

BRIEF NOTE ON SWORDFISH TAGGING BY THE SPANISH COMMERCIAL FLEET IN THE ATLANTIC (1984-1990)

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SUMMARY

This short paper is a review of swordfish tagging carried out by the Spanish commercial fleet in Atlantic waters during the 1984-1990 period.

Of the 96 swordfish tagged, only one recapture has been reported to date, showing that communication exists between the temperate zones of the mid-north Atlantic (17°C) and the warm waters of the Caribbean (25.9°C).

RESUME

Ce bref document passe en revue le marquage d'espadon réalisé par la flottille commerciale espagnole dans l'Atlantique pendant la période 1984-90.

Un seul des 96 espadons marqués a été repris à cette date, indiquant qu'il y a échange entre les zones tempérées du milieu de l'Atlantique nord (17°C) et les eaux plus chaudes des Antilles (25,9°C).

RESUMEN

Este breve documento estudia el marcado de pez espada realizado por la flota comercial española en aguas del Atlántico durante el período 1984-1990.

De los 96 ejemplares marcados se ha recuperado uno, lo que demuestra que hay comunicación entre las aguas templadas del Atlántico norte central (17°C) y las cálidas del Caribe (25,9°C).

1. GENERAL COMMENTS.

The Spanish surface longline fleet has been tagging swordfish in the Atlantic since 1984, while carrying out commercial fishery. This tagging, however, has been on a low level.

The fact that a number of skippers are strongly interested in learning about the migratory habits of this species as well as the continuous contact maintained with the scientist in Fishery Research Centers, have contributed greatly to the execution of this program.

2.1. TAGGING RESULTS AND DISCUSSION.

Between 1984 and July 1990, the skippers of the Spanish commercial fleet have reported tagging 96 fish with D type tags (MATHER et al. 1972), 59% of which were tagged Western of 30 degrees W and 41% Eastern of 30 degrees W (Table 1. Figure 1).

All individuals were small in size (range 40-125 cm LJ-FL), (Figure 2).

We must point out that this type of tagging is not the most suitable since most of the small fish caught live during commercial fishery are hauled back in a totally weakened state and are not properly handled once on board (during lifting, measuring and tagging procedures). In general they are released in a condition which is probably not conducive to survival.

Despite the comments made previously, we think that it would be appropriate to stay in contact with the skippers and to continue this type of tagging as it is the only possibility at this time.

Clearly our goal is to increase the number of fish that are tagged and released, and likely to be recaptured. However we also aim to train the skippers in the application of tagging-recapture techniques, as this will affect the number of recaptures reported in the future as well as the quality of the information supplied.

In other hand a tagging survey was developed in 1981 (months 10 and 11) by scientist staff, most in the area 22° N-17° W. 52 swordfish were released, (range 75-140 LJFL) (Rey, pers. com.+ ICCAT) (Figure 3).

2.2. RECAPTURE RESULTS AND DISCUSSION.

Of the opportunist tagging carried out by the commercial fleet, only one recapture (1%) has been reported to date. Figure 1 provides the a rectilinear diagram of the hypothetical movement.

Table 2 gives detailed data on this recapture (already reported to ICCAT).

This fish was released in the NW of Azores Islands, area under the influence of Gulf Stream Current (41°N - 37°W) and it was recaptured 4.7 years later under the influence of North Equatorial Current (20°N - 62°W).

Two recaptures have been reported in the area of Azores from the tagging survey done in 1981 by scientist staff (ANONIMO, 1988), (FIG. 1).

BECKET (1972) affirms that the recapture rate is largely contingent upon the type of tagging used. Thus, 18.3% of the fish tagged with a harpoon were later recaptured, whereas only 1.4% of those tagged using longline were recaptured.

The size of the individuals tagged with each fishing gear may also be a highly influential factor in the recapture rate by gear.

ACKNOWLEDGMENTS.

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LITERATURE CITED.

ANONIMO, 1988. Report of Swordfish Workshop ICCAT, 1987. Co. Vol. Sci. Pap. Vol XXVII: 320.

BECKET, J., S., 1972. Biology of Swordfish, *Xiphias gladius* L., in the Northwest Atlantic Ocean. Proceeding of Intern. Billf. Symp. Haway 1972. Vol. 2.:103-106.

