

REPORT OF EC-SPAIN ON THE ATLANTIC *LAMNA NASUS*: ICES AND ICCAT MEETING 2009

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SUMMARY

*This paper summarize the most important Spanish fisheries within the ICCAT, ICES and NAFO convention areas where potential impact on porbeagle could be expected based on the areas of distribution of this species and their geographical overlap with the areas of activity of some of these fleets. Any targeted fishery is developed by Spain on this species. The Spanish surface longline targeting swordfish (*Xiphias gladius*) within the ICCAT convention area has sporadically caught porbeagle as a low prevalent by-catch in the North and South Atlantic areas, with the two most prevalent shark species being blue shark (*Prionace glauca*) and, to a lesser extent, shortfin mako (*Isurus oxyrinchus*). The paper summarize some of the old and recent scientific references on this Spanish fleet where information on porbeagle was reported since mid eighties of last century about, areas of activity, level of catches, catch rates, size, length-weight relationships, sex-ratio at size, relative prevalence, etc. as well as recent catch estimations and standardized CPUE trends. The porbeagle is a very rare by-catch within ICES and NAFO fisheries of CE-Spain and the level of their possible by-catch should be considered null or statistically negligible. The paper also summarizes several contributions presented to the working group of year 2009.*

RÉSUMÉ

*Le présent document résume les principales pêcheries espagnoles opérant dans les zones de Convention de l'ICCAT, du CIEM et de NAFO dans lesquelles il pourrait que se produise un impact potentiel sur le requin-taupe commun en raison de sa distribution géographique et du chevauchement avec les zones d'activité de certaines de ces flottilles. Il n'existe en Espagne aucune pêcherie dirigée sur le requin-taupe commun. La pêcherie espagnole de palangre de surface dirigée sur l'espadon (*Xiphias gladius*) dans la zone de la Convention ICCAT capture sporadiquement cette espèce comme prise accessoire de très faible prédominance, dans l'Atlantique Nord et Sud, les requins de plus grande prévalence étant le requin peau bleue (*Prionace glauca*) et, dans une moindre mesure, le requin taupe bleu (*Isurus oxyrinchus*). Le document cite des documents scientifiques anciens et plus récents sur cette flottille espagnole, dans lesquels l'information sur le requin-taupe commun était déclarée depuis le milieu des années 80 du siècle antérieur, sur les zones d'activité, les niveaux des captures, les taux de capture, les tailles, les relations taille-poids, le sex-ratio par taille, les prévalences relatives, etc., ainsi que les récentes estimations de captures et tendances des taux standardisés de CPUE. Le requin-taupe commun est considéré comme une capture accessoire très rare dans les pêcheries de CE-Espagne relevant du CIEM et de NAFO, et les niveaux des captures éventuelles sont considérés nuls ou statistiquement négligeables. Le document résume, en outre, diverses contributions présentées au Groupe de travail de 2009.*

RESUMEN

*Este documento resume las pesquerías españolas más importantes dentro de las áreas de Convenio de ICCAT, ICES y NAFO, donde podría esperarse un potencial impacto sobre el marrajo sardinero en base a su distribución geográfica y al solapamiento con las áreas de actividad de algunas de estas flotas. En España no se realiza ninguna pesca dirigida al marrajo sardinero. La pesquería española de palangre de superficie dirigida al pez espada (*Xiphias gladius*) captura esporádicamente esta especie como captura incidental de muy baja prevalencia, dentro del área del Convenio de la ICCAT del Atlántico Norte y Sur, siendo los tiburones de mayor prevalencia la tintorera (*Prionace glauca*) y, en menor medida, el marrajo*

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dientuso (Isurus oxyrinchus). El documento cita documentos científicos antiguos y más recientes sobre esta flota española en los cuales se comunicó información sobre el marrajo sardinero desde mediados de los años ochenta del siglo pasado, sobre áreas de actividad, niveles de capturas, tasas de captura, tallas, relaciones talla-peso, sex-ratio por talla, prevalencias relativas, etc., así como recientes estimaciones de capturas y tendencias de las tasas estandarizadas de CPUE. El marrajo sardinero es considerado una captura incidental muy rara dentro de las pesquerías de la UE-España en las pesquerías ICES y NAFO y los niveles de posibles capturas son considerados nulos o estadísticamente despreciables. El documento además resume varias contribuciones presentadas al grupo de trabajo del año 2009.

