WORKSHOP ON FISH OF CONSERVATION AND BYCATCH RELEVANCE (WKCOFIBYC; outputs from 2020 meeting)

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Contents

i Executive summary iii
ii Expert group information iv
iii Terms of reference (ToRs) v
1 Introduction 1
2 Lists of fishes of conservation interest 2
2.1 Regional Seas Conventions (RSCs) 2
2.1.1 OSPAR Commission 2
2.1.2 Helsinki Commission (HELCOM) 4
2.1.3 Barcelona Convention 5
2.1.4 Bucharest Convention 6
2.2 International hard law texts 8
2.2.1 EU Habitats Directive 8
2.2.2 EU CFP Prohibited Species List 8
2.2.3 Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) 11
2.2.4 North East Atlantic Fisheries Commission (NEAFC) 12
2.3 International treaties and soft law texts 14
2.3.1 Convention on the Conservation of Migratory Species of Wild Animals 14
2.3.2 Bern Convention 17
2.4 National law (non-EU member states) 22
2.4.1 United Kingdom (UK) 22
2.4.2 Iceland 27
2.5 Scientific/monitoring lists 28
2.5.1 WGECO 28
2.5.2 EU programme for data collection in the fisheries sector 30
2.5.3 Species received in WGBYC data calls 47
2.6 Red lists of extinction risk 51
2.6.1 IUCN Global Red List 51
2.6.2 European Red Lists of fishes 51
2.6.3 Red List of Mediterranean species 54
2.6.4 USA and Canadian Legislation 56
2.6.5 ICCAT 56
3 ICES fish biodiversity lists 57
3.1 ToR a: Assessment lists for fish conservation/biodiversity assessment 57
3.2 ToR b: Lists for by-catch advice 58
4 Assessment units for listed fish species 60
5 Fish of conservation concern 61
5.1 Approaches to assessment of species on the list 62
5.2 Ecosystem overviews 63
5.3 Dedicated fish biodiversity assessments 63
6 List of fish species of bycatch concern 68
6.1 Fisheries overviews 69
6.2 Dedicated bycatch advice 69
7 Conclusions and next steps 74
8 References 75
Annex 1: List of participants 77
Annex 2: WKCOFIBYC Comprehensive Species List 78
Annex 3: RAL and RBL by ecoregion 89

i Executive summary

WKCOFIBYC was convened to develop a list of species of conservation and/or bycatch interest, that could be used to prioritise and plan for future work within ICES. WKCOFIBYC compiled a list of fish species (including non-commercial and commercial) of conservation concern (threatened, sensitive, or already listed in legislation) that could be included in future assessments by ICES. This is termed the Comprehensive Species List (CSL). This list is composed of international and national hard law, along with national hard law designations, in addition to relevant red lists of extinction risk and various academic exercises to identify sensitive species. For the first time, through this workshop, a list of priority sensitive species for future conservation/biodiversity-concern assessment has been developed: the regional assessment lists (RALs). The group also compiled ecoregion-level lists (regional bycatch lists or RBLs) of fish species of bycatch concern, which can be used for future planning. To avoid duplication, the RALs and RBLs exclude species for which ICES or other bodies already provide quantitative assessments. Additionally, the RBLs exclude most remaining species already advised upon by ICES or equivalent bodies. A set of guidelines for establishing assessment units are presented in the report.

This process started by identifying 597 species from the northeast Atlantic and the Mediterranean, including some brackish water and diadromous species. However, 193 of these species were deemed not relevant, mainly due to not being representative of the main fish fauna of the regions. The list is structured by relevance, geography, and according to which legal, scientific or other designations of being sensitive to over-exploitation were relevant. The ICES ecoregions or Mediterranean subregions where the species occur is indicated. Also, the listing of each species in hard and soft law is noted. Hard law includes the EU Habitats Directive, the Common Fisheries Policy Prohibited Species list, and national legislation in the UK and Iceland. Where species are listed in various Red Lists of extinction risk, this is also noted.

The methodology by which the lists were compiled is provided. A key challenge for ICES will be to maintain the list and ensure it remains current. As WKCOFIBYC is a one-off initiative, it remains unclear how the lists will be maintained going forward. The attention of ACOM is drawn to this matter.

ii Expert group information

Expert group name	Workshop on Fish of Conservation and Bycatch Relevance (WKCOFIBYC)
Expert group cycle	Annual
Year cycle started	2019
Reporting year in cycle	1/1
Chair	Maurice Clarke, Ireland
Meeting venue and dates	16–20 November 2020, online meeting (15 participants)

iii Terms of reference (ToRs)

WKCOFIBYC - Workshop on Fish of Conservation and Bycatch Relevance

2019/WK/HAPISG11 The **Workshop on Fish of Conservation and Bycatch Relevance** (WKCOFIBYC), chaired by Maurice Clarke*, Ireland, will meet online 16–20 November 2020 to:

a) Compile a list of fish species (including non-commercial and commercial) of conservation concern (threatened, sensitive, or already listed in legislation) that should be included in future assessments by ICES, and compile the assessment units for these species, including considering the regional approach for ecosystem/fisheries assessments/advice of ICES ecoregions. This list will be internally reviewed in ICES (e.g. by WGECO) and then passed to ACOM for consideration (Science Plan codes: 3.2, 3.5);
b) Compile a list of fish species of relevance for ICES bycatch advice and assessment units for these species, including considering the regional approach for ecosystem/fisheries assessments/advice of ICES ecoregions. This list will be internally reviewed in ICES (e.g. by WGECO) and then passed to ACOM for consideration (Science Plan codes: 3.2., 3.5).

WKCOFIBYC will report by 15 December 2020 for the attention of ACOM and SCICOM.

Supporting Information

Priority	High.
Scientific justification	This workshop will start bringing together two approaches running as yet in-parallel: fishes (including elasmobranchs) of conservation concern and bycatch relevance. It is very likely that follow-up workshops might be required, dependent on the success and outcome of this WK. **Term of Reference a):** This is a comprehensive list of fish species which are included in existing legislative or soft-legal frameworks that convey conservation interest upon particular species. This includes EU MSFD (D1C1-C5), EU Habitats Directive, EU Fish Redlist, CFP Prohibited Fish List, and various national designations or lists. To ensure ICES is prepared for changes in the list of species of concern, the WK will also identify fish species that, in the view of the WK should or could be included in future assessments. This should include the considerations by WGECO. The selection of assessment units will be informed by available information and data flows and be consistent with current assessment requirements. **Term of Reference b):** This is a comprehensive list of fish and elasmobranch species which will be considered in ICES bycatch advice, with the ultimate aim to deliver recurrent advice in Fisheries Overviews (i.e. advice structured by ecoregions) from 2022 onwards.
Resource requirements	None, apart from meeting facilities. Any additional resource requirements would be met by funded advisory requests from clients
Participants	It is envisaged that 12–15 people might attend such meetings.
Secretariat facilities	Secretariat facilities Meeting facilities and DATRAS support expertise.
Financial	No financial implications, however, the work area may create advice custom for ICES.
Linkages to advisory and science committees	ACOM for bycatch advice and also ecosystem advice under MSFD. ICES IBTSWG expertise required to understand all issues with DATRAS data and products. ICES

	WGBYC is beginning to collate and advise upon protected fish bycatch, but there are methodological issues to address, especially regarding raising of data.
Linkages to other groups	There is an obvious linkage with WKLIFE in terms of assessment methodologies. Other groups with some overlap with this area include: WGBYC, WGEF, WGDEEP, WGECO.
Linkages to other organizations	OSPAR, HELCOM, ICCAT-Bycatch Group (potentially EIFAC if anadromous species are to be considered).

1 Introduction

Background to the ICES Workshop on Fish of Conservation and Bycatch Relevance (WKCOFIBYC)

A central strength of ICES is its competence in assessing the status of fish stocks and providing advice to requesters on fishing opportunities. Increasingly ICES is also being asked to give advice on fish for biodiversity, management, or conservation issues. Much work has already been done in this field. Rare and threatened elasmobranchs and deep-water teleost species have been advised upon regularly over the years as part of routine advice to the EU and NEAFC. Regional Seas conventions also request fish biodiversity advice from ICES.

A challenge faced by ICES has been to prioritise which species or populations of fish to consider in its routine bycatch advice on protected, endangered, and threatened species (PETS), and in various assessments that may be conducted in the future of species of conservation concern. It is the purpose of this report to produce such lists, and do this by different ICES ecoregions.

Whilst previous ICES expert groups have summarised information on 'threatened fish' (e.g. ICES, 2004), much of that work is now out-of-date, given the increased use of nature conservation legislation for affording some protection to threatened fish and conservation initiatives for highlighting fish species of conservation concern.

These fish species are summarised from the following sources:

1. Prohibited species on EU fisheries regulations (see sections 2.1–2.2)
2. OSPAR List of Threatened and Declining Species (see section 2.1)
3. HELCOM–Helsinki Commission (see section 2.1)
4. Convention on International Trade in Endangered Species of Wild Fauna and Flora (see section 2.2)
5. Convention on the Conservation of Migratory Species of Wild Animals (see section 2.2)
6. European Red List of marine fishes (see section 2.6)
7. National legislation (see section 2.4)
8. The EU programme for data collection in the fisheries sector (see section 2.5)
9. Scientific studies (see section 2.5)
10. Species listed as Prohibited on NEAFC Regulations (see section 2.2)

The relevance of these species in the EU programme for data collection in the fisheries sector is also appraised.

2 Lists of fishes of conservation interest

WKCOFIBYC compiled all available legal, scientific, and any other relevant material that comprises a list of fish species of conservation interest. The work focussed on the ICES areas (FAO 27) and Mediterranean/Black Sea (FAO 37). The Mediterranean Sea was included because this area is included in ICES advice on bycatch and since ICES provides advice on aspects of the EU Marine Strategy Framework Directive (MSFD). These lists are presented in the six boxes below. WKCOFIBYC only made a survey of relevant legislation in all jurisdictions in the ICES areas, thus jurisdictions without relevant legislation are not listed below.

Regional Seas Conventions
OSPAR (NE Atlantic)
HELCOM (Baltic Sea)
Barcelona Convention (Mediterranean)
Bucharest Convention (Black Sea)

International Hard Law
EU Habitats Directive
EU CFP Prohibited Species
CITES
NEAFC Prohibited Species

International Agreements
Convention on Migratory Species (CMS)
Bern Convention

Non-EU Member State Hard Law
UK Wildlife and Countryside Act
UK-Scotland PSL
Iceland

Scientific / Monitoring lists
Fish Stock Advice (ICES, STECF, ICCAT, GFCM)
ICES WGECO analyses of sensitivity
WGBYC data call species list
MSFD - DCF Table 1D (now defunct)

Fish Red Lists
EU Marine
EU Freshwater
IUCN Global
IUCN Mediterranean

2.1 Regional Seas Conventions (RSCs)

2.1.1 OSPAR Commission

The OSPAR Commission compiled a List of Threatened and Declining Species and Habitats (https://www.ospar.org/work-areas/bdc/species-habitats/list-of-threatened-declining-species-habitats) which lists a range of marine taxa, with the fish that were listed detailed in Table 1 here.

The OSPAR List of Threatened and Declining Species did not use *a priori* assessments of all species to identify 'threatened and declining species', rather being based on the review of those species that were nominated by parties to OSPAR. This list of fish, largely developed in 2008, has

not generally changed over time and ICES has recently provided advice on the current status of the various elasmobranch species listed (ICES, 2020).

Table 1. Taxonomic list of fish species listed by OSPAR. OSPAR also noted that "*Fish species affected by fishing in this list are marked with an asterisk (*). These species are subject to management by an international or national fisheries authority or body. The OSPAR Commission has no competence to adopt programmes or measures on questions relating to the management of fisheries*".

	Scientific name	English name	OSPAR regions where the species occurs	OSPAR regions where the species is under threat and/or in decline
1	*Petromyzon marinus*	Sea lamprey	I, II, III, IV	All where it occurs
2	**Centrophorus granulosus*	Gulper shark	IV, V	All where it occurs
3	**Centrophorus squamosus*	Leafscale gulper shark	All	All where it occurs
4	**Centroscymnus coelolepis*	Portuguese dog-fish	All	All where it occurs
5	**Squalus acanthias*	Spurdog	All	All where it occurs
6	**Squatina squatina*	Angel shark	II, III, IV	All where it occurs
7	**Cetorhinus maximus*	Basking shark	All	All where it occurs
8	**Lamna nasus*	Porbeagle	All	All where it occurs
9	**Dipturus batis*	Common Skate	All	All where it occurs
10	**Raja clavata*	Thornback skate / ray	I, II, III, IV, V	II
11	**Raja montagui*	Spotted Ray	II, III, IV, V	All where it occurs
12	**Rostroraja alba*	White skate	II, III, IV	All where it occurs
13	**Acipenser sturio*	Sturgeon	II, IV	All where it occurs
14	**Anguilla anguilla*	European eel	I, II, III, IV	All where it occurs
15	**Alosa alosa*	Allis shad	II, III, IV	All where it occurs
16	*Coregonus lavaretus oxyrinchus*	Houting	II	All where it occurs
17	**Salmo salar*	Salmon	I, II, III, IV	All where it occurs
18	**Gadus morhua*– populations in the OSPAR regions II and III	Cod	All	II, III
19	**Hoplostethus atlanticus*	Orange roughy	I, V	All where it occurs
20	*Hippocampus guttulatus* (=*Hippocampus ramulosus*)	Long-snouted seahorse	II, III, IV, V	All where it occurs
21	*Hippocampus hippocampus*	Short-snouted seahorse	II, III, IV, V	All where it occurs
22	**Thunnus thynnus*	Bluefin tuna	V	All where it occurs

2.1.2 Helsinki Commission (HELCOM)

The Baltic Marine Environment Protection Commission, or Helsinki Commission (HELCOM), is an intergovernmental organization and regional sea convention for the Baltic Sea (https://helcom.fi). The "HELCOM Red List of Baltic Sea species in danger of becoming extinct" (HELCOM, 2013) included 33 species of fish (Table 2), including both marine species, as well as some typically freshwater species that may occur in the less saline parts of the Baltic Sea.

It may also be noted that this list of species includes some species that are more typical of the shelf seas of north-west Europe and for which the Baltic Sea is at the extreme edge of their distribution. The species listed under EU data collection programmes for the Baltic Sea (EU, 2016, 2019; see section 2.9) differ slightly from those listed by HELCOM (2013).

Table 2. Taxonomic list of fish species on the HELCOM Red List of Baltic Sea species (HELCOM, 2013).

	Family	Scientific name
1	Petromyzontidae	*Lampetra fluviatilis*
2		*Petromyzon marinus*
3	Squalidae	*Squalus acanthias*
4	Lamnidae	*Lamna nasus*
5	Triakidae	*Galeorhinus galeus*
6	Rajidae	*Dipturus batis*
7		*Raja clavata*
8	Acipenseridae	*Acipenser oxyrinchus*
9	Anguillidae	*Anguilla Anguilla*
10	Salmonidae	*Coregonus maraena*
11		*Salmo salar*
12		*Salmo trutta*
13		*Thymallus thymallus*
14	Cyprinidae	*Aspius aspius*
15	Gadidae	*Gadus morhua*
16		*Melanogrammus aeglefinus*
17		*Merlangius merlangus*
18	Lotidae	*Enchelyopus cimbrius*
19		*Lota lota*
20		*Molva molva*
21	Merluccidae	*Merluccius merluccius*

	Family	Scientific name
22	Cyclopteridae	*Cyclopterus lumpus*
23	Zoarcidae	*Lycodes gracilis*
24		*Zoarces viviparus*
25	Anarhichadidae	*Anarhichas lupus*
26	Gobiidae	*Lebetus guilleti*
27		*Lebetus scorpioides*
28		*Lesueurigobius friesii*
29		*Pomatoschistus norvegicus*
30		*Pomatoschistus pictus*
31	Scophthalmidae	*Scophthalmus maximus*
32		*Phrynorhombus norvegicus*
33		*Zeugopterus punctatus*

2.1.3 Barcelona Convention

The Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean is a regional convention adopted in 1976 to prevent and abate pollution from ships, air-craft, and land-based sources in the Mediterranean Sea. The protocol concerning specially protected areas and biological diversity (Annex II of the convention) contains a list of endangered or threatened species, see Table 3.

Table 3. Taxonomic list of fish species listed on the Barcelona Convention.

	Scientific name	English name
1	*Carcharias taurus*	Sand tiger shark
2	*Dipturus batis*	Common skate
3	*Galeorhinus galeus*	Tope shark
4	*Gymnura altavela*	Spiny butterfly ray
5	*Isurus oxyrinchus*	Shortfin mako shark
6	*Lamna nasus*	Porbeagle shark
7	*Leucoraja circularis*	Sandy ray
8	*Leucoraja melitensis*	Maltese ray
9	*Acipenser naccarii*	Adriatic sturgeon
10	*Acipenser sturio*	Atlantic sturgeon

	Scientific name	English name
11	*Aphanius fasciatus*	Mediterranean killifish
12	*Aphanius iberus*	Spanish toothcarp
13	*Carcharodon carcharias*	Great white shark
14	*Cetorhinus maximus*	Basking shark
15	*Hippocampus hippocampus*	Short-snouted seahorse
16	*Hippocampus ramulosus*	Long-snouted seahorse
17	*Huso huso*	Beluga
18	*Lethenteron zanandreai*	Lombardy lamprey
19	*Mobula mobular*	Giant devil ray
20	*Odontaspis ferox*	Smalltooth sand tiger
21	*Oxynotus centrina*	Angular roughshark
22	*Pomatoschistus canestrinii*	Canestrini's goby
23	*Pomatoschistus tortonesei*	Tortonese's goby
24	*Pristis pectinata*	Smalltooth sawfish
25	*Pristis pristis*	Largetooth sawfish
26	*Rhinobatos cemiculus*	Blackchin guitarfish
27	*Rhinobatos rhinobatos*	Common guitarfish
28	*Rostroraja alba*	White skate
29	*Sphyrna lewini*	Scalloped hammerhead
30	*Sphyrna mokarran*	Great hammerhead
32	*Sphyrna zygaena*	Smooth hammerhead
33	*Squatina aculeata*	Sawback angel shark
34	*Squatina oculata*	Smoothback angel shark
35	*Squatina squatina*	Angel shark
36	*Valencia hispanica*	Valencia toothcarp

2.1.4 Bucharest Convention

The Bucharest Convention (also called the Convention on the Protection of the Black Sea against Pollution) was signed by six Black Sea countries in Bucharest, Romania, on 21 April 1992 and entered into force on 15 January 1994. The Convention obliges the Contracting Parties to prevent, reduce, and control the pollution in the Black Sea in order to protect and preserve the marine

environment, marine biodiversity, and marine living resources. The Convention has a list in Annex II of species of biodiversity concern in the Black Sea (see Table 4).

Table 4. Taxonomic list of fish species listed on the Bucharest Convention.

	Scientific name	English name
1	*Acipenser nudiventris*	Ship sturgeon
2	*Acipenser stellatus*	Stellate sturgeon
3	*Acipenser sturio*	Atlantic sturgeon
4	*Acipenser gueldenstaedtii*	Russian sturgeon
5	*Arnoglossus kessleri*	Scaldback
6	*Benthophiloides brauneri*	Goby
7	*Benthophilus stellatus*	Stellate tadpole-goby
8	*Callionymus pusillus*	Sailfin dragonet
9	*Callionymus risso*	Risso's dragonet
10	*Caspiosoma caspium*	Ponto-Caspian goby
11	*Chelidonichthys lucernus*	Tub gurnard
12	*Hippocampus guttulatus*	Long-snouted seahorse
13	*Huso huso*	Beluga
14	*Labrus viridis*	Green wrasse
15	*Nerophis ophidion*	Straightnose pipefish
16	*Platichthys flesus*	European flounder
17	*Salmo trutta*	Sea Trout
18	*Sander marinus*	Estuarine perch
19	*Syngnathus abaster*	Black-striped pipefish
20	*Syngnathus tenuirostris*	Narrow-snouted pipefish
21	*Syngnathus typhle*	Broadnosed pipefish
22	*Syngnathus variegatus*	Thickly snouted pipefish

2.2 International hard law texts

2.2.1 EU Habitats Directive

The Habitats Directive (Council Directive 92/43/EEC) was adopted in 1992 as a response to the Bern Convention. The Habitats Directive requires national governments to specify areas that are expected to be ensuring the conservation of flora and fauna species. It is one of the main pillars of the European Union's system of wildlife and nature conservation. The annexes of the directive outline the protected habitats and species (Table 5).

Table 5. Subjects covered by different Annexes of the Habitats Directive.

Annex I	Habitats
Annex II	Species requiring designation of Special Areas of Conservation
Annex IV	Species in need of strict protection
Annex V	Species in which member countries may decide for themselves how to manage the population

2.2.2 EU CFP Prohibited Species List

Fish (and shellfish) species that are listed as 'prohibited' in EU fisheries regulations are included in at least three sets of regulations, including those for the conservation of fisheries resources through technical measures (EU, 2019b), annual fishing opportunities (e.g. EU, 2020) and the biennial fishing regulations for deep-sea fist stocks (e.g. EU, 2018). Regulations to prohibit the landing of species agreed in Regional Fisheries Management Organizations (RFMOs) for other management areas, such as the International Commission for the Conservation of Atlantic Tuna (ICCAT), are also included in EU regulations. The most recent regulations are detailed below and, for the sake of completeness, include relevant shellfish species.

It is prohibited for EU vessels to fish for, retain on board, tranship, land, store, sell, display or offer for sale fish (and shellfish) species listed in Annex I of Regulation (EU) 2019/1241 (EU, 2019b). The species listed are presented in Table 6 here.

Table 6. List of Prohibited species under the EU's Common Fisheries Policy Legislation.

	Scientific name	English name	Prohibited Area
1	*Anoxypristis cuspidata*	Narrow sawfish	All Union waters
2	*Pristis clavata*	Dwarf sawfish	All Union waters
3	*Pristis pectinata*	Smalltooth sawfish	All Union waters
4	*Pristis pristis*	Largetooth sawfish	All Union waters
5	*Pristis zijsron*	Green sawfish	All Union waters
6	*Cetorhinus maximus*	Basking shark	All waters
7	*Carcharodon carcharias*	White shark	All waters
8	*Etmopterus pusillus*	Smooth lantern shark	Union waters of ICES division 2a and subarea 4, and of ICES subareas 1, 5, 6, 7, 8, 12 and 14

	Scientific name	English name	Prohibited Area
9	*Manta alfredi*	Reef manta ray	All Union waters
10	*Manta birostris*	Giant manta ray	All Union waters
11	*Mobula mobular*	Devil fish	All Union waters
12	*Mobula rochebrunei*	Lesser Guinean devil ray	All Union waters
13	*Mobula japanica*	Spinetail mobula	All Union waters
14	*Mobula thurstoni*	Smoothtail mobula	All Union waters
15	*Mobula eregoodootenkee*	Longhorned mobula	All Union waters
16	*Mobula munkiana*	Munk's devil ray	All Union waters
17	*Mobula tarapacana*	Chilean devil ray	All Union waters
18	*Mobula kuhlii*	Shortfin devil ray	All Union waters
19	*Mobula hypostoma*	Lesser devil ray	All Union waters
20	*Raja (Dipturus) nidarosiensis*	Norwegian skate	Union waters of ICES divisions 6a, 6b, 7a, 7b, 7c, 7e, 7f, 7g, 7h and 7k
21	*Raja alba*	White skate	Union waters of ICES subareas 6-10
22	*Rhinobatidae*	Guitarfishes	Union waters of ICES subareas 1-10 and 12
23	*Squatina squatina*	Angel shark	All Union waters
24	*Salmo salar*	Salmon	Union waters of ICES sub-areas 1, 2 and 4-10
25	*Salmo trutta*	Sea trout	Union waters of ICES sub-areas 1, 2 and 4-10
26	*Coregonus oxyrhynchus*	Houting	Union waters of ICES division 4b
27	*Acipenser naccarii*	Adriatic sturgeon	All Union waters
28	*Acipenser sturio*	Common sturgeon	All Union waters
29	*Amblyraja radiata*	Starry ray	Union waters of ICES divisions 2a, 3a and 7d and ICES subarea 4
30	*Centrophorus squamosus*	Leafscale gulper shark	Union waters of ICES division 2a and subarea 4 and in Union and international waters of ICES subareas 1 and 14
31	*Centroscymnus coelolepis*	Portuguese dogfish	Union waters of ICES division 2a and subarea 4 and in Union and international waters of ICES subareas 1 and 14
32	*Dalatias licha*	Kitefin shark	Union waters of ICES division 2a and subarea 4 and in Union and international waters of ICES subareas 1 and 14
33	*Deania calcea*	Birdbeak dogfish	Union waters of ICES division 2a and subarea 4 and in Union and international waters of ICES subareas 1 and 14

	Scientific name	English name	Prohibited Area
34	*Dipturus batis*	Common skate	Union waters of ICES division 2a and ICES subareas 3, 4, 6, 7, 8, 9 and 10
35	*Etmopterus princeps*	Great lanternshark	Union waters of ICES division 2a and subarea 4 and in Union and international waters of ICES subareas 1 and 14
36	*Galeorhinus galeus*	Tope shark	Union waters of ICES division 2a and subarea 4 and in Union and international waters of ICES subareas 1, 5, 6, 7, 8, 12 and 14
37	*Lamna nasus*	Porbeagle	All Union waters
38	*Raja clavata*	Thornback ray	Union waters of ICES division 3a
39	*Raja undulata*	Undulate ray	Union waters of ICES subareas 6 and 10
40	*Rhincodon typus*	Whale shark	All Union waters
41	*Rhinobatos rhinobatos*	Common guitarfish	Mediterranean
42	*Squalus acanthias*	Picked dogfish	Union waters of ICES subareas 2, 3, 4, 5, 6, 7, 8, 9 and 10
43	*Alopias superciliosus*	Bigeye thresher sharks	
44	*Alopias Spp*	Thresher sharks	
45	*Sphyrnidae Spp*	Hammerhead sharks	Fisheries in the ICCAT Convention Area
46	*Carcharhinus longimanus*	Oceanic whitetip sharks	
47	*Carcharhinus falciformis*	Silky sharks	
48	*Hoplostethus atlanticus*	Orange roughy	Union and international waters of ICES subareas 1 to 10, 12 and 14
	Deep-sea shark species		
49	*Hexanchus griseus*	Bluntnose sixgill shark	ICES subareas 5 to 9, in Union and international waters of ICES subarea 10, in international waters of ICES subarea 12 and in Union waters of CECAF 34.1.1, 34.1.2 and 34.2 and to retain on board, tranship, relocate or land deep-sea sharks caught in those areas, with the exception of cases where TACs apply for bycatches in fisheries for black scabbardfish
50	*Chlamydoselachus anguineus*	Frilled shark	
51	*Apristurus* spp.	Deep-water catsharks	
52	*Galeus murinus*	Mouse catshark	
53	*Dalatias licha*	Kitefin shark	
54	*Centroscyllium fabricii*	Black dogfish	
55	*Etmopterus princeps*	Great lanternshark	
56	*Etmopterus spinax*	Velvet belly	
57	*Centroscymnus coelolepis*	Portuguese dogfish	
58	*Centroscymnus crepidater*	Longnose velvet dogfish	

	Scientific name	English name	Prohibited Area
59	*Scymnodon ringens*	Knifetooth dogfish	
60	*Somniosus microcephalus*	Greenland shark	
62	*Oxynotus paradoxus*	Sailfin roughshark	
63	*Centrophorus* spp.	Gulper shark	
64	*Deania calcea*	Birdbeak dogfish	

2.2.3 Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)

A range of fish species (Table 7) are listed on the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), which aims to ensure that international trade in wildlife products does not threaten the survival of the species (https://www.cites.org/).

Table 7. Taxonomic list of fish listed by CITES indicating which taxa occur in ICES areas (species denoted as "(Yes)" indicate those species that may potentially occur in the more southern and/or more oceanic parts of the ICES Area, but for which the populations are largely outside the ICES area and documented captures from the ICES area may relate to occasional vagrants).

Order	Family	Appendix I	Appendix II	Present in ICES areas
Lamniformes	Alopiidae		*Alopias* spp.	Yes
	Cetorhinidae		*Cetorhinus maximus*	Yes
	Lamnidae		*Carcharodon carcharias*	(Yes)
			Isurus oxyrinchus	Yes
			Isurus paucus	(Yes)
			Lamna nasus	Yes
Orectolobiformes	Rhincodontidae		*Rhincodon typus*	(Yes)
Carcharhiniformes	Carcharhinidae		*Carcharhinus falciformis*	(Yes)
			Carcharhinus longimanus	(Yes)
	Sphyrnidae		*Sphyrna lewini*	(Yes)
			Sphyrna mokarran	(Yes)
			Sphyrna zygaena	(Yes)
Myliobatiformes	Myliobatidae		*Manta* spp.	(Yes)
			Mobula spp.	(Yes)
Rhinopristiformes	Pristidae	Pristidae spp.		No
	Glaucostegidae		*Glaucostegus* spp.	(Yes)

Order	Family	Appendix I	Appendix II	Present in ICES areas
	Rhinidae		Rhinidae spp.	No
Acipenseriformes	Acipenseridae	*Acipenser brevirostrum*		No
		Acipenser sturio		Yes
			Acipenseriformes spp. [*]	Yes
Anguilliformes	Anguillidae		*Anguilla anguilla*	Yes
Cypriniformes	Catostomidae	*Chasmistes cujus*		No
	Cyprinidae		*Caecobarbus geertsii*	No
		Probarbus jullieni		No
Osteoglossiformes	Arapaimidae		*Arapaima gigas*	No
	Osteoglossidae	*Scleropages formosus*		No
		Scleropages inscriptus		No
Perciformes	Labridae		*Cheilinus undulatus*	No
	Pomacanthidae		*Holacanthus clarionensis*	No
	Sciaenidae	*Totoaba macdonaldi*		No
Siluriformes	Pangasiidae	*Pangasianodon gigas*		No
Syngnathiformes	Syngnathidae		*Hippocampus* spp.	Yes
Ceratodontiformes	Neoceratodontidae		*Neoceratodus forsteri*	No
Coelacanthiformes	Latimeriidae	*Latimeria* spp.		No

[*] Except the species included in Appendix I

2.2.4 North East Atlantic Fisheries Commission (NEAFC)

The North East Atlantic Fisheries Commission (NEAFC) is a regional fisheries management organization that maintains controls over fishing and fishing-related acts in the North East Atlantic Ocean. NEAFC states that its objective is "to ensure the long-term conservation and optimum utilization of the fishery resources in its Convention Area, providing sustainable economic, environmental and social benefits." The NEAFC area is continuous with the ICES area, however the NEAFC regulatory area comprises international waters of the wider NEAFC area.

NEAFC has recommendations(https://www.neafc.org/managing_fisheries/measures/current) relating to fish species that may be considered as 'sensitive'. These species are listed in Table 8.

- Recommendation 8/2019 on the *Conservation and Management Measures for Spurdog (Squalus acanthias) in the NEAFC Regulatory Area (2019–2020)* requires Contracting Parties to prohibit all directed fishing for spurdog in the Regulatory Area.
- Recommendation 7/2020 on the *Conservation and Management Measures for Porbeagle (Lamna nasus)* in the NEAFC Regulatory Area (2020–2023), requires Contracting Parties to prohibit all directed fishing for porbeagle shark in the Regulatory Area.

- Recommendation 8/2020 on the *Conservation and Management Measures for Basking Shark (Cetorhinus maximus) in the NEAFC Regulatory Area (2020–2023)* requires Contracting Parties to prohibit all directed fishing for basking shark in the Regulatory Area.
- Recommendation 9/2020 on the *Conservation and Management Measures for Deep Sea Sharks in the NEAFC Regulatory Area (2020–2023)* requires Contracting Parties to prohibit all directed fishing for deep-water sharks. The species listed are as also listed on EU TAC regulations (see section 2.2) and with the addition of black-mouth dogfish *Galeus melastomus.*
- Recommendation 10/2020 on *the Conservation and Management Measures for Deep Sea Rays (Rajiformes) in the NEAFC Regulatory Area (2020–2023)* requires Contracting Parties to prohibit all directed fishing for three species of skate (round skate *Rajella fyllae* (listed as *Raja fyllae),* Arctic skate *Amblyraja hyperborea* (listed as *Raja hyperborea*) and Norwegian skate *Dipturus nidarosiensis* (listed as *Raja nidarosiensis*)) in the Regulatory Area.
- Recommendation 11/2020 on the *Conservation and Management Measure for Deep Sea Chimaeras in the NEAFC Regulatory Area (2020–2023)* requires Contracting Parties to prohibit all directed fishing for three species of chimaera (Rabbitfish *Chimaera monstrosa*, large-eyed rabbit fish *Hydrolagus mirabilis* and straightnose rabbitfish *Rhinochimaera atlantica*) in the Regulatory Area.
- There are also other recommendations (e.g. 5/2020 and 6/2020) which set limits on the landings of grenadiers (roundnose grenadier *Coryphaenoides rupestris*, roughhead grenadier *Macrourus berglax*, roughsnout grenadier *Trachyrinchus scabrus* and other grenadiers (Macrouridae) in the NEAFC Regulatory Area.

Table 8. List of species which are prohibited by NEAFC. *Measures with equal effect as waters under their national jurisdiction. **Areas A: Xb and XIIc, XIIa1 and XIVb1. ** Areas B: VI b.1 and VII c.1 and VII k.1, V b.1a and XII.b.

