



Background Document for Common skate
Dipturus batis



OSPAR Convention

The Convention for the Protection of the Marine Environment of the North-East Atlantic (the “OSPAR Convention”) was opened for signature at the Ministerial Meeting of the former Oslo and Paris Commissions in Paris on 22 September 1992. The Convention entered into force on 25 March 1998. It has been ratified by Belgium, Denmark, Finland, France, Germany, Iceland, Ireland, Luxembourg, Netherlands, Norway, Portugal, Sweden, Switzerland and the United Kingdom and approved by the European Community and Spain.

Convention OSPAR

La Convention pour la protection du milieu marin de l'Atlantique du Nord-Est, dite Convention OSPAR, a été ouverte à la signature à la réunion ministérielle des anciennes Commissions d'Oslo et de Paris, à Paris le 22 septembre 1992. La Convention est entrée en vigueur le 25 mars 1998. La Convention a été ratifiée par l'Allemagne, la Belgique, le Danemark, la Finlande, la France, l'Irlande, l'Islande, le Luxembourg, la Norvège, les Pays-Bas, le Portugal, le Royaume-Uni de Grande Bretagne et d'Irlande du Nord, la Suède et la Suisse et approuvée par la Communauté européenne et l'Espagne.

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Background Document for Common skate *Dipturus batis* species complex

Executive Summary

This background document on the Common skate *Dipturus batis* has been developed by OSPAR following the inclusion of this species on the OSPAR List of threatened and/or declining species and habitats (OSPAR Agreement 2008-6). The document provides a compilation of the reviews and assessments that have been prepared concerning this species since the agreement to include it in the OSPAR List in 2003. The original evaluation used to justify the inclusion of *D. batis* in the OSPAR List is followed by an assessment of the most recent information on its status (distribution, population, condition) and key threats prepared during 2009-2010. Chapter 7 provides proposals for the actions and measures that could be taken to improve the conservation status of the species. In agreeing to the publication of this document, Contracting Parties have indicated the need to further review these proposals. Publication of this background document does not, therefore, imply any formal endorsement of these proposals by the OSPAR Commission. On the basis of the further review of these proposals, OSPAR will continue its work to ensure the protection of *D. batis*, where necessary in cooperation with other competent organisations. This background document may be updated to reflect further developments or further information on the status of the species which becomes available.

Récapitulatif

Le présent document de fond sur le pocheteau gris a été élaboré par OSPAR à la suite de l'inclusion de cette espèce dans la liste OSPAR des espèces et habitats menacés et/ou en déclin (Accord OSPAR 2008-6). Ce document comporte une compilation des revues et des évaluations concernant cette espèce qui ont été préparées depuis qu'il a été convenu de l'inclure dans la Liste OSPAR en 2003. L'évaluation d'origine permettant de justifier l'inclusion du pocheteau gris dans la Liste OSPAR est suivie d'une évaluation des informations les plus récentes sur son statut (distribution, population, condition) et des menaces clés, préparée en 2009-2010. Le chapitre 7 fournit des propositions d'actions et de mesures qui pourraient être prises afin d'améliorer l'état de conservation de l'espèce. En se mettant d'accord sur la publication de ce document, les Parties contractantes ont indiqué la nécessité de réviser de nouveau ces propositions. La publication de ce document ne signifie pas, par conséquent que la Commission OSPAR entérine ces propositions de manière formelle. A partir de la nouvelle révision de ces propositions, OSPAR poursuivra ses travaux afin de s'assurer de la protection du pocheteau gris, le cas échéant avec la coopération d'autres organisations compétentes. Ce document de fond pourra être actualisé pour tenir compte de nouvelles avancées ou de nouvelles informations qui deviendront disponibles sur l'état de l'espèce.

1. Background information

Name of species

Common skate (*Dipturus batis*) Linnaeus, 1758

Recent genetic research (Iglésias *et al.* 2009) indicates that the species reported as *Dipturus batis* is actually comprised of two large threatened species of *Dipturus* - provisionally *D. cf. flossada* and *D. cf. intermedia* - and that recorded landings of *D. batis* also include Norwegian skate *D. nidarosiensis*, particularly from deepwater fisheries. This species could also potentially be confused with *D. oxyrinchus*, despite morphological and colour differences (Ragonese *et al.* in press).

