

**THE SWORDFISH (*XIPHLAS GLADIUS* L., 1758) SURFACE LONGLINE FISHING PRACTISED
IN THE FISHERIES OF EASTERN SICILY**

Potoschi, A., G. Cavallaro, P. Sturiale, G. Pisciotto, A. Granata, B. Mellini
Dept. of Animal Biology and Marine Ecology, University of Messina
C. da Speron 31, 98166 Messina, Italy

SUMMARY

This work presents the results of a study on swordfish longline fishing in the fisheries of eastern Sicily in 1990. It contains information about the number of fisheries, the characteristics of the fishing boats, and the equipment used. Longline fishing effort (E), CPUE and their geographical distribution data are also available, and show that swordfish fishing areas are dispersed throughout the Mediterranean Sea.

RESUME

Ce travail présente les résultats obtenus sur une étude des pêcheries de surface palangrières de l'espadon effectuées en 1990 dans l'est de la Sicile.

Il contient l'information sur le nombre de pêcheries, les caractéristiques des bateaux de pêche et l'armement utilisé.

L'effort de pêche palangrier (E), les données de CPUE et leur distribution géographique sont également disponibles, les zones de pêche révélant elles-mêmes qu'elles sont réparties dans toute la Mer Méditerranée.

RESUMEN

Este trabajo presenta los resultados concernientes a un estudio sobre la captura de pez espada con palangre de superficie en el este de Sicilia, 1990.

Contiene información acerca del número de pesquerías, las características de los barcos de pesca y el equipo utilizado.

El esfuerzo de pesca de palangre (E), C.P.U.E., y los datos de su distribución geográfica también están disponibles, y los caladeros parecen haberse desplazado por todo el Mar Mediterráneo.

RESULTS

The swordfish surface longline fishing has been practising for several years in almost all the fisheries of Eastern Sicily.

During 1990, while continuing a research aiming above all at studying the biology of the species, we followed the course of the fishing season especially referring to the number of the fishing-boats involved in this activity.

Tables 1, 2 and 3 report, the number of fishing-boats, their technical characteristics, the various equipments used for each fishery.

This was planned in order to be able to estimate the C.P.U.E. and the fishing effort (E) exercised by the fleet during the swordfish surface longline catch.

This research was carried out with several difficulties.

In fact, we found out that the surface longline fishing areas, beat by the fleet, were distributed in many areas of the Mediterranean waters. In spite of this, however, in 1990, we succeeded in following the whole fishing season and in collecting all the data necessary to reach our objective.

Table 4 reports the monthly effort (E) values, number of hooks and fishing days.

Table 4 clearly shows that the fishing effort is mostly exercised from June to August, although the number of hooks decreases if it is compared to that of the other months. This because of the increase in the number of small fishing-boats, which sink a reduced number of hooks, consequently diminishing the average number of hooks sunk in sea waters.

The C.P.U.E. values (table 5) have been estimated by using these data and it confirms the information concerning the fishing effort.

We considered useful to accomplish a geographical distribution of certain parameters.

In figure 1 the geographical distribution of catches points out that the activity exercised by local small fishing-boats deeply increases the quantity of catches.

Figure 1

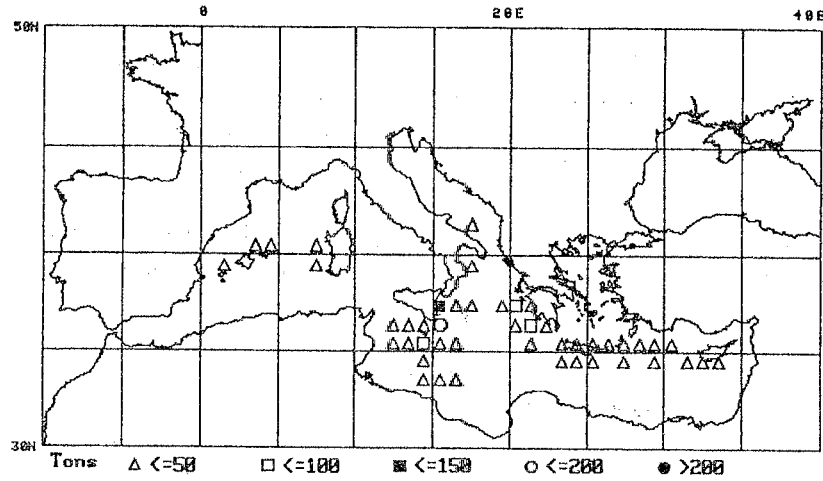


Fig.1 - Geographical distribution of surface longline catches, in 1990.

