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Status Assessment 2021 - Gulper Shark

Fishing pressure, identified as the only threat to the gulper shark in the last OSPAR assessment, has declined. Several fisheries regulations in the North-East Atlantic have been adopted within and beyond EU waters. However, abundance and biomass index estimates for this species are lacking and the data derived from discard sampling are not adequate to estimate the quantities of this species that are caught in commercial fisheries. Therefore, available data are insufficient to evaluate the current status of the population, but the species is known to exhibit life-history traits that make the recovery process slow.

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Assessment of status		Distribution	Population size	Demographics, e.g. productivity	Previous OSPAR status assessment	Status
Region	I					NA
	II					NA
	III					NA
	IV	←→[1]	?	?	●	?
	V	←→[1]	?	?	●	?

Assessment of key pressures		Fisheries	Threat or impact
Region	**I**		NA
	II		NA
	III		NA
	IV	↓[1]	?
	V	↓[1]	?

⊞ Table Legend

⊞ Method of Assessment

Confidence

Low

Background Information

The gulper shark was nominated for inclusion on the OSPAR List of Threatened and/or Declining Species and Habitats in 2006 and it has been included since 2009. The original evaluation against the Texel-Faial criteria listed sensitivity and decline in the OSPAR Regions where it occurs (Regions IV and V) as reasons for its listing. There is however ongoing taxonomic confusion across the genus *Centrophorus*, which has implications for the interpretation of all data on this Genus.

Geographical Range and Distribution

The gulper shark is thought to be distributed in the Atlantic from the waters off eastern North America to France, extending southwards to South Africa and including the Madeira and Azores archipelagos. The species possibly occurs in other areas, but the geographic range is uncertain due to misidentification with similar species in the Atlantic and other oceans (Ebert and Stehmann 2013). In the North-East Atlantic, two species of *Centrophorus* were previously landed under the unique scientific name of *Centrophorus granulosus*, including *Centrophorus uyato*. *C. uyato* is considered to be a more southerly species that also occurs in the Mediterranean while *C. granulosus* is known to inhabit the Iberian continental slope and more northern areas. According to White et al. (2013) *C. lusitanicus* Bocage & Capello, 1864 and *C. niaukang* Teng, 1959 are considered junior synonyms of *C. granulosus*.
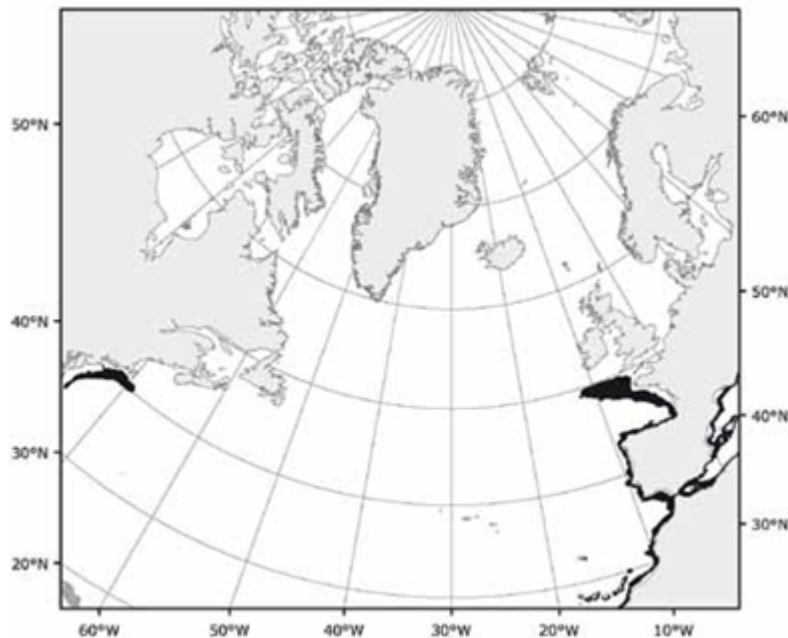
Figure 1: Distribution of gulper shark Centrophorus granulosus (Ebert and Stehmann, 2013).

Population/Abundance

The stock structure of this species in the North-East Atlantic is unknown. Data are insufficient to evaluate either current population size or recent trends in relative abundance. Very little new information is available, as this species is rarely caught in scientific research surveys. ICES does not provide advice for this species.