	Scientific name	English name	Area	Directed Fisheries
1	*Lamna nasus*	Porbeagle	FAO 27	Prohibited
2	*Macrourus berglax*	Roughhead grenadier	Area A**	Prohibited
3	*Trachyrinchus scabrus*	Roughsnout grenadier	Areas A**	Prohibited
4	*Macrourus berglax*	Roughhead grenadier	Areas B**	Prohibited
5	*Trachyrinchus scabrus*	Roughsnout grenadier	Areas B**	Prohibited
6	*Cetorhinus maximus*	Basking shark	FAO 27	Prohibited
7	*Apristuris spp*	Iceland catshark	FAO 27	*
8	*Centrophorus granulosus*	Gulper shark	FAO 27	*
9	*Centrophorus squamosus*	Leafscale gulper shark	FAO 27	*
10	*Centroscyllium fabricii*	Greater lanternshark	FAO 27	*
11	*Centroscymnus coelolepis*	Portuguese dogfish	FAO 27	*
12	*Centroscymnus crepidater*	Longnose velvet dogfish	FAO 27	*

	Scientific name	English name	Area	Directed Fisheries
13	*Chlamydoselachus anguineus*	Frilled shark	FAO 27	*
14	*Dalatias licha*	Kitefin shark	FAO 27	*
15	*Deania calcea*	Birdbeak dogfish	FAO 27	*
16	*Etmopterus princeps*	Black dogfish	FAO 27	*
17	*Etmopterus spinax*	Velvet belly	FAO 27	*
18	*Galeus melastomus*	Blackmouth dogfish	FAO 27	*
19	*Galeus murinus*	Mouse catshark	FAO 27	*
20	*Hexanchus griseus*	Bluntnose six-gilled shark	FAO 27	*
21	*Oxynotus paradoxus*	Sailfin roughshark	FAO 27	*
22	*Scymnodon ringens*	Knifetooth dogfish	FAO 27	*
23	*Somniosus microcephalus*	Greenland shark	FAO 27	*
24	*Raja fyllae*	Round ray	FAO 27	*
25	*Raja hyperborea*	Arctic skate	FAO 27	*
26	*Raja nidarosiensis*	Norwegian skate	FAO 27	*
27	*Chimaera monstrosa*	Rabbit fish	FAO 27	*
28	*Hydrolagus mirabilis*	Large-eyed rabbit fish (Ratfish)	FAO 27	*
29	*Rhinochimaera atlantica*	Straightnose rabbitfish	FAO 27	*
30	*Lamna nasus*	Porbeagle	FAO 27	*

2.3 International treaties and soft law texts

2.3.1 Convention on the Conservation of Migratory Species of Wild Animals

The Convention on the Conservation of Migratory Species of Wild Animals (CMS; https://www.cms.int/) is an international convention that specializes in the conservation of migratory species, including their habitats and migration corridors. Migratory species that are considered as being threatened with extinction are listed on Appendix I (and CMS parties should strictly protect such species), whilst those migratory species that require international cooperation are listed on Appendix II. Fish species listed on CMS are summarised in Table 9.

There is also the associated (non-legally binding) Memorandum of Understanding on the Conservation of Migratory Sharks (https://www.cms.int/sharks/en) which aims to "achieve and maintain a favourable conservation status for migratory sharks based on the best available scientific information, taking into account the socio-economic and other values of these species for the people of the Signatories", with migratory sharks of unfavourable conservation status listed in Annex I of the Sharks MoU.

Table 9. Taxonomic list of fish listed by CMS indicating which taxa occur in ICES areas (species denoted as "(Yes)" indicate those species that may potentially occur in the more southern and/or more oceanic parts of the ICES areas, but for which the populations are largely outside the ICES area and documented captures from the ICES areas may relate to occasional vagrants).

Family	Scientific name	CMS			Present in ICES areas
		App. I	App. II	Sharks MoU (Annex I)	
Squalidae	*Squalus acanthias*[1]	–	2008	2010	Yes
Squatinidae	*Squatina squatina*	2017	2017	2018	Yes
Alopiidae	*Alopias pelagicus*	–	2014	2016	No
	Alopias superciliosus	–	2014	2016	Yes
	Alopias vulpinus	–	2014	2016	Yes
Cetorhinidae	*Cetorhinus maximus*	2005	2005	2010	Yes
Lamnidae	*Carcharodon carcharias*	2002	2002	2010	(Yes)
	Isurus oxyrinchus	–	2008	2010	Yes
	Isurus paucus	–	2008	2010	(Yes)
	Lamna nasus	–	2008	2010	Yes
Rhincodontidae	*Rhincodon typus*	2017	1999	2010	(Yes)
Triakidae	*Galeorhinus galeus*	–	2020	–	Yes
Carcharhinidae	*Carcharhinus falciformis*	–	2014	2016	(Yes)
	Carcharhinus longimanus	2020	2020	2018	(Yes)
	Carcharhinus obscurus	–	2017	2018	(Yes)
	Prionace glauca	–	2017	–	Yes
Sphyrnidae	*Sphyrna lewini*	–	2014	2016	(Yes)
	Sphyrna mokarran	–	2014	2016	(Yes)
	Sphyrna zygaena	–	2020	2018	(Yes)
Rhinobatidae	*Rhinobatos rhinobatos*	2017 (Med)	2017	2018	(Yes)

[1] Northern hemisphere populations only

Family	Scientific name	CMS			Present in ICES areas
		App. I	App. II	Sharks MoU (Annex I)	
Rhinidae	*Rhynchobatus australiae*	–	2017	2018	No
	Rhynchobatus djiddensis	–	–	2018	No
	Rhynchobatus laevis	–	–	2018	No
Pristidae	*Anoxypristis cuspidata*	2014	2014	2016	No
	Pristis clavata	2014	2014	2016	No
	Pristis pectinata	2014	2014	2016	No
	Pristis pristis	2014	2014	2016	No
	Pristis zijsron	2014	2014	2016	No
Mobulidae	*Manta birostris*	2014	2014	2016	(Yes)
	Manta alfredi	2014	2014	2016	No
	Mobula eregoodootenkee	2014	2014	2016	No
	Mobula hypostoma	2014	2014	2016	No
	Mobula japanica	2014	2014	2016	No
	Mobula kuhlii	2014	2014	2016	No
	Mobula mobular	2014	2014	2016	(Yes)
	Mobula munkiana	2014	2014	2016	No
	Mobula rochebrunei	2014	2014	2016	No
	Mobula tarapacana	2014	2014	2016	No
	Mobula thurstoni	2014	2014	2016	No
Acipenseridae	*Acipenser baerii baicalensis*		1999	n/a	
	Acipenser fulvescens		1979	n/a	
	Acipenser gueldenstaedtii		1999	n/a	
	Acipenser medirostris		1999	n/a	
	Acipenser mikadoi		1999	n/a	
	Acipenser naccarii		1999	n/a	
	Acipenser nudiventris		1999	n/a	
	Acipenser persicus		1999	n/a	
	Acipenser ruthenus		1999	n/a	

Family	Scientific name	CMS			Present in ICES areas
		App. I	App. II	Sharks MoU (Annex I)	
	Acipenser schrenckii		1999	n/a	
	Acipenser sinensis		1999	n/a	
	Acipenser stellatus		1999	n/a	
	Acipenser sturio	2005	1999	n/a	Yes
	Huso huso		1979	n/a	
	Huso dauricus		1999	n/a	
	Pseudoscaphirhynchus fedtschenkoi		1999	n/a	
	Pseudoscaphirhynchus hermanni		1999	n/a	
	Pseudoscaphirhynchus kaufmanni		1999	n/a	
Polyodontidae	*Psephurus gladius*		1999	n/a	No
Anguillidae	*Anguilla anguilla*		2014	n/a	Yes
Pangasiidae[2]	*Pangasianodon gigas*	1979		n/a	No

2.3.2 Bern Convention

The Bern Convention on the Conservation of European Wildlife and Natural Habitats, is a binding international legal instrument in the field of Nature Conservation, it covers the natural heritage in Europe, as well as in some African countries. The Convention was open for signature on 19 September 1979 and came into force on 1 June 1982. It is particularly concerned about protecting natural habitats and endangered species, including migratory species. Many of its provisions have been subsumed into the Habitats Directive of the EU. Table 10 shows species of fish listed by the Convention.

Table 10. Fish species listed in the Bern Convention appendix II (Strictly protected fauna species) and appendix III (Protected fauna species).

	Family	Scientific name	Appendices
1	Petromyzonidae	*Lethenteron zanandrai*	Appendix II
2	Cetorhinidae	*Cetorhinus maximus*	Appendix II
3	Lamnidae	*Carcharodon carcharias*	Appendix II
4	Myliobatidae	*Mobula mobular*	Appendix II
5	Acipenseridae	*Acipenser naccarii*	Appendix II

[2] CMS list this species as being in the Family Schilbeidae.

	Family	Scientific name	Appendices
6	Acipenseridae	*Acipenser sturio*	Appendix II
7	Acipenseridae	*Huso huso*	Appendix II
8	Umbridae	*Umbra krameri*	Appendix II
9	Cyprinodontidae	*Aphanius fasciatus*	Appendix II
10	Cyprinodontidae	*Aphanius iberus*	Appendix II
11	Cyprinodontidae	*Valencia hispanica*	Appendix II
12	Cyprinodontidae	*Valencia leutourneuxi*	Appendix II
13	Syngnathidae	*Hippocampus hippocampus*	Appendix II
14	Syngnathidae	*Hippocampus ramulosus*	Appendix II
15	Percidae	*Romanichthys valsanicola*	Appendix II
16	Percidae	*Zingel asper*	Appendix II
17	Gobiidae	*Pomatoschistus canestrinii*	Appendix II
18	Gobiidae	*Pomatoschistus tortonesei*	Appendix II
19	Lamnidae	*Isurus oxyrinchus*	Appendix III
20	Lamnidae	*Lamna nasus*	Appendix III
21	Carcharhinidae	*Prionace glauca*	Appendix III
22	Squatinidae	*Squatina squatina*	Appendix III
23	Rajidae	*Raja alba*	Appendix III
24	Petromyzonidae	*Eudontomyzon hellenicum*	Appendix III
25	Petromyzonidae	*Eudontomyzon mariae*	Appendix III
26	Petromyzonidae	*Eudontomyzon vladykovi*	Appendix III
27	Petromyzonidae	*Lampetra fluviatilis*	Appendix III
28	Petromyzonidae	*Lampetra planeri*	Appendix III
29	Petromyzonidae	*Lampetra zanandreai*	Appendix III
30	Petromyzonidae	*Petromyzon marinus*	Appendix III
31	Acipenseridae	*Acipenser ruthenus*	Appendix III
32	Acipenseridae	*Acipenser stellatus*	Appendix III
33	Acipenseridae	*Huso huso*	Appendix III
34	Clupeidae	*Alosa alosa*	Appendix III

	Family	Scientific name	Appendices
35	Clupeidae	*Alosa fallox*	Appendix III
36	Clupeidae	*Alosa pontica*	Appendix III
37	Coregonidae	*Coregonus all species*	Appendix III
38	Thymallidae	*Thymallus thymallus*	Appendix III
39	Salmonidae	*Hucho hucho*	Appendix III
40	Salmonidae	*Salmo salar*	Appendix III
41	Cyprinidae	*Abramis ballerus*	Appendix III
42	Cyprinidae	*Abramis sapa*	Appendix III
43	Cyprinidae	*Abramis vimba*	Appendix III
44	Cyprinidae	*Alburnoides bipunctatus*	Appendix III
45	Cyprinidae	*Alburnus albidus*	Appendix III
46	Cyprinidae	*Aspius aspius*	Appendix III
47	Cyprinidae	*Barbus bocagei*	Appendix III
48	Cyprinidae	*Barbus comiza*	Appendix III
49	Cyprinidae	*Barbus meridionalis*	Appendix III
50	Cyprinidae	*Barbus microcephalus*	Appendix III
51	Cyprinidae	*Barbus peloponesis*	Appendix III
52	Cyprinidae	*Barbus plebejus*	Appendix III
53	Cyprinidae	*Barbus sclateri*	Appendix III
54	Cyprinidae	*Barbus steindachneri*	Appendix III
55	Cyprinidae	*Chalcalburnus chalcoides*	Appendix III
56	Cyprinidae	*Chondrostoma genei*	Appendix III
57	Cyprinidae	*Chondrostoma kneri*	Appendix III
58	Cyprinidae	*Chondrostoma lemingi*	Appendix III
59	Cyprinidae	*Chondrostoma lusitanicum*	Appendix III
60	Cyprinidae	*Chondrostoma nasus*	Appendix III
61	Cyprinidae	*Chondrostoma phoxinus*	Appendix III
62	Cyprinidae	*Chondrostoma polylepis*	Appendix III
63	Cyprinidae	*Chondrostoma soetta*	Appendix III

	Family	Scientific name	Appendices
64	Cyprinidae	*Chondrostoma toxostoma*	Appendix III
65	Cyprinidae	*Chondrostoma willkommi*	Appendix III
66	Cyprinidae	*Gobio albipinnatus*	Appendix III
67	Cyprinidae	*Gobio kessleri*	Appendix III
68	Cyprinidae	*Gobio uranoscopus*	Appendix III
69	Cyprinidae	*Leucaspius delineatus*	Appendix III
70	Cyprinidae	*Leucaspius stymphalicus*	Appendix III
71	Cyprinidae	*Leuciscus illyricus*	Appendix III
72	Cyprinidae	*Leuciscus lucumotis*	Appendix III
73	Cyprinidae	*Leuciscus microlepis*	Appendix III
74	Cyprinidae	*Leuciscus polylepis*	Appendix III
76	Cyprinidae	*Leuciscus pyrenaicus*	Appendix III
77	Cyprinidae	*Leuciscus soufia*	Appendix III
78	Cyprinidae	*Leuciscus svallize*	Appendix III
79	Cyprinidae	*Leuciscus turskyi*	Appendix III
80	Cyprinidae	*Leuciscus ukliva*	Appendix III
81	Cyprinidae	*Pachychilon pictum*	Appendix III
82	Cyprinidae	*Pelecus cultratus*	Appendix III
83	Cyprinidae	*Phoxinellus adspersus*	Appendix III
84	Cyprinidae	*Phoxinellus hispanicus*	Appendix III
85	Cyprinidae	*Pseudophoxinus marathonicus*	Appendix III
86	Cyprinidae	*Pseudophoxinus stymphalicus*	Appendix III
87	Cyprinidae	*Rhodeus sericeus*	Appendix III
88	Cyprinidae	*Rutilus alburnoides*	Appendix III
89	Cyprinidae	*Rutilus arcasii*	Appendix III
90	Cyprinidae	*Rutilus frisii*	Appendix III
91	Cyprinidae	*Rutilus graecus*	Appendix III
92	Cyprinidae	*Rutilus lemmingii*	Appendix III
93	Cyprinidae	*Rutilus macedonicus*	Appendix III

	Family	Scientific name	Appendices
94	Cyprinidae	*Rutilus macrolepidotus*	Appendix III
95	Cyprinidae	*Rutilus pigus*	Appendix III
96	Cyprinidae	*Rutilus racovitzai*	Appendix III
97	Cyprinidae	*Rutilus rubilio*	Appendix III
98	Cobitidae	*Cobitis elongata*	Appendix III
99	Cobitidae	*Cobitis hassi*	Appendix III
100	Cobitidae	*Cobitis larvata*	Appendix III
101	Cobitidae	*Cobitis paludicola*	Appendix III
102	Cobitidae	*Cobitis taenia*	Appendix III
103	Cobitidae	*Cobitis trichonica*	Appendix III
104	Cobitidae	*Misgurnis fossilis*	Appendix III
105	Cobitidae	*Sabanejewia aurata*	Appendix III
106	Cobitidae	*Sabanejewia calderoni*	Appendix III
107	Siluridae	*Siluris aristotelis*	Appendix III
108	Siluridae	*Siluris glanis*	Appendix III
109	Cyprinodontidae	*Aphanius fasciatus*	Appendix III
110	Cyprinodontidae	*Aphanius iberus*	Appendix III
111	Syngnathidae	*Syngnathus abaster*	Appendix III
112	Syngnathidae	*Syngnathus nigrolineatus*	Appendix III
113	Gasterosteidae	*Pungitius hellenicus*	Appendix III
114	Gasterosteidae	*Tuntitius platygaster*	Appendix III
115	Cottidae	*Cottus poecilopus*	Appendix III
116	Cottidae	*Myoxocephalus quadricornis*	Appendix III
117	Serranidae	*Epinephelus marginatus*	Appendix III
118	Sciaenidae	*Sciæna umbra*	Appendix III
119	Sciaenidae	*Umbrina cirrosa*	Appendix III
120	Percidae	*Gymnocephalus baloni*	Appendix III
121	Percidae	*Gymnocephalus schraetzer*	Appendix III
122	Percidae	*Stizostedion volgense*	Appendix III

	Family	Scientific name	Appendices
123	Percidae	*Zingel streber*	Appendix III
124	Percidae	*Zingel zingel*	Appendix III
125	Blenniidae	*Blennius fluviatilis*	Appendix III
126	Gobiidae	*Gobius fluviatilis*	Appendix III
127	Gobiidae	*Gobius kessleri*	Appendix III
128	Gobiidae	*Gobius nigricans*	Appendix III
129	Gobiidae	*Gobius ophiocephalus*	Appendix III
130	Gobiidae	*Gobius syrman*	Appendix III
131	Gobiidae	*Gobius thressalus*	Appendix III
132	Gobiidae	*Padogobius martensi*	Appendix III
133	Gobiidae	*Padogobius panizzai*	Appendix III
134	Gobiidae	*Pomatoschistus canestrini*	Appendix III
135	Gobiidae	*Pomatoschistus microps*	Appendix III
136	Gobiidae	*Pomatoschistus minutus*	Appendix III
137	Gobiidae	*Proterorhinus marmoratus*	Appendix III

2.4 National law (non-EU member states)

National governments may also have other legal instruments through which various species of flora and fauna can be provided with legal protection nationally.

2.4.1 United Kingdom (UK)

The main legislation that can be considered as hard law in the United Kingdom is the Wildlife and Countryside Act (WCA), (https://www.legislation.gov.uk/ukpga/1981/69) which was enacted in 1981 has provisions to protect species of flora and fauna. Section 9 of the WCA states that: "*Subject to the provisions of this Part, if any person intentionally kills, injures or takes any wild animal included certain wild in Schedule 5, he shall be guilty of an offence*", with Schedule 5 of the WCA listing protected species of animals (Table 11 below). The WCA, however, does not apply to the Crown Dependencies (see Isle of Man, Jersey and Guernsey, below).

The UK list of Priority Habitats and Species (https://jncc.gov.uk/our-work/uk-bap-priority-species/) also lists **51 taxa of fish** which should be considered in biodiversity conservation.

Table 11. Taxonomic list of fish species and whether they are listed on Schedule 5 of the Wildlife and Countryside Act (WCA); Species of Principal Importance in England (NERC/S41); Conservation (Nature Habitats, etc.) Regulations (Northern Ireland) 1995 (Con. Reg.NI); Northern Ireland Priority Species List (NIPSL); Scottish Biodiversity List (SBL); Conservation of Habitats and Species Regulations 2010 (CHSR, 2010); UK list of Priority Habitats and Species (UKBAP); Environment (Wales) Act 2016 - Species of Principal Importance in Wales (E(W)A/SPIW); and the Sharks, Skates and Rays (Prohibition of Fishing, Transhipment and Landing) (Scotland) Order 2012 (SSO).

Family	Species	WCA	NERC/S41	Con. Reg.NI	NIPSL	SBL	CHSR, 2010	UKBAP	E(W)A/SPIW	SSO
Petromyzontidae	*Lampetra fluviatilis*		X	X	X	X	X	X	X	
Petromyzontidae	*Lampetra planeri*					X				
Petromyzontidae	*Petromyzon marinus*		X			X		X	X	
Hexanchidae	*Hexanchus griseus*									X
Chlamydoselachidae	*Chlamydoselachus anguineus*									X
Cetorhinidae	*Cetorhinus maximus*	X	X		X	X		X	X	
Lamnidae	*Isurus oxyrinchus*		X					X		
Lamnidae	*Lamna nasus*		X		X	X		X	X	X
Pentanchidae	*Galeus melastomus*									X
Scyliorhinidae	Apristurus spp.									X
Triakidae	*Galeorhinus galeus*		X		X	X		X	X	X
Carcharhinidae	*Prionace glauca*		X			X		X	X	
Dalatiidae	*Dalatias licha*		X			X		X		X
Etmopteridae	*Centroscyllium fabricii*									X
Etmopteridae	*Etmopterus princeps*									X
Etmopteridae	*Etmopterus spinax*									X
Somniosidae	*Centroscymnus coelolepis*		X			X		X		X
Somniosidae	*Centroscymnus crepidater*									X
Somniosidae	*Scymnodon ringens*									X
Somniosidae	*Somniosus microcephalus*									X
Oxynotidae	*Oxynotus paradoxus*									X
Centrophoridae	*Centrophorus granulosus*		X			X		X		
Centrophoridae	*Centrophorus squamosus*		X			X		X		X
Centrophoridae	*Deania calcea*									X
Squalidae	*Squalus acanthias*		X		X	X		X	X	X

Family	Species	WCA	NERC/S41	Con. Reg.NI	NIPSL	SBL	CHSR, 2010	UKBAP	E(W)A/SPIW	SSO
Squatinidae	*Squatina squatina*	X			X	X		X	X	X
Rajidae	*Dipturus batis*		X		X	X		X	X	X
Rajidae	*Leucoraja circularis*					X		X		
Rajidae	*Raja brachyura*								X	
Rajidae	*Raja clavata*					X			X	
Rajidae	*Raja undulata*		X		X			X	X	X
Rajidae	*Rostroraja alba*	X	X					X	X	X
Acipenseridae	*Acipenser sturio*	X	X			X	X	X		
Anguillidae	*Anguilla anguilla*		X		X	X		X	X	
Clupeidae	*Alosa alosa*	X	X	X	X	X	X	X	X	
Clupeidae	*Alosa fallax*	X	X	X		X	X	X	X	
Clupeidae	*Alosa fallax* subsp. *fallax*				X					
Clupeidae	*Clupea harengus*		X		X	X		X	X	
Cobitidae	*Cobitis taenia*		X					X		
Cyprinidae	*Barbus barbus*						X			
Salmonidae	*Coregonus albula*	X	X			X	X	X		
Salmonidae	*Coregonus autumnalis*				X			X		
Salmonidae	*Coregonus lavaretus*	X	X			X	X	X	X	
Salmonidae	*Salmo salar*		X	X	X	X	X	X	X	
Salmonidae	*Salmo trutta*		X		X	X		X	X	
Salmonidae	*Salvelinus alpinus*		X		X	X		X	X	
Salmonidae	*Thymallus thymallus*						X			
Osmeridae	*Osmerus eperlanus*		X		X	X		X	X	
Macrouridae	*Coryphaenoides rupestris*		X			X		X		
Gadidae	*Gadus morhua*		X		X	X		X	X	
Gadidae	*Merlangius merlangus*		X		X	X		X	X	
Gadidae	*Micromesistius poutassou*		X			X		X		
Gadidae	*Trisopterus esmarkii*					X				

Family	Species	WCA	NERC/S41	Con. Reg.NI	NIPSL	SBL	CHSR, 2010	UKBAP	E(W)A/SPIW	SSO
Lotidae	*Lota lota*	X	X					X		
Lotidae	*Molva dypterygia*		X			X		X		
Lotidae	*Molva molva*		X		X	X		X	X	
Merlucciidae	*Merluccius merluccius*		X		X	X		X	X	
Trachichthyidae	*Hoplostethus atlanticus*		X			X		X		
Scombridae	*Scomber scombrus*		X		X	X		X	X	
Scombridae	*Thunnus thynnus*		X			X		X		
Trichiuridae	*Aphanopus carbo*		X			X		X		
Syngnathidae	*Hippocampus guttulatus*	X	X			X		X	X	
Syngnathidae	*Hippocampus hippocampus*	X	X					X		
Gobiidae	*Gobius cobitis*	X								
Gobiidae	*Gobius couchi*	X								
Pleuronectidae	*Hippoglossus hippoglossus*		X			X		X		
Pleuronectidae	*Pleuronectes platessa*		X		X	X		X	X	
Pleuronectidae	*Reinhardtius hippoglossoides*		X			X		X		
Soleidae	*Solea solea*		X		X	X		X	X	
Carangidae	*Trachurus trachurus*		X		X			X	X	
Lophiidae	*Lophius piscatorius*		X		X	X		X	X	
Ammodytidae	*Ammodytes marinus*		X		X	X		X	X	
Ammodytidae	*Ammodytes tobianus*					X				
Sebastidae	*Sebastes viviparus*					X				

UK - England and Wales

The Conservation of Habitats and Species Regulations 2010 is a Statutory Instrument (SI 2010/ No. 490) (https://www.legislation.gov.uk/uksi/2010/490/made/data.pdf) that relates to England and Wales. Under this SI, it is an offence to (a) deliberately capture, injure or kill any wild animal of a European protected species (as listed in Schedule 2 of the SI), (b) deliberately disturb wild animals of any such species, (c) deliberately take or destroy the eggs of such an animal, or (d) damage or destroy a breeding site or resting place of such an animal. This thus affords protection on the sturgeon *Acipenser sturio*. This SI also has other fish species listed on Schedule 4 (animals which may not be captured or killed in certain ways), with the SI making it an offence to kill or take fish using poisons or explosives.

Under this SI, it is also illegal to "*use for the purpose of capturing or killing*" any of the Schedule 4-listed species by "*any other means of capturing or killing which is indiscriminate and capable of causing the local disappearance of, or serious disturbance to, a population of any species of animal listed in Schedule 4 or any European protected species of animal*". Fish listed on Schedule 4 include a range of freshwater species (barbel *Barbus barbus*, grayling *Thymallus thymallus*, Atlantic salmon *Salmo salar* (only in fresh water), vendace *Coregonus albula* and whitefish *Coregonus lavaretus*) as well as some diadromous species (river lamprey *Lampetra fluviatilis*, allis shad *Alosa alosa* and twaite shad *A. fallax*.

UK - England

Various rare and threatened species are listed under Section 41 (S41; *Species of Principal Importance in England*) of the Natural Environment and Rural Communities (NERC) Act of 2006 (https://www.legislation.gov.uk/ukpga/2006/16/section/41). There are currently **48 taxa of fish** listed on S41. Under the NERC Act, the Secretary of State should "*take such steps as appear… reasonably practicable to further the conservation of the living organisms and types of habitat included in any list published under this section*". Whilst highlighting those species deemed of high conservation interest, it does not confer species protection, with several of the listed species being of importance to commercial and/or recreational fisheries.

UK - Northern Ireland

The Conservation (Nature Habitats, etc.) Regulations (Northern Ireland) 1995 (amended 2004) includes a list of species of protected species, and a list of animals which "*may not be taken or killed in certain ways*" (https://www.legislation.gov.uk/nisr/1995/380/contents/made). In terms of the latter, four species of fish are listed, river lamprey *Lampetra fluviatilis*, Atlantic salmon *Salmo salar* (only in fresh water), allis shad *Alosa alosa* and twaite shad *A. fallax*, and it is prohibited to use poisons or explosives to take or kill these listed fish species.

The Northern Ireland Priority Species List (https://www.daera-ni.gov.uk/sites/default/files/publications/doe/northern-ireland-priority-species-list.pdf) of March 2010 lists **27 taxa of fish.**

UK - Scotland

The Scottish Biodiversity List provides a list of animals, plants, and habitats that Scottish ministers should consider to be of principal importance when considering biodiversity conservation in Scotland (https://www.nature.scot/scotlands-biodiversity/scottish-biodiversity-strategy/scottish-biodiversity-list). There are currently **48 taxa of fish** listed (Table 11), although some of these are freshwater.

The Sharks, Skates and Rays (Prohibition of Fishing, Transhipment and Landing) (Scotland) Order 2012 is a Scottish Statutory Instrument (2012/No 63). This SI (https://www.legislation.gov.uk/ssi/2012/63/made) prohibits the landing of *Galeorhinus galeus*, with landings of listed elasmobranchs also prohibited (for rod and line, and hand-line fisheries), stating that "*the landing of any specified species caught by rod and line or hand-line (wherever caught), from a boat or vessel to which this article applies, is prohibited in Scotland*". This SI, therefore, provides protection for listed species from recreational fisheries. The listed species are: *Squatina squatina*, *Dipturus batis*, *Raja undulata*, *Rostroraja alba*, *Lamna nasus*, *Squalus acanthias*, *Scymnodon ringens*, *Oxynotus paradoxus*, *Etmopterus princeps*, *Centrophorus squamosus*, *Centroscymnus coelolepis*, *Galeus melastomus*, *Centroscymnus crepidater*, *Centroscyllium fabricii*, *Somniosus microcephalus*, *Hexanchus griseus*, *Etmopterus spinax*, *Apristurus* spp. and *Chlamydoselachus anguineus*.

UK - Wales

The Environment (Wales) Act 2016 (https://www.biodiversitywales.org.uk/Environment-Wales-Act) supports the "*sustainable management of natural resources*". Section 7 of the act provides a list

of species and habitats that Welsh ministers should consider to be of key significance for sustaining and improving biodiversity in Wales. The listed species of Principal Importance in Wales includes **33 taxa of fish** (Table 11).

Isle of Man

Section 9 of the Isle of Man's Wildlife Act 1990 states that "*Subject to the provisions of this Part, if any person intentionally or recklessly kills, injures or takes any wild animal included in Schedule 5 without reasonable excuse, he shall be guilty of an offence*". Currently one fish species (basking shark *Cetorhinus maximus*) is listed on Schedule 5 (http://www.legislation.gov.im/cms/images/LEGISLATION/PRINCIPAL/1990/1990-0002/WildlifeAct1990_2.pdf).

Jersey

Whilst no fishes were included on the original Conservation of Wildlife (Jersey) Law 2000, bluefin tuna *Thunnus thynnus* was added to the list of Protected Wild Animals in 2020 (https://www.gov.je/SiteCollectionDocuments/Environment%20and%20greener%20living/ID%20Conservation%20of%20Wildlife%20(Jersey)%20Law%202000%2020181016%20DM.pdf)

There have been recent consultations on further updates to the Wildlife (Jersey) Law (https://www.gov.je/SiteCollectionDocuments/Environment%20and%20greener%20living/LD%20Draft%20Wildlife%20Law%20Jersey%20201%2020181102%20DM.pdf) scheduled for revision in 2021. Fish species included in the consultations for listing as Protected Wild Animals also comprising allis shad *Alosa alosa*, twaite shad *A. fallax*, lumpsucker *Cyclopterus lumpus*, long-snouted seahorse *Hippo-campus guttulatus*, short-snouted seahorse *H. hippocampus*, Sturgeon *Acipenser sturio*, Sunfish *Mola mola* and a more generic category of "*Sharks, pelagic (all species except houndsharks and catsharks); Selachimorpha (except Triakidae and Scyliorhinidae)*".

There is also a degree of protection for other fish species through a combination of zero quotas (for commercial fisheries) and zero bag limit for recreational fisheries (P. Chambers, Government of Jersey, Pers. comm.). These species, which do not all occur in the waters of Jersey, are bluefin tuna (also legally protected) as well as albacore tuna *Thunnus alalunga*, angel shark *Squatina squatina*, basking shark *Cetorhinus maximus*, bigeye tuna *Thunnus obesus*, black skate *Dipturus nidarosiensis*, blue shark *Prionace glauca*, common skate *Dipturus batis*-complex, orange roughy *Hoplostethus atlanticus*, porbeagle *Lamna nasus*, shad *Alosa* spp., smooth hammerhead *Sphyrna zygaena*, spurdog *Squalus acanthias*, tope *Galeorhinus galeus*, white shark *Carcharodon carcharias and* white skate *Rostroraja alba*. The giant goby *Gobius cobitis* just has a zero-bag limit.

Guernsey

Whilst the WCA does not apply on Guernsey, basking shark has been protected since 1997, with Ordinance No. XXV of 1997 (Fishing Ordinance, 1997) stating that "*No person shall land, import, export, take, kill, injure, buy, sell or have in his possession any small cetacean or basking shark*" and that "*A person who takes any fish, small cetacean or basking shark in contravention of subsection (1) or (2) shall return it to the sea forthwith*". See:

(file:///C:/Users/jre00/OneDrive%20-%20CEFAS/M%20Drive/Marine%20conservation%20issues/Wildlife%20and%20Countryside%20Act/Guernsey%201997.pdfx

2.4.2 Iceland

Reglugerð um bann við veiðum á háfi, hámeri og beinhákarli nr 456/2017 states that spiny dogfish/spurdog, porbeagle and basking shark are protected in Icelandic waters and all targeted fishing prohibited. Reglugerð um veiðar á lúðu nr 470/2012 states that all targeted fishing of Atlantic halibut is prohibited and all Atlantic halibut that are caught should be released if

deemed viable. Reglugerð um bann við álaveiðum nr 408/2019 states that all targeted commercial fishing for eels (American and European) both in sea and freshwater is prohibited. Traditional fishing for own consumption is allowed with a special permit, but sale of eel products is prohibited.

2.5 Scientific/monitoring lists

2.5.1 WGECO

Greenstreet *et al*. (2012) identified sensitive fish species in the North Sea demersal fish assemblage to be used in species-level indicators for informing on the Marine Strategy Framework Directive (MSFD). Of the 40 species identified as sensitive (Table 8), many are assessed by ICES, either in the North Sea or in adjacent areas, highlighting the potential overlap between species of commercial importance and conservation interest.

Rindorf *et al*. (2020), when analysing data for those fish species captured in trawl surveys in the North East Atlantic, identified 59 species that could be considered as 'sensitive' (Table 8).

Several approaches have been used in ICES and elsewhere to identify sensitive species. They differ both in the amount of information required and in the number of species to which they have been applied. Two of them (Hobday *et al*., 2011; Greenstreet *et al*., 2012) use ranking of species based on life history characteristics identified in the literature as being indicative of species sensitivity (slow growth, late maturity, large asymptotic size etc.). The Hobday *et al*. approach operates with three different sensitivity rankings for seven traits indicative of sensitivity whereas the Greenstreet *et al*. takes a continuous approach to four traits indicative of sensitivity. The Greenstreet *et al.* method proceeds to identify sensitive species as the most sensitive 33% of all species. In contrast, the Hobday *et al*. method uses cut-offs based on life history traits.

Other methods use modelling to estimate the Spawning Stock Biomass (SSB) per recruit at different levels of fishing mortality. These include the methods published by Le Quesne and Jennings (2012) and Rindorf *et al.* (2020). The latter includes information on species catchability to identify the fisheries impact on different types and sizes of fish. Sensitive species are identified as species with a lower fishing mortality required to reduce the SSB per recruit to 25% than the most sensitive major commercial species. Among the 270 species examined, 59 were identified as sensitive.