KEYWORDS

By-catch, long lining, blue shark, shortfin mako, porbeagle, swordfish

1. Tuna and tuna-like fisheries

The Spanish surface longline targeting swordfish (*Xiphias gladius*) has sporadically caught porbeagle as a low prevalent by-catch, with the two most prevalent shark species being historically the blue shark (*Prionace glauca*) and, to a lesser extent, shortfin mako (*Isurus oxyrinchus*). The first descriptions citing porbeagle as a low by-catch species in this fishery date from the early eighties, when part of this fleet was operating in the NE Atlantic, generally between 35°-50° N latitude (Mejuto and González-Garcés 1984, Mejuto 1985). These authors estimated catches for this fleet of 28 t and 20 t with catch rates of 2.07 and 1.1 (kg/1000 hooks) for years 1983 and 1984, respectively. Data on size at sex, sex-ratios and size-weight relationships by sex etc., were also reported. During those years, approximately 62% of the catch in weight was made up of females. During the same period, the porbeagle accounted for 6.6% of the catch of shortfin mako and porbeagle combined. However, in subsequent years, due to the fact that this fleet changed fishing grounds, moving toward the South and West, it would be possible to predict a considerable reduction of this ratio in later periods. Other authors have also reported the presence of porbeagle as a sporadic by-catch in this Spanish fleet (González-Garcés and Rey 1984, Rey *et al.* 1988, Moreno 1992, Buencuerpo *et al.* 1998). Contrary to what occurred historically with the blue shark, no porbeagle discards have been observed in the whole time series studied. Therefore the landings and catches may, in this case, be considered equivalent terms.

From 1997 onward, a research project was launched in Spain for the following purposes: to conduct out a study on the specific composition of the by-catch of this fishery, to carry out a scientific estimation of the catch levels; to identify possible data deficiencies and to propose actions to improve the statistics on these species, including the porbeagle which is found at very low prevalence (Mejuto *et al.* 2009). According to these authors, the mean annual catch of porbeagle from years 1997-2006 ranged between 24.5 t and 3.1 t in the North and South Atlantic, respectively (5°degree N boundary lines was considered). The porbeagle accounted for 0.11% and 0.03% of the catch in weight of the pelagic sharks landed (shark species combined) in each of these Atlantic areas, respectively. The two most prevalent Lamnidae species are *I. oxyrinchus* and *L. nasus* which are often the cause of confusion. During the above period the porbeagle catch was 1.21% and 0.31% for both species combined in each Atlantic area respectively, or 0.93% for the two areas of the Atlantic combined. Although this prevalence was greater for earlier periods in the areas where the fleet was operating, it would not be much greater than 6.6%, as was reported at the beginning of the eighties.

Three documents were presented to the ICCAT-ICES assessment meeting (June 2009) with information of this fishery. The SCRS/2009/053 provides standardized catch rates from 15 458 trip observations of surface longline targeting swordfish, during the period 1986-2007. Because of the low prevalence of this species in this fishery, the standardized CPUE was developed using GLM procedures assuming a delta-lognormal distribution error. Base case and alternate runs were done. The base case run suggests a moderately decreasing trend between 1986 and 1996, a period of stability until year 2000 and a slight increase thereafter. The results obtained using only the traditional style longline with some data restrictions indicate that the trend was substantially stable from 1986-2000. The results obtained show standardized CPUE trends that were very similar for the whole time series, regardless of the type of analysis conducted. Scientific estimations of annual catches for the period 1997-2008 have also been updated.

The document SCRS/2009/062 presents an overview of the recent FAO statistics on the porbeagle shark (*Lamna nasus*) and examines its relationship to the reported catch of one of the other important species belonging to the family Lamnidae (*Isurus oxyrinchus*), establishing a ratio between the two. The data suggest that there may be some inconsistencies between the statistics reported for these species over the time series, emphasizing the need to maintain smooth coordination between the RFOs and the FAO and to set up programs aimed at the dissemination of specific information directed at the different countries, to improve the statistics of these species. The authors suggested highly advisable to implement programs at national level to provide information and training to fishers as well as to those involved in the processes of gathering and communicating data related to the statistics of these species at other levels.

The document SCRS/2009/087 provides estimated catches of porbeagle done by the Spanish surface longline targeting swordfish in the North Atlantic areas during the period 1950-2008. The catches for the period 1950-1982 were retrospectively estimated using the observed ratio between porbeagle and swordfish at the beginning of the eighties of the last century. The catches of the posterior period to 1982 were obtained using previously reported estimation of other authors or estimated from new scientific records.