Hence, the implications of these observations are that members of the '*D. batis*' species complex are even more depleted than formerly understood. The risk of extinction of this depleted species may be higher than previously assessed and might be unavoidable without immediate and incisive conservation action (Iglésias *et al.* 2009)

2. Original evaluation against the Texel-Faial selection criteria

List of OSPAR Regions and Dinter biogeographic zones where the species occurs

OSPAR Regions: I, II, III, IV, V

Dinter biogeographic zones: Warm-temperate waters, Cold-temperate waters, Warm-temperate pelagic waters, Lusitanian (Cold/Warm), Lusitanian-boreal, Cold-temperate pelagic waters, Boreal-lusitanian, Seamounts and plateaus, Boreal, Norwegian Coast (Finnmark), Norwegian Coast (Westnorwegian), Norwegian Coast (Skagerrak)

List of OSPAR Regions where the species is under threat and/or in decline

All Regions where it occurs:

Original evaluation against the Texel-Faial criteria for which the species was included on the OSPAR List

D. batis was nominated for inclusion in the OSPAR List in 2001 by several Contracting Parties and Observers. The criteria common to all nominations were decline, sensitivity and rarity.

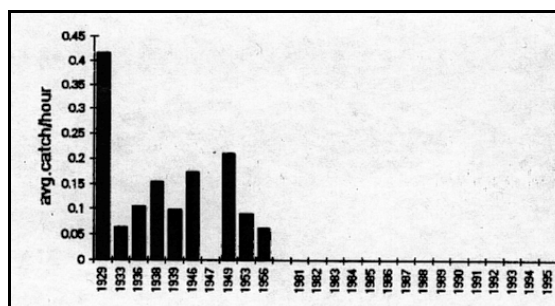
Table 1: Summary assessment of Common Skate (*Dipturus batis*), against the Texel-Faial criteria (summarised from information compiled by Dulvy *et al.* 2006).

Criterion	Comments	Evaluation
Global importance	The OSPAR Area may include 75 % or more of the global population of Common skate (it is rare in the Mediterranean, and extends south to Senegal).	Uncertain
Regional importance	The Greater North Sea/Celtic Sea may be the most important region for this species, amounting to around 75 % of the North Atlantic population, but further confirmation is required (Daan, pers comm. in OSPAR Commission 2006).	Uncertain
Rarity	The Common skate was originally one of the most common and commercially important skates fished in shelf waters of the OSPAR Area. It is now very rare in most of the OSPAR Area.	Qualifies

Sensitivity	This is a large, long-lived species with a low fecundity. Its age and very large size at maturity makes all size classes vulnerable to capture by bottom trawls and other demersal fisheries. Mortality of the large juveniles is high.	Qualifies
Keystone species	No	Unknown
Decline	Once abundant in the OSPAR Area. Catch statistics and fishery-independent survey data document declines throughout its range, particularly on the shelf, since the end of the 19 th Century. The proportion of <i>D. batis</i> in some skate fisheries has declined from ~40 % of the skate catch in the early 20 th Century, to 10 % in 1970, to zero (see Figure 1). <i>D. batis</i> has been commercially extinct in the Irish Sea for some years and has declined severely in the North Sea. Dutch by-catch records indicate a 75 % decline during 1947-1981. Fishing pressure in the North Sea has been calculated to have resulted in a 34-37 % decrease in numbers annually. It is assessed by ICES as nearly extirpated in the Irish and North Seas. Apparently stable landings in other parts of the species' range were formerly attributed by ICES to the redirection of fishing effort from shelf seas, where <i>D. batis</i> is seriously depleted, into deeper water where previously unfished populations are now being taken, but are now known to be due to misreporting.	Qualifies

Figure 1: Average catch/hour of *D. batis* in the North Sea, 1929-1956 and 1981-1995

Source: Walker & Hislop 1998



3. Current status of the species

Further deterioration in the status of Common skate (*Dipturus batis*) has been reported since it was included on the OSPAR List, particularly in Regions II and III. The species is now assessed as “Critically Endangered” globally on the IUCN Red List of Threatened Species (Dulvy *et al.* 2006). Furthermore, recent genetic research (Iglésias *et al.* in press 2009) indicates that the species reported as *Dipturus batis* is actually comprised of two large threatened species of *Dipturus* (provisionally *D. cf. flossada* and *D. cf. intermedia*), and that recorded landings of *D. batis* also include Norwegian skate *D. nidarosiensis*, particularly from deepwater fisheries. The implications of these observations are that members of the ‘*D. batis*’ species complex are even more depleted than formerly understood.