As expected since different input data are used, the methods do not provide identical results. However, the major influence on the sensitivity of the species is derived from asymptotic length (an estimated 72% of the total variability in sensitivity among 270 species, Rindorf *et al*., 2020), and as a result, the methods provide broadly similar results. The Rindorf *et al*. method shows high correspondence with the IUCN classification of the species, with the 17 red listed species being almost entirely identified as sensitive (14 out of the 17).

All species listed in these studies are included in Table 12 below.

Table 12. Taxonomic list of North Sea fish considered as 'sensitive' by Greenstreet *et al.* (2012; n = 41) and North East Atlantic fish that were considered as 'sensitive' by Rindorf *et al.* (2020; n = 60), and whether the species are assessed by ICES. Numbers given here differ slightly to as given by the authors, due to taxonomic updates.

Family	Scientific name	Common name	Greenstreet et al. (2012)	Rindorf et al. (2020)	Assessed by ICES?
Petromyzontidae	*Petromyzon marinus*	Sea lamprey	Y		No
Hexanchidae	*Hexanchus griseus*	Bluntnose sixgill shark		Y	No
Lamnidae	*Lamna nasus*	Porbeagle		Y	WGEF
Pentanchidae	*Galeus melastomus*	Blackmouth dogfish		Y	WGEF
Scyliorhinidae	*Scyliorhinus canicula*	Lesser-spotted dogfish	Y	Y	WGEF
	Scyliorhinus stellaris	Nurse hound	Y	Y	(W)
Triakidae	*Galeorhinus galeus*	Tope	Y	Y	WGEF
	Mustelus asterias	Starry smooth-hound	Y	Y	WGEF
	Mustelus mustelus	Smooth-hound	Y	Y	
Dalatiidae	*Dalatias licha*	Kitefin shark		Y	WGEF
Etmopteridae	*Etmopterus princeps*	Great lanternshark		Y	No
Centrophoridae	*Deania calcea*	Birdbeak dogfish		Y	No
Somniosidae	*Somniosus microcephalus*	Greenland shark	Y	Y	No
Squalidae	*Squalus acanthias*	Spurdog	Y	Y	WGEF
Torpedinidae	*Tetranarce nobiliana*	Electric ray		Y	No
	Torpedo marmorata	Marbled electric ray		Y	No
Rajidae	*Amblyraja hyperborea*	Arctic skate		Y	No
	Amblyraja radiata	Starry ray		Y	WGEF
	Dipturus batis	Common blue skate	Y	Y	WGEF
	Dipturus intermedius	Flapper skate	Y	Y	WGEF
	Dipturus nidarosiensis	Norwegian skate		Y	No
	Dipturus oxyrinchus	Long-nosed skate		Y	No
	Leucoraja circularis	Sandy ray	Y	Y	(some areas)
	Leucoraja fullonica	Shagreen ray	Y	Y	(some areas)
	Leucoraja naevus	Cuckoo ray	Y	Y	WGEF
	Raja brachyura	Blonde ray	Y	Y	WGEF
	Raja clavata	Thornback ray	Y	Y	WGEF
	Raja microocellata	Small-eyed ray		Y	(some areas)
	Raja montagui	Spotted ray	Y	Y	WGEF
	Raja undulata	Undulate ray	Y	Y	WGEF
	Rajella bathyphila	Deepwater ray		Y	No
	Rajella fyllae	Round ray		Y	No
	Rajella lintea	Sailray		Y	No
	Rostroraja alba	White skate		Y	WGEF
Dasyatidae	*Dasyatis pastinaca*	Stingray		Y	No
	Dasyatis tortonesei	Tortonese's stingray		Y	No
Chimaeridae	*Chimaera monstrosa*	Rabbitfish	Y	Y	No
Anguillidae	*Anguilla anguilla*	European eel	Y		WGEEL
Congridae	*Conger conger*	Conger eel	Y	Y	No
Synapobranchidae	*Synaphobranchus kaupi*	Kaup's arrowtooth eel		Y	No
Marouridae	*Coryphaenoides rupestris*	Roundnose grenadier		Y	WGDEEP

Family	Scientific name	Common name	Greenstreet et al. (2012)	Rindorf et al. (2020)	Assessed by ICES?
	Macrourus berglax	Roughhead grenadier		Y	WGDEEP
Moridae	*Mora moro*	Common mora		Y	No
Gadidae	*Gadus morhua*	Atlantic Cod	Y		various
	Pollachius pollachius	Pollack	Y		various
	Pollachius virens	Saithe	Y		various
Lotidae	*Brosme brosme*	Torsk	Y	Y	WGDEEP
	Molva dypterygia	Blue ling	Y	Y	WGDEEP
	Molva macrophthalma	Spanish ling		Y	No
	Molva molva	Ling	Y	Y	WGDEEP
Phycidae	*Phycis blennoides*	Greater forkbeard		Y	WGDEEP
Merluccidae	*Merluccius merluccius*	Hake	Y		WGBIE
Bramidae	*Brama brama*	Ray's bream	Y	Y	No
Scophthalmidae	*Lepidorhombus whiffiagonis*	Megrim	Y	Y	various
	Scophthalmus rhombus	Brill		Y	(various not Celtic Seas)
Pleuronectidae	*Hippoglossus hippoglossus*	Halibut	Y	Y	No
Lophiidae	*Lophius budegassa*	Black bellied anglerfish	Y	Y	WGCSE; WGBIE
	Lophius piscatorius	Anglerfish	Y	Y	WGCSE; WGBIE
Tetraodontidae	*Ephippion guttifer*	Prickly puffer		Y	No
Polyprionidae	*Polyprion americanus*	American wreckfish		Y	No
Epigonidae	*Epigonus telescopus*	Black cardinal fish		Y	No
Moronidae	*Dicentrarchus punctatus*	Spotted seabass		Y	No
Sciaenidae	*Argyrosomus regius*	Meagre		Y	No
Labridae	*Labrus bergylta*	Ballan wrasse	Y		No
Zoarcidae	*Zoarces viviparus*	Viviparous blenny	Y		No
Anarhichadidae	*Anarhichas lupus*	Wolf-fish	Y	Y	No
	Anarhichas minor	Spotted wolf-fish	Y	Y	No
Sebastidae	*Helicolenus dactylopterus*	Blue-mouth redfish	Y		No
	Sebastes marinus	Redfish	Y		NWWG; AFWG
	Sebastes viviparus	Norway haddock	Y		No
Scorpaenidae	*Scorpaena scrofa*	Red scorpionfish		Y	No
Triglidae	*Chelidonichthys lucerna*	Tub gurnard	Y		No
Cyclopteridae					

2.5.2 EU programme for data collection in the fisheries sector

The multiannual EU programmes for the collection of fishery data identify a range of "*Species to be monitored under protection programmes in the Union or under international obligations*" (EU, 2016, 2019). As parts of this, EU (2019) states that "*For all types of fisheries, incidental by-catch of all birds, mammals and reptiles and fish protected under Union legislation and international agreements, including the species listed in Table 1D, including absence in the catch, during scientific observer trips on fishing ships or by the fishers themselves through logbooks. Where data collected during observer trips are not considered to provide sufficient data on incidental by-catch for end user needs, other methodologies, shall*

be implemented by Member States. The selection of these methodologies shall be coordinated at marine region level and be based on end-user needs".

The fish species identified in Table 1D of EU (2019) are summarised in Table 13 below (noting that any spelling errors or invalid synonyms in the listed scientific names have been corrected).

These programmes list sturgeons as *Acipenser* spp. and *Huso huso*. The species present in European waters (Svetovidov, 1989) are Danube sturgeon *Acipenser gueldenstaedtii* and fringebarbel sturgeon *A. nudiventris* (Black Sea), Adriatic sturgeon *A. naccarii* (Adriatic Sea), starry sturgeon *A. stellatus* and *beluga Huso huso* (Black Sea and Adriatic Sea), and European sturgeon *A. sturio* (north eastern Atlantic, Mediterranean and Black Sea). It should also be noted that the Atlantic sturgeon *Acipenser oxyrinchus*, which occurs primarily in North America and the north western Atlantic, may also occur occasionally in European Atlantic seas (Desse-Berset and Williot, 2011; Elvira *et al*., 2015).

WKCOFIBYC notes that the latest guidance on the DCF data collection does not contain a list of species of biodiversity concern. Instead it recommends that species on already-established lists be considered for sampling purposes. For this reason, Table 1D is not considered by WKCOFIBYC for further list-development by this workshop. understands that this list is composed of species already on another list. Also, the latest guidance on implementation of the EU's Data Collection Framework does not retain this list. Hence it is not included in further list compilation in WKCOFIBYC.

Table 13. Fish species identified as "Species to be monitored under protection programmes in the Union or under international obligations" (EU, 2016, 2019). The table below excludes the generic category "Selachimorpha (or Selachii), Batoidea".

Family	Common name	Scientific name	FAO Code	EU 2019/910 (OSPAR Area)	EU 2019/910 (Deepwater)	EU 2019/910 (Baltic Sea)	EU 2019/910 (Mediterranean)	EU 2019/910 (Black Sea)	EU 2019/910 (RFMOs)
Petromyzontidae	River lamprey	*Lampetra fluviatilis*	LAR	X		X			
Petromyzontidae	Sea lamprey	*Petromyzon marinus*	LAU			X			
Hexanchidae	Sharpnose sevengill shark	*Heptranchias perlo*	HXT	X	X		X		X
Hexanchidae	Bluntnose six-gilled shark	*Hexanchus griseus*	SBL	X	X		X		X
Chlamydoselachiidae	Frilled shark	*Chlamydoselachus anguineus*	HXC		X				
Rhincodontidae	Whale shark	*Rhincodon typus*	RHN						X
Carchariidae	Sand tiger shark	*Carcharias taurus*	CCT				X		X
Pseudocarchariidae	Crocodile shark	*Pseudocarcharias kamoharai*	PSK						X
Alopiidae	Pelagic Thresher	*Alopias pelagicus*	PTH						X
Alopiidae	Big Eye Thresher	*Alopias superciliosus*	BTH	X			X		X
Alopiidae	Common Thresher	*Alopias vulpinus*	ALV	X		[X]	X		X
Cetorhinidae	Basking shark	*Cetorhinus maximus*	BSK	X		[X]	X		X

Family	Common name	Scientific name	FAO Code	EU 2019/910 (OSPAR Area)	EU 2019/910 (Deepwater)	EU 2019/910 (Baltic Sea)	EU 2019/910 (Mediterranean)	EU 2019/910 (Black Sea)	EU 2019/910 (RFMOs)
Lamnidae	Great white shark	*Carcharodon carcharias*	WSH				X		X
Lamnidae	Shortfin mako	*Isurus oxyrinchus*	SMA						X
Lamnidae	Longfin mako	*Isurus paucus*	LMA						X
Lamnidae	Porbeagle	*Lamna nasus*	POR	X		[X]			X
Scyliorhinidae	Iceland catshark	*Apristurus* spp.	API		X				
Scyliorhinidae	Blackmouth dogfish	*Galeus melastomus*	SHO	X	X	[X]			
Scyliorhinidae	Mouse catshark	*Galeus murinus*	GAM		X				
Scyliorhinidae	Small-spotted catshark	*Scyliorhinus canicula*	SYC			[X]			
Triakidae	Tope (school shark)	*Galeorhinus galeus*	GAG	X		[X]	X	[X]	X
Triakidae	Starry smooth-hound	*Mustelus asterias*	SDS	X			X		
Triakidae	Common smooth-hound	*Mustelus mustelus*	SMD	(S)			X		
Triakidae	Blackspotted smooth-hound	*Mustelus punctulatus*	MPT	(S)			X		
Carcharhinidae	Silky shark	*Carcharhinus falciformis*	FAL						X
Carcharhinidae	Galapagos shark	*Carcharhinus galapagensis*	CCG						X

Family	Common name	Scientific name	FAO Code	EU 2019/910 (OSPAR Area)	EU 2019/910 (Deepwater)	EU 2019/910 (Baltic Sea)	EU 2019/910 (Mediterranean)	EU 2019/910 (Black Sea)	EU 2019/910 (RFMOs)
Carcharhinidae	Oceanic whitetip shark	*Carcharhinus longimanus*	OCS						X
Carcharhinidae	Dusky shark	*Carcharhinus obscurus*	DUS						
Carcharhinidae	Sandbar shark	*Carcharhinus plumbeus*	CCP				X	[X]	X
Sphyrnidae	Winghead hammerhead	*Eusphyra blochii*	EUB						X
Sphyrnidae	Scalloped hammerhead	*Sphyrna lewini*	SPL						X
Sphyrnidae	Great hammerhead	*Sphyrna mokarran*	SPK						X
Sphyrnidae	Smooth hammerhead	*Sphyrna zygaena*	SPZ						X
Dalatiidae	Kitefin shark	*Dalatias licha*	SCK		X				
Etmopteridae	Black dogfish	*Centroscyllium fabricii*	CFB		X				
Etmopteridae	Greater lanternshark	*Etmopterus princeps*	ETR		X				
Etmopteridae	smooth lanternshark	*Etmopterus pusillus*	ETP		X				
Etmopteridae	Velvet belly	*Etmopterus spinax*	ETX		X				
Somniosidae	Portuguese dogfish	*Centroscymnus coelolepis*	CYO		X				
Somniosidae	Longnose velvet dogfish	*Centroscymnus crepidater*	CYP		X				

Family	Common name	Scientific name	FAO Code	EU 2019/910 (OSPAR Area)	EU 2019/910 (Deepwater)	EU 2019/910 (Baltic Sea)	EU 2019/910 (Mediterranean)	EU 2019/910 (Black Sea)	EU 2019/910 (RFMOs)
Somniosidae	Knifetooth dogfish	*Scymnodon ringens*	SYR		X				
Somniosidae	Greenland shark	*Somniosus microcephalus*	GSK	X	X				X
Oxynotidae	Sailfin roughshark	*Oxynotus paradoxus*	OXN		X				
Centrophoridae	Gulper shark	*Centrophorus granulosus*	GUP		X				
Centrophoridae	Gulper shark species	*Centrophorus* spp.	CWO		X				
Centrophoridae	Leafscale gulper shark	*Centrophorus squamosus*	GUQ		X				
Centrophoridae	Birdbeak dogfish	*Deania calcea*	DCA		X				
Squalidae	Spurdog (piked dogfish)	*Squalus acanthias*	DGS	X		[X]	X	X	
Squatinidae	Sawback angelshark	*Squatina aculeata*	SUA				X		
Squatinidae	Smoothback angelshark	*Squatina oculata*	SUT				X		
Squatinidae	Angel shark	*Squatina squatina*	AGN	X			X		
Torpedinidae	Marbled electric ray	*Torpedo marmorata*	TTR			[X]			
Glaucostegidae	Blackchin guitarfish	*Glaucostegus cemiculus (Rhinobatos cemiculus)*	RBC	(S)			X		X
Rhinobatidae	Common guitarfish	*Rhinobatos rhinobatos*	RBX	(S)			X		X

Family	Common name	Scientific name	FAO Code	EU 2019/910 (OSPAR Area)	EU 2019/910 (Deepwater)	EU 2019/910 (Baltic Sea)	EU 2019/910 (Mediterranean)	EU 2019/910 (Black Sea)	EU 2019/910 (RFMOs)
Pristidae	Narrow sawfish	*Anoxypristis cuspidata*	RPA						X
Pristidae	Dwarf sawfish	*Pristis clavata*	RPC						X
Pristidae	Smalltooth sawfish	*Pristis pectinata*	RPP				[X]		X
Pristidae	Common sawfish	*Pristis pristis*	RPR				[X]		X
Pristidae	Green sawfish	*Pristis zijsron*	RPZ						X
Rajidae	Thorny skate	*Amblyraja radiata*	RJR	X		[X]			X
Rajidae	Common blue skate	*Dipturus batis*	RJB	X	X	[X]	X		
Rajidae	Flapper skate	*Dipturus intermedius*	DRJ						
Rajidae	Norwegian skate	*Dipturus nidarosiensis*	JAD	X	X				X
Rajidae	Sandy Skate	*Leucoraja circularis*	RJI	X			X		
Rajidae	Shagreen ray	*Leucoraja fullonica*	RJH			[X]			
Rajidae	Maltese skate	*Leucoraja melitensis*	JAM				X		
Rajidae	Thornback ray	*Raja clavata*	RJC	X		[X]			
Rajidae	Round skate	*Rajella fyllae*	RJY		X				

Family	Common name	Scientific name	FAO Code	EU 2019/910 (OSPAR Area)	EU 2019/910 (Deepwater)	EU 2019/910 (Baltic Sea)	EU 2019/910 (Mediterranean)	EU 2019/910 (Black Sea)	EU 2019/910 (RFMOs)
Rajidae	Arctic skate	*Amblyraja hyperborea*	RJG		X				
Rajidae	Spotted ray	*Raja montagui*	RJM	X		[X]			
Rajidae	Undulate ray	*Raja undulata*	RJU	X					[X]
Rajidae	White skate	*Rostroraja alba*	RJA	X			X		
Dasyatidae	Stingray	*Dasyatis pastinaca*	JDP					X	
Dasyatidae	Blue stingray	*Pteroplatytrygon violacea*	PLS				X		X
Gymnuridae	Spiny butterfly ray	*Gymnura altavela*	RGL				X		
Mobulidae	Reef manta ray	*Manta alfredi*	RMA						X
Mobulidae	Giant manta ray	*Manta birostris*	RMB						X
Mobulidae	Longhorned mobula	*Mobula eregoodootenkee*	RME						X
Mobulidae	Lesser devil ray	*Mobula hypostoma*	RMH						X
Mobulidae	Spinetail mobula	*Mobula japanica*	RMJ						X
Mobulidae	Shortfin devil ray	*Mobula kuhlii*	RMK						X
Mobulidae	Devil fish	*Mobula mobular*	RMM				X		X

Family	Common name	Scientific name	FAO Code	EU 2019/910 (OSPAR Area)	EU 2019/910 (Deepwater)	EU 2019/910 (Baltic Sea)	EU 2019/910 (Mediterranean)	EU 2019/910 (Black Sea)	EU 2019/910 (RFMOs)
Mobulidae	Munk's devil ray	*Mobula munkiana*	RMU						X
Mobulidae	Lesser Guinean devil ray	*Mobula rochebrunei*	RMN						X
Mobulidae	Chilean devil ray	*Mobula tarapacana*	RMT						X
Mobulidae	Smoothtail mobula	*Mobula thurstoni*	RMO						X
Chimaeridae	Rabbit fish	*Chimaera monstrosa*	CMO		X	[X]			
Chimaeridae	Large-eyed rabbitfish	*Hydrolagus mirabilis*	CYH		X				
Rhinochimaeridae	Straightnose rabbitfish	*Rhinochimaera atlantica*	RCT		X				
Acipenseridae	Sturgeons	*Acipenser* spp.	(STU)	X		X	X	X	
Acipenseridae	Beluga	*Huso huso*	HUH					X	
Notacanthidae	Snubnosed spiny eel	*Notacanthus chemnitzii*	NNN		X				
Anguillidae	European eel	*Anguilla anguilla*	ELE	X		X			
Clupeidae	Allis shad	*Alosa alosa*	ASD	X		X			
Clupeidae	Twaite shad	*Alosa fallax*	TSD			X			
Clupeidae	Pontic shad	*Alosa immaculata*	n/a					X	

Family	Common name	Scientific name	FAO Code	EU 2019/910 (OSPAR Area)	EU 2019/910 (Deepwater)	EU 2019/910 (Baltic Sea)	EU 2019/910 (Mediterranean)	EU 2019/910 (Black Sea)	EU 2019/910 (RFMOs)
Clupeidae	Black Sea shad	*Alosa tanaica*	n/a					X	
Clupeidae	Autumn-spawning herring	*Clupea harengus subsp.*	HER			X			
Alepocephalidae	Smoothheads (slickheads)	*Alepocephalidae*	PZC		X				
Alepocephalidae	Baird's smoothhead	*Alepocephalus bairdii*	ALC		X				
Alepocephalidae	Risso's smoothhead	*Alepocephalus rostratus*	PHO		X				
Cobitidae	Spined loach	*Cobitis taenia*	BIT			X			
Cyprinidae	Zope	*Abramis ballerus*	(FBR)			X			
Cyprinidae	Bleak	*Alburnus alburnus*	ALR			X			
Cyprinidae	Asp	*Aspius aspius*	ASU			X			
Cyprinidae	Barbel	*Barbus barbus*	PTB			X			
Cyprinidae	Gudgeon	*Gobio gobio*	GOG			X			
Cyprinidae	Ziege	*Pelecus cultratus*	FSC			X			
Cyprinidae	Eurasian minnow	*Phoxinus phoxinus*	PXP			X			
Cyprinidae	Vimba	*Vimba vimba*	VIV			X			

Family	Common name	Scientific name	FAO Code	EU 2019/910 (OSPAR Area)	EU 2019/910 (Deepwater)	EU 2019/910 (Baltic Sea)	EU 2019/910 (Mediterranean)	EU 2019/910 (Black Sea)	EU 2019/910 (RFMOs)
Salmonidae	Vendace	*Coregonus albula*	FVE			X		X	
Salmonidae	Baltic houting	*Coregonus balticus (=Coregonus lavaretus;* migratory)	(PLN)			X			
Salmonidae	Common whitefish	*Coregonus lavaretus*	PLN	X					
Salmonidae	Maraena	*Coregonus maraena (=Coregonus lavaretus;* stationary)	(PLN)			X			
Salmonidae	Pallas's houting	*Coregonus pallasii*	n/a			X			
Salmonidae	Atlantic salmon	*Salmo salar*	SAL	X		X			
Salmonidae	Trout	*Salmo trutta*	TRS			X			
Osmeridae	Smelt	*Osmerus eperlanus*	SME			X			
Zeidae	John dory	*Zeus faber*	JOD			[X]			
Macrouridae	Roundnose grenadier	*Coryphaenoides rupestris*	RNG			[X]			
Macrouridae	Grenadiers (other)	Macrouridae (other)	RTX		X				
Macrouridae	Roughhead grenadier	*Macrourus berglax*	RHG		X				
Moridae	Blue antimoral	*Antimora rostrata*	ANT		X				
Moridae	Common mora	*Mora moro*	RIB		X				

Family	Common name	Scientific name	FAO Code	EU 2019/910 (OSPAR Area)	EU 2019/910 (Deepwater)	EU 2019/910 (Baltic Sea)	EU 2019/910 (Mediterranean)	EU 2019/910 (Black Sea)	EU 2019/910 (RFMOs)
Gadidae	Cod	*Gadus morhua*	COD	X		X			
Gadidae	Haddock	*Melanogrammus aeglefinus*	HAD			X			
Gadidae	Whiting	*Merlangius merlangus*	WHG			X		X	
Gadidae	Pollack	*Pollachius pollachius*	POL			X			
Lotidae	Blue ling	*Molva dypterygia*	BLI		X				
Lotidae	Ling	*Molva molva*	LIN			[X]			
Merluccidae	Hake	*Merluccius merluccius*	HKE						
Berycidae	Alfonsinos	*Beryx* spp.	ALF		X				
Trachichthyidae	Orange roughy	*Hoplostethus atlanticus*	ORY		X				
Trachichthyidae	Silver roughy	*Hoplostethus mediterraneus*	HPR		X				
Bythitidae	Brotula	*Cataetyx laticeps*	TVY		X				
Pomatomidae	Bluefish	*Pomatomus saltatrix*	BLU					X	
Centrolophidae	Niger Blackfish	*Centrolophus niger*	CEO			[X]			
Scombridae	Bullet tuna	*Auxis rochei*	BLT			[X]			

Family	Common name	Scientific name	FAO Code	EU 2019/910 (OSPAR Area)	EU 2019/910 (Deepwater)	EU 2019/910 (Baltic Sea)	EU 2019/910 (Mediterranean)	EU 2019/910 (Black Sea)	EU 2019/910 (RFMOs)
Scombridae	Little thunny	*Euthynnus alletteratus*	LTA			[X]			
Scombridae	Plain bonito	*Orcynopsis unicolor*	BOP			[X]			
Scombridae	Atlantic chub mackerel	*Scomber colias*	VMA					X	
Scombridae	Atlantic mackerel	*Scomber scombrus*	MAC			X			
Scombridae	Bluefin tuna	*Thunnus thynnus*	BFT	X			X		X
Bramidae	Oceanic sea breams	*Brama* spp.	BRA				X	X	
Gempylidae	Black gemfish	*Nesiarchus nasutus*	NEN		X				
Trichiuridae	Black scabbardfish	*Aphanopus carbo*	BSF		X				
Trichiuridae	Scabbardfish	*Aphanopus intermedius*	APH		X				
Trichiuridae	Silver scabbard fish	*Lepidopus caudatus*	SFS		X				
Synganthidae	Snake pipefish	*Entelurus aequoreus*	ENQ			X			
Synganthidae	Long-snouted seahorse	*Hippocampus guttulatus*	HPI	X					
Synganthidae	Short-snouted seahorse	*Hippocampus hippocampus*	HPH	X					
Synganthidae	Worm pipefish	*Nerophis lumbriciformis*	NRL			X			

Family	Common name	Scientific name	FAO Code	EU 2019/910 (OSPAR Area)	EU 2019/910 (Deepwater)	EU 2019/910 (Baltic Sea)	EU 2019/910 (Mediterranean)	EU 2019/910 (Black Sea)	EU 2019/910 (RFMOs)
Synganthidae	Straightnose pipefish	*Nerophis ophidion*	NRO			X			
Synganthidae	Greater pipefish	*Syngnathus acus*	SGQ			X			
Synganthidae	Broad-nosed pipefish	*Syngnathus typhle*	STQ			X			
Gobiidae	Crystal gobid	*Crystallogobius linearis*	YTN					X	
Gobiidae	Gobies	Gobiidae	FGX					X	
Gobiidae	Painted goby	*Pomatoschistus pictus*	n/a			X			
Pleuronectidae	Atlantic halibut	*Hippoglossus hippoglossus*	HAL	X	X	[X]			
Xiphiidae	Swordfish	*Xiphias gladius*	SWO			[X]			
Atherinidae	Big-scale sand smelt	*Atherina boyeri*	ATB					X	
Belonidae	Garfish	*Belone belone*	GAR					X	
Mugilidae	Golden grey mullet	*Liza aurata*	MGA					X	
Mugilidae	Leaping mullet	*Liza saliens*	LZS					X	
Mugilidae	Mullet	*Mugil* spp.	MGS					X	
Lophiidae	Black-bellied angler	*Lophius budegassa*	ANK			[X]			

Family	Common name	Scientific name	FAO Code	EU 2019/910 (OSPAR Area)	EU 2019/910 (Deepwater)	EU 2019/910 (Baltic Sea)	EU 2019/910 (Mediterranean)	EU 2019/910 (Black Sea)	EU 2019/910 (RFMOs)
Polyprionidae	Wreckfish	*Polyprion americanus*	WRF	X	X		X		
Epigonidae	Black cardinalfish	*Epigonus telescopus*	EPI		X				
Moronidae	European seabass	*Dicentrarchus labrax*	BSS			[1]			
Serranidae	Groupers	*Epinephelus* spp.	GPX				X		
Sparidae	Annular seabream	*Diplodus annularis*	ANN				X		
Sparidae	Sharpsnout seabream	*Diplodus puntazzo*	SHR				X		
Sparidae	White seabream	*Diplodus sargus*	SWA				X		
Sparidae	Two-banded seabream	*Diplodus vulgaris*	CTB				X		
Sparidae	Stripped seabream	*Lithognathus mormyrus*	SSB				X		
Sparidae	Spanish seabream	*Pagellus acarne*	SBA				X		
Sparidae	Blackspot seabream	*Pagellus bogaraveo*	SBR				X		
Sparidae	Common seabream	*Pagrus pagrus*	RPG				X		
Labridae	Ballan wrasse	*Labrus bergylta*	USB				X		
Labridae	Cuckoo wrasse	*Labrus mixtus*	USI				X		

Family	Common name	Scientific name	FAO Code	EU 2019/910 (OSPAR Area)	EU 2019/910 (Deepwater)	EU 2019/910 (Baltic Sea)	EU 2019/910 (Mediterranean)	EU 2019/910 (Black Sea)	EU 2019/910 (RFMOs)
Labridae	Corkwring wrasse	*Symphodus melops*	YFM				X		
Zoarcidae	Greater Eelpout	*Lycodes esmarkii*	LXK		X				
Anarhichadidae	Wolf-fish	*Anarhichas lupus*	CAA			[X]			
Stichaeidae	Snakeblenny	*Lumpenus lampretaeformis*	n/a			[X]			
Nototheniidae	Patagonian toothfish	*Dissostichus eleginoides*	TOP						X
Nototheniidae	Antarctic toothfish	*Dissostichus mawsoni*	TOA						X
Ammodytidae	Lesser sandeel	*Ammodytes marinus*	QLH			X			
Ammodytidae	Small sandeel	*Ammodytes tobianus*	ABZ			X			
Trachinidae	Greater weever	*Trachinus draco*	WEG			X			
Sebastidae	Bluemouth redfish	*Helicolenus dactylopterus*	BRF	X	X				
Sebastidae	Ocean perch	*Sebastes marinus*	REG			[X]			
Sebastidae	Norway redfish	*Sebastes viviparus*	SFV	X	X	[X]			
Sebastidae	Spiny scorpionfish	*Trachyscorpia cristulata*	TJX		X				
Gasterosteidae	Sea stickleback	*Spinachia spinachia*	GSS			X			

Family	Common name	Scientific name	FAO Code	EU 2019/910 (OSPAR Area)	EU 2019/910 (Deepwater)	EU 2019/910 (Baltic Sea)	EU 2019/910 (Mediterranean)	EU 2019/910 (Black Sea)	EU 2019/910 (RFMOs)
Cottidae	Miller's thumb	*Cottus gobio*	n/a			X			
Cottidae	Alpine bullhead	*Cottus poecilopus*	n/a			X			
Cottidae	Shorthorn sculpin	*Myoxocephalus scorpius*	MXV			X			
Cottidae	Longspined bullhead	*Taurulus bubalis*	XTA			X			
Cottidae	Fourhorn sculpin	*Triglopsis quadricornis*	TGQ			X			
Cyclopteridae	Lumpsucker	*Cyclopterus lumpus*	LUM	X	X	X			
Liparidae	Striped seasnail	*Liparis liparis*	LIL			X			
Liparidae	Montagu's seasnail	*Liparis montagui*	LIM			X			

2.5.3 Species received in WGBYC data calls

ICES issues annual official data calls for data on bycatch of protected threatened and endangered species since 2018. The requested data are used by ICES advisory groups (e.g. WGBYC) involved in the pro-vision of advice on the effect of fishing on small cetaceans and other marine animals. Data on "*protected, prohibited (see Table 1.4 of the WGEF 2019 report for a list of EU-prohibited elasmobranchs) or zero TAC elasmobranchs and protected fish species*" have been requested within these data calls. In the data call issued in December 2019 it was specified that the protected bony-fish species of interest corresponded to the ones listed in Table 18 of the WGBYC 2019 report.

Since 2018, data on 119 fish taxa have been submitted including 40 bony fish, 65 elasmobrachs, two species of lampreys, one species of the family Chimeridae, and one species of the family Mixinidae (Table 14). These species are included in this report for illustrative purposes and WKCOFIBYC has not used this list for further list development.

Table 14. Fish species for which data was submitted in response to the ICES data calls on bycatch of protected species.

