic Iberian Waters (ICES Subareas 6 and 8 and Divs 7a–c, e–k and 9a)	5	4
Red gurnard (<i>Chelidonichthys cuculus</i>) in the Northeast Atlantic (ICES Subareas 3–8)	6	6
Deep sea		
Black scabbardfish (<i>Aphanopus carbo</i>) in subareas 1, 2, 4–8, 10, and 14, and divisions 3.a, 9.a, and 12.b (Northeast Atlantic and Arctic Ocean)	3	5
Greater silver smelt (<i>Argentina silus</i>) in subareas 1, 2, and 4, and in Division 3.a (Northeast Arctic, North Sea, Skagerrak and Kattegat)	3	3
Greater silver smelt (<i>Argentina silus</i>) in Faroes grounds and west of Scotland (ICES divisions 5.b and 6.a)	3	3

Table 6 (continued)

Greater silver smelt (<i>Argentina silus</i>) in subareas 7–10 and 12, and in Division 6.b (other areas)	3	NA
Ling (<i>Molva molva</i>) in Northeast Atlantic and Arctic Ocean (subareas 6–9, 12, and 14, and in Divs. 3a,4.a)	3	3
Greater forkbeard (<i>Phycis blennoides</i>) in subareas 1–10, 12, and 14 (the Northeast Atlantic and adjacent waters)	3	3
Tusk (<i>Brosme brosme</i>) in subareas 4 and 7–9, and in divisions 3.a, 5.b, 6.a, and 12.b (Northeast Atlantic)	3	3
Red (= blackspot) seabream (<i>Pagellus bogaraveo</i>) in Celtic Seas and the English Channel, Bay of Biscay) ICES subareas 6, 7, and 8	6	4
Blue ling (<i>Molva dypterygia</i>) in subareas 1, 2, 8, 9, and 12, and in divisions 3.a and 4.a (other areas)	5	NA
Roundnose grenadier (<i>Coryphaenoides rupestris</i>) in subareas 6 and 7 and divisions 5.b and 12.b (Celtic Seas and the English Channel, Faroes grounds, and western Hatton Bank)	5	NA
Tusk (<i>Brosme brosme</i>) in Division 6.b (Rockall)	5	3
Orange roughy (<i>Hoplostethus atlanticus</i>) in the Northeast Atlantic	6	4
Roughhead grenadier (<i>Macrourus berglax</i>) in the Northeast Atlantic	6	NA
Roughsnout grenadier (<i>Trachyrincus scabrus</i>) in the Northeast Atlantic	6	NA

Table 7

ICES data-limited elasmobranch stocks around the British Isles with current (2018) and target data category; see Introduction for data categories, target data categories are based on ICES WKLIFE4 2014 report; see Table 1 for link. NA= target category not available. See <http://www.ices.dk/community/advisory-process/Pages/Latest-advice.aspx> for advice by stock and <http://www.ices.dk/community/advisory-process/Pages/fisheries-overviews.aspx> for overviews by ecoregion.

Celtic Seas		
Stock (see map for ICES Subareas and Divisions)	Category	
	Current	Target
Cuckoo ray (<i>Leucoraja naevus</i>) in West of Scotland, Celtic Seas and Biscay (subareas 6 and 7 and divisions 8.ab and 8.d)	3	3
Spotted ray (<i>Raja montagui</i>) in West of Scotland, west and southwest of Ireland (ICES Subarea 6 and Divs. 7.b and 7.j)	3	3
Spotted ray (<i>Raja montagui</i>) in southern Celtic Seas and western English Channel (ICES divisions 7.a and 7.e–h)	3	3
Spotted ray (<i>Raja montagui</i>) the Irish and Celtic Seas and Bristol Channel (Divs. 7afg)	3	3
Lesser-spotted dogfish (<i>Scyliorhinus canicula</i>) in the Celtic Seas (ICES Subarea 6 and Divs. 7.a–c and 7.e–j)	3	3
Thornback ray (<i>Raja clavata</i>) in the West of Scotland (Sub area 6)	3	3
Greater spotted dogfish (<i>Scyliorhinus stellaris</i>) in subareas 6 and 7 (Celtic Sea and English Channel)	3	NA
Black-mouthed dogfish (<i>Galeus melastomus</i>) in subareas 6 and 7 (Celtic Seas and English Channel)	3	NA
Small-eyed ray (<i>Raja microcellata</i>) in Bristol Channel, and North Celtic Sea (ICES Divs. 7.f and 7.g)	3	4
Black-mouthed dogfish (<i>Galeus melastomus</i>) in subareas 6 and 7 (Celtic Seas and English Channel)	3	NA
Thornback ray (<i>Raja clavata</i>) in the Western English Channel (ICES Division 7e)	5	3

