DEEP SEA SPECIES:
THE EUROPEAN UNION MUST DECIDE BETWEEN SCIENCE AND THE PRIVATE INTERESTS OF THE FISHING INDUSTRY

The European Commission proposal with regard to the setting and distribution of quotas for deep-sea marine species (Com (2004) 746) represents a significant step forward in complying with the European Union's commitments and the new Common Fisheries Policy.

The proposal follows a number of scientific recommendations, many of which have been repeatedly ignored for years, and even applies the precautionary principle to stocks for which information is scarce but whose tendencies are showing disturbing signs.

Of equal importance is the call it makes to non-EU states, with which fishing grounds and stocks are shared, to adopt similar and complementary measures. The fleets with the largest catches of these deep-sea species come from Norway, Iceland and the Faroe Islands, not forgetting Russia, which was a pioneer in this type of fishery, although its fishing potential is currently considerably depleted.

Oceana welcomes the Commission proposal and wishes to contribute to this important debate by offering a series of comments on the Commission's proposal along with a reminder of the most recent scientific recommendations.

We trust that, in the debates of the EU Council of Fisheries Ministers, scientific knowledge and not private interests will prevail in guiding political decisions.

OCEANA Protecting The World's Oceans.

Oceana's comments on the Commission's proposal for TACs (in tonnes) of deep-sea species for the European Union fleets

Species		Areas	Current TACs	Commission's proposal	OCEANA comments
Deep-sea sharks		V, VI, VII, VIII, IX		3,219	*TAC 0
Deep-sea sharks		X		14	*TAC 0
Deep-sea sharks	Deania histricosa Deania profondorum	XII		243	*TAC 0
Black scabbardfish	Aphanopus carbo	I, II, III, IV	30	30	OK
Black scabbardfish	Aphanopus carbo	V, VI, VII, XII	3,110	1,965	OK
Black scabbardfish	Aphanopus carbo	VIII, IX, X	(IX, X) 4,000	3, 197	OK
Black scabbardfish	Aphanopus carbo	CECAF 34.1.2.		4,285	*OK
Greater argentine smelt	Argentina silus	I, II		116	OK
Greater argentine smelt	Argentina silus	III, IV	1,566	284	OK
Greater argentine smelt	Argentina silus	V, VI, VII	6,247	2,229	OK
Golden eye perch	Beryx spp.	I, II, III, IV, V, VI, VII, VIII, IX, X, XII, XIV		315	*140
Tusk	Brosme brosme	I, II, XIV	35	35	*OK
Tusk	Brosme brosme	III	40	40	*OK
Tusk	Brosme brosme	IV	370	134	*OK
Tusk	Brosme brosme	V, VI, VII	710	277	*OK
Roundnose grenadier	Coryphaenoides rupestris	I, II, IV, Va	20	20	4
Roundnose grenadier	Coryphaenoides rupestris	III	1,870	683	OK
Roundnose grenadier	Coryphaenoides rupestris	Vb, VI, VII	5,106	2,290	OK
Roundnose grenadier	Coryphaenoides rupestris	VIII, IX, X, XII, XIV,		7,217	OK
Orange roughy	Hoplostethus atlanticus	VI	88	88	0
Orange roughy	Hoplostethus atlanticus	VII	1,349	258	0

Orange roughy	Hoplostethus atlanticus	I, II, III, IV, V, VIII, IX, X, XI, XII, XIV		102	0
Blue ling	Molva dypterygia	II, IV, V	138	85	0
Blue ling	Molva dypterygia	III	25	25	0
Blue ling	Molva dypterygia	VI, VII	3,678	2,328	0
Ling	Molva molva	I, II	45	45	OK
Ling	Molva molva	III	136	86	OK
Ling	Molva molva	IV	4,666	1,706	OK
Ling	Molva molva	V	54	54	OK
Ling	Molva molva	VI, VII, VIII, IX, X, XII, XIV	14,966	7,007	OK
Red seabream	Pagellus bogaraveo	VI, VII, VIII	350	127	0
Red seabream	Pagellus bogaraveo	IX	1,271	463	280
Red seabream	Pagellus bogaraveo	X	1,136	748	748
Greater forkbeard	Phycis blennoides	I, II, III, IV		36	36
Greater forkbeard	Phycis blennoides	V, VI, VII,		2,080	2,000
Greater forkbeard	Phycis blennoides	VIII, IX,		267	200
Greater forkbeard	Phycis blennoides	X, XII		63	63
Greenland halibut	Reinhardtius hippoglossoides	IIa, IV, VI		844	OK
Greenland halibut	Reinhardtius hippoglossoides	V, XII, XIV,		1,707	OK

* Oceana's comments marked with an asterisk depend on the acceptance of other, complementary, decisions which are described in each of the sections detailed below.