Species	Class	Common name
Acipenser sturio	Actinopterygii	Atlantic sturegon
Alburnus alburnus	Actinopterygii	alver
Alepocephalus rostratus	Actinopterygii	Risso's smooth-head
Alosa	Actinopterygii	NULL
Alosa alosa	Actinopterygii	allis shad
Alosa fallax	Actinopterygii	shad
Anarhichas lupus	Actinopterygii	Atlantic wolffish
Anguilla anguilla	Actinopterygii	eel
Aphanopus carbo	Actinopterygii	black scabbardfish
Argentina silus	Actinopterygii	argentine
Argentina sphyraena	Actinopterygii	argentine
Beryx decadactylus	Actinopterygii	alfonsino
Beryx splendens	Actinopterygii	Lowe's Beryx
Coregonus lavaretus	Actinopterygii	NULL
Coryphaenoides rupestris	Actinopterygii	rock grenadier
Cyclopterus lumpus	Actinopterygii	henfish
Diplodus puntazzo	Actinopterygii	sharp snout bream
Diplodus vulgaris	Actinopterygii	two banded sea bream
Epigonus telescopus	Actinopterygii	bulls-eye
Epinephelus marginatus	Actinopterygii	dusky grouper

Species	Class	Common name
Gadus morhua	Actinopterygii	Atlantic cod
Helicolenus dactylopterus	Actinopterygii	blackbelly rosefish
Hippocampus guttulatus	Actinopterygii	long-snouted seahorse
Hippocampus hippocampus	Actinopterygii	seahorse
Hippoglossus hippoglossus	Actinopterygii	Atlantic halibut
Hoplostethus atlanticus	Actinopterygii	orange roughy
Hoplostethus mediterraneus	Actinopterygii	rough-fish
Lepidopus caudatus	Actinopterygii	scabbardfish
Lithognathus mormyrus	Actinopterygii	striped seabream
Macrouridae	Actinopterygii	grenadiers
Mola mola	Actinopterygii	ocean sunfish
Molva dypterygia	Actinopterygii	blue ling
Molva molva	Actinopterygii	common ling
Mora moro	Actinopterygii	common mora
Myoxocephalus quadricornis	Actinopterygii	fourhorn sculpin
Myoxocephalus scorpius	Actinopterygii	bull rout
Nerophis ophidion	Actinopterygii	NULL
Nesiarchus nasutus	Actinopterygii	black gemfish
Osmerus eperlanus	Actinopterygii	rainbow smelt
Pagellus acarne	Actinopterygii	axillary seabream
Pagellus bogaraveo	Actinopterygii	blackspot seabream
Pagrus pagrus	Actinopterygii	red porgy
Pollachius pollachius	Actinopterygii	green pollack
Polyprion americanus	Actinopterygii	stone-bass
Salmo salar	Actinopterygii	Atlantic salmon
Salmo trutta	Actinopterygii	brown trout
Thunnus thynnus	Actinopterygii	Atlantic bluefin tuna
Trachyscorpia cristulata	Actinopterygii	Atlantic thornyhead
Trachyscorpia cristulata echinata	Actinopterygii	NULL

Species	Class	Common name
Triglopsis quadricornis	Actinopterygii	fourhorn sculpin
Vimba vimba	Actinopterygii	vimba bream
Aetomylaeus bovinus	Elasmobranchii	NULL
Alopias superciliosus	Elasmobranchii	bigeye thresher
Alopias vulpinus	Elasmobranchii	common thresher
Amblyraja radiata	Elasmobranchii	starry ray
Carcharhinus plumbeus	Elasmobranchii	sandbar shark
Centrophorus granulosus	Elasmobranchii	gulper shark
Centrophorus squamosus	Elasmobranchii	leafscale gulper shark
Centroscymnus coelolepis	Elasmobranchii	Portuguese dogfish
Centroscymnus crepidater	Elasmobranchii	longnose velvet dogfish
Cetorhinus maximus	Elasmobranchii	basking shark
Chlamydoselachus anguineus	Elasmobranchii	frilled shark
Dalatias licha	Elasmobranchii	Darkie Charlie
Dasyatis pastinaca	Elasmobranchii	common stingray
Deania calcea (=Deania calceus)	Elasmobranchii	NULL
Deania calceus (=Deania calcea)	Elasmobranchii	NULL
Dipturus batis	Elasmobranchii	common skate
Dipturus flossada	Elasmobranchii	blue skate
Dipturus intermedius	Elasmobranchii	NULL
Dipturus linteus	Elasmobranchii	NULL
Dipturus nidarosiensis	Elasmobranchii	black skate
Dipturus oxyrinchus	Elasmobranchii	long-nosed skate
Etmopterus princeps	Elasmobranchii	greater lantern-shark
Etmopterus pusillus	Elasmobranchii	smooth lanternshark
Etmopterus spinax	Elasmobranchii	velvet-belly
Galeorhinus galeus	Elasmobranchii	sweet william
Galeus melastomus	Elasmobranchii	black-mouthed dogfish
Gymnura altavela	Elasmobranchii	spiny butterfly ray

Species	Class	Common name
Heptranchias perlo	Elasmobranchii	sharpnose sevengill shark
Hexanchus	Elasmobranchii	NULL
Hexanchus griseus	Elasmobranchii	bluntnose sixgill shark
Isurus oxyrinchus	Elasmobranchii	Atlantic mako shark
Isurus paucus	Elasmobranchii	longfin mako
Lamna nasus	Elasmobranchii	(common) Atlantic mackerel sha
Leucoraja circularis	Elasmobranchii	sandy ray
Leucoraja melitensis	Elasmobranchii	Maltese ray
Mobula mobular	Elasmobranchii	devil ray
Mustelus asterias	Elasmobranchii	starry smooth hound
Mustelus mustelus	Elasmobranchii	smooth hound
Mustelus punctulatus	Elasmobranchii	blackspotted smoothhound
Myliobatis aquila	Elasmobranchii	NULL
Oxynotus centrina	Elasmobranchii	angular rough-shark
Prionace glauca	Elasmobranchii	NULL
Pteroplatytrygon violacea	Elasmobranchii	pelagic stingray
Raja asterias	Elasmobranchii	Mediterranean starry ray
Raja batis	Elasmobranchii	blonde ray
Raja clavata	Elasmobranchii	roker
Raja microocellata	Elasmobranchii	painted ray
Raja montagui	Elasmobranchii	homelyn ray
Raja oxyrinchus	Elasmobranchii	NULL
Raja radiata	Elasmobranchii	starry ray
Raja undulata	Elasmobranchii	undulate ray
Rajella lintea	Elasmobranchii	NULL
Rostroraja alba	Elasmobranchii	white skate
Scyliorhinus canicula	Elasmobranchii	dogfish
Scyliorhinus stellaris	Elasmobranchii	greater spotted dogfish
Scymnodon ringens	Elasmobranchii	knifetooth dogfish

Species	Class	Common name
Selachii	Elasmobranchii	NULL
Somniosus microcephalus	Elasmobranchii	Greenland shark
Sphyrna lewini	Elasmobranchii	scalloped hammerhead
Squalus acanthias	Elasmobranchii	picky dog
Squalus blainville	Elasmobranchii	NULL
Squatina squatina	Elasmobranchii	NULL
Tetronarce nobiliana	Elasmobranchii	NULL
Torpedo marmorata	Elasmobranchii	marbled electric ray
Torpedo nobiliana	Elasmobranchii	Atlantic torpedo
Chimaera monstrosa	Holocephali	rabbit-fish
Myxine glutinosa	Myxini	Atlantic hagfish
Lampetra fluviatilis	Petromyzonti	River lamprey
Petromyzon marinus	Petromyzonti	great sea lamprey

2.6 Red lists of extinction risk

2.6.1 IUCN Global Red List

The International Union for Conservation of Nature (IUCN; https://www.iucn.org/) is a global conservation organisation that oversees Red List assessments (https://www.iucnredlist.org/). The Red List process involves the evaluation of populations in relation to agreed categories, with assessed organisms then allocated to the following categories: Extinct (EX), Extinct in the Wild (EW), Critically Endangered (CR), Endangered (EN), Vulnerable (VU), Near Threatened (NT), Least Concern (LC), Data Deficient (DD) and Not Evaluated (NE). For information on the Red List categories and guidance, see IUCN (2012, 2019). Many fish species in European waters are included on the list, but not all of them have yet been listed. A list of species in European waters that appears on the IUCN Red List is not readily available, and hence no attempt is made here to include one. However, the IUCN designations for all species dealt with in this report are visible in Annex II.

2.6.2 European Red Lists of fishes

Whilst global assessments are available for a range of species, the recent Red Lists of European fishes (Freyhof and Brooks, 2011; Nieto *et al*., 2015) were considered for the purposes of the present study. Whilst Freyhof and Brooks (2011) focused on freshwater fish species, some migratory species that occur in both freshwater and marine ecosystems, as well as some estuarine species, were also included (e.g. lampreys, European eel *Anguilla anguilla*, shads, various salmonids, grey mullets (Mugilidae), seabass *Dicentrarchus labrax*, various gobies (Gobiidae) and flounder *Platichthys flesus*). The marine fish species that were listed as Threatened (i.e. CR, EN or VU) are summarised in Table 15 here for the European Red Lists.

Table 15. Taxonomic list of marine fish listed as Threatened (i.e. Critically Endangered (CR), Endangered (EN) or Vulnerable (VU)), according to Nieto et al. (2015) and Freyhof and Brooks (2011; species denoted *). Taxa occurring in the ICES area are identified (species denoted as "(Yes)" indicate those species that may potentially occur in the more southern and/or more oceanic parts of the ICES Area, but for which the populations are largely outside the ICES area and documented captures from the ICES area may relate to occasional vagrants).

Family	Species	Red List	Present in ICES Aaeas
Centrophoridae	*Centrophorus granulosus*	CR	Yes
	Centrophorus lusitanicus	EN	Yes
	Centrophorus squamosus	EN	Yes
	Centrophorus uyato	VU	Uncertain
	Deania calcea	EN	Yes
Dalatiidae	*Dalatias licha*	EN	Yes
Oxynotidae	*Oxynotus centrina*	VU	Yes
Somniosidae	*Centroscymnus coelolepis*	EN	Yes
Squalidae	*Squalus acanthias*	EN	Yes
Echinorhinidae	*Echinorhinus brucus*	EN	Yes
Squatinidae	*Squatina aculeata*	CR	No
	Squatina oculata	CR	No
	Squatina squatina	CR	Yes
Alopiidae	*Alopias superciliosus*	EN	Yes
	Alopias vulpinus	EN	Yes
Cetorhinidae	*Cetorhinus maximus*	EN	Yes
Lamnidae	*Carcharodon carcharias*	CR	Yes
	Lamna nasus	CR	Yes
Odontaspididae	*Carcharias taurus*	CR	(Yes)
	Odontaspis ferox	CR	(Yes)
Triakidae	*Galeorhinus galeus*	VU	Yes
	Mustelus mustelus	VU	(Yes)
	Mustelus punctulatus	VU	(Yes)
Carcharhinidae	*Carcharhinus longimanus*	EN	(Yes)
	Carcharhinus plumbeus	EN	(Yes)
Rhinobatidae	*Glaucostegus cemiculus*	EN	(Yes)
	Rhinobatos rhinobatos	EN	(Yes)

Family	Species	Red List	Present in ICES Aaeas
Pristidae	*Pristis pectinata*	CR	No
	Pristis pristis	CR	No
Rajidae	*Dipturus batis*	CR	Yes
	Leucoraja circularis	EN	Yes
	Leucoraja fullonica	VU	Yes
	Leucoraja melitensis	CR	No
	Raja maderensis	VU	Yes
	Raja radula	EN	No
	Rostroraja alba	CR	Yes
Dasyatidae	*Dasyatis centroura*	VU	(Yes)
	Dasyatis pastinaca	VU	Yes
Gymnuridae	*Gymnura altavela*	CR	(Yes)
Myliobatidae	*Myliobatis aquila*	VU	Yes
	Pteromylaeus bovinus	CR	(Yes)
Mobulidae	*Mobula mobular*	EN	(Yes)
*Acipenseridae	*Acipenser gueldenstaedtii*	CR	No
	Acipenser naccarii	CR	No
	Acipenser nudiventris	CR	No
	Acipenser stellatus	CR	No
	Acipenser sturio	CR	Yes
	Huso huso	CR	No
*Anguillidae	*Anguilla anguilla*	CR	Yes
Salmonidae	*Salmo salar*	VU	Yes
Lotidae	*Molva dypterygia*	VU	Yes
Macrouridae	*Coryphaenoides rupestris*	EN	Yes
Trachichthyidae	*Hoplostethus atlanticus*	VU	Yes
Sebastidae	*Sebastes mentella*	EN	Yes
	Sebastes norvegicus	VU	Yes
Epinephelidae	*Epinephelus marginatus*	EN	Yes

Family	Species	Red List	Present in ICES Aaeas
	Mycteroperca fusca	VU	(Yes)
Labridae	*Bodianus scrofa*	VU	(Yes)
	Labrus viridis	VU	(Yes)
Sparidae	*Dentex dentex*	VU	Yes
Sciaenidae	*Umbrina cirrosa*	VU	Yes
Anarhichadidae	*Anarhichas denticulatus*	EN	Yes
Gobiidae	*Pomatoschistus tortonesei*	EN	No
Scombridae	*Orcynopsis unicolor*	VU	Yes
Scophthalmidae	*Scophthalmus maximus*	VU	Yes
Pleuronectidae	*Hippoglossus hippoglossus*	VU	Yes

2.6.3 Red List of Mediterranean species

Abdul Malak *et al*. (2011) and Dulvy *et al*. (2016) have produced Red List of Mediterranean fishes. These are summarised here in Table 16.

Table 16. Taxonomic list of marine fish listed as Threatened (i.e. Critically Endangered (CR), Endangered (EN) or Vulnerable (VU)) in the Mediterranean Sea according to Abdul Malak *et al.* (2011) and Dulvy *et al.* (2016).

Scientific Name	Malak *et al.* 2011	Dulvy *et al.* 2016
Alopias superciliosus	DD	EN
Alopias vulpinus	VU	EN
Carcharhinus plumbeus	EN	EN
Carcharias taurus	CR	CR
Carcharodon carcharias	EN	CR
Centrophorus granulosus	VU	CR
Cetorhinus maximus	VU	EN
Dalatias licha	DD	VU
Dasyatis centroura		VU
Dasyatis pastinaca		VU
Dentex dentex	VU	
Dipturus batis	CR	CR
Echinorhinus brucus	DD	EN

Scientific Name	Malak *et al.* 2011	Dulvy *et al.* 2016
Epinephelus marginatus	EN	
Galeorhinus galeus	DD	VU
Glaucostegus cemiculus		EN
Gymnura altavela		CR
Heptranchias perlo	VU	DD
Hexanchus griseus	VU	LC
Isurus oxyrinchus	CR	CR
Lamna nasus	CR	CR
Leucoraja circularis	CR	CR
Leucoraja fullonica	NT	CR
Leucoraja melitensis	CR	CR
Mobula mobular		EN
Mustelus asterias	EN	VU
Mustelus mustelus	EN	VU
Mustelus punctulatus	DD	VU
Myliobatis aquila	NT	VU
Odontaspis ferox		CR
Opeatogenys gracilis	VU	
Oxynotus centrina	CR	CR
Pomatoschistus microps	CR	
Pomatoschistus minutus	VU	
Pomatoschistus tortonesei	EN	
Prionace glauca	VU	CR
Pristis pectinata	CR	CR
Pristis pristis	CR	CR
Pteromylaeus bovinus	DD	CR
Raja radula	DD	EN
Raja undulata	EN	NT
Rhinobatos cemiculus	EN	

Scientific Name	Malak *et al.* 2011	Dulvy *et al.* 2016
Rhinobatos rhinobatos	EN	EN
Rostroraja alba	CR	EN
Sciaena umbra	VU	
Sphyrna zygaena	VU	CR
Squalus acanthias	EN	EN
Squatina aculeata	CR	CR
Squatina oculata	CR	CR
Squatina squatina	CR	CR
Syngnathus taenionotus	EN	
Thunnus thynnus	EN	
Umbrina cirrosa	VU	

2.6.4 USA and Canadian Legislation

Species from the United States and Canada were not included in the process, as they are assessed by national bodies, but for the sake of completeness a short summary of the legislation involving protected fish in those two countries is listed here.

In Canada, 88 fish species/populations (both oceanic and freshwater species) are listed and protected under the species at risk act. The law and list of species can be found here: https://laws.justice.gc.ca/eng/acts/S-15.3/page-17.html#h-435647.

In the USA, endangered and threatened species are protected federally in the Endangered species act. Fish protected under the act are 43 species, thereof 25 foreign endangered and threatened species. Information on the act and species listed under the act can be found here: https://www.fisheries.noaa.gov/species-directory/threatened-endangered.

2.6.5 ICCAT

The International Commission for the Conservation of Atlantic Tunas takes responsibility for assessing bycatch in fisheries for tunas and billfishes in the Atlantic and Mediterranean. ICCAT has not adopted a list of species of fish of bycatch interest. However, a consultant's report to ICCAT (Cotter, 2010) presents a long list of elasmobranch and teleost fish which may be considered relevant.

3 ICES fish biodiversity lists

The various lists compiled as described in section 2 ('Lists of fishes of conservation interest') of this report were aggregated into a WKCOFIBYC Comprehensive Species list, or (CSL) as follows:

CSL = (A + B + C + D) – E

where,

- A = International Hard and Soft Law/Agreement Listed Species.
- B = National Hard Law Listed Species.
- C = Any Red Listed Species if classified as EX, CR, EN, VU.
- D = WGECO / and peer-reviewed literature sensitivity analyses species.
- E = Species not present or at the edge of their distributions in FAO Areas 27 and/or 37.

The CSL is available on the ICES SharePoint site for the group, in **Error! Reference source not found.Error! Reference source not found.**, and on the public website of the WKCOFIBYC page as a downloadable supplement.

The CSL was structured into regional lists per ICES ecoregion and GFCM subregions. The CSL is apportioned out into relevant stock or population units, on an ecoregion basis, to produce regional stock lists (RPLs). This process is described in Figure 1.

RPL = CSL (divided into ecoregions) – F

where,

- F = Stocks of qualifying species already assessed by ICES/ICCAT/STECF/GFCM in ICES categories 1 or 2 in a given ecoregion.

Note that under term F, if there several stocks of the particular species which are assessed under categories 3, 4, 5 or 6, these are disregarded. This assumes that within an ecoregion, if a species is assessed across multiple categories, those instances of categories 3–6 are because the stock is less relevant for assessment purposes in those areas.

3.1 ToR a: Assessment lists for fish conservation/biodiversity assessment

The ToR a lists are structured by ICES ecoregion/GFCM Sub-region, to produce regional as-assessment lists (RALs) as follows:

RAL = RPL – (X + Y)

where,

- X = Stocks that are not relevant for conservation/biodiversity issues in that area, including freshwater.
- Y = Non-indigenous species introduced for fisheries/aquaculture or by accident, including Lessepsian species incoming from the Red Sea.

noting that,

- The RAL includes widely distributed species straddling several ecoregions, provided that ecoregion is part of the species' main range.
- The final RALs are presented in Annex 3: below.

3.2 ToR b: Lists for by-catch advice

For ToR b (bycatch) WKCOFIBYC considers the list to be a subset of the RALs. These lists can be termed Regional By-catch Lists (RBLs), and constructed as follows:

RBL = (RAL – Z) + W)

- Z = Stocks of qualifying species already assessed by ICES/ICCAT/STECF/GFCM in ICES categories 3 or 4 in a given ecoregion.
- W = Species not advised upon anywhere and listed as Data Deficient (DD) on red lists.

Note that under term Z, if there several stocks of the particular species which are assessed under categories 5 or 6, these are disregarded. This assumes that within an ecoregion, if a species is assessed across multiple categories, those instances of category 5 or 6 are because the stock is not sufficiently abundant in a particular area. Thus, if a stock assessed as category 3 in part of an ecoregion and as category 6 elsewhere in that ecoregion, it is assumed that the category 6 assessment relates to the edge of a commercially-important species' distribution, and that it is assessed at category 3 in the areas where it is relevant for assessment purposes.

The final RBLs are presented in Annex 3: below.

Raw list compilation

CSL = (A + B + C + D + E + F) – G

where

A = International Hard and Soft Law Listed Species

B = National Hard Law Listed Species

C = Various Red Listed Species if classified as EX, CR, EN, VU

D = WGECO / STECF sensitivity analyses species

E = Species not present or at the edge of their distributions in FAO Areas 27 and/or 37.

Eco-region Long lists

RPL = CSL - F

where

F = Stocks of qualifying species, which are already assessed by ICES/ICCAT/STECF/GFCM in ICES categories 1 or 2 in that eco-region

ToR 1 Assessment Lists

RAL = RPL – (X + Y)

where

X= Stocks that are not relevant as a conservation species in that area, including freshwater, brackish or diadromous species not relevant in a particular area.

Y = Non-indigenous species introduced for fisheries/aquaculture or by accident, including Lessepsian species from Red Sea.

ToR 1 By-catch Lists

RBL = RAL + Z

where

Z = Stocks of qualifying species, which are already assessed by ICES/ICCAT /STECF/GFCM in ICES categories 3 or 4 in that eco-region

W = Species not advised upon and listed as Data Deficient (DD) on relevant red lists

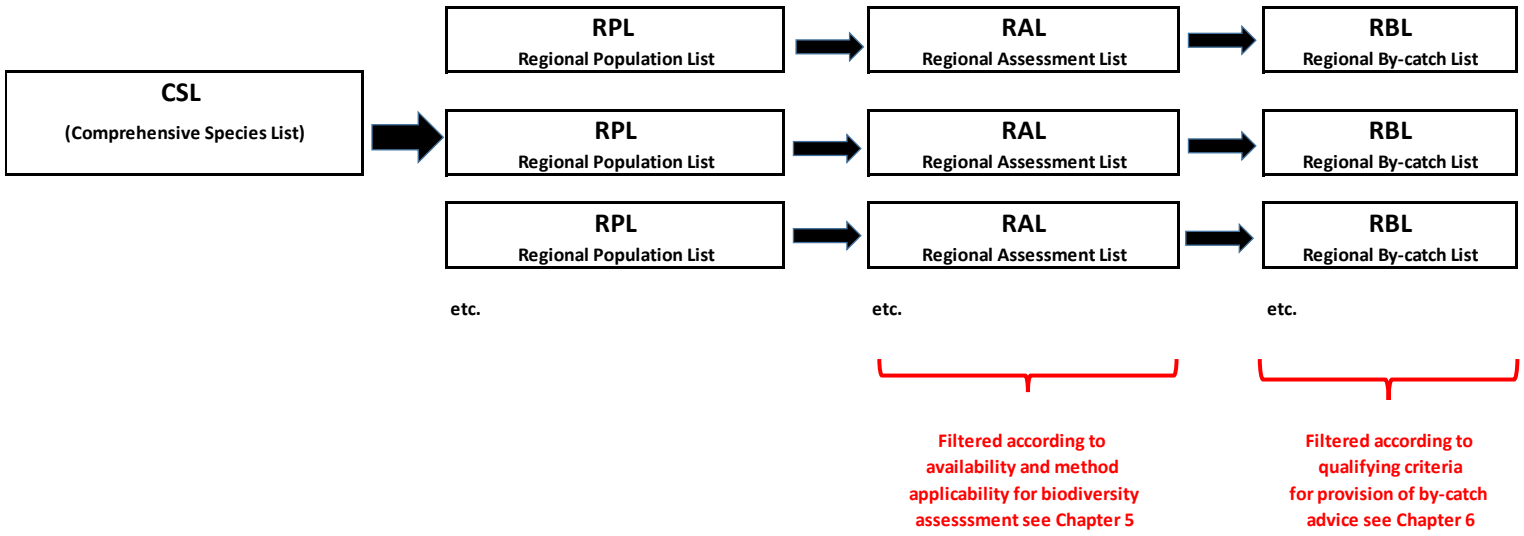


Figure 1. How the various lists are constructed and can be used to answer Terms of Reference a and b (in red).

4 Assessment units for listed fish species

WKCOFIBYC was also requested to "*compile the assessment units*". In many cases, the exact 'biological stock units' for these species is unknown. Some of the larger pelagic species may have stocks that are oceanic in scale, whilst some of the smaller, coastal species may have more spatially-discrete stocks.

In instances where stock units are undefined a knowledge of the species biogeographical distributions can be used to infer over which management units such species could usefully be appraised, using for instance the DATRAS data base or the MEDITS trawl survey. For instance, this analysis could highlight gaps in distribution which could imply discrete populations. Before any assessment would be conducted for a species, such spatial analyses would be performed on survey and other available data. This will inform the assessment units to be used. The results of this analysis, and any published information would be used to improve on the base case assumptions above.

In the absence of information above, WKCOFIBYC advocates the pragmatic approach as follows:

Demersal small/pelagic species:	ICES Sub-area/division, GFCM Geographic sub-area
Large Pelagic species:	Entire North Atlantic, FAO 27, FAO 37 or FAO 27+37
Coastal species:	ICES Division, GFCM Geographic sub-area
Deepwater species:	FAO 27, GFCM 27 or GFCM Geographic subregion
Catadromous species:	Sea basin
Anadromous species:	River basin

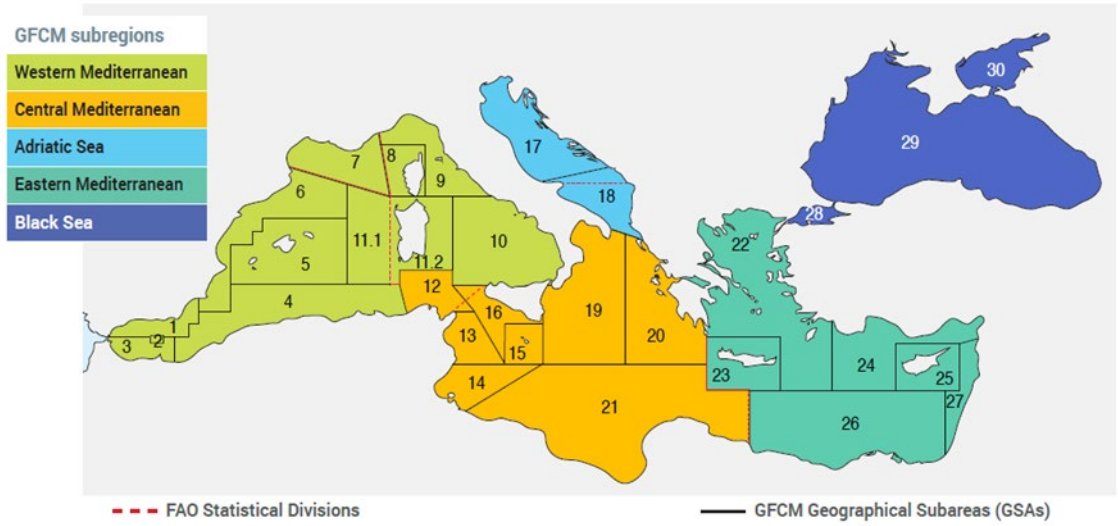
5 Fish of conservation concern

ToR a

*Compile a **list of fish species** (incl. non-commercial and commercial) of conservation concern (threatened, sensitive or already listed in legislation) that should be **included in future assessments by ICES**, and compile **the assessment units** for these species, incl. considering the regional approach for ecosystem/fisheries assessments/advice of ICES ecoregions. This list will be internally reviewed in ICES (e.g. by WGECO) and then passed to ACOM for consideration; (Science Plan codes:3.2, 3.5);*

Following the approach outlined in section 3 and Figure 1, Regional Assessment Lists (RALs) would be created from the Comprehensive Species List (CSL). These would be structured according to the ICES ecoregions and General Fisheries Commission for the Mediterranean (GFCM) geographic subregions, as follows, and Figures 2 and 3.

Figure 2. ICES ecoregions.



GFCM GSAs

01 - Northern Alboran Sea	07 - Gulf of Lion	13 - Gulf of Hammamet	19 - Western Ionian Sea	25 - Cyprus
02 - Alboran Island	08 - Corsica	14 - Gulf of Gabes	20 - Eastern Ionian Sea	26 - South Levant
03 - Southern Alboran Sea	09 - Ligurian Sea and Northern Tyrrhenian Sea	15 - Malta	21 - Southern Ionian Sea	27 - Eastern Levant Sea
04 - Algeria	10 - South and Central Tyrrhenian Sea	16 - South of Sicily	22 - Aegean Sea	28 - Marmara Sea
05 - Balearic Islands	11.1 - Sardinia (west) 11.2 - Sardinia (east)	17 - Northern Adriatic Sea	23 - Crete	29 - Black Sea
06 - Northern Spain	12 - Northern Tunisia	18 - Southern Adriatic Sea	24 - North Levant Sea	30 - Azov Sea

Figure 3. GFCM subregions (SAs) and geographic subareas (GSAs).

5.1 Approaches to assessment of species on the list

The species on the RALs are likely to fall in a continuum of data availability for both abundance and bycatch. The most appropriate assessments and assessment update schedule will depend on where the species is located along this continuum. The following bullet points illustrate the issue:

1. Category 1 type assessment: A very data rich species may have a full assessment producing estimates of both stock size and fishing mortality. This would then form the basis of ICES advice on the status of this species e.g. spiny dogfish *Squalus acanthias* by ICES, or *Anarhicus lupus* in Iceland.
2. Category 3 type assessment with good catch data: An example as a candidate is wolfish *Anarhicus lupus* in the North Sea.
3. Category 3 type assessment without good catch data: Species with data on abundance from surveys but poor estimates of catch (e.g. species mostly or fully discarded) may have an assessment of biomass only based on surveys, but no assessment of bycatch mortality, e.g. starry ray *Raja radiata* (discarded) and tub gurnard *Chelidonichthys lucerna* (aggregated landings for related species).
4. Category 3 type assessment species which are landed but not well represented in trawl surveys contained in the DATRAS data base e.g. Atlantic halibut *Hippoglossus hippoglossus*. Such species may be well represented in survey data in some areas, in non-trawl surveys or in commercial CPUE series.
5. Category 5 type assessments: species that are not found in surveys, but the catch data are available e.g. tope shark *Galeorhinus galeus*.

6. Category 5/6 type assessments for a number of very rare species, will have very limited data on both biomass and catches (e.g. longnose skate *Dipturus oxyrinchus* or angel shark *Squatina squatina*). For these species, it may be more appropriate to use:
    - Expert judgement assessment, possibly along the line of ICES assessment conducted for European eel
    - Assessments as conducted by IUCN using its red list methodology
    - Productivity Sensitivity Analysis (PSA)
    - Population Viability Analyses (PVA)
7. Category 5/6 type assessments for species which are less rare species than in item 6, which may be locally abundant e.g. spiny butterfly ray *Gymnura altavela* or undulate ray *Raja undulata*. The methodology can be the same as for category 6. However, as an addition, assessments according to D1C4 (population distributional range and pattern) and D1C5 (habitat for the species) are relevant because habitat degradation may be an additional pressure to fisheries.
8. Coastal, small-bodied species such as e.g. *Hippocampus* (sea horses) will not appear in landings data, or in surveys. They might best be handled in the same way as Items 6 or 7 above, or in surveys used for Natura 2000 monitoring purposes.

The interval for advice update would vary between these categories, with the data rich species perhaps being updated annually or biennially and the most data poor stocks being updated at five yearly intervals. Or the approach taken to arrange the frequency of advice for elasmobranch species by ICES could be considered.

5.2 Ecosystem overviews

The Ecosystem Overviews are a key mechanism by which ICES identifies and disseminates the best avail-able knowledge for ecosystem-based management. The aim of the overviews is to create clear quantitatively supported statements that are of use to regional managers, and also the interested informed public.

Ecosystem overviews focus on regional manageable pressures and describe their implications on the state and variability of the system. The purpose of the ecosystem overviews is to describe:

1. the location, scale, and the management and assessment boundaries of the ecoregion;
2. the distribution of human activities and resultant pressures (in space and time) on the environment and ecosystem; and
3. the state of the ecosystem (in space and time) and the linking of key pressures, including climate change, to the changes of ecosystem components.

The core of the ecosystem overviews are figures that relate the main pressures within an ecoregion to (a) the activities that most directly impose these pressures, and (b) the ecosystem components that are most impacted by these pressures.

One of the subsections of the section on state of the ecosystem is 'Threatened and Declining Species', which is based on the species list species as identified by Regional Seas Conventions (OSPAR and HELCOM). Outcome of ToR a) might become a very useful product to be included into the ecosystem overviews as 'ICES List of Species of Conservation Concern' in particular ecoregion.

5.3 Dedicated fish biodiversity assessments

Apart from stocks for which advice is provided to clients, ICES does not conduct routine assessments of the status of any fish species. However, with its expertise in the field of fish assessment,

ICES is well placed to conduct such assessments. Table 17 offers some examples of what could be accomplished by way of showing species illustrating different data availability/advisory scenarios.

Assessments could be on foot of requests from clients. ICES could – for instance – offer assessments in the following areas:

- Assessments for GES for fish under the EU MSFD D1 (biodiversity) descriptor, either:
    - Integrated Category 1-type assessments answering Primary Criteria Elements D1C1 (mortality) and D1C2 (abundance/biomass)
    - Assessments of abundance only, answering Criteria Element D1C2
- Assessments of range and/or habitat of particular species towards:
    - EU MSFD Secondary Criteria Elements D1C4 (range) and D1C5 (habitat)
    - The EU Habitats Directive which requires D1C4 and D1C5 type MSFD assessments for listed species
    - Other special requests on sustainable use of the marine space
- Fish population status assessments for Regional Seas Conventions, Regional Fisheries Management Organisations or other advice requesters.
- Data and/or assessments in red List type assessments of extinction risk, either by IUCN, or by third parties (e.g. the EU) using IUCN procedures.

The ICES recurrent advice on by-catch of Protected Threatened and Endangered Species will not include fish in 2021. This is a result of ACOM's decision to pause the provision of this advice until a clear plan for how to provide advice, and how to deal with species for which ICES already gives advice for. It is envisaged that fish will be included in the recurrent by-catch advice from 2022 onwards. The outcome of WKCOFIBYC can be used to select the species/stocks to be included in this going forward.

Table 17. Some examples of scenarios for assessment of fish species by ICES. Abbreviations as follows; a. available, n.a. not available, n.r. not relevant, d.p. data poor. The possibilities per species are structured according to the criteria ele-ments of biodiversity assessments in the EU MSFD, for illustrative purposes only.

					MSFD Criteria Elements for D1 Biodiversity				
Species	**Common name**	**Ecology**	**Advice category**	**Comments**	**C1 Mortality**	**C2 Population**	**C3 Size/Age**	**C4 Range**	**C5 Habitat**
Squalus acanthias	Spurdog	Bentho pelagic	ICES Cat 1		a.	a.	n.a.	n.r.	n.r.
Isurus oxyrinchus	Mako Shark	Pelagic	ICCAT [~Cat 1]		a.	a.	n.a.	n.r.	n.r.
Gadus morhua	Cod	Demersal	ICES Cat 1	Already being done	a.	a.		n.r.	n.r.
Anguilla anguilla	European Eel	Catadromous	ICES/EIFAC	EU MS eel Man Plans	a.	a.	n.a.		
Anarhicus lupus	Wolffish	Deepwater	Cat 1 Iceland only	Rare in North Sea	catch/biomass	survey trends			
Alosa fallax	Twaite Shad	Anadromous	Hab,. Dir. national reports	at sea mortality info.?	n.a.	n.a.	n.a.	HD, MS submission	

Species	Common name	Ecology	Advice category	Comments	MSFD Criteria Elements for D1 Biodiversity				
					C1 Mortality	C2 Population	C3 Size/Age	C4 Range	C5 Habitat
Hippoglossus hippoglossus	Atlantic Halibut	Demersal	None		n.a. (catch data available)	d.p. (DATRAS?)	n.a.		
Scopthalmus maximus	Turbot	Demersal	Cat 3 some areas	Not assessed in CS, BBI	catch/biomass	survey trends	n.a.		
Salmo salar	Atlantic salmon	Anadromous	Advice Greenland fisheries only, national		national level		n.a.	National	National
Hippocampus guttulatus	Long-snouted seahorse	Coastal	None		n.a. (no data)	n.a.	n.a.	?	?
Molva dypterygia	Blue ling	Deepwater	ICES Cat 1, 3		a.; n.a.	a.	n.a.		spawning areas identified
Trachyscorpia cristulata	Spiny scorpionfish	Deepwater	None		n.a. (no data)		n.a.		