Table 7 (continued)

Blonde ray (<i>Raja brachyura</i>) in Bristol Channel, Irish and North Celtic Seas (ICES Divs. 7 a, f, g)	5	3
Blonde ray (<i>Raja brachyura</i>) in Northern North Sea and West of Scotland (ICES Subarea 6 and Division 4.a)	5	4
Shagreen ray (<i>Leucoraja fullonica</i>) in West of Scotland, southern Celtic Seas and English Channel ICES subareas 6–7)	5	4
Common skate (blue skate (<i>Dipturus batis</i>) and flapper skate (<i>Dipturus cf. intermedia</i>)) in Celtic Seas and western English Channel (ICES subareas 6–7 (excluding Division 7.d))	5	3
Small-eyed ray (<i>Raja microocellata</i>) in the English Channel (ICES divisions 7.d and 7.e)	5	4
Blonde ray in Division 7.e (western English Channel)	5	NA
Common skate (blue skate (<i>Dipturus batis</i>) and flapper skate (<i>Dipturus cf. intermedia</i>)) in Celtic Seas and western English Channel (ICES subareas 6–7 (excluding Division 7.d))	6	3
Undulate ray (<i>Raja undulata</i>) in English Channel ICES divisions 7.d–e	6	6
Undulate ray (<i>Raja undulata</i>) west and southwest of Ireland (ICES divisions 7.b and 7.j)	6	6
Other skates and rays in subareas 6–7 (excluding Division 7.d) (Rockall and West of Scotland, southern Celtic Seas, western English Channel)	6	NA
Greater North Sea		
Cuckoo ray (<i>Leucoraja naevus</i>) in the North Sea, Skagerrak and Kattegat (ICES Subarea 4)	3	3
Lesser-spotted dogfish (<i>Scyliorhinus canicula</i>) in the North Sea, Skagerrak and Eastern English Channel (ICES Subarea 4 & Div. 3a & 7d)	3	3
Thornback ray (<i>Raja clavata</i>) in the North Sea, Skagerrak, Kattegat and Eastern English Channel (Subarea 4 and Divs. 3a and 7d)	3	3
Spotted ray (<i>Raja montagui</i>) the North Sea, Skagerrak, Kattegat and Eastern English Channel (Subarea 4 & Div. 3a & 7d)	3	3

Table 7 (continued)

Starry ray (<i>Amblyraja radiata</i>) in the North Sea (ICES Subarea 4)	3	3
Blonde ray (<i>Raja brachyura</i>) in southern North Sea and eastern English Channel (ICES Divisions 4.c and 7.d)	3	3
Common skate (blue skate (<i>Dipturus batis</i>) and flapper skate (<i>Dipturus cf. intermedia</i>)) in North Sea, Skagerrak and eastern English Channel (ICES Sub area 4 and divisions 3a and 7d)	6	4
Rays and skates in Subarea 4 and in divisions 3.a and 7.d (North Sea, Skagerrak, Kattegat, and eastern English Channel)	6	NA
Widely distributed		
Smooth-hound (<i>Mustelus spp.</i>) in the Northeast Atlantic and adjacent waters (ICES Subareas 1–10, 12, and 14)	3	3
Tope (<i>Galeorhinus galeus</i>) in the Northeast Atlantic	5	4
Leafscale gulper shark (<i>Centrophorus squamosus</i>) in the Northeast Atlantic	5	3
Porbeagle (<i>Lamna nasus</i>) in the Northeast Atlantic	5	4
White skate (<i>Rostroraja alba</i>) in the Northeast Atlantic	6	NA
Portuguese dogfish (<i>Centroscymnus coelolepis</i>) in the Northeast Atlantic	6	3
Basking shark (<i>Cetorhinus maximus</i>) in the Northeast Atlantic	6	NA
Angel shark in subareas 1–10, 12, and 14 (the Northeast Atlantic and adjacent waters)	6	NA
Portuguese dogfish in subareas 1–10, 12, and 14 (the Northeast Atlantic and adjacent waters)	6	NA

Table 8

ICES data-limited pelagic stocks around the British Isles with current (2018) and target data category; see Introduction for data categories, target data categories are based on ICES WKLIFE4 2014 report; see Table 1 for link. NA= target category not available. See <http://www.ices.dk/community/advisory-process/Pages/Latest-advice.aspx> for advice by stock and <http://www.ices.dk/community/advisory-process/Pages/fisheries-overviews.aspx> for overviews by ecoregion.