MATHER, F., J., 1972. Results of Sailfish Tagging in the Wester North Atlantic Ocean. Proceeding of the Intern. Billf. Symp. Haway 1972. Vol 2.:194-203.

YEAR	# TAGS	# TAG >30 W	# TAG <30 W
1984	18	15	3
1985	42	29	13
1986	16	6	10
1987	0	0	0
1988	6	4	2
1989	10	0	10
1990	4	3 *	1

* tagging by scientist staff in a commercial trip.

Table 1.- Number of released swordfish reported by spanish skippers, for the years 1984-1990, in the Atlantic.

	RELEASE	RECAPTURE
tag	KA008117	KA008117
date	3 may 85	24 jan 90
Position	41 N - 37 W	20 N - 62 W
LJFL cm.	100	147.3
Sex	unk	unk
Tempera. C	17	25.9

Table 2.- Information about release and recapture of a single swordfish, tagged by spanish skippers.

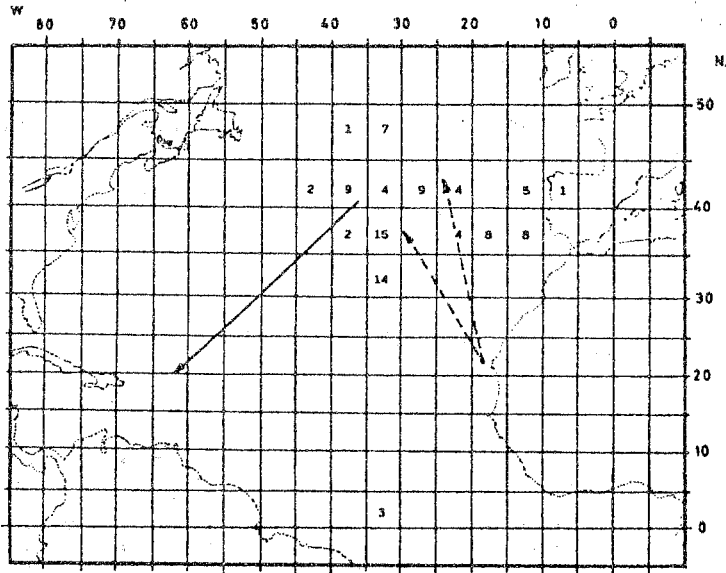
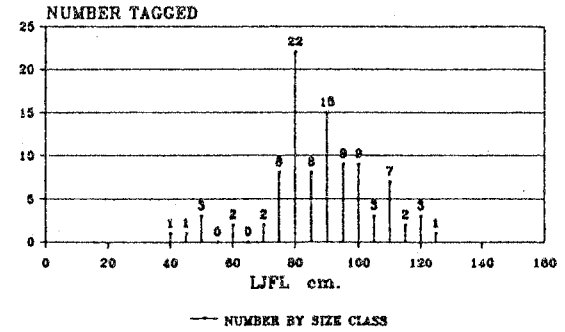


Figure 1. Number of swordfish released by the commercial fleet (Spain) from 1984 to 1990, by 5 x 5 degrees square and rectilinear diagram of hypothetical movement of a single recapture (solid line). Movements reported previously in the East Atlantic (dotted line).

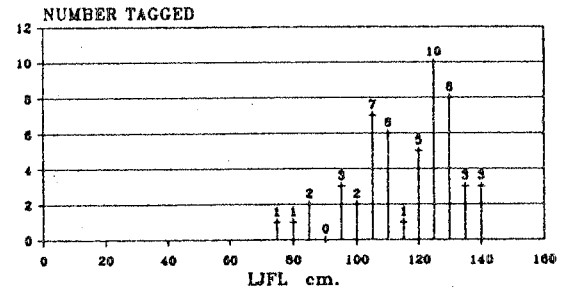
TAGGING BY COMMERCIAL FLEET (SPAIN)
YEARS 1984-1990 N= 96



11 JULY 1990

Figure 2. Size of swordfish released by commercial fleet (Spain) from 1984 to 1990.

TAGGING BY SURVEY (SPAIN), 22 N - 17 W
YEAR 1981 N= 52



REY, (pers. comm.)+ ICCAT

Figure 3. Size of swordfish released by survey developed in 1981, from REY (pers. comm.) and ICCAT.