2. Demersal fisheries in NAFO areas

The Spanish fleet has historically developed trawling fisheries in NAFO area. The most recent data indicate that a total of 14 Spanish trawlers operated in NAFO Regulatory Area (Div. 3LMNO) during 2008, amounting to 1 406 days (21 408 hours) of fishing effort. This implies a decrease of 80% in 2008 effort compared to 2003 effort. Total catches for all species combined in this division were 17 364 tons in 2008, compared to 14 044 tons in 2007. The Spanish fleet has four main different fisheries in NAFO Subarea 3 characterized by different mesh size, target species, depth and fishing area. The Spanish fleet effort in NAFO area is mainly directed to Greenland halibut (mostly in Div. 3LM), alternating with the skate fishery in the second half of the year (Div. 3NO), shrimp fishery (Div. 3LM), and in less degree redfish (Div. 3O). In Div. 3L, most of the effort was performed using cod-end mesh size of 135 mm, indicating that the fleet targeted Greenland halibut. In the first half of the year a small part of the effort was directed to the shrimp fishery. Regarding Div. 3M, most of the effort was carried out using 135 mm cod-end mesh size at more than 700 m depth targeting Greenland halibut and in less degree at less than 700 m depth targeting redfish. The 15% of the fishing effort was carried out using 40 mm cod-end mesh size directed to the shrimp fishery. In Div. 3N and during the first quarter of the year, fishing was performed using 135 and 280 mm cod-end mesh size, which indicates that the fleet targeted Greenland halibut in depth more than 700 m. and skate in depth less than 200 m. in similar proportion. However, during the others quarters most part of the effort moved to depths less than 200 m where the skate fishery took place using 280 mm mesh size. Fishing effort in Div. 3O was limited (3%) and targeted redfish, using mainly 135 mm mesh size. In addition to NAFO observers (NAFO Observers Program), 6 IEO scientific observers were onboard vessels, comprising a total of 290 observed fishing days, around 21% coverage of the total Spanish effort. Besides recording catches, discards, and effort, these observers carried out biological sampling of the main species taken in the catch. Although a very scarce shark by-catch -species combined- was observed in some years, the estimated catches from observers at sea indicate that *Lamna nasus* should be expected as a very rare by-catch species in these fisheries.

3. Demersal fisheries in ICES areas

A total of 2 965 boats are operating in the northeast Atlantic (VI-IX ICES Divisions) using demersal gears. 90% of boats are artisanal or small scale fisheries in Spanish national waters (VIIIc and IXa ICES Divisions) and can use also pelagic gears. The second fleet are the trawlers (otter trawl and pair trawl) with 6% of the boats. The rest of the fleet (gillnetters, gillnetters for *Lophius*, and demersal longliners) represents each one less than 1%. Fleet census as small scale fisheries work with many gears and the target species change along the year: demersal long-line (targeting *Merluccius merluccius*, *Conger conger*, *Phycis blennoides*, *Pollachius spp*, Sparidae, etc); gillnets (targeting *Merluccius merluccius*, *Lophius spp*, *Trisopterus spp*, *Mullus spp*, coastal finfish); hand-line (targeting *Pagellus bogaraveo*; *Lepidopus caudatus*); pots and traps (targeting *Octopus vulgaris*, coastal crustaceans and coastal finfish); and many local variations of these gears. This fleet is fishing in a wide depth range, mainly due to the narrow Spanish continental shelf, and for this reason deep water species like *Phycis blennoides* are also target species. The Spanish industrial demersal fishing fleet operates in national waters and Union European waters. In the Spanish continental shelf (VIIIc and IXa ICE Divisions) 38% of the effort (in terms of fishing days) belongs to otter trawl fishery. The target species are mainly demersal (*Merluccius merluccius*, *Lepidorhombus spp.*, *Lophius spp*, *Dicologoglosa cuneata*, *Parapenaeus longirostris*, *Nephrops*

norvegicus, *Octopus vulgaris*, etc) and small pelagic finfish (*Scomber scombrus* and *Trachurus trachurus*). In this area, the fleet is also using the pair trawl (effort 7.7%). Target species of this fishery are *Micromesistius poutassou*, *Merluccius merluccius*, *Scomber scombrus* and Ommastrephidae. The rest of the effort is exerted to fixed gear with similar targeting species as small scale fisheries:

- Pots and traps (15.7%) Targeting coastal finfish (*Trisopterus spp*, etc), crustaceans and molluscs (mainly *Octopus vulgaris*)
- Gillnet (31.8%): Targeting *Merluccius merluccius* and *Lophius spp*.
- Set longline (6.6%): Targeting *Merluccius merluccius*, *Conger conger*, *Phycis blennoides*, *Pollachius spp*, etc.

Outside national waters (VI, VII and VIIIab ICES Divisions) 50% of total effort is exerted by the otter trawl fishery (targeting mainly *Merluccius merluccius*, *Lepidorhombus spp*, *Lophius spp*, and *Nephrops norvegicus*). The pair trawl fishery in this area targeting *Merluccius merluccius* (effort 9%). The set gillnet targeting Hake (effort 8%) and the set longline (effort 31%) targeting mainly *Merluccius merluccius*, *Conger conger* and *Molva spp*. Although sporadic events of *Lamna nasus* could be possible as incidental bycatch in some fisheries, catches can be considered null or negligible in these ICES fisheries.

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