

## Myths and facts about deep-sea fisheries in the North-East Atlantic Ocean

The below document addresses common misperceptions about North-East Atlantic deep-sea fisheries, based on the best available information regarding the status and biological characteristics of deep-sea stocks, by-catch and discard rates of deep-sea fisheries, and EU and international precedents of restricting deep-sea bottom trawls and gillnets.

**Myth 1:** Deep-sea stocks in the North-East Atlantic are in good condition.

**Reality:** Of the 54 deep-sea species included in the Commission's proposal, according to ICES:

- 21 species are considered to be depleted or at risk of depletion
- 5 species have one or more stocks that are in stable or slightly negative condition
- 4 species have one or more stocks that are of unknown status, due to a lack of data
- 3 species have one or more stocks that are considered to be in good condition

The status of a further 26 species is completely unknown, because they have never been assessed (see Table 1).<sup>1</sup>

**Myth 2:** Only a few deep-sea species have biological characteristics that make them especially vulnerable to overfishing.

**Reality:** In general, most deep-sea species have long lifespans, grow slowly, reach sexual maturity at a late age, and have low reproductive potential. For the 30 species for which maximum age has been estimated, the average is 36 years (see Table 1). For the 20 species for which age at maturity has been estimated, the average is 12 years (see Table 1).

For comparison, anchovy (*Engraulis encrasicolus*) matures at 1 year, and lives up to 4 years of age; hake (*Merluccius merluccius*) matures at 3-8 years and lives up to 20 years of age; and cod (*Gadus morhua*), which is a relatively long-lived species, matures at 2-4 years, and lives up to 25 years of age.

**Myth 3:** Deep-sea fisheries do not catch a high number of non-target species, and do not produce high levels of discards.

**Reality:** Scientific publications and technical reports from scientific advisory bodies indicate that the number of non-target species often greatly exceeds the number of target species, and that a high percentage of the total catch is frequently discarded. Rates vary among fleets (depending on depth, gear specificities, and fishing practices), but Table 2 shows that EU deep-sea trawls in the North-East

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<sup>1</sup> Note: the number of species does not sum to 54, because different stocks of some species fall under multiple categories.

Atlantic catch between 40 to 100 non-target species, and that average discard rates reach 50% of a haul, with up to 80% of some hauls discarded.

**Myth 4:** Prohibiting the use of deep-sea bottom trawls and gillnets is an unprecedented measure.

**Reality:** Both of these types of fishing gear have already been prohibited in other RFMOs and in some parts of the EU, because of concerns about their impacts on deep-sea habitats, and high levels of bycatch. Below are listed examples of existing bans:

**Prohibitions on deep-sea bottom trawling:**

- Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) – [Conservation Measure 22-05](#)
- General Fisheries Commission for the Mediterranean (GFCM) – [Recommendation GFCM/2005/1](#) (prohibited below 1000 m)
- European Union – [Regulation \(EC\) No 1568/2005](#) (prohibited in Azores, Madeira, and Canary Islands)

**Prohibitions on deep-sea gillnets:**

- Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) – [Conservation Measure 22-04](#)
- North East Atlantic Fisheries Commission (NEAFC) – [Recommendation 3](#) (prohibited below 200 m)
- South East Atlantic Fisheries Organisation (SEAFO) – [Recommendation 1/2010](#)
- South Pacific Regional Fisheries Management Organisation (SPRFMO) – [Conservation and Management Measure 1.03](#)
- European Union – [Regulation \(EU\) No 227/2013](#) (prohibited below 600 m)
- European Union – [Regulation \(EC\) No 1568/2005](#) (prohibited below 200m in Azores, Madeira, and Canary Islands)

**Table 1.** Stock status and biological characteristics of species included in the European Commission’s proposal for a new deep-sea access regime in the North-East Atlantic Ocean<sup>2</sup>.