Distribution in OSPAR Maritime Area

D. batis was historically common over large areas of coastal, continental and insular shelf waters of the northeast and east central Atlantic, from northern Norway and Iceland, throughout the North Sea, to the western Mediterranean and northwest Africa (Figure 2), but not Madeira (Wirtz *et al.* 2008). This demersal species is found from shallow coastal waters down to depths of 600 m, although

primarily above 200 m depth range (Stehmann and Burkel 1984). Its population is now severely depleted and fragmented, with extirpation reported in several parts of its range (Dulvy *et al.* 2006).

Figure 1 shows the global distribution of *D. batis*, excluding the southern North Sea where it no longer occurs. It has also been reported from developing fisheries on the Mid-Atlantic Ridge (ICES 2002, Pinho 2006), is caught in annual bottom trawl surveys on the Porcupine Bank (Velasco & Blanco 2008) and from an area between Le Danois Bank and the continental shelf of the Cantabrian Sea (Sanchez *et al.* 2008).

Within the Mediterranean, the species now appears to be restricted to the coasts of Morocco, Spain and France (Figure 2 also shows its former range in the eastern and central basins).

Figure 2: Global distribution of Common Skate
Dipturus batis

Source: IUCN Red List of Threatened Species.

Note that records in the Eastern Mediterranean, Irish Sea, central and southern North Sea and possibly other areas illustrate historic, not present, distribution.



The trend for a contraction of the range and extirpation in the most heavily fished parts of the distribution of *D. batis* is likely to continue unless the latest management measures adopted for EU fleets are implemented effectively and fishing mortality declines significantly.

Population (current/trends/future prospects)

Overall population size is almost certainly still decreasing, as described above. Expanding deepwater fisheries are depleting stocks that were until recently unexploited. Given that this species is likely to be taken in trawl and gillnet fisheries that target high-value teleosts (e.g. megrim, anglerfish and hake), it is unlikely that fishing effort will decrease. It is too early to tell whether new management measures (regulation of deepwater fisheries and species protection) could reverse the long term trend towards depletion of stocks and extirpation from former areas of this species' range.

- | | |
|-------------------|---|
| Region I | Still present. Status and trends unknown, but presumed to be depleted on the coasts of Norway and Iceland. May be more abundant in deep water on the slope. |
| Region II | Extirpated from most of this Region, particularly the southern North Sea and English Channel. Still reported occasionally from the north of the Region. |
| Region III | Extirpated from the Irish Sea. Still present (but greatly depleted) in a few inshore locations in northwest Scotland, in the approaches to the Bristol Channel, and off the coast of Ireland. Still being harvested from deepwater. |

- Region IV** Still present, but likely depleted (status uncertain due to misreporting in landings).
- Region V** Still present in deep water to 700 m on the slope. Deeper records, including those from the mid-Atlantic ridge, may be misidentifications. Status unknown, but likely to be suffering depletion by expanding deepwater fisheries.

Condition (current/trends/future prospects)

The two species reported as *Dipturus batis* have largely been extirpated from shelf waters. The condition of the remaining populations of this species complex, which extend to a depth of 700 m on the slope and are being harvested by deepwater fisheries, are likely extremely poor. Productivity is naturally very low in very large *Dipturus* species, so recovery will be extremely slow even if remaining individuals in shelf and slope waters are protected through zero TAC or other measures. Since the species reported as *D. batis* take 11 and 20 years to reach maturity, it will likely take decades to see a significant or detectable improvement in status. This species is assessed as “Critically Endangered” by IUCN because of these past and continuing population declines (Dulvy *et al.* 2006).

Limitations in knowledge

Although very common in the past, the Common skate is now only rarely reported. There is very limited knowledge available on its present distribution, the size of stocks, and location of remaining self-sustaining populations. Most data are available from an inshore population that is being studied through a tag and release programme in Western Scotland. *D. batis* was identified by the ICES Study Group on Elasmobranch Fish as a species which requires information on fisheries statistics, biology and status of exploitation (ICES SGEF 1995). The misidentification of this species, particularly through confusion with other ‘long-nosed’ *Dipturus* species, is likely to hamper data collection and management efforts. Current knowledge will need to be reviewed in light of the latest genetic studies that indicate more than one species is being reported as *D. batis* (Iglésias *et al.* 2009 in press.). EU Member States were required in 2008 to provide species specific landings data for *D. batis* and other major North and Norwegian Sea species of skates and rays landed, but landings of *D. batis* were prohibited in 2009.