Justification

Recent scientific research on the biology of many deep-sea species has demonstrated that very few of them can withstand commercial exploitation and that the majority can only withstand such low levels of exploitation that catching them would be completely unfeasible from an economic perspective.

The species that live at great depths tend to have a very low reproductive rate, a long gestation

period, late maturity and slow growth, which means that their populations are rapidly overexploited and exhausted and their recovery is either very slow or impossible.

The longevity and reproductive ages of the main deep-sea species targeted by North Atlantic fisheries are as follows[1]:

Species	Mature age	Greatest age
Orange roughy (Hoplostethus spp.)	25-33	150-185
Roundnose grenadier (Coriphaenoides rupestres)	14-16	60-70
Blue ling (Molva dypterigia)	8-11	20-30
Leafscale gulper shark (Centrophorus squamosus)	25-44	53-70
Birdbeak dogfish (Deania calceus)	19-27	30-35
Ling (Molva molva)	5-6	20-25
Greater argentine smelt (Argentina silus)	4-9	30-36
Red or blackspot seabream (Pagellus bogaraveo)		15-16
Greater forkbeard (Phycis blennoides)	3-4	15-20
Black scabbardfish (Aphanopus carbo)		25-32
Tusk (Brosme brosme)	8-10	18-20
Golden eye perch (Beryx spp.)	2-6	11-23
Greenland halibut (Reihnardtius hippoglosodes)	7-12	20-30
Bluemouth (Helicolenus dactylopterus)	13-15	37-43
Deepwater redfish (Sebastes mentella)	10-13	70-80

- **Orange Roughy *(Hoplostethus atlanticus)***

In 2003, the International Council for the Exploration of the Sea[2] (ICES) advised the North East Atlantic Fisheries Commission (NEAFC): *"orange roughy stocks cannot sustain high rates of exploitation. Newly-discovered aggregations are often overexploited before enough information is available to provide timely advice on management. Considering recent observations on the fishery developments, the exploitation of orange roughy should be strictly limited and the stocks/populations closely monitored. Data obtained should be incorporated into appropriate management measures. These recommendations should also apply to areas where there is currently no exploitation of orange roughy. There should be no direct fishery in sub-area VI"*

Studies carried out in Australia have come to the conclusion that in order to allow the species to survive, a sustainable exploitation should not be catching more than 1% or 2% of the species' biomass per year, which means that commercial fishing is virtually unfeasible[3]. It is believed that this capacity of this species to regenerate, in a best-case scenario, is less than 2.5% of the virgin biomass[4].

This is not the first time that ICES has indicated that the fisheries of this species are based on continually fishing-out populations, and it has not found a single sustainable exploitation of these stocks, recommending that no direct catches whatsoever of this species should take place in sub-area VI[5].

In sub-area VII, ICES[6] warns that similar guidelines should be followed to sub-area VI, in view of which Oceana believes that measures similar to a zero quota should be adopted. For other areas, given that sustainable exploitation has not been noted in any fishery and that the Iceland and Faroe Island fisheries in sub-areas VI, VIa, X and XII had to be shut down, we see no scientific reason to grant quotas for these species, not even in the French, Irish and New Zealand fisheries that take place over the mid-Atlantic ridge, given that this is a particularly vulnerable area.

Catches of this species in all the NEAFC areas have fallen drastically from 5,846 tonnes in 2002 to 758 in 2003, and from an average of 2,749 tonnes during the nineties to less than 800 at present. In other words, a drop of more than 70%, in a fishery that has only been running for 15 years.

This fishery is mainly operated by France and Ireland, although there are also boats from Iceland, the Faroe Islands, Russia and New Zealand and, more sporadically, from Portugal, Scotland and, very rarely, Spain and Norway.

ICES has also recommended the protection of certain areas where breeding fish congregate, such as the Hebrides Terrace Seamount. Some populations also need to be protected in the waters of the Azores, the Hatton Bank and the Mid-Atlantic ridge.