Stock status is indicated by the following symbols:

- ✓ good condition
- ✗ depleted or concerns about depletion
- stable condition or slightly negative
- ? status unknown

Common and scientific names	Biology	Area	Stock status
Gulper shark <i>Centrophorus granulosus</i>	Maximum age: 25-39 years Age at maturity: 8-17 years	NEAFC area	✗ (ICES 2012)
Leafscale gulper shark <i>Centrophorus squamosus</i>	Maximum age: 54-70 years Age at maturity: 27-40 years	Northeast Atlantic	✗ (ICES 2012)
Black dogfish <i>Centroscyllium fabricii</i>	Age at maturity: 5 years	NEAFC area	✗ (ICES 2012)
Portuguese dogfish <i>Centroscymnus coelolepis</i>		Northeast Atlantic	✗ (ICES 2012)
Longnose velvet dogfish <i>Centroscymnus crepidater</i>	Maximum age: 54 years Age at maturity: 20 years	NEAFC area	✗ (ICES 2012)
Kitefin shark <i>Dalatias licha</i>		Northeast Atlantic	✗ (ICES 2012)
Greater lanternshark <i>Etmopterus princeps</i>		NEAFC area	✗ (ICES 2012)
Iceland catshark <i>Apristuris spp</i>		NEAFC area	✗ (ICES 2012)
Frilled shark <i>Chlamydoselachus anguineus</i>		NEAFC area	✗ (ICES 2012)
Birdbeak dogfish <i>Deania calcea</i>	Maximum age: 32-35 years Age at maturity: 16-25 years	NEAFC area	✗ (ICES 2012)
Blackmouth dogfish <i>Galeus melastomus</i>	Maximum age: 5 years Age at maturity: 2 years	NEAFC area	✗ (ICES 2012)
Mouse catshark <i>Galeus murinus</i>	Maximum age: 8 years Age at maturity: 4 years	NEAFC area	✗ (ICES 2012)
Bluntnose six-gilled shark <i>Hexanchus griseus</i>		NEAFC area	✗ (ICES 2012)

<sup>2</sup> COM(2012) 371 final

Common and scientific names	Biology	Area	Stock status
Velvet belly <i>Etmopterus spinax</i>	Maximum age: 7-10 years Age at maturity: 4-5 years	NEAFC area	✗ (ICES 2012)
Sailfin roughshark <i>Oxynotus paradoxus</i>		NEAFC area	✗ (ICES 2012)
Knifetooth dogfish <i>Scymnodon ringens</i>		NEAFC area	✗ (ICES 2012)
Greenland shark <i>Somniosus microcephalus</i>		NEAFC area	✗ (ICES 2012)
Smoothheads (Slickheads) <i>Alepocephalidae</i>			?
Baird's smoothhead <i>Alepocephalus bairdii</i>	Maximum age: 38 years Age at maturity: 13 years		?
Risso's smoothhead <i>Alepocephalus rostratus</i>	Maximum age: 23 years		?
Black scabbardfish <i>Aphanopus carbo</i>	Maximum age: 15 years Age at maturity: 8 years	Subareas I, II, IV, X, XIV and Divisions IIIa, Va	? (ICES 2012)
		Subareas VI, VII and Divisions Vb, XIIb	✓ (ICES 2012)
		Subareas VIII, IX	✓ (ICES 2012)
Greater silver smelt <i>Argentina silus</i>	Maximum age: 35 years Age at maturity: 8-15 years	Subareas I, II, IV, VII, VIII, IX, X, XII, XIV Divisions IIIa, Vb	? (ICES 2012)
		Division Va	— (ICES 2012)
Alfonsinos <i>Beryx spp.</i>		North East Atlantic	✗ (ICES 2012)
Deep-water red crab <i>Chaceon (Geryon) affinis</i>			?
Rabbit fish <i>Chimaera monstrosa</i>	Maximum age: 29 years Age at maturity: 11 years		?
Large-eyed rabbitfish <i>Hydrolagus mirabilis</i>			?
Straightnose rabbitfish <i>Rhinochimaera atlantica</i>			?
Roundnose grenadier <i>Coryphaenoides rupestris</i>	Maximum age: 54 years Age at maturity: 10 years	Subareas I, II, IV, VIII, IX, Divisions XIVa, Subdivisions Va2, XIVba	? (ICES 2012)
		Division IIIa	? (ICES 2012)
		Division Xb, XIIc, Subdivision Va1, XIIa1, XIVb1	? (ICES 2012)