Species	Common name	Ecology	Advice category	Comments	MSFD Criteria Elements for D1 Biodiversity				
					C1 Mortality	C2 Population	C3 Size/Age	C4 Range	C5 Habitat
Bathyraja pallida	Pale skate	Deepwater	None	deeper than any fishery, not listed	no catch data		n.a.		

6 List of fish species of bycatch concern

ToR b

*Compile a **list** of fish species of relevance for **ICES bycatch advice** and **assessment units** for these species, incl. considering the **regional approach for ecosystem/fisheries assessments/advice** of ICES - ecoregions. This list will be internally reviewed in ICES (e.g. by WGECO, WGBYC) and then passed to ACOM for consideration (Science Plan codes:3.2., 3.5).*

WKCOFIBYC considered how to construct lists that support provision of regionalised advice on by-catch, both in the routine advice and for the regional fisheries overviews. The workshop was mindful of the Roadmap of ICES bycatch on protected, endangered and threatened species (PETS), which sets out ICES' overarching advisory goal for the bycatch advice on PETS: to assess the risk of, and the impact of fleet activity on incidental bycatch, and to include these in ICES Fisheries Overviews by 2022.Efficient use of internal resources and effective cooperation between ICES and a wide range of international conservation and management organisations is a primary objective of the roadmap, particularly in terms of sharing data and information and a collaborative approach to bycatch assessments and risk evaluation.

In particular, WKCOFIBYC was careful to ensure that, as per the ICES by-catch roadmap, that the RBL doesn't contain species for which ICES is giving fishing opportunities advice in a given ecoregion.

Following the approach outlined above in section 3 and Figure 1, Regional Bycatch Lists (RBLs) would be created from the Regional Advice Lists (RALs). These would also be structured according to the ICES ecoregions and General Fisheries Commission for the Mediterranean (GFCM) geographic subregions as follows:

For TOR b (bycatch) WKCOFIBYC considers the list to be a subset of the RALs. These lists can be termed Regional Bycatch Lists (RBLs), and constructed as follows:

RBL = (RAL – Z) + W)

- Z = Stocks of qualifying species, already assessed by ICES/ICCAT/STECF/GFCM in ICES categories 3 or 4 in that ecoregion.
- W = Species not advised upon anywhere, and listed as Data Deficient (DD) on red lists.

These RBLs can then be filtered per ecoregion in order to produce a shorter species list for advice provision using the following criteria:

- Qualifying criterion: Species subject to strict protection on the Habitats Directive (Annex IV), Appendix I of CMS or CITES.
- Disqualifying criterion: Species having an EU red listing of LC or NT.
- Disqualifying criterion: Stocks already advised upon a by relevant body, note this does not include ICES Category 5/6 stocks, where a species is only assessed in a given ecoregion in either of these categories. The reasoning behind this decision is that stocks that are exclusively assessed in these categories and are of qualifying species (i.e. species included in RAL) are by definition by-catch species, and are not of commercial importance. It is assumed that if these species were of commercial importance and not PET species, they would be assessed in ICES categories 1-4. It should also be noted that many of the species in this situation are ones for which ICES gives status advice, but not catch opportunity advice. Thus, there is no conflict be-tween advice ICES is giving elsewhere on and advice ICES may provide on bycatch.

- Qualifying criterion on information utility/importance
    - Very data poor species for which any data point is informative in itself e.g. S. *squatina*
    - Less data poor, diadromous species for which information can elucidate at-sea by-catch risk e.g. *Alosa* spp.
    - Large megafauna fish and sharks which are encountered rarely but for which approaches as applied for marine mammals can be used e.g. *Cetorhinus maximus*
    - Does the bycatch information provide potentially important information on the sites of occurrence?
    - Does the bycatch information provide useful quantitative data on bycatch rates?
- Disqualifying criterion: stock is outside the spatial/bathymetric range of current fisheries.
- Qualifying criterion: not advised upon anywhere, and listed as Data Deficient (DD) on any relevant red lists e.g. marbled stingray *Dasyatis marmorata*.

This listing process should be revised perhaps every five years using the criteria above. It must be noted that there will be species which should be considered in the future, possibly also in the IUCN global or regional next red list processes.

A particular difficulty was identified by WKCOFIBYC in considering how best deep-water species should be dealt with the RBL. Deepwater species (Table 18) have the following characteristics, being:

- Only occurring deeper than 400 m and/or the permanent thermocline
- Many being PET species, especially the sharks
- Mostly are vulnerable to exploitation
- Can be abundant in catches, even those listed as protected.
- Necessitate different sampling and raising procedures to other PET taxa (which are usually rare and create zero-inflated data).
- Have a dedicated management regime (Regulation (EU) 2016/2336).
- Very speciose in the deep-water environment.

These issues pose questions as to how to incorporate the large, diverse and particular group into any future general by-catch advice. Regulation 2016/2336 requires advice on the interactions between deep water fisheries and deep-water taxa (fish and benthos). The benthos interaction is dealt with in dedicated ICES advice on VMEs (Vulnerable Marine Ecosystems) through ICES WGDEC. Further work is required to scope out how best to position advice on deep-water fish. One approach may be to have an enhanced role for ICES WGDEEP and/or WGDEC alongside that of ICES WGBYC.

6.1 Fisheries overviews

There is a section on species at risk of by-catch in the ICES fisheries overviews and these can be populated from ToR b) RBL list. The recurrent ICES advice on bycatch of Protected Endangered and Threatened Species will be included for 2022 onwards.

6.2 Dedicated bycatch advice

The recurrent ICES advice on bycatch of Protected Endangered and Threatened Species will not include fish, in 2021. This is because ACOM decided to pause the provision of this advice until a clear plan for how to provide advice, and how to deal with species for which ICES already gives advice for. It is envisaged that fish will be included in the recurrent by-catch advice from 2022 onwards. The outcome of WKCOFIBYC can be used to select the species/stocks to be included in this going forward.

Table 18. List of species, from the CSL, which can be considered as deep-water species in either the Mediterranean (FAO Area 37) or NE Atlantic (FAO Area 27) and their listing on the Deep Sea Access Regulation (2016 2336).

Valid scientific name	English name	Deep water species in NE Atlantic	Deep water species in the Mediterranean	Deepwater species sensu 2016 2336	Sensitive species sensu 2016 2336
Chlamydoselachus anguineus	Frilled shark	No	No	Yes	
Galeus melastomus	Blackmouth catshark	Yes	Yes	Yes	
Galeus murinus	Mouse catshark	Yes	No	Yes	
Dalatias licha	Kitefin shark	Yes	Yes	Yes	listed
Centroscyllium fabricii	Black dogfish	Yes	No	Yes	listed
Etmopterus princeps	Great lanternshark	Yes	No	Yes	listed
Etmopterus spinax	Velvetbelly lanternshark	Yes	Yes	Yes	
Centroscymnus coelolepis	Portuguese dogfish	Yes	Yes	Yes	listed
Centroscymnus crepidater	Longnose velvet dogfish	Yes	No	Yes	listed
Scymnodon ringens	Knifetooth dogfish	Yes	No	Yes	
Somniosus microcephalus	Greenland shark	Yes	No	Yes	
Somniosus rostratus	Little sleeper shark	Yes	Yes	No	
Oxynotus centrina	Angular roughshark	Yes	Yes	No	
Oxynotus paradoxus	Sailfin roughshark	Yes	No	Yes	
Centrophorus granulosus	Gulper shark	Yes	Yes	No	
Centrophorus squamosus	Leafscale gulper shark	Yes	No	No	

Valid scientific name	English name	Deep water species in NE Atlantic	Deep water species in the Mediterranean	Deepwater species sensu 2016 2336	Sensitive species sensu 2016 2336
Centrophorus uyato	Little gulper shark	Yes	Yes	No	
Deania calcea	Birdbeak dogfish	Yes	No	Yes	
Echinorhinus brucus	Bramble shark	Yes	Yes	No	
Dipturus nidarosiensis	Norwegian skate	Yes	No	No	
Rajella bathyphila	Deep-water ray	Yes	Yes	No	
Rajella fyllae	Round skate	Yes	Yes	No	
Chimaera monstrosa	Rabbitfish	Yes	Yes	Yes	
Hydrolagus mirabilis	Large-eyed rabbitfish	Yes	No	Yes	
Rhinochimaera atlantica	Atlantic longnose chimaera	Yes	No	Yes	
Notacanthus chemnitzii	Snub-nosed spiny eel	Yes	No	No	
Synaphobranchus kaupi	Kaup's Aarrowtooth Eel	Yes	No	No	
Alepocephalus bairdii	Baird's slickhead	Yes	No	Yes	
Alepocephalus rostratus	Risso's smooth-head	Yes	Yes	Yes	
Argentina silus	Argentine	Yes	No	Yes	
Coryphaenoides rupestris	Roundnose grenadier	Yes	No	Yes	
Hymenocephalus italicus	Glasshead grenadier	Yes	Yes	No	
Macrouridae	Grenadier spp.	Yes	Yes	No	

Valid scientific name	English name	Deep water species in NE Atlantic	Deep water species in the Mediterranean	Deepwater species sensu 2016 2336	Sensitive species sensu 2016 2336
Macrourus berglax	Roughhead grenadier	Yes	No	Yes	
Nezumia aequalis	Common Atlantic grenadier	Yes	Yes	No	
Nezumia sclerorhynchus	Roughtip grenadier	Yes	Yes	No	
Trachyrincus scabrus	Roughsnout grenadier	Yes	Yes	No	
Antimora rostrata	Blue Antimora	Yes	No	Yes	
Mora moro	Common mora	Yes	Yes	Yes	
Brosme brosme	Tusk	Yes	No	No	
Molva dypterygia	Blue ling	Yes	No	No	
Molva macrophthalma	Spanish Ling	Yes	Yes	No	
Phycis blennoides	Greater forkbeard	Yes	Yes	No	
Beryx decadactylus	Alfonsino	Yes	Yes	No	
Beryx splendens	Lowe's beryx	Yes	Yes	No	
Hoplostethus atlanticus	Orange roughy	Yes	No	Yes	listed
Hoplostethus mediterraneus	Silver roughy	Yes	Yes	No	
Cataetyx laticeps	Brotula	Yes	Yes	Yes	
Centrolophus niger	Blackfish	Yes	Yes	No	
Nesiarchus nasutus	Black gemfish	Yes	Yes	Yes	

Valid scientific name	English name	Deep water species in NE Atlantic	Deep water species in the Mediterranean	Deepwater species sensu 2016 2336	Sensitive species sensu 2016 2336
Aphanopus carbo	Black scabbardfish	Yes	Yes	Yes	
Aphanopus intermedius	Intermediate scabbardfish	Yes	No	No	
Lepidopus caudatus	Silver scabbardfish	Yes	Yes	Yes	
Reinhardtius hippoglossoides	Greenland halibut	Yes	No	Yes	
Polyprion americanus	Wreckfish	Yes	Yes	Yes	
Epigonus telescopus	Cardinal fish	Yes	Yes	Yes	listed
Pagellus bogaraveo	Blackspot seabream	Yes	Yes	Yes	
Lycodes esmarkii	Esmark's eelpout	Yes	No	Yes	
Helicolenus dactylopterus	Bluemouth redfish	Yes	Yes	No	
Sebastes mentella	Beaked redfish	Yes	No	No	
Sebastes norvegicus	Golden rosefish	Yes	No	No	
Sebastes viviparus	Norway redfish	Yes	No	Yes	
Scorpaena scrofa	Red scorpionfish	Yes	No	No	
Trachyscorpia cristulata	Atlantic thornyhead	Yes	No	Yes	

7 Conclusions and next steps

WKCOFIBYC recommends that the compiled lists developed by this workshop should be developed into a searchable relational database by ICES Data Centre. Such a database could then be used for future decision-making by the ACOM leadership and others.

WKCOFIBYC recommends the TBL lists of species of bycatch concern should be revised by ACOM about every five years, using the criteria outlined in section 6 of this WKCOFIBYC report.

Fish bycatch incidents would probably constitute the majority of the data submitted in response to future ICES data calls related to bycatch of protected species. Therefore, collaboration between WGBYC and other relevant ICES expert groups (e.g. WGDEC, WGDEEP, WGEF) to evaluate protected fish bycatch data gathered through the WGBYC data call may be needed in the future. This would be a recommendation to WGBYC, WGDEC, WGDEEP, WGEF.

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Annex 1: List of participants

Participant	Country
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Håkan Wennhage	Sweden
Henn Ojaveer	Estonia
Jim Ellis	United Kingdom
Julio Valeiras	Spain
Maurice Clarke (chair)	Ireland
Rita Vasconcelos	Portugal
Ruth Fernández	ICES
Sara Bonanomi	Italy
Vasiliki Kousteni	Greece
Wolfgang Nikolaus Probst	Germany

Annex 2: WKCOFIBYC Comprehensive Species List

The WKCOFIBYC comprehensive species list: includes information columns for each species on associated relevance, ICES ecoregion, Red List categories, and legal protection. Relevance column: Exclude (1: does not occur in ICES area or GFCM area), (2: mostly outside area), Exclude (3: freshwater), Exclude (4: freshwater/brackish), Exclude (5: littoral and shallow sublittoral), Exclude (6: small size, generally < 12 cm TL), Exclude (7: Lessepsian migrants or introduced species), Exclude (8: assumed low catchability due to body shape). Additional data columns for the list are available in the excel version: Region, species previous scientific name, species English name, assessed stock information columns, additional CFP PSL information, occurrence on additional lists (Mediterranean and Black Sea STECF, Mediterranean and Black Sea GFSC, fresh water species, WGBYC, WGECO, WGBIODIV, Rindorf *et al.* 2020, Greenstreet *et al.* 2012, Commission Decision 2016/1251 Table 1D). The full table can be downloaded from the ICES website.

			ICES Ecoregion																Red Lists			Strict protection				Hard Law					Soft Law						
Valid scientific name	FAO_Code	*Relevance*	Arctic Ocean	Greenland Sea	Barents Sea	Norwegian Sea	Icelandic Waters	Faroes	Baltic Sea	Greater North Sea	Celtic Seas	Oceanic Northeast Atlantic	Azores	Bay of Biscay & Iberian Coast	Western Mediterranean	Central Mediterranan	Eastern Mediterranean (Sea of Marmara)	Adriatic Sea	Black Sea	EU Redlist	Med Redlist	IUCN Redlist	Habs.Dir.IV	CFP PSL	NEAFSC	CITES	Habs Dir.	UK HL	NEAFSC	Iceland	CMS	HELCOM	OSPAR	Barcelona	UK SL	Bucharest	Bern	Med
Caspiomyzon hellenicus	n/a	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	na	na	CR	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Eudontomyzon mariae	*LAF*	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	na	na	LC	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Eudontomyzon vladykovi	n/a	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	na	na	LC	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Lampetra fluviatilis	LAR	*Relevant*	0	0	0	0	0	0	1	1	1	0	0	1	1	0	0	1	0	na	na	LC	0	0	0	0	1	0	0	0	0	1	0	0	1	0	1	0
Lampetra planeri	IDN	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	na	na	LC	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0
Lampetra zanandreai	n/a	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	na	na	LC	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Lethenteron zanandreai	IDV	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	na	na	LC	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Petromyzon marinus	LAU	*Relevant*	0	0	1	1	1	1	1	1	1	0	0	1	1	1	1	1	0	na	na	LC	0	0	0	0	1	0	0	0	0	1	1	0	1	0	1	0
Heptranchias perlo	HXT	*Relevant*	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	DD	DD	NT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Hexanchus griseus	SBL	*Relevant*	0	0	0	1	1	1	0	1	1	1	1	1	1	1	1	1	0	LC	LC	NT	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	1
Chlamydoselachus anguineus	HXC	*Relevant*	0	0	1	1	1	1	0	0	1	1	1	1	0	0	0	0	0	LC	na	LC	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0

			ICES Ecoregion																	Red Lists			Strict protection				Hard Law					Soft Law						
Valid scientific name	FAO_Code	*Relevance*	Arctic Ocean	Greenland Sea	Barents Sea	Norwegian Sea	Icelandic Waters	Faroes	Baltic Sea	Greater North Sea	Celtic Seas	Oceanic Northeast Atlantic	Azores	Bay of Biscay & Iberian Coast	Western Mediterranean	Central Mediterranan	Eastern Mediterranean (Sea of Marmara)	Adriatic Sea	Black Sea	EU Redlist	Med Redlist	IUCN Redlist	Habs.Dir.IV	CFP PSL	NEAFSC	CITES	Habs Dir.	UK HL	NEAFSC	Iceland	CMS	HELCOM	OSPAR	Barcelona	UK SL	Bucharest	Bern	Med
Carcharias taurus	CCT	*Relevant*	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	CR	CR	VU	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Odontaspis ferox	LOO	*Relevant*	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	CR	CR	VU	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Alopias spp.	THR	*Relevant*	0	0	0	1	0	0	0	1	1	1	1	1	1	1	1	1	0	na	na	na	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0
Alopias superciliosus	BTH	*Relevant*	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	EN	EN	VU	0	1	0	1	0	0	0	0	1	0	0	0	0	0	1
Alopias vulpinus	ALV	*Relevant*	0	0	0	1	0	1	0	1	1	1	1	1	1	1	1	1	0	EN	EN	VU	0	0	0	1	0	0	0	0	1	0	0	0	0	0	1
Cetorhinus maximus	BSK	*Relevant*	0	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	0	EN	EN	EN	0	1	1	1	0	1	1	1	1	0	1	1	1	0	1	1
Carcharodon carcharias	WSH	*Relevant*	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	CR	CR	VU	0	1	0	1	0	0	0	0	1	0	0	1	0	0	1	1
Isurus oxyrinchus	SMA	*Assessed stock (ICCAT)*	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	DD	CR	EN	0	0	0	1	0	0	0	0	1	0	0	1	1	0	1	1
Isurus paucus	LMA	*Relevant*	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	DD	DD	EN	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0
Lamna nasus	POR	*Relevant*	0	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	0	CR	CR	VU	0	1	1	1	0	1	1	1	1	1	1	1	1	0	1	1
Galeus melastomus	SHO	*Assessed stocks (ICES)*	0	0	0	1	0	1	0	1	1	1	0	1	1	1	1	1	0	LC	LC	LC	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0
Galeus murinus	GAM	*Relevant*	0	1	0	1	1	1	0	0	1	1	0	1	0	0	0	0	0	LC	na	LC	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Apristurus laurussonii	APQ	*Relevant*	0	1	0	1	1	1	0	0	1	1	0	0	0	0	0	0	0	LC	na	DD	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Apristurus spp.	API	*Relevant*	0	1	0	1	1	1	0	0	1	1	1	1	0	0	0	0	0	na	na	na	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Scyliorhinus canicula	SYC	*Assessed stocks (ICES)*	0	0	0	1	0	0	0	1	1	0	0	1	1	1	1	1	0	LC	LC	LC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scyliorhinus stellaris	SYT	*Relevant*	0	0	0	0	0	0	0	1	1	0	0	1	1	1	1	1	0	NT	NT	NT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Galeorhinus galeus	GAG	*Relevant*	0	0	0	1	1	1	0	1	1	1	1	1	1	1	1	1	0	VU	VU	CR	0	1	0	0	0	1	0	0	1	1	0	1	1	0	0	1
Mustelus asterias	SDS	*Relevant*	0	0	0	0	0	0	0	1	1	0	0	1	1	1	1	1	0	NT	VU	LC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Mustelus mustelus	SMD	*Relevant*	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	VU	VU	VU	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Mustelus punctulatus	MPT	*Relevant*	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	VU	VU	DD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Carcharhinus falciformis	FAL	*Relevant*	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	DD	DD	VU	0	1	0	1	0	0	0	0	1	0	0	0	0	0	0	0
Carcharhinus longimanus	OCS	*Relevant*	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	EN	na	CR	0	1	0	1	0	0	0	0	1	0	0	0	0	0	0	0
Carcharhinus plumbeus	CCP	*Relevant*	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	EN	EN	VU	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Prionace glauca	BSH	*Assessed stock (ICCAT)*	0	0	0	1	1	1	0	1	1	1	1	1	1	1	1	1	0	NT	CR	NT	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	1
Sphyrna zygaena	SPZ	*Relevant*	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	DD	CR	VU	0	0	0	1	0	0	0	0	1	0	0	1	0	0	0	1
Sphyrnidae	SPY	*Relevant*	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	na	na	na	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dalatias licha	SCK	*Relevant*	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	EN	VU	VU	0	1	0	0	0	1	1	0	0	0	0	0	1	0	0	1
Centroscyllium fabricii	CFB	*Relevant*	0	1	0	1	1	1	0	1	1	1	0	1	0	0	0	0	0	LC	na	LC	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0
Etmopterus princeps	ETR	*Relevant*	0	1	0	0	1	1	0	1	1	1	1	1	0	0	0	0	0	LC	na	DD	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0
Etmopterus pusillus	ETP	*Relevant*	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	DD	na	LC	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Etmopterus spinax	ETX	*Relevant*	0	0	1	1	1	1	0	1	1	1	1	1	1	1	1	1	0	NT	LC	LC	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	1
Centroscymnus coelolepis	CYO	*Relevant*	0	1	0	1	1	1	0	1	1	1	1	1	1	1	0	0	0	EN	LC	NT	0	1	0	0	0	1	1	0	0	0	0	1	0	0	1	1
Centroscymnus crepidater	CYP	*Relevant*	0	1	0	0	1	1	0	0	1	1	1	1	0	0	0	0	0	LC	na	LC	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0

			ICES Ecoregion																	Red Lists			Strict protection				Hard Law					Soft Law						
Valid scientific name	FAO_Code	*Relevance*	Arctic Ocean	Greenland Sea	Barents Sea	Norwegian Sea	Icelandic Waters	Faroes	Baltic Sea	Greater North Sea	Celtic Seas	Oceanic Northeast Atlantic	Azores	Bay of Biscay & Iberian Coast	Western Mediterranean	Central Mediterranan	Eastern Mediterranean (Sea of Marmara)	Adriatic Sea	Black Sea	EU Redlist	Med Redlist	IUCN Redlist	Habs.Dir.IV	CFP PSL	NEAFSC	CITES	Habs Dir.	UK HL	NEAFSC	Iceland	CMS	HELCOM	OSPAR	Barcelona	UK SL	Bucharest	Bern	Med
Scymnodon ringens	SYR	*Relevant*	0	0	0	0	0	1	0	1	1	1	0	1	0	0	0	0	0	LC	na	DD	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0
Somniosus microcephalus	GSK	*Relevant*	1	1	1	1	1	1	0	1	1	1	0	1	0	0	0	0	0	NT	na	NT	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0
Oxynotus centrina	OXY	*Relevant*	0	0	0	1	0	1	0	1	1	1	0	1	1	1	1	1	0	VU	CR	VU	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Oxynotus paradoxus	OXN	*Relevant*	0	0	0	0	0	1	0	1	1	1	1	0	0	0	0	0	0	DD	na	DD	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0
Centrophorus granulosus	GUP	*Relevant*	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	CR	CR	DD	0	1	0	0	0	0	1	0	0	0	1	0	1	0	0	0
Centrophorus squamosus	GUQ	*Relevant*	0	0	0	1	1	1	0	1	1	1	1	1	0	0	0	0	0	EN	na	VU	0	1	0	0	0	1	1	0	0	0	1	0	1	0	0	0
Centrophorus uyato	CPU	*Relevant*	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	VU	CR	DD	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Deania calcea	DCA	*Relevant*	0	0	0	0	1	1	0	1	1	1	1	1	0	0	0	0	0	EN	na	LC	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0
Squalus acanthias	DGS	*Assessed stock (ICES)*	0	1	1	1	1	1	0	1	1	1	0	1	1	1	1	1	1	EN	EN	VU	0	1	0	0	0	1	0	1	1	1	1	0	1	0	0	1
Echinorhinus brucus	SHB	*Relevant*	0	0	0	1	0	0	0	1	1	1	1	1	1	1	1	1	0	EN	EN	DD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Squatina aculeata	SUA	*Relevant*	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	CR	CR	CR	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Squatina oculata	SUT	*Relevant*	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	CR	CR	CR	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Squatina squatina	AGN	*Relevant*	0	0	0	0	0	0	0	1	1	0	0	1	1	1	1	1	0	CR	CR	CR	0	1	0	0	0	1	0	0	1	0	1	1	1	0	1	1
Tetronarce nobiliana	TTO	*Relevant*	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	0	LC	LC	DD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Torpedo marmorata	TTR	*Relevant*	0	0	0	0	0	0	0	1	1	0	0	1	1	1	1	1	0	LC	LC	DD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rhinobatidae	GTF	*Relevant*	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	na	na	na	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rhinobatos rhinobatos	RBX	*Relevant*	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	EN	EN	EN	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	1
Glaucostegus cemiculus	RBC	*Relevant*	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	EN	EN	CR	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1
Glaucostegus halavi	RBH	*Exclude (7)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	na	na	CR	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Glaucostegus spp.	n/a	*Relevant*	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	na	na	na	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Pristidae	SAW	*Relevant*	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	na	na	na	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Amblyraja hyperborea	RJG	*Relevant*	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	LC	na	LC	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Amblyraja radiata	RJR	*Assessed stock (ICES)*	0	1	1	1	1	1	0	1	1	0	0	0	0	0	0	0	0	LC	na	VU	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dipturus batis	RJB	*Relevant*	0	0	0	1	1	1	0	1	1	1	0	1	0	0	0	0	0	CR	na	CR	0	1	0	0	0	1	0	0	0	1	1	1	1	0	0	1
Dipturus intermedius	DRJ	*Relevant*	0	0	0	1	1	1	0	1	1	1	0	1	0	0	0	0	0	CR	na	CR	0	1	0	0	0	1	0	0	0	1	1	1	1	0	0	1
Dipturus nidarosiensis	JAD	*Relevant*	0	0	1	1	1	1	0	1	1	1	0	1	1	1	0	0	0	NT	na	NT	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Dipturus oxyrinchus	RJO	*Relevant*	0	0	0	1	0	1	0	1	1	1	1	1	1	1	1	1	0	NT	na	NT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Leucoraja circularis	RJI	*Relevant*	0	0	0	1	1	1	0	1	1	1	0	1	1	1	1	1	0	EN	CR	EN	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1
Leucoraja fullonica	RJF	*Relevant*	0	0	1	1	1	1	0	1	1	1	1	1	1	1	1	1	0	VU	CR	VU	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Leucoraja melitensis	JAM	*Relevant*	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	CR	CR	CR	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Leucoraja naevus	RJN	*Assessed stocks (ICES)*	0	0	0	1	0	1	0	1	1	0	0	1	1	1	1	1	0	LC	NT	LC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Raja brachyura	RJH	*Assessed stocks (ICES)*	0	0	0	0	0	0	0	1	1	0	1	1	1	1	1	1	0	NT	NT	NT	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Raja clavata	RJC	*Assessed stocks (ICES)*	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	NT	NT	NT	0	1	0	0	0	0	0	0	0	1	1	0	1	0	0	0

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Valid scientific name	FAO_Code	*Relevance*	Arctic Ocean	Greenland Sea	Barents Sea	Norwegian Sea	Icelandic Waters	Faroes	Baltic Sea	Greater North Sea	Celtic Seas	Oceanic Northeast Atlantic	Azores	Bay of Biscay & Iberian Coast	Western Mediterranean	Central Mediterranan	Eastern Mediterranean (Sea of Marmara)	Adriatic Sea	Black Sea	EU Redlist	Med Redlist	IUCN Redlist	Habs.Dir.IV	CFP PSL	NEAFSC	CITES	Habs Dir.	UK HL	NEAFSC	Iceland	CMS	HELCOM	OSPAR	Barcelona	UK SL	Bucharest	Bern	Med
Raja maderensis	JFY	*Relevant*	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	VU	na	VU	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Raja microocellata	RJE	*Relevant*	0	0	0	0	0	0	0	1	1	0	0	1	0	0	0	0	0	NT	na	NT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Raja montagui	RJM	*Assessed stocks (ICES)*	0	0	0	0	0	0	0	1	1	0	0	1	1	1	1	1	0	LC	LC	LC	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Raja radula	JAR	*Relevant*	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	EN	EN	EN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Raja undulata	RJU	*Assessed stocks (ICES)*	0	0	0	0	0	0	0	1	1	0	0	1	1	1	1	1	0	NT	NT	EN	0	1	0	0	0	1	0	0	0	0	0	0	1	0	0	1
Rajella bathyphila	JRH	*Relevant*	0	1	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	LC	na	LC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rajella fyllae	RJY	*Relevant*	0	1	1	1	1	1	0	1	1	1	0	1	0	0	0	0	0	LC	na	LC	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Rajella lintea	RJK	*Relevant*	0	1	1	1	1	1	0	1	1	1	0	0	0	0	0	0	0	LC	na	LC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rostroraja alba	RJA	*Relevant*	0	0	0	0	0	0	0	1	1	0	0	1	1	1	1	1	0	CR	EN	EN	0	1	0	0	0	1	0	0	0	0	1	1	1	0	0	1
Bathytoshia lata	RDC	*Relevant*	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	VU	VU	LC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Dasyatis pastinaca	JDP	*Relevant*	0	0	0	0	0	0	0	1	1	0	1	1	1	1	1	1	1	VU	VU	DD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Dasyatis tortonesei	JDO	*Relevant*	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	na	na	na	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Himantura leoparda	DKL	*Exclude (7)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	na	na	VU	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Himantura uarnak	DHV	*Exclude (7)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	na	na	VU	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pteroplatytrygon violacea	PLS	*Relevant*	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	0	LC	LC	LC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Gymnura altavela	RGL	*Relevant*	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	CR	CR	VU	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Aetomylaeus bovinus	MPO	*Relevant*	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	na	CR	DD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Myliobatis aquila	MYL	*Relevant*	0	0	0	0	0	0	0	1	1	0	1	1	1	1	1	1	0	VU	VU	DD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Mobula birostris	RMB	*Relevant*	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	na	na	VU	0	1	0	1	0	0	0	0	1	0	0	0	0	0	0	0
Manta spp	MNT	*Relevant*	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	na	na	na	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Mobula mobular	RMM	*Relevant*	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	EN	EN	EN	0	1	0	1	0	0	0	0	1	0	0	1	0	0	1	1
Mobula spp	RMV	*Relevant*	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	na	na	na	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Chimaera monstrosa	CMO	*Relevant*	0	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	0	NT	NT	VU	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Hydrolagus mirabilis	CYH	*Relevant*	0	1	0	1	1	1	0	0	1	1	0	1	0	0	0	0	0	LC	na	LC	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Rhinochimaera atlantica	RCT	*Relevant*	0	1	0	1	1	1	0	0	1	1	0	1	0	0	0	0	0	LC	na	LC	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Acipenser gueldenstaedtii	APG	*Relevant*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	na	CR	CR	0	0	0	1	1	0	0	0	0	0	0	0	1	0	1
Acipenser naccarii	AAA	*Relevant*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	na	CR	CR	1	1	0	1	1	0	0	0	0	0	0	1	0	0	1	1
Acipenser nudiventris	AAN	*Relevant*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	na	na	CR	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0
Acipenser oxyrinchus	AAO	*Relevant*	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	na	na	NT	1	0	0	1	1	0	0	0	0	1	0	0	0	0	0	0
Acipenser ruthenus	APR	*Exclude (4)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	VU	na	VU	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Acipenser spp	STU	*Relevant*	0	0	0	1	0	0	1	1	1	0	0	1	1	1	1	1	1	na	na	na	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Acipenser stellatus	APE	*Relevant*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	na	CR	CR	0	0	0	1	1	0	0	0	0	0	0	0	1	1	1
Acipenser sturio	APU	*Relevant*	0	0	0	1	0	0	1	1	1	0	0	1	1	1	1	1	1	na	CR	CR	1	1	0	1	1	1	0	0	0	0	1	1	1	1	1	1

			ICES Ecoregion																Red Lists			Strict protection				Hard Law					Soft Law						
Valid scientific name	FAO_Code	*Relevance*	Arctic Ocean	Greenland Sea	Barents Sea	Norwegian Sea	Icelandic Waters	Faroes	Baltic Sea	Greater North Sea	Celtic Seas	Oceanic Northeast Atlantic	Azores	Bay of Biscay & Iberian Coast	Western Mediterranean	Central Mediterranan	Eastern Mediterranean (Sea of Marmara)	Adriatic Sea	Black Sea	EU Redlist	Med Redlist	IUCN Redlist	Habs.Dir.IV	CFP PSL	NEAFSC	CITES	Habs Dir.	UK HL	NEAFSC	Iceland	CMS	HELCOM	OSPAR	Barcelona	UK SL	Bucharest	Bern	Med
Huso huso	HUH	*Relevant*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	na	na	CR	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0
Synaphobranchus kaupi	SSK	*Exclude (8)*	0	0	0	0	0	1	0	0	1	1	1	1	0	0	0	0	0	LC	na	LC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Conger conger	COE	*Relevant*	0	0	0	1	1	1	0	1	1	1	1	1	1	1	1	1	1	LC	LC	LC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Anguilla anguilla	ELE	*Assessed stock (ICES)*	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	na	na	CR	0	0	0	1	0	0	0	1	0	1	1	0	1	0	0	0
Alosa alosa	ASD	*Relevant*	0	0	0	0	0	0	1	1	1	0	0	1	1	0	0	0	0	na	na	LC	0	0	0	0	1	1	0	0	0	0	1	0	1	0	1	0
Alosa fallax	TSD	*Relevant*	0	0	0	0	1	1	1	1	1	0	0	1	1	1	1	1	1	na	na	LC	0	0	0	0	1	1	0	0	0	0	0	0	1	0	1	0
Alosa immaculata	n/a	*Relevant*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	na	na	VU	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sardina pilchardus	PIL	*Relevant*	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	NT	LC	LC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Engraulis encrasicolus	ANE	*Relevant*	0	0	0	0	0	0	0	1	1	0	0	1	1	1	1	1	1	LC	LC	LC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cobitis elongata	n/a	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	LC	na	LC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Cobitis haasi	n/a	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	VU	na	na	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Cobitis paludica	n/a	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	VU	na	VU	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Cobitis taenia	BIT	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	LC	na	LC	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0
Cobitis trichonica	n/a	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	EN	na	EN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Misgurnis fossilis	n/a	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	LC	na	LC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Sabanejewia aurata	n/a	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	LC	na	LC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Sabanejewia calderoni	n/a	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	EN	na	na	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Sabanejewia larvata	n/a	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	LC	na	LC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Ballerus ballerus	n/a	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	LC	na	na	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Ballerus sapa	n/a	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	LC	na	na	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Vimba vimba	n/a	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	LC	na	na	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Alburnoides bipunctatus	*ABI*	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	LC	na	na	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Alburnus alburnus	ALR	*Exclude (4)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	LC	na	LC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Leuciscus aspius	ASU	*Exclude (4)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	LC	na	LC	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0
Barbus bocagei	n/a	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	LC	na	na	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Luciobarbus comizo	n/a	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	VU	na	na	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Barbus meridionalis	*BUD*	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NT	na	NT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Luciobarbus microcephalus	n/a	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	VU	na	na	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Barbus peloponnesius	n/a	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	LC	na	na	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Barbus plebejus	*BSJ*	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	LC	na	LC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Luciobarbus sclateri	n/a	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	LC	na	na	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Labeobarbus steindachneri	n/a	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	VU	na	na	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Alburnus chalcoides	*NUC*	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	LC	na	na	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0