- **Roundnose grenadier *(Coryphaenoides rupestris)***

ICES[7] believes that all the populations of this species are at very low levels. In sub-areas VI and VII and divisions Vb and IIIa, a reduction in the fishing effort of 50% was advised for 2000-2002. It also recommended that no increase in catches should be permitted in any other zone where there are fisheries of this species. It is believed that the species can only withstand very low levels of exploitation and that the recovery of overexploited stocks will be very slow.

This recommendation to reduce catches has been constantly reiterated by the Group of Experts on Deep-Sea Species. Despite this, catches have remained at the same levels, with a slight increase in 2001, over the last few years.

Oceana believes that catches of this species should be strictly limited, as the roundnose grenadier is not only a direct target but is also a regular by-catch in other deep-sea fisheries. The extremely high number of discards is well known, which can reach 75% in certain trawling fisheries. These discards are not accounted for, and so are not taken into consideration when evaluating the state of the stock.

The main countries fishing this species are Denmark, France, Spain and Russia, followed by the Faroe Islands, Iceland, Germany, the United Kingdom and Norway.

- **Blue ling *(Molva dypterigia)***

The populations of blue ling are in evident decline. It is believed that the exploitable biomass of the species has fallen by 80% in just twelve years of fisheries operation.

Along with the orange roughy, this is one of the species that is most vulnerable to overexploitation and it has been corroborated that when it gets to such low levels the chance for regeneration may be impossible, even when catches have been drastically reduced, as has been witnessed in divisions Va and Vb[8].

Many of the catches made in the areas of greatest fishery exploitation are based on congregations of breeding fish, making their regeneration even more difficult.

ICES has recommended the closure of fisheries in areas where breeding fish congregate, such as the Reykjanes Ridge to the south of the Vestmann Islands, the Rockall seamounts, the Storegga slide and certain areas in division Vb.

- **Ling *(Molva molva)***

The state of the stock of species is unknown, not even the number of populations in existence[9], but the evident drop in catches demonstrates that this species is in decline.

ICES has recommended reducing the fishing effort by 30% in sub-areas II, IV, VI, VII and VIII and in division Va, as well as prohibiting increases in division Vb. In the latter zone, the majority of catches are made by deep-sea longliners.

The Commission's proposal suggests a higher cut-back than that recommended by ICES; however, the great uncertainty about stocks and the high likelihood that they may be isolated populations makes it advisable to adopt precautionary proposals to prevent the collapse of the species, because the current biomass of this species could be close to 50% of the maximum recorded.

- **Red seabream *(Pagellus bogaraveo)***

The species has been exhausted in most North Atlantic areas – especially sub-areas VI, VII and VII – with the exception of sub-areas IX and X, where its state is unknown[10].

This species is caught by deep-sea longlining but it is also an accidental catch in bottom-trawling fisheries targeting hake, snapper, monkfish, Norwegian lobster, etc.

This is a protogynous hermaphrodite fish which changes sex when it reaches a certain age. It is estimated that specimens function as males until they reach four years of age and then become female. This makes them very vulnerable to overexploitation and also makes it very difficult to set a minimum catch size.

The critical situation being experienced by the majority of populations, the uncertainty regarding the rest and the fact that they are accidental catches in other fisheries makes it

advisable to adopt a precautionary stance that establishes a zero quota for areas where they are heavily overexploited and a significant reduction in other areas.

- **Greater forkbeard *(Phycys blennoides)***

There is a lot of uncertainty as to the state, biology and number of populations and distribution of this species. In addition, the fact that this species is often caught together with the lesser forkbeard (Phycis phycis) makes it even more difficult to evaluate.

ICES[11] has recommended that fisheries of this species should not be allowed unless accompanied by strict compilation of data that allows the knowledge and management of the species to be improved.

Although during the last few years quotas have not been established for this species, some 3,130 tonnes have been caught, generally mixed up with other moridae or with *Phycis phycis*. On many occasions these are accidental catches made by deep-sea trawlers and longliners dedicated to catching species such as hake, lings and monkfish.

Oceana recommends a precautionary reduction of 30% instead of the 21% being proposed currently by the European Commission.

- **Black scabbardfish *(Aphanopus carbo)***

As is the case with many other deep-sea species, not a great deal is known about its biology, distribution and state. Despite this, data on catches per unit of effort (CPUE) show a constant decline in populations, particularly in the northern area.

For this reason, ICES[12] has asked for "significant reductions" in the fishing effort of the species, and for the accidental catches that occur in other fisheries to be taken into account.