As far as the geographical distribution of the number of caught samples is concerned, figure 2 shows that, during the fishing season, the most numerous catches are displaced in the areas nearer to the Ionic coast of Sicily, which is the most beaten local fishery.

Figure 2

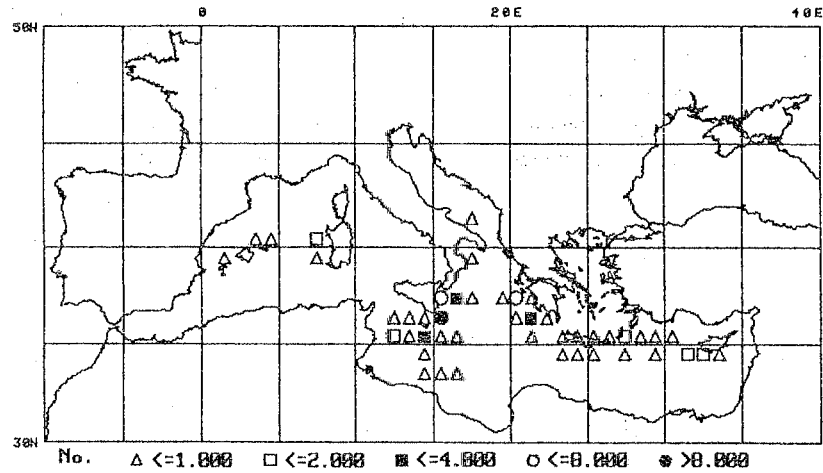


Fig.2 - Geographical distribution of caught specimens, in 1990.

In figure 3 the geographical distribution of the number of hooks, sunk per fishing operations, appear to be more numerous in those areas farther from the coast of origin of the fleet.

This testifies the displacement of bigger tonnage fishing-boats which are provided with surface longlines presenting a remarkable number of hooks.

Figure3

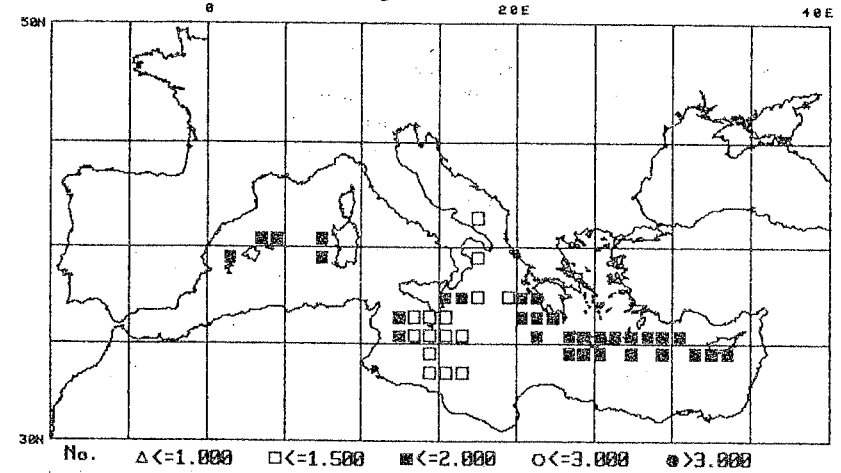


Fig.3 - Geographical distribution of the number of hooks sunk in sea waters, in 1990.

Figure 4

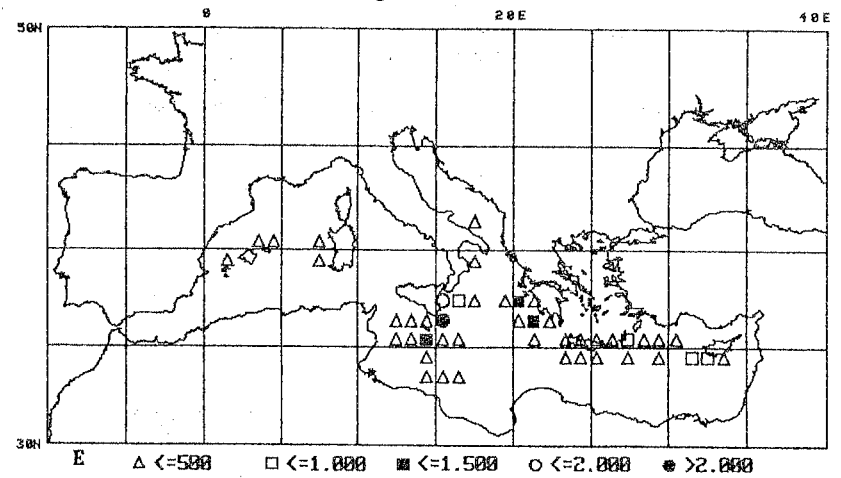


Fig.4 - Geographical distribution of the fishing effort.