4. Evaluation of threats and impacts

By-catch mortality in fisheries is the key threat to this large-bodied species, which is vulnerable to fisheries long before it is old enough to reproduce (Dulvy *et al.* 2008, Fricke *et al.* 2007). Common skates are mostly caught in trawls and static (gill or tangle) nets and by hook and line (recreational and commercial longlines in a few locations). Some animals in public aquariums have been obtained from live by-catch landed as a curiosity because of its rarity, others hatched from egg cases. It is unknown whether there is any targeting of these animals by hook and line for aquarium display. The distribution of the threat posed by fisheries mortality is linked to the intensity of coastal, shelf and deepwater net, longline and trawl fisheries in OSPAR Regions where the species still persists. Recolonisation of areas from which the Common skate has been extirpated will be hampered by by-catch in fisheries. Decreasing fishing effort as a result of management and economic constraints, combined with mandatory release of this species since 2009 (see Section 5), is likely to reduce this threat, to some extent (release mortality may be high), in future years. Additional threats include habitat damage (pollution) (Fricke *et al.* 2007).

Table 2: Summary of key threats and impacts to Common Skate (*Dipturus batis*)

Type of impact	Cause of threat	Comment
Excessive mortality	Removal of all life stages through bycatch in commercial fisheries Target specimen fish angling	Fisheries mortality affects all life stages, from egg cases on nursery grounds to newly hatched, juveniles and adult fish. It greatly exceeds the natural rate of population increase for this species. Impact should be reduced under EC regulations.
Habitat damage	Mobile fishing gears, pollution	Minor impact compared with excessive mortality rates in fisheries.
Prey availability	Depletion of prey species	Potential, but minor impact compared with fisheries mortality.

5. Existing management measures

A total allowable catch (TAC) was set for skates and rays in EU waters of the North Sea and Norwegian Sea for many years, although as a single TAC for all species, which did not protect the most vulnerable species such as *D. batis*. Furthermore, this TAC only became restrictive in recent years. From 2008 onwards the EC has obliged Member States to provide species-specific landings data for the major North/Norwegian Sea species of skates and rays, including (in 2008) *D. batis* (see 3.4). Other ICES areas have recently also come under TAC management.

Minimum landing sizes have been set for skates and rays in a few Sea Fisheries Committee Districts in English and Welsh waters. These do not provide effective protection for large species like *D. batis*, which reach maturity at a very much larger size.

Council Regulation (EC) 43/2009 prohibited all landings of *D. batis* in EU waters. Annex III Part B of this Regulation states “Common skate in EC waters of IIa, III, IV, VI, VII, VIII, IX and X [...] may not be retained on board. Catches [...] shall be promptly released unharmed to the extent practicable. Fishers shall be encouraged to develop and use techniques and equipment which, following consultation of STECF, serve to facilitate the rapid and safe release of the species.” It is too early to judge how effective this measure will be. It will certainly need to be widely publicised to the fishing industry and recreational anglers if it is to be implemented effectively. These stakeholders should also be encouraged to report released by-catch.

D. batis is a Biodiversity Action Plan (BAP) species in the British Isles, where the species has been proposed for strict protection.

6. Conclusion on overall status

Common skate (*Dipturus batis*) is “Critically Endangered” globally due to steep declines in abundance and extirpation from significant portions of its former range, which is centred in the OSPAR Area. These declines were originally caused by historic target coastal fisheries, subsequently through fisheries by-catch in shelf seas, and are now being driven by deepwater fisheries. The listing of this species on Annex V was not accompanied by any improvements in the management of the fisheries driving its depletion. The adoption of some management measures in 2009, including mandatory release of by-catch in EU fisheries, is too recent to have had any impact upon overall status.