Greater North Sea		
Stock (see map for ICES Subareas and Divisions)	Category	
	Current	Target
Sprat (Sprattus sprattus) in the English Channel (ICES Divs. 7d,e)	3	3
Celtic Seas		
Sprat (Sprattus sprattus) in the West of Scotland and Celtic and Irish Seas (ICES Subarea 6 and Divs. 7a-c)	5	5
Sardine (Sardina pilchardus) in Celtic Seas (ICES subarea 7)	5	NA

Table 9

ICES data-limited pelagic stocks around the British Isles with current (2018) and target data category; see Introduction for data categories, target data categories are based on ICES WKLIFE4 2014 report; see Table 1 for link. NA= target category not available. See <http://www.ices.dk/community/advisory-process/Pages/Latest-advice.aspx> for advice by stock and <http://www.ices.dk/community/advisory-process/Pages/fisheries-overviews.aspx> for overviews by ecoregion.

Celtic Seas		
Stock (see map for ICES Nephrops Functional Units)	Category	
	Current	Target
Norway lobster (Nephrops norvegicus) in Division 4.a, Functional Unit 10 (northern North Sea, Noup); note stock is in northern North Sea but maps to Celtic Sea; see map	4	4
Nephrops in Division 6.a, outside the functional units (west of Scotland)	5	NA
Nephrops in Subarea 7, outside the functional units (southern Celtic Seas, southwest of Ireland)	5	NA
Greater North Sea		
Norway lobster (Nephrops norvegicus) in Division 4.b, Functional Unit 34 (central North Sea, Devil's Hole)	4	1
Norway lobster (Nephrops norvegicus) in divisions 4.b and 4.c, Functional Unit 5 (central and southern North Sea, Botney Cut-Silver Pit)	4	1
Norway lobster (Nephrops norvegicus) in Division 4.a, Functional Unit 32 (northern North Sea, Norway Deep)	4	1
Norway lobster (Nephrops norvegicus) in Division 4.b, Functional Unit 33 (central North Sea, Horn's Reef)	4	1
Nephrops in Subarea 4, outside the functional units (North Sea)	5	NA

Table 10

Whitefish data-limited stocks outside ICES data-limited assessments based on Project inshore and other sources https://www.seafish.org/media/Publications/Project_Inshore_Stage_1_report_SP.pdf

Celtic Seas
Brill (<i>Scophthalmus rhombus</i>) in the English Channel (ICES Division 7d-e) has been considered a stock. Brill is also present in other areas of this Ecoregion
Dab (<i>Limanda limanda</i>) common on continental shelf throughout Ecoregion
Flounder (<i>Platichthys flesus</i>) present in inshore and estuarine waters throughout ecoregion
Lemon sole (<i>Microstomus kitt</i>) common on continental shelf throughout Ecoregion, with a significant fishery in the western English Channel (ICES Division 7e)
Turbot (<i>Scophthalmus maximus</i>) in English Channel and southern Celtic and Biscay (ICES Div. 7d,e,h and j and Sub area 8) are considered separate from the turbot in the North Sea (on which there is data-limited assessment) western approaches (remainder of Sub area 7) and West of Scotland (Sub area 6). Irish Sea (Division 7a) are considered a separate population.
Witch (<i>Glyptocephalus cynoglossus</i>) present throughout the Ecoregion, but more common in north west Celtic Sea (ICES Division 7g) and west of Ireland (ICES Division 7b)
Widely distributed
Black sea bream (<i>Spondyliosoma cantharus</i>) is fished predominantly in the English Channel (ICES Divisions 7d-e)
Grey mullet (<i>Liza ramada</i> , <i>Liza aurata</i> and <i>Chelon labrosus</i>) found in shallow inshore waters around the British Isles especially southern Scotland and the English Channel
Pouting (<i>Trisopterus luscus</i>) in coastal European waters
John dory (<i>Zeus faber</i>) distributed throughout Northeast Atlantic waters

Table 11

Pelagic data-limited stocks outside ICES data-limited assessments

Celtic Seas
Herring in Bristol Channel and western English Channel (ICES Divs 7e,f)