Condition

The gulper shark reaches a maximum size of 176 cm total length (TL). Males mature at c.111 cm in total length; females at c.143 cm in total length (Cotton et al. 2015, Weigmann 2016). The species produces litter sizes of 1–7 pups (Cotton et al. 2015). Female age-at-maturity is estimated to be 16.5 years with a maximum age of 39 years. This results in a generation length of 27.75 years (Guallart 1998).

Threats and Impacts

A targeted longline fishery that began in the north of Portugal in 1983 included this species but this fishery stopped in 2006 (ICES 2019). Currently, the species is an occasional bycatch species in deep-water fisheries, but landings are prohibited. An exception is made for deep-water longlines targeting black scabbardfish, where a small bycatch is allowed.

Bycatch mortality, whether discarded or utilised, poses a particular challenge for the management of deep-water sharks; these species cannot be returned alive following capture in many commercial fisheries.

Fishing effort has strongly decreased in the last 15 years, given the EU management measures adopted to reduce the impact of deep-water fisheries on deep-water species, including sharks.

Measures that address key pressures from human activities or conserve the species/habitat

In the EU, a zero total allowable catch (TAC) was adopted in 2010 for a range of deep-water sharks, including the gulper shark. Since 2017, a limited TAC for deep-water sharks has been allowed for "*bycatches in longline fishery targeting black scabbardfish*", with no directed fisheries permitted. Given the potential negative impact on deep-water species, gill nets, entangling nets, and trammel nets were banned for fisheries at depths >600m from 2007 onwards. In order to mitigate the potential damaging impacts of bottom trawling, fishing with bottom trawls was permitted only at depths ≤800 m after 2016. However, the gulper shark is most commonly found in the 300 to 800 metre depth range. Thus, only part of the population may be protected by these measures. In Region IV, several records assigned to this species indicate that species is known to distribute at depths >740 m (Bañon et al., 2008); in 1451–1850m strata (Diez et al., 2021).

In the Azores, bottom trawls have been prohibited in most of the EEZ since 2005 (Council Regulation (EC) No 1568/2005 of 20 September 2005; Regulation (EU) 2019/1241 of the European Parliament and of the Council of 20 June 2019; Portaria nº 114/2014, of 28 May of 2014). In the NEAFC Regulatory Area the species is designated as Category 2, which means that directed fisheries are not authorised and that bycatches should be minimised.

Conclusion (including management considerations)

Fishing pressure, identified as the only threat to the gulper shark in the last OSPAR assessment, has declined. Several fisheries regulations in the North-East Atlantic have been adopted within and beyond EU waters. However, abundance and biomass indices for this species are lacking and the data derived from discard sampling are not adequate to estimate the quantities caught. The available data are insufficient to fully evaluate the current status of the population, but the species is known to exhibit life-history traits that make the recovery process slow.

Incidental bycatch of gulper shark continues to take place in some deep-water fisheries targeting other species. Spatio-temporal management could be considered to further minimise bycatch (e.g. avoidance of some fishing grounds or times of the year where there is a spatial overlap between the target species of the fisheries and deep-water shark species) (ICES 2020). However, the information available is not adequate to frame such measures at present. Among the other

possible bycatch mitigation measures for this species in deep-water fisheries is the development of gear-based technical measures for improving selectivity, such as electromagnetic exclusion devices, acoustic or light-based deterrents for example.

Knowledge Gaps

There is a worldwide concern about the misidentification of Centrophorus species and further efforts should be made to clarify the Genus and, consequently, species occurrences. For the North-East Atlantic, the knowledge on gulper shark distribution and stock structure is very deficient. Life-history and biological information are significantly lacking.

A major scientific investment is required to gain a full understanding of the spatial and temporal population dynamics that would enable estimates of sustainable exploitation levels or the development of conservation-oriented measures. This would include:

i)   increased and rigorous monitoring of deep-water shark populations;

ii)   development of specific studies to assess the distribution patterns of species and to estimate the spatial overlap with fisheries;

iii)   evaluation of the effect on the bycatch of deep-water sharks of modifications in deep-water fishing operations (ICES 2019).

Method used

The assessment is based mainly on expert opinion with very limited data. It is derived from a mixture of OSPAR data and assessments from third parties, landings data from ICES working group reports, ICES WKSHARK6, and Red List assessments by the IUCN.

⊞ References

Sheet reference:

BDC2021/Gulper shark

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