7. Action to be taken at an OSPAR level

The conservation objectives for *Dipturus batis* should be to protect all remaining animals and populations in order to allow these populations to rebuild, and to enable the species to recolonise its former range. This requires the identification and protection of remaining populations and their habitat and the minimisation of target and by-catch mortality throughout the OSPAR Area. Demographic information indicates that population recovery might be achieved by allowing increasing juvenile survival (Walker and Hislop 1998), but protection of large adult females should be an essential component of any actions taken, if recruitment of juveniles is to be improved. ICES 2008 notes that a Maximum Landing Length (MLL) of 100 cm for all skates and rays would be beneficial for common skate while not influencing commercial landings of most other species.

Action/measures that OSPAR could take, subject to OSPAR agreement

As set out in Article 4 of Annex V of the Convention, OSPAR has agreed that no programme or measure concerning a question relating to the management of fisheries shall be adopted under this Annex. However where the Commission considers that action is desirable in relation to such a question, it shall draw that question to the attention of the authority or international body competent for that question. Where action within the competence of the Commission is desirable to complement or support action by those authorities or bodies, the Commission shall endeavour to cooperate with them

It is proposed that OSPAR should recommend that relevant Contracting Parties (those within the historic range of *D. batis* and those whose flag vessels pursue fisheries within this range) take into account the “Critically Endangered” status of this species when reviewing, updating, developing and/or adopting the following:

1. national, European and regional fisheries conservation and management measures, including provisions within the Community Plan of Action on Sharks and prohibitions on fishing, retention, landing and sale;
2. marine protected areas;
3. national, European and international protected species legislation (including the Bern Convention on the Conservation of European Wildlife and Natural Habitats, the Bonn Convention on the Conservation of Migratory Species of Wild Animals, and Council Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora); and
4. marine species, habitat and fisheries research.

It is proposed that OSPAR should draw to the attention of Contracting Parties the conservation measures for this species adopted by the Council of Ministers in 2008, and recommend that CPs disseminate this information to their commercial and recreational fishers, encourage fishers to report details (including date and location) of released by-catch, and use the information submitted in their reports to OSPAR.

It is proposed that OSPAR urges Parties and the European Commission to consider carefully how zero quotas, mandatory release and protected species legislation may be adopted that does not prevent sports anglers from engaging in the voluntary tag and release programmes that have provided some important data on this species.

To complement the above, the OSPAR Commission should:

1. communicate to the European Commission the “Critically Endangered” status of *D. batis* and its Annex V status, and encourage urgent consideration of the species as a candidate for listing on European and international biodiversity conventions and for special attention under the Community Plan of Action for Sharks;

2. communicate to ICES and other relevant scientific funding bodies the need for more research on the life history, distribution and habitat requirements of *D. batis*, with a view to obtaining management advice and identifying critical areas (e.g. spawning grounds) for protection.

Brief summary of the proposed monitoring system (c.f. Annex 2)

Relevant Contracting Parties should be encouraged to report to OSPAR on:

- Historic records (location, dates and abundance)
- Current location, dates and number of by-catch (returned to the sea) and sea angling records (including tag and release)
- Individuals in captivity (with a view to facilitating life history and genetic studies)

Table 3: Summary of key priority actions and measures which could be taken for Common skate (*Dipturus batis*). Where relevant, the OSPAR Commission should draw the need for action in relation to questions of fisheries management to the attention of the competent authorities. Where action within the competence of the Commission is desirable to complement or support action by those authorities or bodies, the Commission shall endeavour to cooperate with them.

Key threats	Fisheries mortality: By-catch in commercial fisheries Target fishing (primarily sport angling and possibly obtaining specimens for aquaria) Habitat deterioration (secondary threat)
Other responsible authorities	EC and Council of Fisheries Ministers (Common Fisheries Policy, TACs) OSPAR Contracting Parties ICES (e.g. provision of advice on trends, assessment criteria and triggers) and other RFOs Council of Europe?
Already protected? Measures adequate?	EU: Zero TAC and mandatory release (2009) Too recent to be able to assess impact. Must be extended into future years. Should not prohibit the participation of anglers in genuine tag and release research programmes. Supplement with national and EC biodiversity conservation measures
Recommended Actions and Measures	OSPAR Commission Communicate to the Commission the status of <i>D. batis</i> and its need for conservation under biodiversity instruments and the Community Plan of Action for Sharks; Communicate to ICES and other scientific bodies the need for research and advice on distribution and habitat requirements Contracting Parties Consider how national and regional fisheries conservation and management measures, marine protected areas, and species protection legislation may be used to improve the status of <i>D. batis</i> and take action to apply these, as appropriate; Disseminate to commercial and sports fishers information on the threatened status of <i>D. batis</i> and the legal and voluntary measures that protect it and require captures to be released alive; License tag and release programmes Assist industry to develop techniques and equipment to facilitate safe release of <i>D. batis</i> from commercial fishing gear. Research needs Life history information Locations of surviving populations and critical spawning and mating habitats