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Protochondrostoma genei	*HOG*	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	LC	na	na	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Chondrostoma knerii	n/a	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	VU	na	na	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Iberochondrostoma lusitanicum	n/a	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CR	na	na	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Chondrostoma nasus	*HON*	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	LC	na	LC	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Chondrostoma phoxinus	n/a	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	EN	na	EN	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Pseudochondrostoma polylepis	*HOY*	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	LC	na	na	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Chondrostoma soetta	*HOS*	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	EN	na	EN	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Parachondrostoma toxostoma	*HOX*	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	VU	na	na	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Pseudochondrostoma willkommii	n/a	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	VU	na	na	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Romanogobio albipinnatus	*GOP*	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	LC	na	na	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Romanogobio kesslerii	n/a	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	LC	na	na	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Romanogobio uranoscopus	n/a	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	LC	na	na	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Iberochondrostoma lemmingii	*RFZ*	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	VU	na	VU	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Leucaspius delineatus	*LUD*	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	LC	na	LC	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Squalius illyricus	n/a	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NT	na	na	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Squalius lucumonis	n/a	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	EN	na	na	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Squalius microlepis	n/a	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	EN	na	na	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Telestes polylepis	*LUP*	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CR	na	na	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Squalius pyrenaicus	*LUR*	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NT	na	na	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Telestes souffia	n/a	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	LC	na	na	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Squalius svallize	n/a	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	VU	na	na	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Telestes turskyi	n/a	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CR	na	na	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Squalius pictus	n/a	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	LC	na	LC	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Pelasgus stymphalicus	n/a	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	LC	na	LC	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Pelecus cultratus	*FSC*	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	LC	na	LC	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Delminichthys adspersus	*PXA*	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	VU	na	na	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Phoxinellus hispanicus	n/a	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	EN	na	na	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Pelasgus marathonicus	n/a	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NT	na	na	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Pelasgus stymphalicus	*PDY*	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	LC	na	na	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Rhodeus sericeus	*ROR*	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	LC	na	LC	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Squalius alburnoides	*RLA*	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	VU	na	na	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Achondrostoma arcasii	n/a	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	VU	na	na	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Rutilus frisii	*RFR*	*Exclude (4)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	LC	na	LC	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0

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Scardinius graecus	n/a	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CR	na	na	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Pachychilon macedonicum	n/a	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	DD	na	na	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Rutilus macrolepidotus	n/a	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	LC	na	na	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Rutilus pigus	n/a	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	LC	na	LC	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Rutilus racovitzai	n/a	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CR	na	na	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Sarmarutilus rubilio	*RTR*	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NT	na	NT	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Telestes ukliva	n/a	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	EX	na	na	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Siluris aristotelis	n/a	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	na	na	DD	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Siluris glanis	n/a	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	na	na	LC	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Umbra krameri	*UMK*	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	na	na	VU	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Coregonus albula	FVE	*Unknown*	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	na	na	LC	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0
Coregonus autumnalis	CIA	*Unknown*	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	na	na	LC	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0
Coregonus lavaretus	PLN	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	na	na	VU	0	0	0	0	1	1	0	0	0	0	1	0	1	0	0	0
Coregonus maraena	n/a	*Unknown*	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	na	na	VU	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0
Coregonus oxyrinchus	HOU	*Unknown*	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	na	na	EX	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Coregonus pallasii	n/a	*Unknown*	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	na	na	LC	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Coregonus spp. (excluding C. oxyrhinchus)	WHF	*Unknown*	0	0	1	0	0	0	1	1	1	0	0	0	0	0	0	0	0	na	na	na	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Coregonus widegreni	n/a	*Unknown*	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	DD	na	DD	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Hucho hucho	*HUC*	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	na	na	EN	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Salmo labrax	n/a	*Relevant*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	na	na	LC	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Salmo macrostigma	n/a	*Relevant*	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	na	na	DD	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Salmo marmoratus	SFM	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	na	na	LC	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Salmo salar	SAL	*Assessed stocks (ICES, NASCO)*	0	1	1	1	1	1	1	1	1	1	0	1	0	0	0	0	0	VU	na	LC	0	1	0	0	0	0	0	0	0	1	1	0	1	0	1	0
Salmo trutta	TRS	*Relevant*	0	0	1	1	1	1	1	1	1	1	0	1	0	0	0	0	0	na	na	LC	0	1	0	0	0	0	0	0	0	1	0	0	1	0	0	0
Thymallus thymallus	TLV	*Exclude (4)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	na	na	LC	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	0
Coryphaenoides rupestris	RNG	*Relevant*	0	1	0	1	1	1	0	1	1	1	0	1	0	0	0	0	0	EN	na	CR	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Hymenocephalus italicus	HYS	*Relevant*	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	LC	LC	LC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Macrourus berglax	RHG	*Relevant*	0	1	1	1	1	1	0	1	1	1	0	0	0	0	0	0	0	LC	na	na	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0
Nezumia aequalis	NZA	*Relevant*	0	0	0	0	1	1	0	0	1	1	1	1	1	1	1	0	0	LC	LC	LC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Nezumia sclerorhynchus	NZS	*Relevant*	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0	LC	LC	LC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Trachyrincus scabrus	TSU	*Relevant*	0	0	0	0	0	0	0	0	1	1	0	1	1	1	1	0	0	LC	LC	LC	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1
Mora moro	RIB	*Relevant*	0	0	0	0	1	1	0	0	1	1	1	1	1	1	1	0	0	LC	LC	LC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Gadus morhua	COD	*Assessed stocks (ICES)*	0	1	1	1	1	1	1	1	1	1	0	1	0	0	0	0	0	LC	na	VU	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0

			ICES Ecoregion																	Red Lists			Strict protection				Hard Law					Soft Law						
Valid scientific name	FAO_Code	*Relevance*	Arctic Ocean	Greenland Sea	Barents Sea	Norwegian Sea	Icelandic Waters	Faroes	Baltic Sea	Greater North Sea	Celtic Seas	Oceanic Northeast Atlantic	Azores	Bay of Biscay & Iberian Coast	Western Mediterranean	Central Mediterranan	Eastern Mediterranean (Sea of Marmara)	Adriatic Sea	Black Sea	EU Redlist	Med Redlist	IUCN Redlist	Habs.Dir.IV	CFP PSL	NEAFSC	CITES	Habs Dir.	UK HL	NEAFSC	Iceland	CMS	HELCOM	OSPAR	Barcelona	UK SL	Bucharest	Bern	Med
Melanogrammus aeglefinus	HAD	*Assessed stocks (ICES)*	0	1	1	1	1	1	0	1	1	0	0	1	0	0	0	0	0	LC	na	VU	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Merlangius merlangus	WHG	*Assessed stocks (ICES)*	0	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	LC	LC	LC	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0
Pollachius pollachius	POL	*Assessed stocks (ICES)*	0	0	1	1	1	1	1	1	1	0	0	1	0	0	0	0	0	LC	na	LC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pollachius virens	POK	*Relevant*	0	1	1	1	1	1	0	1	1	1	0	1	0	0	0	0	0	LC	na	na	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Trisopterus esmarkii	NOP	*Assessed stocks (ICES)*	0	0	1	1	1	1	1	1	1	1	0	1	0	0	0	0	0	LC	na	LC	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Brosme brosme	USK	*Assessed stocks (ICES)*	0	1	1	1	1	1	0	1	1	1	0	0	0	0	0	0	0	LC	na	na	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Enchelyopus cimbrius	ENC	*Relevant*	0	0	1	1	1	1	1	1	1	0	0	1	0	0	0	0	0	LC	na	LC	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Lota lota	FBU	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	na	na	LC	0	0	0	0	0	1	0	0	0	1	0	0	1	0	0	0
Molva dypterygia	BLI	*Assessed stocks (ICES)*	0	0	1	1	1	1	0	1	1	1	0	0	0	0	0	0	0	VU	LC	na	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Molva macrophthalma	SLI	*Relevant*	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	LC	LC	na	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Molva molva	LIN	*Assessed stocks (ICES)*	0	0	1	1	1	1	0	0	1	1	0	1	1	0	0	0	0	LC	DD	na	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0
Phycis blennoides	GFB	*Relevant*	0	0	1	1	1	1	0	1	1	1	0	1	1	1	1	1	0	DD	LC	na	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Merluccius merluccius	HKE	*Assessed stocks (ICES)*	0	0	0	1	1	1	0	1	1	1	0	1	1	1	1	1	0	LC	VU	LC	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0
Hoplostethus atlanticus	ORY	*Relevant*	0	0	0	0	1	1	0	0	1	1	1	1	0	0	0	0	0	VU	na	na	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0
Hoplostethus mediterraneus	HPR	*Relevant*	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	LC	LC	LC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Pomatomus saltatrix	BLU	*Relevant*	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	NT	LC	VU	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Orcynopsis unicolor	BOP	*Relevant*	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	VU	LC	LC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Thunnus thynnus	BFT	*Assessed stock (ICCAT)*	0	0	0	1	1	1	0	1	1	1	1	1	1	1	1	1	1	NT	EN	EN	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0
Brama brama	POA	*Relevant*	0	1	1	1	1	1	0	1	1	1	1	1	1	1	0	0	0	LC	DD	LC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ruvettus pretiosus	OIL	*Relevant*	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	0	LC	LC	LC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Hippocampus guttulatus	HPI	*Relevant*	0	0	0	0	0	0	0	1	1	0	1	1	1	1	1	1	1	DD	NT	DD	0	0	0	1	0	1	0	0	0	0	1	1	1	1	1	1
Hippocampus hippocampus	HPH	*Relevant*	0	0	0	0	0	0	0	1	1	0	1	1	1	1	1	1	1	DD	NT	DD	0	0	0	1	0	1	0	0	0	0	1	1	1	0	0	1
Hippocampus spp	HIC	*Relevant*	0	0	0	0	0	0	0	1	1	0	1	1	1	1	1	1	1	na	na	na	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Nerophis ophidion	NRO	*Exclude (5)*	0	0	0	1	0	0	1	1	1	0	0	1	1	1	1	1	1	LC	LC	LC	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Syngnathus abaster	SHQ	*Exclude (5)*	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	LC	DD	LC	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
Syngnathus taenionotus	*SUZ*	*Relevant*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	DD	EN	DD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Syngnathus tenuirostris	STX	*Exclude (5)*	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	DD	NT	DD	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Syngnathus typhle	STQ	*Exclude (5)*	0	0	0	1	0	0	1	1	1	0	0	1	1	1	1	1	1	LC	NT	LC	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Syngnathus variegatus	SVR	*Exclude (5)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	DD	na	DD	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Benthophiloides brauneri	BFB	*Exclude (6)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	na	na	DD	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Benthophilus stellatus	n/a	*Exclude (6)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	na	na	LC	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Caspiosoma caspium	SJP	*Exclude (6)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	na	na	LC	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Gobius cobitis	GBC	*Exclude (5)*	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	1	1	LC	LC	LC	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0

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Gobius couchi	n/a	*Exclude (5)*	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	1	0	LC	DD	LC	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Gobius fluviatilis nigra	n/a	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	LC	na	na	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Ponticola kessleri	n/a	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	LC	na	na	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Padogobius nigricans	n/a	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	VU	na	na	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Zosterisessor ophiocephalus	n/a	*Exclude (5)*	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	LC	LC	LC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Knipowitschia thessala	n/a	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	EN	na	na	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Knipowitschia panizzae	n/a	*Exclude (6)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	LC	na	na	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Lebetus guilleti	GLG	*Exclude (6)*	0	0	0	0	0	0	0	1	1	0	0	0	1	0	0	0	0	LC	DD	LC	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Lebetus scorpioides	n/a	*Exclude (6)*	0	0	0	0	1	1	0	1	1	0	0	1	0	0	0	0	0	LC	na	LC	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Lesueurigobius friesii	GOF	*Exclude (6)*	0	0	0	0	0	0	0	1	1	0	0	1	1	1	1	1	0	LC	LC	LC	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Padogobius bonelli	n/a	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	LC	na	na	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Pomatoschistus canestrinii	n/a	*Exclude (6)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	na	na	LC	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0
Pomatoschistus microps	*OBD*	*Exclude (6)*	0	0	0	1	0	0	1	1	1	0	0	1	1	0	0	0	0	LC	CR	LC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Pomatoschistus minutus	*OBZ*	*Exclude (6)*	0	0	0	1	0	1	1	1	1	0	0	1	1	0	0	0	1	LC	VU	LC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Pomatoschistus norvegicus	n/a	*Exclude (6)*	0	0	1	1	0	1	0	1	1	0	0	0	0	0	0	0	0	LC	DD	LC	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Pomatoschistus pictus	n/a	*Exclude (6)*	0	0	0	1	0	0	0	1	1	0	0	1	0	0	0	0	0	LC	DD	LC	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Pomatoschistus tortonesei	n/a	*Exclude (6)*	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	EN	EN	EN	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0
Ponticola syrman	n/a	*Exclude (4)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	LC	na	na	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Proterorhinus marmoratus	*RSO*	*Exclude (6)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	LC	LC	LC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Lepidorhombus whiffiagonis	MEG	*Assessed stocks (ICES)*	0	0	0	1	1	1	0	1	1	1	1	1	1	1	1	1	0	LC	LC	na	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phrynorhombus norvegicus	FRN	*Exclude (6)*	0	0	1	1	1	1	0	1	1	0	0	1	0	0	0	0	0	LC	na	LC	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Scophthalmus maximus	TUR	*Relevant*	0	0	0	1	1	1	1	1	1	0	0	1	1	1	1	1	1	VU	na	na	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Scophthalmus rhombus	BLL	*Relevant*	0	0	0	1	1	1	1	1	1	0	0	1	1	1	1	1	1	LC	LC	na	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Zeugopterus punctatus	ZGP	*Relevant*	0	0	0	1	0	0	0	1	1	0	0	1	0	0	0	0	0	LC	na	na	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Arnoglossus kessleri	RKZ	*Exclude (6)*	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	DD	DD	DD	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Hippoglossus hippoglossus	HAL	*Relevant*	0	1	1	1	1	1	0	1	1	1	0	1	0	0	0	0	0	VU	na	EN	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0
Platichthys flesus	FLE	*Relevant*	0	0	1	1	0	0	1	1	1	0	0	1	1	1	1	1	1	na	NT	LC	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Solea solea	SOL	*Assessed stocks (ICES)*	0	0	0	0	0	0	0	1	1	0	0	1	1	1	1	1	1	DD	LC	DD	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Trachurus trachurus	HOM	*Assessed stocks (ICES)*	0	0	0	1	1	1	0	1	1	1	1	1	1	1	1	1	1	LC	LC	VU	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Aphanius fasciatus	AFS	*Exclude (5)*	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	na	na	LC	0	0	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0
Aphanius iberus	AFJ	*Exclude (5)*	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	na	na	EN	0	0	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0
Valencia hispanica	VHS	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	na	na	CR	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0
Valencia letourneuxi	VLX	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	na	na	CR	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0

			ICES Ecoregion																Red Lists			Strict protection				Hard Law					Soft Law						
Valid scientific name	FAO_Code	*Relevance*	Arctic Ocean	Greenland Sea	Barents Sea	Norwegian Sea	Icelandic Waters	Faroes	Baltic Sea	Greater North Sea	Celtic Seas	Oceanic Northeast Atlantic	Azores	Bay of Biscay & Iberian Coast	Western Mediterranean	Central Mediterranan	Eastern Mediterranean (Sea of Marmara)	Adriatic Sea	Black Sea	EU Redlist	Med Redlist	IUCN Redlist	Habs.Dir.IV	CFP PSL	NEAFSC	CITES	Habs Dir.	UK HL	NEAFSC	Iceland	CMS	HELCOM	OSPAR	Barcelona	UK SL	Bucharest	Bern	Med
Opeatogenys gracilis	n/a	*Exclude (6)*	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	LC	VU	LC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Salaria fluviatilis	n/a	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	LC	na	LC	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Lophius budegassa	ANK	*Assessed stocks (ICES)*	0	0	0	0	0	1	0	1	1	1	0	1	1	1	1	1	1	LC	LC	DD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lophius piscatorius	MON	*Assessed stocks (ICES)*	0	0	1	1	0	1	0	1	1	1	1	1	1	1	1	1	1	LC	LC	LC	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Mola mola	MOX	*Relevant*	0	0	0	1	0	1	0	1	1	1	1	1	1	1	1	1	0	DD	DD	VU	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Polyprion americanus	WRF	*Relevant*	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	NT	DD	DD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Epigonus telescopus	EPI	*Relevant*	0	0	0	0	0	1	0	0	1	1	1	1	1	1	0	0	0	DD	LC	LC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Dicentrarchus punctatus	BSS	*Relevant*	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	1	LC	LC	LC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Epinephelus aeneus	GPW	*Relevant*	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	DD	NT	NT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Epinephelus caninus	EFJ	*Relevant*	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	LC	DD	DD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Epinephelus costae	EPK	*Relevant*	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	DD	DD	DD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Epinephelus marginatus	GPD	*Relevant*	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	EN	EN	VU	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Mycteroperca fusca	MKF	*Relevant*	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	VU	na	VU	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dentex dentex	DEC	*Relevant*	0	0	0	0	0	0	0	1	1	0	0	1	1	1	1	1	1	VU	VU	VU	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pagellus bogaraveo	SBR	*Assessed stocks (ICES)*	0	0	0	0	0	0	0	1	1	0	1	1	1	1	1	1	0	NT	LC	NT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Sparus aurata	SBG	*Relevant*	0	0	0	0	0	0	0	1	1	0	0	1	1	1	1	1	1	LC	LC	LC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Argyrosomus regius	MGR	*Relevant*	0	0	0	0	0	0	0	1	1	0	0	1	1	1	1	1	1	LC	LC	LC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sciaena umbra	CBM	*Relevant*	0	0	0	0	0	0	0	1	1	0	0	1	1	1	1	1	1	NT	VU	NT	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Umbrina cirrosa	COB	*Relevant*	0	0	0	0	0	0	0	1	1	0	0	1	1	1	1	1	1	VU	VU	VU	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Mullus barbatus	MUT	*Relevant*	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	LC	na	LC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gymnocephalus baloni	*GYL*	*Exclude (4)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	na	na	LC	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Gymnocephalus schraetser	n/a	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	na	na	LC	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Romanichthys valsanicola	*ROV*	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	na	na	CR	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Sander marinus	n/a	*Relevant*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	na	na	DD	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Sander volgensis	n/a	*Exclude (4)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	na	na	LC	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Zingel asper	n/a	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	na	na	CR	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Zingel streber	n/a	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	na	na	LC	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Zingel zingel	*ZIZ*	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	na	na	LC	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Bodianus scrofa	IVD	*Relevant*	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	VU	na	VU	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Labrus bergylta	USB	*Relevant*	0	0	0	1	0	0	1	1	1	0	1	1	0	0	0	0	0	LC	na	LC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Labrus viridis	WRV	*Relevant*	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	VU	VU	VU	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Lycodes esmarkii	LXK	*Relevant*	0	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	LC	na	LC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lycodes gracilis	n/a	*Relevant*	0	0	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	LC	na	na	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0

			ICES Ecoregion																	Red Lists			Strict protection				Hard Law					Soft Law						
Valid scientific name	FAO_Code	*Relevance*	Arctic Ocean	Greenland Sea	Barents Sea	Norwegian Sea	Icelandic Waters	Faroes	Baltic Sea	Greater North Sea	Celtic Seas	Oceanic Northeast Atlantic	Azores	Bay of Biscay & Iberian Coast	Western Mediterranean	Central Mediterranan	Eastern Mediterranean (Sea of Marmara)	Adriatic Sea	Black Sea	EU Redlist	Med Redlist	IUCN Redlist	Habs.Dir.IV	CFP PSL	NEAFSC	CITES	Habs Dir.	UK HL	NEAFSC	Iceland	CMS	HELCOM	OSPAR	Barcelona	UK SL	Bucharest	Bern	Med
Zoarces viviparus	ELP	*Exclude (5)*	0	0	1	1	0	0	1	1	1	0	0	0	0	0	0	0	0	LC	na	na	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Anarhichas denticulatus	CAB	*Relevant*	0	1	1	1	1	1	0	0	0	1	0	0	0	0	0	0	0	EN	na	na	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Anarhichas lupus	CAA	*Relevant*	0	1	1	1	1	1	0	1	1	1	0	0	0	0	0	0	0	DD	na	na	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Anarhichas minor	CAS	*Relevant*	0	1	1	1	1	1	0	1	1	1	0	0	0	0	0	0	0	NT	na	na	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Callionymus pusillus	n/a	*Exclude (6)*	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	LC	LC	LC	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Callionymus risso	n/a	*Exclude (6)*	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	LC	LC	LC	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Helicolenus dactylopterus	BRF	*Relevant*	0	0	0	1	1	1	0	1	1	1	1	1	1	1	1	1	0	LC	LC	LC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Sebastes mentella	REB	*Assessed stocks (ICES)*	0	1	1	1	1	1	0	1	1	1	0	0	0	0	0	0	0	EN	na	LC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sebastes norvegicus	REG	*Assessed stocks (ICES)*	0	1	1	1	1	1	0	1	1	1	0	0	0	0	0	0	0	VU	na	na	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sebastes viviparus	SFV	*Relevant*	0	1	1	1	1	1	0	1	1	1	0	0	0	0	0	0	0	LC	na	na	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Scorpaena scrofa	RSE	*Relevant*	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	LC	LC	LC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chelidonichthys lucerna	GUU	*Relevant*	0	0	0	1	0	0	0	1	1	0	0	1	1	1	1	1	1	LC	na	LC	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Pungitius hellenicus	n/a	*Exclude (3)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CR	na	CR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Pungitius platygaster	n/a	*Exclude (4)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	LC	na	LC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Cottus poecilopus	n/a	*Exclude (4)*	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	LC	na	LC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Myoxocephalus quadricornis	TGQ	*Relevant*	0	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	na	na	LC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Cyclopterus lumpus	LUM	*Relevant*	0	1	1	1	1	1	1	1	1	1	0	1	0	0	0	0	0	NT	na	na	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0

Annex 3: RAL and RBL by ecoregion

RAL (regional assessment lists) and RBL (regional bycatch lists) by ecoregion. Species assessed by ICES at category level 5 or 6 for each ecoregion (*), and deep-water species (†) are highlighted.

Arctic Ecoregion

Scientific name	English name	RAL	RBL
Somniosus microcephalus †	Greenland shark	Y	Y
Amblyraja hyperborea	Arctic skate	Y	Y

Greenland Sea Ecoregion

Scientific name	English name	RAL	RBL
Cetorhinus maximus *	Basking shark	Y	Y
Galeus murinus †	Mouse catshark	Y	Y
Apristurus laurussonii	Iceland catshark	Y	Y
Apristurus spp.	Catshark	Y	Y
Centroscyllium fabricii †	Black dogfish	Y	Y
Etmopterus princeps †	Great lanternshark	Y	Y
Centroscymnus coelolepis * †	Portuguese dogfish	Y	Y
Centroscymnus crepidater †	Longnose velvet dogfish	Y	Y
Somniosus microcephalus †	Greenland shark	Y	Y
Amblyraja hyperborea	Arctic skate	Y	Y
Amblyraja radiata	Starry ray	Y	Y
Rajella bathyphila †	Deep-water ray	Y	Y
Rajella fyllae †	Round skate	Y	Y
Rajella lintea	Sailray	Y	Y
Chimaera monstrosa †	Rabbitfish	Y	Y
Hydrolagus mirabilis †	Large-eyed rabbitfish	Y	Y
Rhinochimaera atlantica †	Atlantic longnose chimaera	Y	Y
Coryphaenoides rupestris * †	Roundnose grenadier	Y	Y
Macrourus berglax * †	Roughhead grenadier	Y	Y
Pollachius virens	Saithe	Y	Y
Brama brama	Atlantic pomfret	Y	Y
Hippoglossus hippoglossus	Atlantic halibut	Y	Y
Lycodes esmarkii †	Esmark's eelpout	Y	Y
Anarhichas denticulatus	Northern wolffish	Y	Y
Anarhichas lupus	Atlantic wolffish	Y	Y
Anarhichas minor	Spotted wolffish	Y	Y
Sebastes mentella †	Beaked redfish	Y	N
Sebastes viviparus †	Norway redfish	Y	Y
Myoxocephalus quadricornis	Fourhorn Sculpin	Y	Y
Cyclopterus lumpus	Lumpfish	Y	Y
Alepocephalus bairdii †	Baird's slickhead	N	Y

Barents Sea Ecoregion

Scientific name	English name	RAL	RBL
Petromyzon marinus	Sea lamprey	Y	Y
Chlamydoselachus anguineus †	Frilled shark	Y	Y
*Cetorhinus maximus **	Basking shark	Y	Y
Etmopterus spinax †	Velvetbelly lanternshark	Y	Y
Somniosus microcephalus †	Greenland shark	Y	Y
Amblyraja hyperborea	Arctic skate	Y	Y
Amblyraja radiata	Starry ray	Y	Y
Dipturus nidarosiensis †	Norwegian skate	Y	Y
Leucoraja fullonica	Shagreen ray	Y	Y
Rajella fyllae †	Round skate	Y	Y
Rajella lintea	Sailray	Y	Y
Chimaera monstrosa †	Rabbitfish	Y	Y
Anguilla anguilla	European Eel	Y	N
Coregonus spp. (excluding C. oxyrhinchus)		Y	Y
Salmo trutta	Sea Trout	Y	Y
*Macrourus berglax * †*	Roughhead grenadier	Y	Y
Pollachius pollachius	Pollack	Y	Y
Brosme brosme †	Tusk	Y	N
*Molva dypterygia * †*	Blue ling	Y	Y
Molva molva	Common ling	Y	N
Phycis blennoides †	Greater forkbeard	Y	N
Brama brama	Atlantic pomfret	Y	Y
Hippoglossus hippoglossus	Atlantic halibut	Y	Y
Lophius piscatorius	Anglerfish	Y	N
Lycodes esmarkii †	Esmark's eelpout	Y	Y
Zoarces viviparus	Eelpout	Y	Y
Anarhichas denticulatus	Northern wolffish	Y	Y
Anarhichas lupus	Atlantic wolffish	Y	Y
Anarhichas minor	Spotted wolffish	Y	Y
Sebastes viviparus †	Norway redfish	Y	Y
Myoxocephalus quadricornis	Fourhorn Sculpin	Y	Y
Cyclopterus lumpus	Lumpfish	Y	Y

Norwegian Sea Ecoregion

Scientific name	English name	RAL	RBL
Petromyzon marinus	Sea lamprey	Y	Y
Hexanchus griseus	Bluntnose sixgill shark	Y	Y
Chlamydoselachus anguineus †	Frilled shark	Y	Y
*Alopias spp. **	Thresher sharks	Y	Y
*Alopias vulpinus **	Common thresher	Y	Y
*Cetorhinus maximus **	Basking shark	Y	Y
Galeus melastomus †	Blackmouth catshark	Y	Y
Galeus murinus †	Mouse catshark	Y	Y
Apristurus laurussonii	Iceland catshark	Y	Y
Apristurus spp.	Catshark	Y	Y
Scyliorhinus canicula	Lesser-spotted dogfish	Y	Y
*Galeorhinus galeus **	Tope shark	Y	Y
Centroscyllium fabricii †	Black dogfish	Y	Y
Etmopterus spinax †	Velvetbelly lanternshark	Y	Y
*Centroscymnus coelolepis * †*	Portuguese dogfish	Y	Y
Somniosus microcephalus †	Greenland shark	Y	Y
*Centrophorus squamosus * †*	Leafscale gulper shark	Y	Y
Amblyraja hyperborea	Arctic skate	Y	Y
Amblyraja radiata	Starry ray	Y	Y
Dipturus batis	Common blue skate	Y	Y
Dipturus intermedius	Flapper skate	Y	Y
Dipturus nidarosiensis †	Norwegian skate	Y	Y
Dipturus oxyrinchus	Long-nosed skate	Y	Y
Leucoraja circularis	Sandy ray	Y	Y
Leucoraja fullonica	Shagreen ray	Y	Y
Leucoraja naevus	Cuckoo ray	Y	Y
Raja clavata	Thornback ray	Y	Y
Rajella fyllae †	Round skate	Y	Y
Rajella lintea	Sailray	Y	Y
Chimaera monstrosa †	Rabbitfish	Y	Y
Hydrolagus mirabilis †	Large-eyed rabbitfish	Y	Y
Rhinochimaera atlantica †	Atlantic longnose chimaera	Y	Y
Acipenser spp	Sturgeons	Y	Y
Acipenser sturio	Atlantic sturgeon	Y	Y
Conger conger	Conger eel	Y	Y
Anguilla anguilla	European Eel	Y	N
Salmo trutta	Sea Trout	Y	Y
*Coryphaenoides rupestris * †*	Roundnose grenadier	Y	Y
*Macrourus berglax * †*	Roughhead grenadier	Y	Y
Pollachius pollachius	Pollack	Y	Y
Brosme brosme †	Tusk	Y	N
*Molva dypterygia * †*	Blue ling	Y	Y
Molva molva	Common ling	Y	N

Norwegian Sea Ecoregion (continued)

Scientific name	English name	RAL	RBL
Labrus bergylta	Ballan wrasse	Y	Y
Lycodes esmarkii †	Esmark's eelpout	Y	Y
Zoarces viviparus	Eelpout	Y	Y
Anarhichas denticulatus	Northern wolffish	Y	Y
Anarhichas lupus	Atlantic wolffish	Y	Y
Anarhichas minor	Spotted wolffish	Y	Y
Helicolenus dactylopterus †	Bluemouth redfish	Y	Y
Sebastes viviparus †	Norway redfish	Y	Y
Chelidonichthys lucerna	Tub gurnard	Y	Y
Myoxocephalus quadricornis	Fourhorn Sculpin	Y	Y
Cyclopterus lumpus	Lumpfish	Y	Y

Icelandic Waters Ecoregion

Scientific name	English name	RAL	RBL
Petromyzon marinus	Sea lamprey	Y	Y
Hexanchus griseus	Bluntnose sixgill shark	Y	Y
Chlamydoselachus anguineus †	Frilled shark	Y	Y
*Cetorhinus maximus **	Basking shark	Y	Y
Galeus murinus †	Mouse catshark	Y	Y
Apristurus laurussonii	Iceland catshark	Y	Y
Apristurus spp.	Catshark	Y	Y
*Galeorhinus galeus **	Tope shark	Y	Y
Centroscyllium fabricii †	Black dogfish	Y	Y
Etmopterus princeps †	Great lanternshark	Y	Y
Etmopterus spinax †	Velvetbelly lanternshark	Y	Y
*Centroscymnus coelolepis * †*	Portuguese dogfish	Y	Y
Centroscymnus crepidater †	Longnose velvet dogfish	Y	Y
Somniosus microcephalus †	Greenland shark	Y	Y
*Centrophorus squamosus * †*	Leafscale gulper shark	Y	Y
Deania calcea †	Birdbeak dogfish	Y	Y
Amblyraja hyperborea	Arctic skate	Y	Y
Amblyraja radiata	Starry ray	Y	Y
Dipturus batis	Common blue skate	Y	Y
Dipturus intermedius	Flapper skate	Y	Y
Dipturus nidarosiensis †	Norwegian skate	Y	Y
Leucoraja circularis	Sandy ray	Y	Y
Leucoraja fullonica	Shagreen ray	Y	Y
Raja clavata	Thornback ray	Y	Y
Rajella bathyphila †	Deep-water ray	Y	Y
Rajella fyllae †	Round skate	Y	Y
Rajella lintea	Sailray	Y	Y
Chimaera monstrosa †	Rabbitfish	Y	Y
Hydrolagus mirabilis †	Large-eyed rabbitfish	Y	Y
Rhinochimaera atlantica †	Atlantic longnose chimaera	Y	Y
Conger conger	Conger eel	Y	Y
Anguilla anguilla	European Eel	Y	N
Alosa fallax	Twaite shad	Y	Y
Salmo trutta	Sea Trout	Y	Y
*Coryphaenoides rupestris * †*	Roundnose grenadier	Y	Y
*Macrourus berglax * †*	Roughhead grenadier	Y	Y
Mora moro †	Common mora	Y	Y
Pollachius pollachius	Pollack	Y	Y
Molva dypterygia †	Blue ling	Y	N
Phycis blennoides †	Greater forkbeard	Y	N
Merluccius merluccius	European hake	Y	Y
*Hoplostethus atlanticus * †*	Orange roughy	Y	Y
Brama brama	Atlantic pomfret	Y	Y

Icelandic Waters Ecoregion (continued)