The northern area of NEAFC, where the catches of black scabbardfish are made by French trawlers targeting roundnose grenadiers and deep-sea sharks, is where the species has suffered its greatest drop in numbers (more than 50% in CPUE since the fishery started). In the southern zone, between the Azores and the Canary Islands, where catches are made by artisan deep-sea longline fisheries, catches and the biomass appear to have remained stable, but it is recommended that the effort should not be increased until reliable information on the state of the stock is available.

In the case of the TAC for the Canaries and Madeira area (CECAF 34.1.2), there should be a clear indication that this is only to maintain the artisan and traditional fisheries operating in the area.

- **Greater silver smelt *(Argentina silus)***

There is not enough information available to evaluate either the state or sustainability of catches of this species[13]. Its biology indicates that it is a highly vulnerable species which can only withstand very low levels of exploitation. Despite this, catches have significantly increased in recent years, until in 2003 the European Union started establishing catch quotas. In just a few years there has been a strong decline in adult fish in sub-area VI due to the high level of exploitation. In addition, this is a species that tends to crop up as an accidental catch in other fisheries.

In many areas, given the scarcity of other species, the greater silver smelt has gone from being an accidental catch to a target species. This has increased the pressure on the species in numerous sub-areas and divisions. Of particular concern are the populations in sub-areas VI and VII, given that this is where the breeding fish congregate.

The countries with the highest numbers of catches are Norway, Denmark, Iceland and the Faroe Islands, followed by Ireland, Scotland and Holland; much further behind are Russia, Germany and France, and just sporadically Spain and Poland.

- **Golden eye perch *(Beryx spp.)***

There are two species Included in this denomination, *Beryx splendens* and *B. decadactylus*. Their exploitation is giving cause for great concern, as this species is easy to catch because it tends to congregate in small areas on coral reefs, and therefore it cannot withstand high catch rates. In addition, it tends to be strongly associated with very vulnerable ecosystems, such as deep-sea coral reefs on seamounts.

The state of the stock is unknown, but there is a risk of the continued exhaustion of its populations, while the data on the Azores area shows a significant decline. It is believed that there are catches in international waters, particularly on the Mid-Atlantic Ridge, which are not recorded or reported to the organisation responsible for its management[14].

Catches are currently at a third (199 tonnes) of historical catches (an average of 616.73 tonnes between 1998 and 2002). Despite this, no quotas had been established to limit catches before the Commission's present proposal.

At the very least their catches should be reduced by 30% as a precautionary measure, and no quotas should be granted to trawlers or any other form of fishery that could damage the sea beds where this species is found.

The fleets involved in the fisheries of this species are from Portugal and Spain and, more sporadically, the Faroe Islands, Norway, Russia and Ireland.

- **Tusk *(Brosme brosme)***

It is believed that all the stocks of this species must be at very low levels[15], but the information available is very scarce. In some divisions, such as Va, the species has not recovered from the major decline it suffered during the Eighties and Nineties. It

is believed that the biomass could be less than 20% of the original, in view of which ICES is recommending a reduction of 30% in the fishing effort.

Given that this is such a vulnerable species and has such low levels of exploitable biomass, Oceana believes that these reductions should be much greater, as outlined in the Commission's proposal. In 1998, the EU caught 1,340 tonnes, so a reduction of 30% would represent 938.7 tonnes (the Commission's proposal recommends just 486 tonnes, i.e. a reduction of 65.76%).

The countries primarily involved in this fishery are Norway, the Faroe Islands and Iceland, followed at a considerable distance by France, Spain, Russia, Ireland and Scotland, and occasionally Germany.

- **Greenland halibut *(Reinhardtius hippoglosoides)***

This is regarded as an overexploited species[16]. Over the last quarter of a century, its catches have remained at between 15,000 and 25,000 tonnes per year as a result of the small biomass caused by fishing pressure.

ICES has recommended that catches should not exceed 13,000 tonnes to allow the species to recover, in addition to the creation of closed fishing areas.

Despite this, catches have increased by both trawlers (which catch 60%-70%) and longliners..

In sub-areas I and II, the EU has hardly caught any halibut, except a few dozen tonnes by boats from the United Kingdom. In sub-areas V, XII and XIV, the biomass is also low. In view of this, ICES has recommended catches are reduced by a third, including a reduction of 50% in division Va and similar measures in Vb and XIVb

The slow growth of this species is emphasised, as well as the possibility that a failure in recruitment of the species may not be noted until it is very late (5 or 10 years later) as its areas of reproduction and congregation of young fish are unknown.