Annex 1: Overview of data and information provided by Contracting Parties

Contracting Party	Feature occurs in CP's Maritime Area	Contribution made to the assessment (e.g. data or information provided)	National reports References or weblinks
Belgium	N	N	
Denmark	N	Y – Review of Draft (No Comments)	
France	Y	Y 3.2 Considered not to be very rare in all OSPAR regions. 4: The majority of released bycatch do not survive. 4: No known pollution impacts on skates 7.1.ii. Habitat protection through the designation of marine protected areas and strict implementation of no take zones for skate mating and spawning grounds is the only effective means of preventing the disappearance of this species.	Iglésias, S.P., Toulhoat, L. & Sellos, D.Y. 2009 in press. Taxonomic confusion and market mislabelling of threatened skates: Important consequences for their conservation status. <i>Aquatic Conservation: Marine and Freshwater Ecosystems</i> . (in press).
Germany	Y	Y	Fricke, R., M. Bilecenoglu & H. M. Sari (2007) Annotated checklist of fish and lamprey species (Gnathostomata and Petromyzontomorphi) of Turkey, including a Red List of threatened and declining species. <i>Stuttgarter Beiträge zur Naturkunde</i> , (A) 706: 1-169, figs 1-3, tabs 1-8. Wirtz, P., R. Fricke & M. J. Biscoito (2008) The coastal fishes of Madeira Island – new records and an annotated checklist. <i>Zootaxa</i> , 1715: 1-26, figs 1-8.
Iceland	Y	N	
Ireland	Y	N	

Netherlands	N	N	
Norway	Y	N	
Portugal	Y	N	
Spain	Y	Y – Review of Draft	Sánchez, F., A. Serrano, S. Parra, M. Ballesteros and J.E. Cartes, 2008. Habitat characteristics as determinant of the structure and spatial distribution of epibenthic and demersal communities of Le Danois Bank (Cantabrian Sea, N. Spain). <i>Journal of Marine Systems</i> , 72: 64-86.
Sweden	Y	Y – Review of Draft	Ed.: Gärdenfors, U., 2005: Rödlistade arter i Sverige 2005. Fiskeriverkets föreskrifter (FIFS 2004:36) om fiske i Skagerrak, Kattegatt och Östersjön. Fiskeriverkets föreskrifter (FIFS 2007:38) om ändring i föreskrifterna (FIFS 2004:36) om fiske i Skagerrak, Kattegatt och Östersjön. Fiskeriverkets föreskrifter (FIFS 2008:35) om ändring i föreskrifterna (FIFS 2004:36) om fiske i Skagerrak, Kattegatt och Östersjön.
United Kingdom	Y	Y – Review of Draft	

Summaries of country-specific information provided

Sweden: Swedish fishing ban since 2004. Landings dropped to zero after ban but landings of *Dipturus linteus* – previously not reported from Swedish waters, have increased instead. There are today uncertainties as to which of the species are present in Swedish waters. The species is listed as CR on the Swedish red list (IUCN) (2005).

United Kingdom: Not extirpated from the Irish Sea, as recently reported in Strangford Lough, Belfast Lough and the North Channel.

Spain: *Dipturus batis* (common skate) in the Cantabrian Sea: The historical series of bottom trawl surveys carried out from 1983 in the continental shelf of Galicia and Cantabrian Sea do not show the presence of this species in the area. Recent surveys conducted in Le Danois Bank (designated MPA) indicated the occurrence of *D. batis* in the inner basin (Figure provided), located between the bank and the continental shelf of the Cantabrian Sea (Sánchez *et al.*, 2008). No information on catches is recorded.