Scientific name	English name	RAL	RBL
Lepidorhombus whiffiagonis	Megrim	Y	Y
Scophthalmus maximus	Turbot	Y	Y
Scophthalmus rhombus	Brill	Y	Y
Hippoglossus hippoglossus	Atlantic halibut	Y	Y
Lycodes esmarkii †	Esmark's eelpout	Y	Y
Anarhichas denticulatus	Northern wolffish	Y	Y
Anarhichas lupus	Atlantic wolffish	Y	Y
Anarhichas minor	Spotted wolffish	Y	Y
Helicolenus dactylopterus †	Bluemouth redfish	Y	Y
Sebastes mentella †	Beaked redfish	Y	N
Sebastes viviparus †	Norway redfish	Y	Y
Cyclopterus lumpus	Lumpfish	Y	Y
Alepocephalus bairdii †	Baird's slickhead	N	Y
Lepidopus caudatus †	Silver scabbardfish	N	Y

Faroes Ecoregion

Scientific name	English name	RAL	RBL
Petromyzon marinus	Sea lamprey	Y	Y
Hexanchus griseus	Bluntnose sixgill shark	Y	Y
Chlamydoselachus anguineus †	Frilled shark	Y	Y
*Alopias vulpinus **	Common thresher	Y	Y
*Cetorhinus maximus **	Basking shark	Y	Y
Galeus melastomus †	Blackmouth catshark	Y	Y
Galeus murinus †	Mouse catshark	Y	Y
Apristurus laurussonii	Iceland catshark	Y	Y
Apristurus spp.	Catshark	Y	Y
*Galeorhinus galeus **	Tope shark	Y	Y
Centroscyllium fabricii †	Black dogfish	Y	Y
Etmopterus princeps †	Great lanternshark	Y	Y
Etmopterus spinax †	Velvetbelly lanternshark	Y	Y
*Centroscymnus coelolepis * †*	Portuguese dogfish	Y	Y
Centroscymnus crepidater †	Longnose velvet dogfish	Y	Y
Scymnodon ringens †	Knifetooth dogfish	Y	Y
Somniosus microcephalus †	Greenland shark	Y	Y
Oxynotus paradoxus †	Sailfin roughshark	Y	Y
*Centrophorus squamosus * †*	Leafscale gulper shark	Y	Y
Deania calcea †	Birdbeak dogfish	Y	Y
Amblyraja hyperborea	Arctic skate	Y	Y
Amblyraja radiata	Starry ray	Y	Y
Dipturus batis	Common blue skate	Y	Y
Dipturus intermedius	Flapper skate	Y	Y
Dipturus nidarosiensis †	Norwegian skate	Y	Y
Dipturus oxyrinchus	Long-nosed skate	Y	Y
Leucoraja circularis	Sandy ray	Y	Y
Leucoraja fullonica	Shagreen ray	Y	Y
Leucoraja naevus	Cuckoo ray	Y	Y
Raja clavata	Thornback ray	Y	Y
Rajella bathyphila †	Deep-water ray	Y	Y
Rajella fyllae †	Round skate	Y	Y
Rajella lintea	Sailray	Y	Y
Chimaera monstrosa †	Rabbitfish	Y	Y
Hydrolagus mirabilis †	Large-eyed rabbitfish	Y	Y
Rhinochimaera atlantica †	Atlantic longnose chimaera	Y	Y
Synaphobranchus kaupi †	Kaup's Aarrowtooth Eel	Y	Y
Conger conger	Conger eel	Y	Y
Anguilla anguilla	European Eel	Y	N
Alosa fallax	Twaite shad	Y	Y
Salmo trutta	Sea Trout	Y	Y
*Coryphaenoides rupestris * †*	Roundnose grenadier	Y	Y
*Macrourus berglax * †*	Roughhead grenadier	Y	Y

Faroes Ecoregion (continued)

Scientific name	English name	RAL	RBL
Mora moro †	Common mora	Y	Y
Pollachius pollachius	Pollack	Y	Y
Brosme brosme †	Tusk	Y	N
Molva molva	Common ling	Y	N
Phycis blennoides †	Greater forkbeard	Y	N
Merluccius merluccius	European hake	Y	Y
Hoplostethus atlanticus * †	Orange roughy	Y	Y
Brama brama	Atlantic pomfret	Y	Y
Pomatoschistus minutus	Sand goby	Y	Y
Lepidorhombus whiffiagonis	Megrim	Y	Y
Scophthalmus maximus	Turbot	Y	Y
Scophthalmus rhombus	Brill	Y	Y
Hippoglossus hippoglossus	Atlantic halibut	Y	Y
Lophius budegassa	Blackbellied anglerfish	Y	N
Lophius piscatorius	Anglerfish	Y	N
Mola mola	Ocean sunfish	Y	Y
Epigonus telescopus †	Cardinal fish	Y	Y
Lycodes esmarkii †	Esmark's eelpout	Y	Y
Anarhichas denticulatus	Northern wolffish	Y	Y
Anarhichas lupus	Atlantic wolffish	Y	Y
Anarhichas minor	Spotted wolffish	Y	Y
Helicolenus dactylopterus †	Bluemouth redfish	Y	Y
Sebastes mentella †	Beaked redfish	Y	N
Sebastes viviparus †	Norway redfish	Y	Y
Cyclopterus lumpus	Lumpfish	Y	Y
Alepocephalus bairdii †	Baird's slickhead	N	Y
Lepidopus caudatus †	Silver scabbardfish	N	Y

Baltic Sea Ecoregion

Scientific name	English name	RAL	RBL
Lampetra fluviatilis	River lamprey	Y	Y
Petromyzon marinus	Sea lamprey	Y	Y
Raja clavata	Thornback ray	Y	Y
Acipenser oxyrinchus	Gulf sturgeon	Y	Y
Acipenser spp	Sturgeons	Y	Y
Acipenser sturio	Atlantic sturgeon	Y	Y
Anguilla anguilla	European Eel	Y	N
Alosa alosa	Allis shad	Y	Y
Alosa fallax	Twaite shad	Y	Y
Coregonus maraena	Whitefish	Y	Y
Coregonus oxyrinchus	Houting	Y	Y
Coregonus pallasii	Pallas's houting	Y	Y
Coregonus spp. (excluding C. oxyrhinchus)		Y	Y
Coregonus widegreni	Baltic houting	Y	Y
Salmo trutta	Sea Trout	Y	N
Merlangius merlangus	Whiting	Y	Y
Pollachius pollachius	Pollack	Y	Y
Enchelyopus cimbrius	Fourbeard rockling	Y	Y
Pomatoschistus microps	Common goby	Y	Y
Pomatoschistus minutus	Sand goby	Y	Y
Scophthalmus maximus	Turbot	Y	N
Scophthalmus rhombus	Brill	Y	N
Labrus bergylta	Ballan wrasse	Y	Y
Zoarces viviparus	Eelpout	Y	Y
Cottus poecilopus	Alpine bullhead	Y	Y
Myoxocephalus quadricornis	Fourhorn Sculpin	Y	Y
Cyclopterus lumpus	Lumpfish	Y	Y

Greater North Sea Ecoregion

Scientific name	English name	RAL	RPL
Lampetra fluviatilis	River lamprey	Y	Y
Petromyzon marinus	Sea lamprey	Y	Y
Hexanchus griseus	Bluntnose sixgill shark	Y	Y
Alopias spp. *	Thresher sharks	Y	Y
Alopias vulpinus *	Common thresher	Y	Y
Cetorhinus maximus *	Basking shark	Y	Y
Galeus melastomus †	Blackmouth catshark	Y	Y
Scyliorhinus canicula	Lesser-spotted dogfish	Y	N
Scyliorhinus stellaris	Greater-spotted dogfish	Y	Y
Galeorhinus galeus *	Tope shark	Y	Y
Mustelus asterias	Starry smoothhound	Y	N
Dalatias licha * †	Kitefin shark	Y	Y
Centroscyllium fabricii †	Black dogfish	Y	Y
Etmopterus princeps †	Great lanternshark	Y	Y
Etmopterus spinax †	Velvetbelly lanternshark	Y	Y
Centroscymnus coelolepis * †	Portuguese dogfish	Y	Y
Scymnodon ringens †	Knifetooth dogfish	Y	Y
Somniosus microcephalus †	Greenland shark	Y	Y
Oxynotus paradoxus †	Sailfin roughshark	Y	Y
Centrophorus squamosus * †	Leafscale gulper shark	Y	Y
Deania calcea †	Birdbeak dogfish	Y	Y
Squatina squatina *	Angelshark	Y	Y
Tetronarce nobiliana	Atlantic torpedo ray	Y	Y
Torpedo marmorata	Marbled electric ray	Y	Y
Amblyraja radiata	Starry ray	Y	N
Dipturus batis *	Common blue skate	Y	Y
Dipturus intermedius	Flapper skate	Y	Y
Dipturus nidarosiensis †	Norwegian skate	Y	Y
Dipturus oxyrinchus	Long-nosed skate	Y	Y
Leucoraja circularis	Sandy ray	Y	Y
Leucoraja fullonica	Shagreen ray	Y	Y
Leucoraja naevus	Cuckoo ray	Y	N
Raja brachyura	Blonde ray	Y	N
Raja clavata	Thornback ray	Y	N
Raja microocellata	Small-eyed ray	Y	Y
Raja montagui	Spotted ray	Y	N
Raja undulata	Undulate ray	Y	Y
Rajella fyllae †	Round skate	Y	Y
Rajella lintea	Sailray	Y	Y
Rostroraja alba *	White skate	Y	Y
Dasyatis pastinaca	Common stingray	Y	Y
Myliobatis aquila	Common eagle ray	Y	Y
Chimaera monstrosa †	Rabbitfish	Y	Y

Greater North Sea Ecoregion (continued)

Scientific name	English name	RAL	RPL
Acipenser oxyrinchus	Gulf sturgeon	Y	Y
Acipenser spp	Sturgeons	Y	Y
Acipenser sturio	Atlantic sturgeon	Y	Y
Conger conger	Conger eel	Y	Y
Anguilla anguilla	European Eel	Y	N
Alosa alosa	Allis shad	Y	Y
Alosa fallax	Twaite shad	Y	Y
Coregonus maraena	Whitefish	Y	Y
Coregonus oxyrinchus	Houting	Y	Y
Coregonus spp. (excluding C. oxyrhinchus)		Y	Y
Salmo trutta	Sea Trout	Y	Y
*Coryphaenoides rupestris * †*	Roundnose grenadier	Y	Y
*Macrourus berglax * †*	Roughhead grenadier	Y	Y
Pollachius pollachius	Pollack	Y	N
Brosme brosme †	Tusk	Y	N
Molva dypterygia †	Blue ling	Y	N
Phycis blennoides †	Greater forkbeard	Y	N
Brama brama	Atlantic pomfret	Y	Y
Hippocampus guttulatus	Long-snouted seahorse	Y	Y
Hippocampus hippocampus	Short-snouted seahorse	Y	Y
Hippocampus spp	Seahorse spp.	Y	Y
Pomatoschistus microps	Common goby	Y	Y
Pomatoschistus minutus	Sand goby	Y	Y
Lepidorhombus whiffiagonis	Megrim	Y	Y
Scophthalmus rhombus	Brill	Y	N
Hippoglossus hippoglossus	Atlantic halibut	Y	Y
Lophius budegassa	Blackbellied anglerfish	Y	N
Lophius piscatorius	Anglerfish	Y	N
Mola mola	Ocean sunfish	Y	Y
Dentex dentex	Common dentex	Y	Y
Sparus aurata	Gilt-head seabream	Y	Y
Argyrosomus regius	Meagre	Y	Y
Sciaena umbra	Brown meagre	Y	Y
Umbrina cirrosa	Shi drum	Y	Y
Labrus bergylta	Ballan wrasse	Y	Y
Lycodes esmarkii †	Esmark's eelpout	Y	Y
Zoarces viviparus	Eelpout	Y	Y
Anarhichas lupus	Atlantic wolffish	Y	Y
Anarhichas minor	Spotted wolffish	Y	Y
Helicolenus dactylopterus †	Bluemouth redfish	Y	Y
Sebastes mentella †	Beaked redfish	Y	Y
Sebastes norvegicus †	Golden rosefish	Y	Y
Sebastes viviparus †	Norway redfish	Y	Y

Greater North Sea Ecoregion (continued)

Scientific name	English name	RAL	RPL
Chelidonichthys lucerna	Tub gurnard	Y	Y
Cyclopterus lumpus	Lumpfish	Y	Y
Zeus faber	John Dory	N	Y
Lepidopus caudatus †	Silver scabbardfish	N	Y

Celtic Seas Ecoregion

Scientific name	English name	RAL	RBL
Lampetra fluviatilis	River lamprey	Y	Y
Petromyzon marinus	Sea lamprey	Y	Y
Hexanchus griseus	Bluntnose sixgill shark	Y	Y
Chlamydoselachus anguineus †	Frilled shark	Y	Y
Alopias spp. *	Thresher sharks	Y	Y
Alopias vulpinus *	Common thresher	Y	Y
Cetorhinus maximus *	Basking shark	Y	Y
Galeus melastomus †	Blackmouth catshark	Y	N
Galeus murinus †	Mouse catshark	Y	Y
Apristurus laurussonii	Iceland catshark	Y	Y
Apristurus spp.	Catshark	Y	Y
Scyliorhinus canicula	Lesser-spotted dogfish	Y	N
Scyliorhinus stellaris	Greater-spotted dogfish	Y	N
Galeorhinus galeus *	Tope shark	Y	Y
Mustelus asterias	Starry smoothhound	Y	N
Sphyrna zygaena	Smooth hammerhead	Y	Y
Sphyrnidae	Hammerhead sharks	Y	Y
Dalatias licha * †	Kitefin shark	Y	Y
Centroscyllium fabricii †	Black dogfish	Y	Y
Etmopterus princeps †	Great lanternshark	Y	Y
Etmopterus spinax †	Velvetbelly lanternshark	Y	Y
Centroscymnus coelolepis * †	Portuguese dogfish	Y	Y
Centroscymnus crepidater †	Longnose velvet dogfish	Y	Y
Scymnodon ringens †	Knifetooth dogfish	Y	Y
Somniosus microcephalus †	Greenland shark	Y	Y
Oxynotus paradoxus †	Sailfin roughshark	Y	Y
Centrophorus squamosus * †	Leafscale gulper shark	Y	Y
Deania calcea †	Birdbeak dogfish	Y	Y
Squatina squatina *	Angelshark	Y	Y
Tetronarce nobiliana	Atlantic torpedo ray	Y	Y
Torpedo marmorata	Marbled electric ray	Y	Y
Amblyraja radiata	Starry ray	Y	Y
Dipturus batis *	Common blue skate	Y	Y
Dipturus intermedius	Flapper skate	Y	Y
Dipturus nidarosiensis †	Norwegian skate	Y	Y
Dipturus oxyrinchus	Long-nosed skate	Y	Y
Leucoraja circularis *	Sandy ray	Y	Y
Leucoraja fullonica *	Shagreen ray	Y	Y
Leucoraja naevus	Cuckoo ray	Y	N
Raja brachyura *	Blonde ray	Y	Y
Raja clavata	Thornback ray	Y	N
Raja microocellata	Small-eyed ray	Y	N
Raja montagui	Spotted ray	Y	N

Celtic Seas Ecoregion (continued)

Scientific name	English name	RAL	RBL
Raja undulata *	Undulate ray	Y	Y
Rajella bathyphila †	Deep-water ray	Y	Y
Rajella fyllae †	Round skate	Y	Y
Rajella lintea	Sailray	Y	Y
Rostroraja alba *	White skate	Y	Y
Dasyatis pastinaca	Common stingray	Y	Y
Myliobatis aquila	Common eagle ray	Y	Y
Chimaera monstrosa †	Rabbitfish	Y	Y
Hydrolagus mirabilis †	Large-eyed rabbitfish	Y	Y
Rhinochimaera atlantica †	Atlantic longnose chimaera	Y	Y
Acipenser oxyrinchus	Gulf sturgeon	Y	Y
Acipenser spp	Sturgeons	Y	Y
Acipenser sturio	Atlantic sturgeon	Y	Y
Synaphobranchus kaupi	Kaup's Aarrowtooth Eel	Y	Y
Conger conger	Conger eel	Y	Y
Anguilla anguilla	European Eel	Y	N
Alosa alosa	Allis shad	Y	Y
Alosa fallax	Twaite shad	Y	Y
Coregonus oxyrinchus	Houting	Y	Y
Coregonus spp. (excluding C. oxyrhinchus)		Y	Y
Salmo trutta *	Sea Trout	Y	Y
Coryphaenoides rupestris * †	Roundnose grenadier	Y	Y
Macrourus berglax * †	Roughhead grenadier	Y	Y
Trachyrincus scabrus * †	Roughsnout grenadier	Y	Y
Mora moro †	Common mora	Y	Y
Pollachius pollachius	Pollack	Y	N
Trisopterus esmarkii *	Norway pout	Y	Y
Brosme brosme †	Tusk	Y	N
Molva macrophthalma †	Spanish Ling	Y	Y
Molva molva	Common ling	Y	N
Phycis blennoides †	Greater forkbeard	Y	N
Hoplostethus atlanticus * †	Orange roughy	Y	Y
Brama brama	Atlantic pomfret	Y	Y
Hippocampus guttulatus	Long-snouted seahorse	Y	Y
Hippocampus hippocampus	Short-snouted seahorse	Y	Y
Hippocampus spp	Seahorse spp.	Y	Y
Gobius cobitis	Giant goby	Y	Y
Gobius couchi	Couch's goby	Y	Y
Pomatoschistus microps	Common goby	Y	Y
Pomatoschistus minutus	Sand goby	Y	Y
Scophthalmus maximus	Turbot	Y	Y
Scophthalmus rhombus	Brill	Y	Y
Hippoglossus hippoglossus	Atlantic halibut	Y	Y

Celtic Seas Ecoregion (continued)

Scientific name	English name	RAL	RBL
Lophius budegassa	Blackbellied anglerfish	Y	N
Mola mola	Ocean sunfish	Y	Y
Polyprion americanus †	Wreckfish	Y	Y
Epigonus telescopus †	Cardinal fish	Y	Y
Dicentrarchus punctatus	Spotted seabass	Y	Y
Dentex dentex	Common dentex	Y	Y
Sparus aurata	Gilt-head seabream	Y	Y
Argyrosomus regius	Meagre	Y	Y
Sciaena umbra	Brown meagre	Y	Y
Umbrina cirrosa	Shi drum	Y	Y
Labrus bergylta	Ballan wrasse	Y	Y
Zoarces viviparus	Eelpout	Y	Y
Anarhichas lupus	Atlantic wolffish	Y	Y
Anarhichas minor	Spotted wolffish	Y	Y
Helicolenus dactylopterus †	Bluemouth redfish	Y	Y
Sebastes mentella †	Beaked redfish	Y	Y
Sebastes viviparus †	Norway redfish	Y	Y
Scorpaena scrofa †	Red scorpionfish	Y	Y
Chelidonichthys lucerna	Tub gurnard	Y	Y
Cyclopterus lumpus	Lumpfish	Y	Y
Somniosus rostratus †	Little sleeper shark	N	N
Alepocephalus bairdii †	Baird's slickhead	N	Y
Zeus faber	John Dory	N	Y
Lepidopus caudatus †	Silver scabbardfish	N	Y

Oceanic Northeast Atlantic Ecoregion

Scientific name	English name	RAL	RBL
Hexanchus griseus	Bluntnose sixgill shark	Y	Y
Chlamydoselachus anguineus †	Frilled shark	Y	Y
Alopias spp. *	Thresher sharks	Y	Y
Alopias superciliosus *	Bigeye thresher	Y	Y
Alopias vulpinus *	Common thresher	Y	Y
Cetorhinus maximus *	Basking shark	Y	Y
Carcharodon carcharias	White shark	Y	Y
Isurus paucus	Longfin mako	Y	Y
Galeus melastomus †	Blackmouth catshark	Y	Y
Galeus murinus †	Mouse catshark	Y	Y
Apristurus laurussonii	Iceland catshark	Y	Y
Apristurus spp.	Catshark	Y	Y
Galeorhinus galeus *	Tope shark	Y	Y
Carcharhinus falciformis	Silky shark	Y	Y
Carcharhinus longimanus	Oceanic whitetip shark	Y	Y
Sphyrna zygaena	Smooth hammerhead	Y	Y
Sphyrnidae	Hammerhead sharks	Y	Y
Dalatias licha * †	Kitefin shark	Y	Y
Centroscyllium fabricii †	Black dogfish	Y	Y
Etmopterus princeps †	Great lanternshark	Y	Y
Etmopterus pusillus	Smooth lanternshark	Y	Y
Etmopterus spinax †	Velvetbelly lanternshark	Y	Y
Centroscymnus coelolepis * †	Portuguese dogfish	Y	Y
Centroscymnus crepidater †	Longnose velvet dogfish	Y	Y
Scymnodon ringens †	Knifetooth dogfish	Y	Y
Somniosus microcephalus †	Greenland shark	Y	Y
Oxynotus paradoxus †	Sailfin roughshark	Y	Y
Centrophorus granulosus	Gulper shark	Y	Y
Centrophorus squamosus * †	Leafscale gulper shark	Y	Y
Deania calcea †	Birdbeak dogfish	Y	Y
Tetronarce nobiliana	Atlantic torpedo ray	Y	Y
Dipturus batis	Common blue skate	Y	Y
Dipturus intermedius	Flapper skate	Y	Y
Dipturus nidarosiensis †	Norwegian skate	Y	Y
Dipturus oxyrinchus	Long-nosed skate	Y	Y
Leucoraja circularis	Sandy ray	Y	Y
Leucoraja fullonica	Shagreen ray	Y	Y
Raja clavata	Thornback ray	Y	Y
Rajella bathyphila †	Deep-water ray	Y	Y
Rajella fyllae †	Round skate	Y	Y
Rajella lintea	Sailray	Y	Y
Mobula birostris	Giant manta	Y	Y
Manta spp	Manta rays	Y	Y

Oceanic Northeast Atlantic Ecoregion (continued)

Scientific name	English name	RAL	RBL
Mobula mobular	Giant devilray	Y	Y
Mobula spp	Devilrays	Y	Y
Chimaera monstrosa †	Rabbitfish	Y	Y
Hydrolagus mirabilis †	Large-eyed rabbitfish	Y	Y
Rhinochimaera atlantica †	Atlantic longnose chimaera	Y	Y
Synaphobranchus kaupi †	Kaup's Aarrowtooth Eel	Y	Y
Conger conger	Conger eel	Y	Y
Anguilla anguilla	European Eel	Y	N
Salmo trutta	Sea Trout	Y	Y
Coryphaenoides rupestris * †	Roundnose grenadier	Y	Y
Macrourus berglax * †	Roughhead grenadier	Y	Y
Trachyrincus scabrus * †	Roughsnout grenadier	Y	Y
Mora moro †	Common mora	Y	Y
Gadus morhua	Atlantic cod	Y	Y
Pollachius virens	Saithe	Y	Y
Molva macrophthalma †	Spanish Ling	Y	Y
Molva molva	Common ling	Y	N
Phycis blennoides †	Greater forkbeard	Y	N
Merluccius merluccius	European hake	Y	Y
Hoplostethus atlanticus * †	Orange roughy	Y	Y
Brama brama	Atlantic pomfret	Y	Y
Lepidorhombus whiffiagonis	Megrim	Y	Y
Hippoglossus hippoglossus	Atlantic halibut	Y	Y
Lophius budegassa	Blackbellied anglerfish	Y	Y
Lophius piscatorius	Anglerfish	Y	Y
Mola mola	Ocean sunfish	Y	Y
Polyprion americanus †	Wreckfish	Y	Y
Epigonus telescopus †	Cardinal fish	Y	Y
Anarhichas denticulatus	Northern wolffish	Y	Y
Anarhichas lupus	Atlantic wolffish	Y	Y
Anarhichas minor	Spotted wolffish	Y	Y
Helicolenus dactylopterus †	Bluemouth redfish	Y	Y
Sebastes mentella †	Beaked redfish	Y	Y
Sebastes norvegicus †	Golden rosefish	Y	Y
Sebastes viviparus †	Norway redfish	Y	Y
Scorpaena scrofa †	Red scorpionfish	Y	Y
Cyclopterus lumpus	Lumpfish	Y	Y
Somniosus rostratus †	Little sleeper shark	N	Y
Alepocephalus bairdii †	Baird's slickhead	N	Y
Zeus faber	John Dory	N	Y
Lepidopus caudatus †	Silver scabbardfish	N	Y

Azores Ecoregion

Scientific name	English name	RAL	RPL
Hexanchus griseus	Bluntnose sixgill shark	Y	Y
Chlamydoselachus anguineus †	Frilled shark	Y	Y
*Alopias spp. **	Thresher sharks	Y	Y
*Alopias superciliosus **	Bigeye thresher	Y	Y
*Alopias vulpinus **	Common thresher	Y	Y
*Cetorhinus maximus **	Basking shark	Y	Y
Carcharodon carcharias	White shark	Y	Y
Isurus paucus	Longfin mako	Y	Y
Apristurus spp.	Catshark	Y	Y
*Galeorhinus galeus **	Tope shark	Y	Y
Carcharhinus falciformis	Silky shark	Y	Y
Carcharhinus longimanus	Oceanic whitetip shark	Y	Y
Sphyrna zygaena	Smooth hammerhead	Y	Y
Sphyrnidae	Hammerhead sharks	Y	Y
*Dalatias licha * †*	Kitefin shark	Y	Y
Etmopterus princeps †	Great lanternshark	Y	Y
Etmopterus pusillus	Smooth lanternshark	Y	Y
Etmopterus spinax †	Velvetbelly lanternshark	Y	Y
*Centroscymnus coelolepis * †*	Portuguese dogfish	Y	Y
Centroscymnus crepidater †	Longnose velvet dogfish	Y	Y
Oxynotus paradoxus †	Sailfin roughshark	Y	Y
Centrophorus granulosus †	Gulper shark	Y	Y
*Centrophorus squamosus * †*	Leafscale gulper shark	Y	Y
Deania calcea †	Birdbeak dogfish	Y	Y
Tetronarce nobiliana	Atlantic torpedo ray	Y	Y
Dipturus oxyrinchus	Long-nosed skate	Y	Y
Leucoraja fullonica	Shagreen ray	Y	Y
Raja brachyura	Blonde ray	Y	Y
Raja clavata	Thornback ray	Y	Y
Raja maderensis	Madeira ray	Y	Y
Dasyatis pastinaca	Common stingray	Y	Y
Myliobatis aquila	Common eagle ray	Y	Y
Mobula birostris	Giant manta	Y	Y
Manta spp	Manta rays	Y	Y
Mobula mobular	Giant devilray	Y	Y
Mobula spp	Devilrays	Y	Y
Chimaera monstrosa †	Rabbitfish	Y	Y
Synaphobranchus kaupi †	Kaup's Aarrowtooth Eel	Y	Y
Conger conger	Conger eel	Y	Y
Anguilla anguilla	European Eel	Y	N
Mora moro †	Common mora	Y	Y
Molva macrophthalma †	Spanish Ling	Y	Y
*Hoplostethus atlanticus * †*	Orange roughy	Y	Y

Azores Ecoregion (continued)

Scientific name	English name	RAL	RPL
Pomatomus saltatrix	Bluefish	Y	Y
Brama brama	Atlantic pomfret	Y	Y
Hippocampus guttulatus	Long-snouted seahorse	Y	Y
Hippocampus hippocampus	Short-snouted seahorse	Y	Y
Hippocampus spp	Seahorse spp.	Y	Y
Lepidorhombus whiffiagonis	Megrim	Y	Y
Trachurus trachurus	Atlantic horse mackerel	Y	Y
Lophius piscatorius	Anglerfish	Y	Y
Mola mola	Ocean sunfish	Y	Y
Polyprion americanus †	Wreckfish	Y	Y
Epigonus telescopus †	Cardinal fish	Y	Y
Epinephelus marginatus	Dusky grouper	Y	Y
Mycteroperca fusca	Island grouper	Y	Y
Bodianus scrofa	Barred hogfish	Y	Y
Labrus bergylta	Ballan wrasse	Y	Y
Helicolenus dactylopterus †	Bluemouth redfish	Y	Y
Scorpaena scrofa †	Red scorpionfish	Y	Y
Taeniurops grabata	Round fantail stingray	N	Y
Zeus faber	John Dory	N	Y
Lepidopus caudatus †	Silver scabbardfish	N	Y

Bay of Biscay and Iberian Coast Ecoregion

Scientific name	English name	RAL	RBL
Lampetra fluviatilis	River lamprey	Y	Y
Petromyzon marinus	Sea lamprey	Y	Y
Hexanchus griseus	Bluntnose sixgill shark	Y	Y
Chlamydoselachus anguineus †	Frilled shark	Y	Y
Alopias spp. *	Thresher sharks	Y	Y
Alopias superciliosus *	Bigeye thresher	Y	Y
Alopias vulpinus *	Common thresher	Y	Y
Cetorhinus maximus *	Basking shark	Y	Y
Carcharodon carcharias	White shark	Y	Y
Isurus paucus	Longfin mako	Y	Y
Galeus melastomus †	Blackmouth catshark	Y	N
Galeus murinus †	Mouse catshark	Y	Y
Apristurus spp.	Catshark	Y	Y
Scyliorhinus canicula	Lesser-spotted dogfish	Y	N
Scyliorhinus stellaris	Greater-spotted dogfish	Y	Y
Galeorhinus galeus *	Tope shark	Y	Y
Mustelus asterias	Starry smoothhound	Y	N
Mustelus mustelus	Common smoothhound	Y	Y
Carcharhinus falciformis	Silky shark	Y	Y
Carcharhinus longimanus	Oceanic whitetip shark	Y	Y
Sphyrnidae	Hammerhead sharks	Y	Y
Dalatias licha * †	Kitefin shark	Y	Y
Centroscyllium fabricii †	Black dogfish	Y	Y
Etmopterus princeps †	Great lanternshark	Y	Y
Etmopterus pusillus	Smooth lanternshark	Y	Y
Etmopterus spinax †	Velvetbelly lanternshark	Y	Y
Centroscymnus coelolepis * †	Portuguese dogfish	Y	Y
Centroscymnus crepidater †	Longnose velvet dogfish	Y	Y
Scymnodon ringens †	Knifetooth dogfish	Y	Y
Somniosus microcephalus †	Greenland shark	Y	Y
Oxynotus centrina †	Angular roughshark	Y	Y
Centrophorus granulosus †	Gulper shark	Y	Y
Centrophorus squamosus * †	Leafscale gulper shark	Y	Y
Centrophorus uyato †	Little gulper shark	Y	Y
Deania calcea †	Birdbeak dogfish	Y	Y
Squatina squatina *	Angelshark	Y	Y
Tetronarce nobiliana	Atlantic torpedo ray	Y	Y
Torpedo marmorata	Marbled electric ray	Y	Y
Rhinobatidae	Guitarfish	Y	Y
Rhinobatos rhinobatos	Common guitarfish	Y	Y
Glaucostegus cemiculus	Blackchin guitarfish	Y	Y
Glaucostegus spp.	Guitarfish spp.	Y	Y
Dipturus batis *	Common blue skate	Y	Y

Bay of Biscay and Iberian Coast Ecoregion (continued)

Scientific name	English name	RAL	RBL
Dipturus intermedius	Flapper skate	Y	Y
Dipturus nidarosiensis †	Norwegian skate	Y	Y
Dipturus oxyrinchus	Long-nosed skate	Y	Y
Leucoraja circularis	Sandy ray	Y	Y
Leucoraja fullonica	Shagreen ray	Y	Y
Leucoraja naevus	Cuckoo ray	Y	N
Raja brachyura	Blonde ray	Y	N
Raja clavata	Thornback ray	Y	N
Raja microocellata	Small-eyed ray	Y	Y
Raja montagui	Spotted ray	Y	N
*Raja undulata **	Undulate ray	Y	Y
Rajella fyllae †	Round skate	Y	Y
*Rostroraja alba **	White skate	Y	Y
Dasyatis pastinaca	Common stingray	Y	Y
Dasyatis tortonesei	Tortonese's stingray	Y	Y
Gymnura altavela	Spiny butterfly ray	Y	Y
Myliobatis aquila	Common eagle ray	Y	Y
Mobula birostris	Giant manta	Y	Y
Manta spp	Manta rays	Y	Y
Mobula mobular	Giant devilray	Y	Y
Mobula spp	Devilrays	Y	Y
Chimaera monstrosa †	Rabbitfish	Y	Y
Hydrolagus mirabilis †	Large-eyed rabbitfish	Y	Y
Rhinochimaera atlantica †	Atlantic longnose chimaera	Y	Y
Acipenser spp	Sturgeons	Y	Y
Acipenser sturio	Atlantic sturgeon	Y	Y
Synaphobranchus kaupi †	Kaup's Aarrowtooth Eel	Y	Y
Conger conger	Conger eel	Y	Y
Anguilla anguilla	European Eel	Y	N
Alosa alosa	Allis shad	Y	Y
Alosa fallax	Twaite shad	Y	Y
Salmo trutta	Sea Trout	Y	Y
Coryphaenoides rupestris †	Roundnose grenadier	Y	Y
*Trachyrincus scabrus * †*	Roughsnout grenadier	Y	Y
Mora moro †	Common mora	Y	Y
Gadus morhua	Atlantic cod	Y	Y
*Pollachius pollachius **	Pollack	Y	Y
Pollachius virens	Saithe	Y	Y
Molva macrophthalma †	Spanish Ling	Y	Y
Molva molva	Common ling	Y	N
Phycis blennoides †	Greater forkbeard	Y	N
*Hoplostethus atlanticus * †*	Orange roughy	Y	Y
Pomatomus saltatrix	Bluefish	Y	Y

Bay of Biscay and Iberian Coast Ecoregion (continued)