Common and scientific names	Biology	Area	Stock status
		Subareas VI, VII, Divisions Vb, XIIb	✓ (ICES 2012)
Black cardinalfish <i>Epigonus telescopus</i>	Maximum age: 104 years		?
Bluemouth <i>Helicolenus dactilopterus</i>	Maximum age: 43 years Age at maturity: 13-16 years		?
Orange roughy <i>Hoplostethus atlanticus</i>	Maximum age: 149 years Age at maturity: 21-40 years	Northeast Atlantic	✗ (ICES 2012)
Roughhead grenadier <i>Macrourus berglax</i>	Maximum age: 25 years		?
Blue ling <i>Molva dyptergia</i>	Maximum age: 20 years Age at maturity: 6 years	Divisions IIIa, IVa, Subareas I, II, VIII, IX, XII	✗ (ICES 2012)
		Division Vb, Subareas VI, VII	✗ (ICES 2012)
Common mora <i>Mora moro</i>	Maximum age: 39 years		?
Blue antimora <i>Antimora rostrata</i>	Maximum age: 25 years		?
Red (blackspot) seabream <i>Pagellus bogaraveo</i>	Maximum age: 15 years	Subarea IX	✗ (ICES 2012)
		Subareas VI, VII, VIII	✗ (ICES 2012)
		Subarea X	✗ (ICES 2012)
Greater forkbeard <i>Phycis blennoides</i>	Maximum age: 20 years Age at maturity: 4 years	Northeast Atlantic	— (ICES 2012)
Wreckfish <i>Polyprion americanus</i>	Maximum age: 81 years		?
Greenland halibut <i>Reinhardtius hippoglossoides</i>	Maximum age: 30 years	Subareas V, VI, XII, XIV	— (ICES 2012)
		Subareas I, II	— (ICES 2012)
<i>Cataetyx laticeps</i>			?
Silver roughy <i>Hoplosthetus mediterraneus</i>	Maximum age: 11 years		?
Grenadiers (rattails) other than roundnose grenadier and roughhead grenadier			?
Black gemfish <i>Nesiarchus nasutus</i>			?
Snubnosed spiny eel <i>Notocanthus chemnitzii</i>			?
Round skate <i>Raja fyllae</i>			?

Common and scientific names	Biology	Area	Stock status
Arctic skate <i>Raja hyperborea</i>			?
Norwegian skate <i>Raja nidarosiensis</i>			?
Spiny (deep-sea) scorpionfish <i>Trachyscorpia cristulata</i>			?
Tusk <i>Brosme brosme</i>	Maximum age: 20 years Age at maturity: 8-10 years	Subareas I, II	? (ICES 2012)
		Subarea VIb	— (ICES 2012)
		Subarea XII (excluding XIIb)	? (ICES 2012)
		Divisions IIIa, Vb, VIa, XIIb, Subareas IV, VII, VIII, IX	✓ (ICES 2012)
Conger eel <i>Conger conger</i>	Maximum age: 20 years	Northeast Atlantic	?
Silver scabbard fish <i>Lepidopus caudatus</i>		Northeast Atlantic	?
Greater eelpout <i>Lycodes esmarkii</i>	Maximum age: 12 years	Northeast Atlantic	?
Ling <i>Molva molva</i>	Maximum age: 30 years Age at maturity: 5-7 years	Divisions IIIa, IVa, Subareas VI, VII, VIII, IX, XII, XIV	— (ICES 2012)
Small redfish <i>Sebastes viviparus</i>	Maximum age: 40 years Age at maturity: 10-15 years	Northeast Atlantic	?

**Table 2:** Numbers of species caught and discard rates for EU deep-sea trawlers in the North-East Atlantic.

Area and period	Number of species caught	Average discard rates (with range)	Reference
French trawlers, off west coast of British Isles, 1995-1997	Total species caught: 52 (43 species were discarded, 8 were landed, and 1 was both landed and discarded).	49% (2–82%)	<a href="#">Allain et al. 2003</a>
Irish trawler, Rockall, 1999	Total species caught: 61	50% (?-80%)	<a href="#">Clarke et al. 1999</a>
French trawlers, West Scotland, 2010		29% (3-82%)	<a href="#">Guérineau et al. 2010</a>
French trawlers, West Scotland, 2010	Total species caught: 144 Non-target species: 80-100	21% (0.2-53%)	<a href="#">Fauconnet et al. 2011</a>
French trawlers, West Scotland, 2011	Total species caught: 100	21% (1-45%)	<a href="#">Dubé et al. 2012</a>