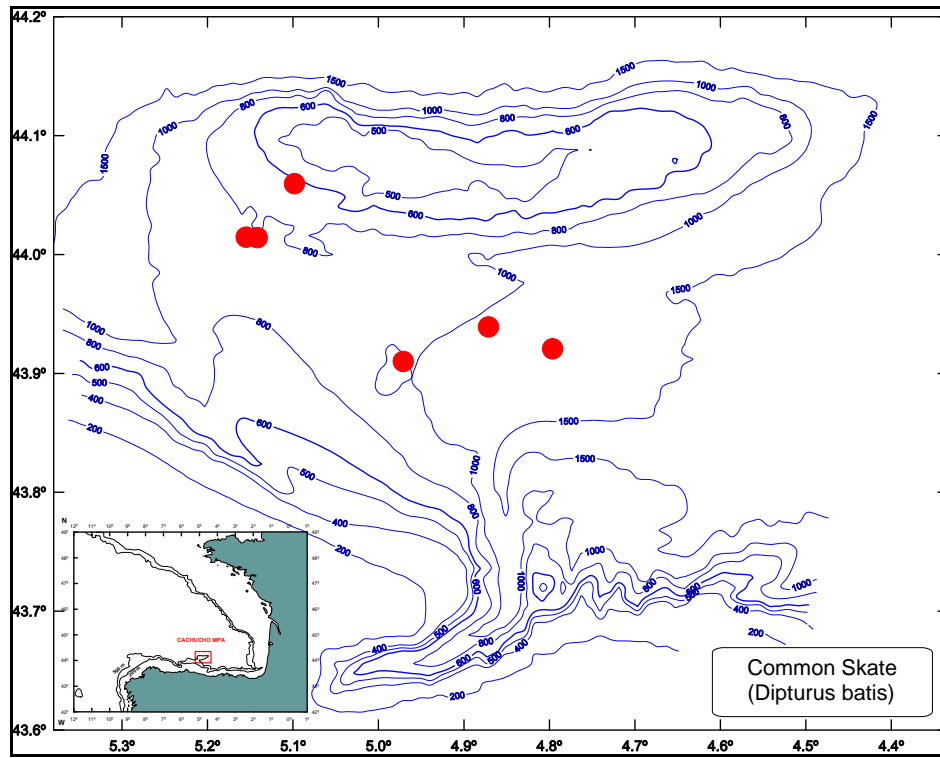


Figure: Spatial distribution of *Dipturus batis* in Le Danois bank (north of Spain)

Annex 2: Detailed description of proposed monitoring and assessment strategy

Rationale for the proposed monitoring

Very little information exists on this species, its life history, distribution and habitat. These recommendations aim to provide the data needed to develop appropriate conservation and management measures for surviving populations of *D. batis* and their habitat.

Use of existing monitoring programmes

Several regular fishery independent surveys are undertaken by research vessels and chartered vessels in the OSPAR area. These report all records of *D. batis*.

Commercial catch and landings data (where landings are not prohibited) should, under EU Regulation and FAO guidelines, record *D. batis* at species level. However, compliance is poor in parts of the OSPAR Area and could be improved by Contracting Parties, particularly through the provision of better identification guides. Voluntary tag and release programmes and records of catches by anglers have produced some important data on distribution, migration and abundance trends at low/no cost to researchers and managers. Genuine, well-conducted tagging programmes should be permitted under license within zero TACs and other species conservation measures.

The ICES Working Group on Elasmobranch Fishes uses these and all other available sources to report regularly on the status of this species in the OSPAR Area.

Synergies with monitoring of other species or habitats

Monitoring of other coastal species of sharks, skates and rays on the OSPAR list require very similar strategies.

Assessment criteria

It is not considered necessary at the present time to develop assessment criteria or triggers for additional monitoring of this species.

Techniques/approaches

As already underway, with the addition of more accurate identification guides for use by industry and at landing sites.

Electronic tagging and tracking techniques could be used to monitor habitat use and movements in known populations.

Selection of monitoring locations

Monitoring should be focused on known relict populations in inshore waters, increasing the emphasis on the use of visual tag recapture data to estimate growth rates, population size and immigration, with the addition of electronic tracking.

Timing and Frequency of monitoring

As already underway.

Data collection and reporting

As already undertaken or required.

Quality assurance

n/a

Annex 3: References

- Anon. 1999. UK Biodiversity Group Tranche 2 Action Plans. Volume V – maritime species and habitats. Published by English Nature on behalf of the UK Biodiversity Group.
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