Scientific name	English name	RAL	RBL
Brama brama	Atlantic pomfret	Y	Y
Hippocampus guttulatus	Long-snouted seahorse	Y	Y
Hippocampus hippocampus	Short-snouted seahorse	Y	Y
Hippocampus spp	Seahorse spp.	Y	Y
Syngnathus abaster	Black-striped pipefish	Y	Y
Pomatoschistus microps	Common goby	Y	Y
Pomatoschistus minutus	Sand goby	Y	Y
Scophthalmus maximus	Turbot	Y	Y
Scophthalmus rhombus	Brill	Y	Y
Hippoglossus hippoglossus	Atlantic halibut	Y	Y
Lophius budegassa	Blackbellied anglerfish	Y	N
Mola mola	Ocean sunfish	Y	Y
Polyprion americanus †	Wreckfish	Y	Y
Epigonus telescopus †	Cardinal fish	Y	Y
Dicentrarchus punctatus	Spotted seabass	Y	Y
Epinephelus marginatus	Dusky grouper	Y	Y
Mycteroperca fusca	Island grouper	Y	Y
Dentex dentex	Common dentex	Y	Y
Sparus aurata	Gilt-head seabream	Y	Y
Argyrosomus regius	Meagre	Y	Y
Sciaena umbra	Brown meagre	Y	Y
Umbrina cirrosa	Shi drum	Y	Y
Labrus bergylta	Ballan wrasse	Y	Y
Helicolenus dactylopterus †	Bluemouth redfish	Y	Y
Scorpaena scrofa †	Red scorpionfish	Y	Y
Chelidonichthys lucerna	Tub gurnard	Y	Y
Cyclopterus lumpus	Lumpfish	Y	Y
Hexanchus nakamurai	Bigeyed sixgill shark	N	Y
Carcharhinus limbatus	Blacktip shark	N	Y
Somniosus rostratus †	Little sleeper shark	N	Y
Squalus blainville	Longnose spurdog	N	Y
Squalus megalops	Shortnose spurdog	N	Y
Torpedo torpedo	Common torpedo ray	N	Y
Taeniurops grabata	Round fantail stingray	N	Y
Rhinoptera marginata	Lusitanian cownose ray	N	Y
Alepocephalus bairdii †	Baird's slickhead	N	Y
Zeus faber	John Dory	N	Y
Lepidopus caudatus †	Silver scabbardfish	N	Y

Western Mediterranean Ecoregion

Scientific name	English name	RAL	RBL
Lampetra fluviatilis	River lamprey	Y	Y
Petromyzon marinus	Sea lamprey	Y	Y
Heptranchias perlo	Sharpnose sevengill shark	Y	Y
Hexanchus griseus	Bluntnose sixgill shark	Y	Y
Carcharias taurus	Sand tiger shark	Y	Y
Odontaspis ferox	Smalltooth sand tiger	Y	Y
Alopias spp.	Thresher sharks	Y	Y
Alopias superciliosus	Bigeye thresher	Y	Y
Alopias vulpinus	Common thresher	Y	Y
Cetorhinus maximus	Basking shark	Y	Y
Carcharodon carcharias	White shark	Y	Y
Isurus oxyrinchus	Shortfin mako	Y	Y
Isurus paucus	Longfin mako	Y	Y
Lamna nasus	Porbeagle	Y	Y
Scyliorhinus canicula	Lesser-spotted dogfish	Y	Y
Scyliorhinus stellaris	Greater-spotted dogfish	Y	Y
Galeorhinus galeus	Tope shark	Y	Y
Mustelus asterias	Starry smoothhound	Y	Y
Mustelus mustelus	Common smoothhound	Y	Y
Mustelus punctulatus	Blackspotted smoothhound	Y	Y
Carcharhinus falciformis	Silky shark	Y	Y
Carcharhinus plumbeus	Sandbar shark	Y	Y
Sphyrna zygaena	Smooth hammerhead	Y	Y
Sphyrnidae	Hammerhead sharks	Y	Y
Dalatias licha †	Kitefin shark	Y	Y
Etmopterus spinax †	Velvetbelly lanternshark	Y	Y
Centroscymnus coelolepis †	Portuguese dogfish	Y	Y
Oxynotus centrina †	Angular roughshark	Y	Y
Centrophorus uyato †	Little gulper shark	Y	Y
Squalus acanthias	Spurdog	Y	Y
Echinorhinus brucus †	Bramble shark	Y	Y
Squatina aculeata	Sawback angelshark	Y	Y
Squatina oculata	Smoothback angelshark	Y	Y
Squatina squatina	Angelshark	Y	Y
Tetronarce nobiliana	Atlantic torpedo ray	Y	Y
Torpedo marmorata	Marbled electric ray	Y	Y
Rhinobatidae	Guitarfish	Y	Y
Rhinobatos rhinobatos	Common guitarfish	Y	Y
Glaucostegus cemiculus	Blackchin guitarfish	Y	Y
Glaucostegus spp.	Guitarfish spp.	Y	Y
Pristidae	Sawfish	Y	Y
Dipturus nidarosiensis	Norwegian skate	Y	Y
Dipturus oxyrinchus	Long-nosed skate	Y	Y

Western Mediterranean Ecoregion (continued)

Scientific name	English name	RAL	RBL
Leucoraja circularis	Sandy ray	Y	Y
Leucoraja fullonica	Shagreen ray	Y	Y
Leucoraja melitensis	Maltese ray	Y	Y
Leucoraja naevus	Cuckoo ray	Y	Y
Raja brachyura	Blonde ray	Y	Y
Raja clavata	Thornback ray	Y	Y
Raja montagui	Spotted ray	Y	Y
Raja radula	Rough skate	Y	Y
Raja undulata	Undulate ray	Y	Y
Rostroraja alba	White skate	Y	Y
Bathytoshia lata	Brown stingray	Y	Y
Dasyatis pastinaca	Common stingray	Y	Y
Dasyatis tortonesei	Tortonese's stingray	Y	Y
Pteroplatytrygon violacea	Pelagic stingray	Y	Y
Gymnura altavela	Spiny butterfly ray	Y	Y
Aetomylaeus bovinus	Bullray	Y	Y
Myliobatis aquila	Common eagle ray	Y	Y
Manta spp	Manta rays	Y	Y
Mobula mobular	Giant devilray	Y	Y
Mobula spp	Devilrays	Y	Y
Chimaera monstrosa †	Rabbitfish	Y	Y
Acipenser spp	Sturgeons	Y	Y
Acipenser sturio	Atlantic sturgeon	Y	Y
Conger conger	Conger eel	Y	Y
Anguilla anguilla	European Eel	Y	Y
Alosa alosa	Allis shad	Y	Y
Alosa fallax	Twaite shad	Y	Y
Sardina pilchardus	European pilchard	Y	Y
Salmo macrostigma		Y	Y
Hymenocephalus italicus †	Glasshead grenadier	Y	Y
Nezumia aequalis †	Common Atlantic grenadier	Y	Y
Nezumia sclerorhynchus †	Roughtip grenadier	Y	Y
Trachyrincus scabrus †	Roughsnout grenadier	Y	Y
Mora moro †	Common mora	Y	Y
Merlangius merlangus	Whiting	Y	Y
Molva macrophthalma †	Spanish Ling	Y	Y
Molva molva	Common ling	Y	Y
Phycis blennoides †	Greater forkbeard	Y	Y
Hoplostethus mediterraneus †	Silver roughy	Y	Y
Pomatomus saltatrix	Bluefish	Y	Y
Orcynopsis unicolor	Plain bonito	Y	Y
Brama brama	Atlantic pomfret	Y	Y
Ruvettus pretiosus	Oilfish	Y	Y

Western Mediterranean Ecoregion (continued)

Scientific name	English name	RAL	RBL
Hippocampus guttulatus	Long-snouted seahorse	Y	Y
Hippocampus hippocampus	Short-snouted seahorse	Y	Y
Hippocampus spp	Seahorse spp.	Y	Y
Syngnathus abaster	Black-striped pipefish	Y	Y
Zosterisessor ophiocephalus	Grass goby	Y	Y
Pomatoschistus microps	Common goby	Y	Y
Pomatoschistus minutus	Sand goby	Y	Y
Pomatoschistus tortonesei	Tortonese's Goby	Y	Y
Lepidorhombus whiffiagonis	Megrim	Y	Y
Scophthalmus maximus	Turbot	Y	Y
Scophthalmus rhombus	Brill	Y	Y
Solea solea	Sole	Y	Y
Aphanius fasciatus	Mediterranean killifish	Y	Y
Aphanius iberus	Spanish killifish	Y	Y
Opeatogenys gracilis	Pygmy clingfish	Y	Y
Lophius budegassa	Blackbellied anglerfish	Y	Y
Lophius piscatorius	Anglerfish	Y	Y
Mola mola	Ocean sunfish	Y	Y
Polyprion americanus †	Wreckfish	Y	Y
Epigonus telescopus †	Cardinal fish	Y	Y
Dicentrarchus punctatus	Spotted seabass	Y	Y
Epinephelus aeneus	White grouper	Y	Y
Epinephelus caninus	Dogtooth grouper	Y	Y
Epinephelus costae	Goldblotch grouper	Y	Y
Epinephelus marginatus	Dusky grouper	Y	Y
Mycteroperca fusca	Island grouper	Y	Y
Dentex dentex	Common dentex	Y	Y
Sparus aurata	Gilt-head seabream	Y	Y
Argyrosomus regius	Meagre	Y	Y
Sciaena umbra	Brown meagre	Y	Y
Umbrina cirrosa	Shi drum	Y	Y
Helicolenus dactylopterus †	Bluemouth redfish	Y	Y
Scorpaena scrofa	Red scorpionfish	Y	Y
Chelidonichthys lucerna	Tub gurnard	Y	Y
Hexanchus nakamurai	Bigeyed sixgill shark	N	Y
Carcharhinus brachyurus	Copper shark	N	Y
Carcharhinus brevipinna	Spinner shark	N	Y
Carcharhinus limbatus	Blacktip shark	N	Y
Somniosus rostratus †	Little sleeper shark	N	Y
Squalus blainville	Longnose spurdog	N	Y
Squalus megalops	Shortnose spurdog	N	Y
Torpedo torpedo	Common torpedo ray	N	Y
Taeniurops grabata	Round fantail stingray	N	Y

Western Mediterranean Ecoregion (continued)

Scientific name	English name	RAL	RBL
Rhinoptera marginata	Lusitanian cownose ray	N	Y
Zeus faber	John Dory	N	Y
Beryx decadactylus †	Alfonsino	N	Y
Lepidopus caudatus †	Silver scabbardfish	N	Y
Taurulus bubalis	Longspined bullhead	N	Y

Central Mediterranean Ecoregion

Scientific name	English name	RAL	RBL
Petromyzon marinus	Sea lamprey	Y	Y
Heptranchias perlo	Sharpnose sevengill shark	Y	Y
Hexanchus griseus	Bluntnose sixgill shark	Y	Y
Carcharias taurus	Sand tiger shark	Y	Y
Odontaspis ferox	Smalltooth sand tiger	Y	Y
Alopias spp.	Thresher sharks	Y	Y
Alopias superciliosus	Bigeye thresher	Y	Y
Alopias vulpinus	Common thresher	Y	Y
Cetorhinus maximus	Basking shark	Y	Y
Carcharodon carcharias	White shark	Y	Y
Isurus oxyrinchus	Shortfin mako	Y	Y
Lamna nasus	Porbeagle	Y	Y
Galeus melastomus †	Blackmouth catshark	Y	Y
Scyliorhinus canicula	Lesser-spotted dogfish	Y	Y
Scyliorhinus stellaris	Greater-spotted dogfish	Y	Y
Galeorhinus galeus	Tope shark	Y	Y
Mustelus asterias	Starry smoothhound	Y	Y
Mustelus mustelus	Common smoothhound	Y	Y
Mustelus punctulatus	Blackspotted smoothhound	Y	Y
Carcharhinus plumbeus	Sandbar shark	Y	Y
Sphyrna zygaena	Smooth hammerhead	Y	Y
Sphyrnidae	Hammerhead sharks	Y	Y
Dalatias licha †	Kitefin shark	Y	Y
Etmopterus spinax †	Velvetbelly lanternshark	Y	Y
Centroscymnus coelolepis †	Portuguese dogfish	Y	Y
Oxynotus centrina †	Angular roughshark	Y	Y
Centrophorus uyato †	Little gulper shark	Y	Y
Squalus acanthias	Spurdog	Y	Y
Echinorhinus brucus †	Bramble shark	Y	Y
Squatina aculeata	Sawback angelshark	Y	Y
Squatina oculata	Smoothback angelshark	Y	Y
Squatina squatina	Angelshark	Y	Y
Tetronarce nobiliana	Atlantic torpedo ray	Y	Y
Torpedo marmorata	Marbled electric ray	Y	Y
Rhinobatidae	Guitarfish	Y	Y
Rhinobatos rhinobatos	Common guitarfish	Y	Y
Glaucostegus cemiculus	Blackchin guitarfish	Y	Y
Glaucostegus spp.	Guitarfish spp.	Y	Y
Dipturus nidarosiensis	Norwegian skate	Y	Y
Dipturus oxyrinchus	Long-nosed skate	Y	Y
Leucoraja circularis	Sandy ray	Y	Y
Leucoraja fullonica	Shagreen ray	Y	Y
Leucoraja melitensis	Maltese ray	Y	Y

Central Mediterranean Ecoregion (continued)

Scientific name	English name	RAL	RBL
Leucoraja naevus	Cuckoo ray	Y	Y
Raja brachyura	Blonde ray	Y	Y
Raja clavata	Thornback ray	Y	Y
Raja montagui	Spotted ray	Y	Y
Raja radula	Rough skate	Y	Y
Raja undulata	Undulate ray	Y	Y
Rostroraja alba	White skate	Y	Y
Bathytoshia lata	Brown stingray	Y	Y
Dasyatis pastinaca	Common stingray	Y	Y
Dasyatis tortonesei	Tortonese's stingray	Y	Y
Pteroplatytrygon violacea	Pelagic stingray	Y	Y
Gymnura altavela	Spiny butterfly ray	Y	Y
Aetomylaeus bovinus	Bullray	Y	Y
Myliobatis aquila	Common eagle ray	Y	Y
Manta spp	Manta rays	Y	Y
Mobula mobular	Giant devilray	Y	Y
Mobula spp	Devilrays	Y	Y
Chimaera monstrosa †	Rabbitfish	Y	Y
Acipenser spp	Sturgeons	Y	Y
Acipenser sturio	Atlantic sturgeon	Y	Y
Conger conger	Conger eel	Y	Y
Anguilla anguilla	European Eel	Y	Y
Alosa fallax	Twaite shad	Y	Y
Sardina pilchardus	European pilchard	Y	Y
Hymenocephalus italicus †	Glasshead grenadier	Y	Y
Nezumia aequalis †	Common Atlantic grenadier	Y	Y
Nezumia sclerorhynchus †	Roughtip grenadier	Y	Y
Trachyrincus scabrus †	Roughsnout grenadier	Y	Y
Mora moro †	Common mora	Y	Y
Merlangius merlangus	Whiting	Y	Y
Molva macrophthalma †	Spanish Ling	Y	Y
Phycis blennoides †	Greater forkbeard	Y	Y
Hoplostethus mediterraneus †	Silver roughy	Y	Y
Pomatomus saltatrix	Bluefish	Y	Y
Orcynopsis unicolor	Plain bonito	Y	Y
Brama brama	Atlantic pomfret	Y	Y
Ruvettus pretiosus	Oilfish	Y	Y
Hippocampus guttulatus	Long-snouted seahorse	Y	Y
Hippocampus hippocampus	Short-snouted seahorse	Y	Y
Hippocampus spp	Seahorse spp.	Y	Y
Syngnathus abaster	Black-striped pipefish	Y	Y
Zosterisessor ophiocephalus	Grass goby	Y	Y
Pomatoschistus tortonesei	Tortonese's Goby	Y	Y

Central Mediterranean Ecoregion (continued)

Scientific name	English name	RAL	RBL
Lepidorhombus whiffiagonis	Megrim	Y	Y
Scophthalmus maximus	Turbot	Y	Y
Scophthalmus rhombus	Brill	Y	Y
Solea solea	Sole	Y	Y
Trachurus trachurus	Atlantic horse mackerel	Y	Y
Aphanius fasciatus	Mediterranean killifish	Y	Y
Opeatogenys gracilis	Pygmy clingfish	Y	Y
Lophius piscatorius	Anglerfish	Y	Y
Mola mola	Ocean sunfish	Y	Y
Polyprion americanus †	Wreckfish	Y	Y
Epigonus telescopus †	Cardinal fish	Y	Y
Dicentrarchus punctatus	Spotted seabass	Y	Y
Epinephelus aeneus	White grouper	Y	Y
Epinephelus caninus	Dogtooth grouper	Y	Y
Epinephelus costae	Goldblotch grouper	Y	Y
Epinephelus marginatus	Dusky grouper	Y	Y
Mycteroperca fusca	Island grouper	Y	Y
Dentex dentex	Common dentex	Y	Y
Pagellus bogaraveo †	Blackspot seabream	Y	Y
Sparus aurata	Gilt-head seabream	Y	Y
Argyrosomus regius	Meagre	Y	Y
Sciaena umbra	Brown meagre	Y	Y
Umbrina cirrosa	Shi drum	Y	Y
Helicolenus dactylopterus †	Bluemouth redfish	Y	Y
Scorpaena scrofa	Red scorpionfish	Y	Y
Chelidonichthys lucerna	Tub gurnard	Y	Y
Hexanchus nakamurai	Bigeyed sixgill shark	N	Y
Carcharhinus brachyurus	Copper shark	N	Y
Carcharhinus brevipinna	Spinner shark	N	Y
Carcharhinus limbatus	Blacktip shark	N	Y
Somniosus rostratus †	Little sleeper shark	N	Y
Squalus blainville	Longnose spurdog	N	Y
Torpedo torpedo	Common torpedo ray	N	Y
Taeniurops grabata	Round fantail stingray	N	Y
Rhinoptera marginata	Lusitanian cownose ray	N	Y
Zeus faber	John Dory	N	Y
Lepidopus caudatus †	Silver scabbardfish	N	Y

Eastern Mediterranean Ecoregion

Scientific name	English name	RAL	RBL
Petromyzon marinus	Sea lamprey	Y	Y
Heptranchias perlo	Sharpnose sevengill shark	Y	Y
Hexanchus griseus	Bluntnose sixgill shark	Y	Y
Carcharias taurus	Sand tiger shark	Y	Y
Odontaspis ferox	Smalltooth sand tiger	Y	Y
Alopias spp.	Thresher sharks	Y	Y
Alopias superciliosus	Bigeye thresher	Y	Y
Alopias vulpinus	Common thresher	Y	Y
Cetorhinus maximus	Basking shark	Y	Y
Carcharodon carcharias	White shark	Y	Y
Isurus oxyrinchus	Shortfin mako	Y	Y
Lamna nasus	Porbeagle	Y	Y
Galeus melastomus †	Blackmouth catshark	Y	Y
Scyliorhinus canicula	Lesser-spotted dogfish	Y	Y
Scyliorhinus stellaris	Greater-spotted dogfish	Y	Y
Galeorhinus galeus	Tope shark	Y	Y
Mustelus asterias	Starry smoothhound	Y	Y
Mustelus mustelus	Common smoothhound	Y	Y
Mustelus punctulatus	Blackspotted smoothhound	Y	Y
Carcharhinus plumbeus	Sandbar shark	Y	Y
Sphyrna zygaena	Smooth hammerhead	Y	Y
Sphyrnidae	Hammerhead sharks	Y	Y
Dalatias licha †	Kitefin shark	Y	Y
Etmopterus spinax †	Velvetbelly lanternshark	Y	Y
Oxynotus centrina †	Angular roughshark	Y	Y
Centrophorus uyato †	Little gulper shark	Y	Y
Squalus acanthias	Spurdog	Y	Y
Echinorhinus brucus †	Bramble shark	Y	Y
Squatina aculeata	Sawback angelshark	Y	Y
Squatina oculata	Smoothback angelshark	Y	Y
Squatina squatina	Angelshark	Y	Y
Tetronarce nobiliana	Atlantic torpedo ray	Y	Y
Torpedo marmorata	Marbled electric ray	Y	Y
Rhinobatidae	Guitarfish	Y	Y
Rhinobatos rhinobatos	Common guitarfish	Y	Y
Glaucostegus cemiculus	Blackchin guitarfish	Y	Y
Glaucostegus spp.	Guitarfish spp.	Y	Y
Dipturus oxyrinchus	Long-nosed skate	Y	Y
Leucoraja circularis	Sandy ray	Y	Y
Leucoraja fullonica	Shagreen ray	Y	Y
Leucoraja melitensis	Maltese ray	Y	Y
Leucoraja naevus	Cuckoo ray	Y	Y
Raja brachyura	Blonde ray	Y	Y

Eastern Mediterranean Ecoregion (continued)

Scientific name	English name	RAL	RBL
Raja clavata	Thornback ray	Y	Y
Raja montagui	Spotted ray	Y	Y
Raja radula	Rough skate	Y	Y
Raja undulata	Undulate ray	Y	Y
Rostroraja alba	White skate	Y	Y
Bathytoshia lata	Brown stingray	Y	Y
Dasyatis pastinaca	Common stingray	Y	Y
Dasyatis tortonesei	Tortonese's stingray	Y	Y
Pteroplatytrygon violacea	Pelagic stingray	Y	Y
Gymnura altavela	Spiny butterfly ray	Y	Y
Aetomylaeus bovinus	Bullray	Y	Y
Myliobatis aquila	Common eagle ray	Y	Y
Manta spp	Manta rays	Y	Y
Mobula mobular	Giant devilray	Y	Y
Mobula spp	Devilrays	Y	Y
Chimaera monstrosa †	Rabbitfish	Y	Y
Acipenser spp	Sturgeons	Y	Y
Acipenser stellatus	Stellate sturgeon	Y	Y
Acipenser sturio	Atlantic sturgeon	Y	Y
Huso huso	Beluga	Y	Y
Conger conger	Conger eel	Y	Y
Anguilla anguilla	European Eel	Y	Y
Alosa fallax	Twaite shad	Y	Y
Sardina pilchardus	European pilchard	Y	Y
Hymenocephalus italicus †	Glasshead grenadier	Y	Y
Nezumia aequalis †	Common Atlantic grenadier	Y	Y
Nezumia sclerorhynchus †	Roughtip grenadier	Y	Y
Trachyrincus scabrus †	Roughsnout grenadier	Y	Y
Mora moro †	Common mora	Y	Y
Merlangius merlangus	Whiting	Y	Y
Molva macrophthalma †	Spanish Ling	Y	Y
Phycis blennoides †	Greater forkbeard	Y	Y
Hoplostethus mediterraneus †	Silver roughy	Y	Y
Pomatomus saltatrix	Bluefish	Y	Y
Orcynopsis unicolor	Plain bonito	Y	Y
Ruvettus pretiosus	Oilfish	Y	Y
Hippocampus guttulatus	Long-snouted seahorse	Y	Y
Hippocampus hippocampus	Short-snouted seahorse	Y	Y
Hippocampus spp	Seahorse spp.	Y	Y
Syngnathus abaster	Black-striped pipefish	Y	Y
Zosterisessor ophiocephalus	Grass goby	Y	Y
Knipowitschia panizzae	Adriatic dwarf goby	Y	Y
Lepidorhombus whiffiagonis	Megrim	Y	Y

Eastern Mediterranean Ecoregion (continued)

Scientific name	English name	RAL	RBL
Scophthalmus maximus	Turbot	Y	Y
Scophthalmus rhombus	Brill	Y	Y
Trachurus trachurus	Atlantic horse mackerel	Y	Y
Aphanius fasciatus	Mediterranean killifish	Y	Y
Lophius budegassa	Blackbellied anglerfish	Y	Y
Lophius piscatorius	Anglerfish	Y	Y
Mola mola	Ocean sunfish	Y	Y
Polyprion americanus †	Wreckfish	Y	Y
Dicentrarchus punctatus	Spotted seabass	Y	Y
Epinephelus aeneus	White grouper	Y	Y
Epinephelus caninus	Dogtooth grouper	Y	Y
Epinephelus costae	Goldblotch grouper	Y	Y
Epinephelus marginatus	Dusky grouper	Y	Y
Mycteroperca fusca	Island grouper	Y	Y
Dentex dentex	Common dentex	Y	Y
Pagellus bogaraveo †	Blackspot seabream	Y	Y
Sparus aurata	Gilt-head seabream	Y	Y
Argyrosomus regius	Meagre	Y	Y
Sciaena umbra	Brown meagre	Y	Y
Umbrina cirrosa	Shi drum	Y	Y
Helicolenus dactylopterus †	Bluemouth redfish	Y	Y
Scorpaena scrofa	Red scorpionfish	Y	Y
Chelidonichthys lucerna	Tub gurnard	Y	Y
Hexanchus nakamurai	Bigeyed sixgill shark	N	Y
Carcharhinus brachyurus	Copper shark	N	Y
Carcharhinus brevipinna	Spinner shark	N	Y
Carcharhinus limbatus	Blacktip shark	N	Y
Somniosus rostratus †	Little sleeper shark	N	Y
Squalus blainville	Longnose spurdog	N	Y
Torpedo torpedo	Common torpedo ray	N	Y
Taeniurops grabata	Round fantail stingray	N	Y
Rhinoptera marginata	Lusitanian cownose ray	N	Y
Zeus faber	John Dory	N	Y
Lepidopus caudatus †	Silver scabbardfish	N	Y

Adriatic Sea Ecoregion

Scientific name	English name	RAL	RBL
Lampetra fluviatilis	River lamprey	Y	Y
Petromyzon marinus	Sea lamprey	Y	Y
Heptranchias perlo	Sharpnose sevengill shark	Y	Y
Hexanchus griseus	Bluntnose sixgill shark	Y	Y
Carcharias taurus	Sand tiger shark	Y	Y
Odontaspis ferox	Smalltooth sand tiger	Y	Y
Alopias spp.	Thresher sharks	Y	Y
Alopias superciliosus	Bigeye thresher	Y	Y
Alopias vulpinus	Common thresher	Y	Y
Cetorhinus maximus	Basking shark	Y	Y
Carcharodon carcharias	White shark	Y	Y
Isurus oxyrinchus	Shortfin mako	Y	Y
Lamna nasus	Porbeagle	Y	Y
Galeus melastomus †	Blackmouth catshark	Y	Y
Scyliorhinus canicula	Lesser-spotted dogfish	Y	Y
Scyliorhinus stellaris	Greater-spotted dogfish	Y	Y
Galeorhinus galeus	Tope shark	Y	Y
Mustelus asterias	Starry smoothhound	Y	Y
Mustelus mustelus	Common smoothhound	Y	Y
Mustelus punctulatus	Blackspotted smoothhound	Y	Y
Carcharhinus plumbeus	Sandbar shark	Y	Y
Sphyrna zygaena	Smooth hammerhead	Y	Y
Sphyrnidae	Hammerhead sharks	Y	Y
Etmopterus spinax †	Velvetbelly lanternshark	Y	Y
Oxynotus centrina †	Angular roughshark	Y	Y
Squalus acanthias	Spurdog	Y	Y
Echinorhinus brucus †	Bramble shark	Y	Y
Squatina aculeata	Sawback angelshark	Y	Y
Squatina oculata	Smoothback angelshark	Y	Y
Squatina squatina	Angelshark	Y	Y
Tetronarce nobiliana	Atlantic torpedo ray	Y	Y
Torpedo marmorata	Marbled electric ray	Y	Y
Rhinobatidae	Guitarfish	Y	Y
Rhinobatos rhinobatos	Common guitarfish	Y	Y
Glaucostegus cemiculus	Blackchin guitarfish	Y	Y
Glaucostegus spp.	Guitarfish spp.	Y	Y
Dipturus oxyrinchus	Long-nosed skate	Y	Y
Leucoraja circularis	Sandy ray	Y	Y
Leucoraja fullonica	Shagreen ray	Y	Y
Leucoraja naevus	Cuckoo ray	Y	Y
Raja brachyura	Blonde ray	Y	Y
Raja montagui	Spotted ray	Y	Y
Raja radula	Rough skate	Y	Y

Adriatic Sea Ecoregion (continued)

Scientific name	English name	RAL	RBL
Raja undulata	Undulate ray	Y	Y
Rostroraja alba	White skate	Y	Y
Bathytoshia lata	Brown stingray	Y	Y
Dasyatis pastinaca	Common stingray	Y	Y
Dasyatis tortonesei	Tortonese's stingray	Y	Y
Pteroplatytrygon violacea	Pelagic stingray	Y	Y
Gymnura altavela	Spiny butterfly ray	Y	Y
Aetomylaeus bovinus	Bullray	Y	Y
Myliobatis aquila	Common eagle ray	Y	Y
Manta spp	Manta rays	Y	Y
Mobula mobular	Giant devilray	Y	Y
Mobula spp	Devilrays	Y	Y
Chimaera monstrosa †	Rabbitfish	Y	Y
Acipenser naccarii	Adriatic sturgeon	Y	Y
Acipenser spp	Sturgeons	Y	Y
Acipenser stellatus	Stellate sturgeon	Y	Y
Acipenser sturio	Atlantic sturgeon	Y	Y
Huso huso	Beluga	Y	Y
Conger conger	Conger eel	Y	Y
Anguilla anguilla	European Eel	Y	Y
Alosa fallax	Twaite shad	Y	Y
Sardina pilchardus	European pilchard	Y	Y
Merlangius merlangus	Whiting	Y	Y
Molva macrophthalma †	Spanish Ling	Y	Y
Phycis blennoides †	Greater forkbeard	Y	Y
Pomatomus saltatrix	Bluefish	Y	Y
Hippocampus guttulatus	Long-snouted seahorse	Y	Y
Hippocampus hippocampus	Short-snouted seahorse	Y	Y
Hippocampus spp	Seahorse spp.	Y	Y
Syngnathus abaster	Black-striped pipefish	Y	Y
Syngnathus taenionotus	Darkflank pipefish	Y	Y
Zosterisessor ophiocephalus	Grass goby	Y	Y
Knipowitschia panizzae	Adriatic dwarf goby	Y	Y
Pomatoschistus canestrinii	Canestrini's Goby	Y	Y
Lepidorhombus whiffiagonis	Megrim	Y	Y
Scophthalmus maximus	Turbot	Y	Y
Scophthalmus rhombus	Brill	Y	Y
Trachurus trachurus	Atlantic horse mackerel	Y	Y
Aphanius fasciatus	Mediterranean killifish	Y	Y
Opeatogenys gracilis	Pygmy clingfish	Y	Y
Lophius budegassa	Blackbellied anglerfish	Y	Y
Lophius piscatorius	Anglerfish	Y	Y
Mola mola	Ocean sunfish	Y	Y

Adriatic Sea Ecoregion (continued)

Scientific name	English name	RAL	RBL
Polyprion americanus †	Wreckfish	Y	Y
Dicentrarchus punctatus	Spotted seabass	Y	Y
Epinephelus marginatus	Dusky grouper	Y	Y
Mycteroperca fusca	Island grouper	Y	Y
Dentex dentex	Common dentex	Y	Y
Pagellus bogaraveo †	Blackspot seabream	Y	Y
Sparus aurata	Gilt-head seabream	Y	Y
Argyrosomus regius	Meagre	Y	Y
Sciaena umbra	Brown meagre	Y	Y
Umbrina cirrosa	Shi drum	Y	Y
Helicolenus dactylopterus †	Bluemouth redfish	Y	Y
Scorpaena scrofa	Red scorpionfish	Y	Y
Chelidonichthys lucerna	Tub gurnard	Y	Y

Black Sea Ecoregion

Scientific name	English name	RAL	RBL
Raja clavata	Thornback ray	Y	Y
Dasyatis pastinaca	Common stingray	Y	Y
Acipenser gueldenstaedtii	Russian sturgeon	Y	Y
Acipenser nudiventris	Ship sturgeon	Y	Y
Acipenser spp	Sturgeons	Y	Y
Acipenser stellatus	Stellate sturgeon	Y	Y
Acipenser sturio	Atlantic sturgeon	Y	Y
Huso huso	Beluga	Y	Y
Conger conger	Conger eel	Y	Y
Anguilla anguilla	European Eel	Y	Y
Alosa fallax	Twaite shad	Y	Y
Alosa immaculata	Pontic shad	Y	Y
Sardina pilchardus	European pilchard	Y	Y
Rutilus frisii	Black sea roach	Y	Y
Salmo labrax	Black Sea salmon	Y	Y
Pomatomus saltatrix	Bluefish	Y	Y
Hippocampus guttulatus	Long-snouted seahorse	Y	Y
Hippocampus hippocampus	Short-snouted seahorse	Y	Y
Hippocampus spp	Seahorse spp.	Y	Y
Nerophis ophidion	Straightnose pipefish	Y	Y
Syngnathus abaster	Black-striped pipefish	Y	Y
Syngnathus tenuirostris	Narrow-snouted pipefish	Y	Y
Syngnathus typhle	Broadnosed pipefish	Y	Y
Syngnathus variegatus	Thickly snouted pipefish	Y	Y
Benthophiloides brauneri	Goby	Y	Y
Benthophilus stellatus	Stellate tadpole-goby	Y	Y
Caspiosoma caspium	Ponto-Caspian goby	Y	Y
Zosterisessor ophiocephalus	Grass goby	Y	Y
Pomatoschistus minutus	Sand goby	Y	Y
Ponticola syrman	Syrman goby	Y	Y
Proterorhinus marmoratus	Tubenose goby	Y	Y
Scophthalmus rhombus	Brill	Y	Y
Arnoglossus kessleri	Scaldback	Y	Y
Platichthys flesus	European flounder	Y	Y
Solea solea	Sole	Y	Y
Trachurus trachurus	Atlantic horse mackerel	Y	Y
Lophius budegassa	Blackbellied anglerfish	Y	Y
Lophius piscatorius	Anglerfish	Y	Y
Dicentrarchus punctatus	Spotted seabass	Y	Y
Dentex dentex	Common dentex	Y	Y
Sparus aurata	Gilt-head seabream	Y	Y
Argyrosomus regius	Meagre	Y	Y
Sciaena umbra	Brown meagre	Y	Y

Black Sea Ecoregion (continued)

Scientific name	English name	RAL	RBL
Umbrina cirrosa	Shi drum	Y	Y
Gymnocephalus baloni	Balon's ruffe	Y	Y
Sander marinus	Estuarine perch	Y	Y
Sander volgensis	Volga pikeperch	Y	Y
Labrus viridis	Green wrasse	Y	Y
Callionymus pusillus	Sailfin dragonet	Y	Y
Callionymus risso	Risso's dragonet	Y	Y
Chelidonichthys lucerna	Tub gurnard	Y	Y
Pungitius platygaster	Southern ninespine stickleback	Y	Y