In figure 4 and 5 you can notice that an inferior number of catches corresponds to those areas where a bigger fishing effort is exercised.

Figure 5

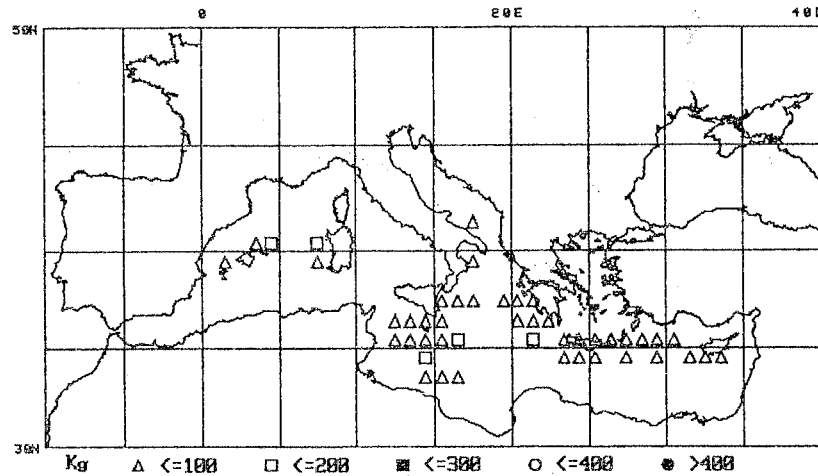


Fig.5 - Geographical distribution of C.P.U.E.

CONCLUSION

We could not carry out any eventual comparison because of the lack of historical data concerning the swordfish surface longline fishing in the Mediterranean Sea.

The Merchant Marine Ministry, however, has promoted and financed a research programme aiming at the valuation of the stocks of the large pelagic fishes. Its intervention

has made possible the continuation of the study in 1991, too.

In the following years, this programme will allow us to have a more complete historical situation of the output of this kind of fishing. It will also broaden our information for a more precise definition of the composition of the swordfish stocks, recently present in the Mediterranean Sea.

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Table 1 - Swordfish fisheries in the Ionic coast of Sicily, number of fishing-boats, kind of equipment used.

Fisheries	N° boats	Gill-net	Long line	Harpoon
PortoPalo/Marzamemi	24	3	24	-
Siracusa	31	7	31	-
Augusta	18	6	17	-
Ognina di Catania	19	9	15	-
Catania	16	6	13	-
Acicastello/Acitrezza	22	12	16	-
S. Maria la Scala	22	18	16	-
Pozzillo/Stazzo	30	22	12	-
Riposto	16	9	12	-
Giardini Naxos	11	11	3	-
Faro	13	-	-	13

Table 2 - Average characteristics of the fishing-boats.

Fisheries	N° boats	LFT m.	HP	N°members crew
PortoPalo/Marzamemi	24	13	157	4
Siracusa	31	16	222	4
Augusta	18	14	167	5
Ognina di Catania	16	15	190	4
Catania	19	16	273	5
Acicastello/Acitrezza	22	19	405	5
S. Maria la Scala	22	19	382	5
Pozzillo/Stazzo	30	16	331	5
Riposto	16	17	334	5
Giardini Naxos	11	17	298	5
Faro	13	15	245	5

Table 3 - Average characteristics of the fishery equipments used for swordfish catches.

Fisheries	Gill- net		Long line	
	Length Km	Meso-size	Length Km	Hooks
PortoPalo/Marzamemi	7	42	25	800
Siracusa	7	42	27	900
Augusta	8	42	37	1100
Ognina di Catania	10	42	51	1500
Catania	12	42	45	1300
Acicastello/Acitrezza	11	42	52	1500
S. Maria la Scala	10	42	58	1600
Pozzillo/Stazzo	10	42	54	1500
Riposto	11	42	58	1700
Giardini Naxos	10	42	-	-
Faro	-	-	-	-

Table 4 - Swordfish surface lonline fishing effort (E), in data 1990.

Month	Days	Hooks	E
January	34	1500	52
February	48	1500	72
March	428	1100	478
April	1322	1170	1547
May	1210	1400	1693
June	1594	1470	2336
July	1923	1530	2938
August	1406	1660	2341
September	876	1740	1522
October	535	1660	889
November	265	1600	425
December	53	1600	86

Table 5 - C.P.U.E. for the swordfish surface lonline catch, in 1990.

Month	Catches Kg.	E	CPUE
January	3490	52	67
February	1942	72	27
March	33580	478	70
April	108197	1547	70
May	119162	1693	70
June	177997	2336	76
July	216295	2938	74
August	193704	2341	83
September	104227	1522	68
October	46261	889	52
November	22962	425	54
December	3823	86	44