Table 12

Molluscan data-limited stocks outside ICES data-limited assessments based on Project inshore and other sources https://www.seafish.org/media/Publications/Project_Inshore_Stage_1_report_SP.pdf

Celtic Seas
Cockles (<i>Cerastoderma edule</i>) Widely distributed in coasts and estuaries. Assessments in The Wash (Eastern IFCA), The Thames (Kent and Essex IFCA) support wild harvest fisheries (Table 3)
Cuttlefish (<i>Sepia officinalis</i>) The east (ICES Div 7d) and west (ICES Div 7d) English Channel stocks are fished although the species is distributed into the North Sea to Tees side and the Irish Sea as far north as Northern Ireland and in the Celtic Sea as far west as the South west of Ireland. There has been some modelling activity by ICES WGCEPH (Table 1) but no routine assessment.
King scallop (<i>Pecten maximus</i>) widespread around the British Isles; see Table 2 for assessment activities by Marine Scotland and Cefas, and Table 1 for ICES WGScallop.
Mussels (<i>Mytilus edulis</i>) widely distributed in coasts and estuaries. Wild harvest fisheries in the English Channel and Morecombe bay and Norfolk Coasts for seed mussels for cultivation. Assessments in The Wash (Eastern IFCA) and Poole Harbour (Southern IFCA) support wild harvest fisheries (Table 3)
Native oysters (<i>Ostrea edulis</i>) around the coasts of the British Isles. Surveys in The Solent (Southern and Sussex IFCA) support wild harvest fishery (Table 3).
Periwinkle (<i>Littorina littorea</i>) are found on all British coasts, though rare or absent in the Isles of Scilly and Channel Isles. Supports wild harvest fisheries in some areas
Queen scallop (<i>Aequipecten opercularis</i>); widespread around the British Isles; assessed in Isle of Man waters see University of Bangor (Table 3 for assessment activities)
Razor clam (<i>Ensis</i> species) widespread in inshore waters. Discussion of stock survey methods in report by NAFC to Welsh Government; see Table 2
Squid (<i>Loligo vulgaris</i> and other species) is widely distributed around the coast of the British Isles, with fisheries in the English Channel and North Sea. There are no routine assessments but see http://www.seafish.org/media/Publications/AberdeenUni_SquidFishinginUKWaters.pdf
Whelk (<i>Buccinum undatum</i>); widespread around the British Isles. Stocks are considered to be very localised with eggs laid on the seabed resulting in localised recruitment so potential for to localised depletion. Size at first maturity is variable from area to area and considered an important parameter for assessment. In most areas size at first maturity is less than the minimum landing size; hence Cefas study of sizes at maturity (Table 2). See also University of Bangor studies of Welsh stocks (Table 3)

Table 13

Crustacean data-limited stocks outside ICES data-limited assessments based on Project inshore and other sources https://www.seafish.org/media/Publications/Project_Inshore_Stage_1_report_SP.pdf

Brown crab (<i>Cancer pagurus</i>) widespread around the British Isles; see Table 2 for assessment activities by Marine Scotland and Cefas. Also Shetland Shellfish Management Organisation. See also Table 1 for ICES WGCRA B
Velvet crab (<i>Liocarcinus puber</i>) widespread around the British Isles; see Table 2 for assessment activities by Marine Scotland
Spider crab (<i>Maia squinado</i>), distributed around the west and southern coasts of the British Isles. Some investigations by Cornwall IFCA see Table 3.
Lobster (<i>Homarus gammarus</i>) widespread around the British Isles; see Table 2 for assessment activities by Marine Scotland and Cefas. See also Queens University Belfast (Table 3) for the use of genetic studies for understanding lobster population dynamics. See also ICES WGCRA B Table 1.
Crawfish or spiny lobster (<i>Palinurus elephas</i>) distributed around the west coast of the British Isles. Has been the subject of a study by Cefas of the dispersal of larvae (see Table 2) as a first step towards understanding management units
Brown shrimp (<i>Crangon crangon</i>) widespread around the British Isles main fisheries are in The Wash and Solway Firth. Efforts are being made to design assessment methods see WGCRA B (Table 1) and the Shrimp Producers Organisation Ltd (Table 3)
Prawns (<i>Palaemon serratus</i>) Frequent on the west, south and south west coast of England and Wales coasts of Ireland and west coast of Scotland. Recorded from the west, south west, south and southeast coast of Ireland. Has been the subject of studies in Cardigan Bay (See University of Bangor in Welsh fisheries Table 3) and Ireland

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