The EU fleet (mainly Germany and the United Kingdom) caught 4,186 tonnes in 2003.

- **Deep sea sharks *(Squalidae)***

There are several dozen species of deep-sea shark in the waters of the North Atlantic. The most frequently caught by fishing fleets are the ones that belong to the genus *Centrophorus*, *Centroscyllium*, *Centroscymnus*, *Dalatias*, *Deania, Etmopterus*, *Somniosus, Squalus,* etc.

In all these cases, we are talking about ovoviviparous aplacental species with a low reproductive rate, a long gestation period and great longevity, which makes them extremely vulnerable to commercial exploitation.

For many years, ICES has been asking for the provision of specific documentation on exploited species in order to formulate detailed advisories. In this respect, applying generic quotas to "deep-sea sharks" runs contrary to any kind of scientific criteria.

There are many reasons that advise against authorising catches of these species:

- Their longevity and low reproductive rate..
- Many of them have a maximum size very close to L50 (when at least 50% of the species is mature):
- Their long gestation period and ovoviviparous reproduction, which means that the vast majority of females are pregnant, thus eliminating two generations at the same time when caught
- The notable decline in the numbers of certain species.

For example, catches of spiny dogfish *(Squalus acanthias)* have dropped by more than 60% in the last 25 years (and by almost 85% in 40 years), reflecting the heavy overexploitation to which they have been subjected. For the majority of deep-water shark species, there is not enough information available to estimate their state, although in some cases drops in the CPUE are already occurring, such as the Portuguese dogfish *(Centroscymnus coelolepis),* despite the fact that this fishery only started 14 years ago[17].

Conclusions

There is a need for these TAC proposals to be accompanied by other measures that serve to protect the main and most vulnerable deep-sea ecosystems, in order to guarantee proper fisheries management of these species.

Amongst these, we should like to highlight the repeated requests, not just from ICES but also by numerous scientific forums and international organisations (AAAS, CBD, IDWCS, UNGA, IUCN, OSPAR, UNICPOLOS, etc.) to ban the use of bottom trawling gear over deep-sea coral and sponge ecosystems as well as other vulnerable benthic habitats. This measure should be complemented by a ban on the use of rockhopper and other similar roller gear that enables fishing to be carried out over these ecosystems, the creation of closed fishing areas and the limitation of other fishing practices that may have a negative impact on the sea bed or the species in question.

Nor should we forget that the situation to which certain populations of deep-water fish have been brought to would, according to IUCN criteria, make it advisable to catalogue these species as "endangered", thus meriting total protection.

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International Council for the Exploration of the Sea - Advisory Committee on Fisheries Management -4.10.8 Orange roughy (*Hoplostethus atlanticus*)-. Copenhagen, Denmark.

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CATCHES OF THE MAIN DEEP-SEA SPECIES BY EU FLEETS IN 2003, following preliminary dates from ICES

Fleets	Species (tonnes)											
	Golden eye perch or Alfonsino *Beryx splendens*	**Great silver smelt or Atlantic argentine** *Argentina silus*	**Blue ling** *Molva dypterygia*	**Black scabbard fish** *Aphanopus carbo*	**Greater fork beard** *Phycis blennoides*	**Ling** *Molva molva*	**Orange Roughy** *Hoplostethus Atlanticus*	**Roundnose grenadier** *Coryphaenoides rupestris*	**Red Seabream** *Pagellus bogaraveo*	**Tusk** *Brosme brosme*	**Greenland halibut** *Reinhardtius hippoglosoides*	**Total**
Germany			15			132				8	2966	3121
Belgium						78						78
Denmark		1119	34			935		4302		234		6624
Spain			215		484	436		8459	354	13	169	10130
Estonia			5									5
Faeroes		6030	2292	1352		3116	1	513		2045		15354
France	23		2905	2502	418	2270	447	5659	16	114	35	14389
Greenland								15				15
Holland		2596				1						2597
Ireland	4	96	30	160	319	1268	310	224		47		2458
Iceland		2683	1098			3587		1		4057	20363	31789
Lithuania			37									37
Norway		8344	551		932	13952		11		13373	9417	46580
Poland			16								5	21
Portugal	172			2630	56				1210		20	4088
U.K.		112	760	139	920	5120		211	20	409	1304	8995
Russia		415	2		1	14		585		27	4384	5428
Sweden			1			40				4		45

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