

DESCRIPTION OF THE MALTESE LONGLINE FISHERY TARGETING BLUEFIN TUNA (*THYNNUS THUNNUS* L.) IN THE MEDITERRANEAN SEA

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SUMMARY

This paper describes the Maltese longline fishery targeting bluefin tuna in the Mediterranean Sea.

RÉSUMÉ

Le présent document décrit la pêche palangrière maltaise qui cible le thon rouge en mer Méditerranée.

RESUMEN

Este documento describe la pesquería de palangre de Malta dirigida al atún rojo en el mar Mediterráneo.

KEY WORDS

Bluefin, longline, Malta

1. INTRODUCTION

Bluefin tuna (*Thunnus thynnus*) fishing season in Malta starts during the month of May and extends until the month of July.

Fishing for bluefin tuna has been undertaken by Maltese fishermen for a very long time. Statistics kept at the Department of Fisheries show that as early as 1920 a substantial amount of tuna was already being landed regularly during the season. However although this trend continued for a long period, the limitations of the local market and the lack of facilities to store tuna for eventual preservation made it uneconomical for fishermen to keep targeting this fish. In fact there was a period when tuna used to be imported from Italy and North Africa in just enough quantities to boost the local catches which were then derived solely from our small set nets ('Tunnara') which were situated in the north of the island. However even this activity proved to be uneconomical and these were wound up in the 1960s due to financial difficulties. Since then and up to the 1980s, although landings of tuna were substantial, these were caught as by-catches of swordfish longlines. It must be noted that during the 1970s and 1980s the dolphin fish ('lampuka') and swordfish were the mainstay of local fishing.

The upsurge in bluefin tuna landings came about as a result of the tapping of the Japanese market in 1989. The decrease in landings from 1995 onwards may be mainly attributed to the large presence of foreign tuna purse seiners just off the Maltese Islands, which carry out a very efficient operation.

According to records kept by the Fisheries Department landings in kilograms for bluefin tuna since 1990 were as shown in **Table 1**.

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2. DESCRIPTION OF FLEETS

In 2001 bluefin tuna were targeted by 58 multi-purpose vessels ranging from 10 to 20 metres, 150 full-time fishermen and part-time fishermen. The total landings were 220938 Kg.

The data collected is summarized in **Figures 1,2,3 and 4**.

3. DESCRIPTION OF FISHING GEAR

The gear used for bluefin tuna is drifting surface longline (**Figure 5**) and is baited with Atlantic mackerel and/or Japanese squid. The maximum number of hooks set in a longline is 2,500 and this depends mostly on the size of the boat. The lines are set during the afternoon and the operation goes on till around 8.00 p.m. since fishermen reckon that this is the prime time for the fish to bite. The lines start being retrieved from around 10.30 p.m. onwards.

Fishing is undertaken to the West, South and South East of the Maltese Islands between the 35th and 36th parallels with the following parameters: on the western limit Latitude 35:52:00 Longitude 13:30:00 (50 miles from Marsaxlokk harbour) to the southern extremity Latitude 35:21:58 Longitude 12:25:24 (30 miles from Marsaxlokk harbour) to the southeast Latitude 35:22:74 Longitude 15:03:14 (37 miles from Marsaxlokk harbour) which covers approximately 2,000 square miles.

At the beginning of the season, i.e. in May, the effort is undertaken mainly in the southwest area of the region and consequently further to the east according to the normal movement of the bluefin tuna. The season ends in July.

Hauling starts at around 10:30 and is done with special belt hydraulic winches. The master of the boat uses a strong light fixed to the bow of the boat to spot the small marker buoys. Hauling is done at a speed of about 6 to 7 knots. The time spent on hauling depends on the amount and type of fish caught because if, for example, the fish caught are still alive, it would take much longer to haul the fish on board.

Since the longline is very long and consists of many hooks, it is very liable to get entangled. It is therefore wound up in a circular basket and the hooks are attached to straps of cork that are fixed around the rim of the basket. The longline is then ready to be used again without any problems.

4. LANDING PORTS

The main landing zones are Marsaxlokk, St. Paul's Bay and Marsascala harbours in Malta, whilst those in Gozo are Mgarr and Marsalforn harbours. Marsaxlokk is the harbour where most of the tuna is landed (**Figure 6**).

5. CATCH PROCESSING

The tuna is usually gutted (removal of internal organs and gills) on board and is unloaded at the fish market in Malta. The tuna for export is then prepared (removal of head and bones) and exported directly either by plane or by boat in freezer containers.

6. DESCRIPTION OF CATCHES

Table 2 shows the number of bluefin tuna caught during each month and their respective weight. The average weight for bluefin tuna for each month is also calculated. **Figures 7 and 8** are graphical distributions of the results obtained in **Table 3**.

7. SIZE DISTRIBUTION

The lengths of tuna were grouped in 5 cm intervals and **Table 3** shows the number of bluefin tuna caught at each appropriate length range during the months of May and June. It also indicates the total of bluefin tuna in each class range. **Figures 9-13** are graphical distributions of data collected in **Table 3**.

Table 1. Bluefin Tuna landings 1990 -2001

Year	Amount of bluefin tuna caught /kg
1990	80958
1991	105314
1992	80213
1993	250903
1994	571676
1995	587218
1996	399004
1997	393024
1998	407059
1999	447465
2000	376029
2001	220938

Table 2. Tuna Catches for 2000

Month	Number	Average Weight/kg
4	10	152,6
5	1062	147,6
6	904	147,7
7	183	160,3
Total	2159	148,7

Table 3. No. of Bluefin Tuna Caught at each Size range

Size	GEAR: LLHB				BFT-200
	4	5	6	7	Total
50	0	0	0	0	0
55	0	0	0	0	0
60	0	0	0	0	0
65	0	0	0	0	0
70	0	0	0	0	0
75	0	0	0	0	0
80	0	2	0	0	2
85	0	0	0	0	0
90	0	0	0	0	0
95	0	0	1	0	1
100	0	8	1	1	10
105	0	7	1	0	8
110	0	34	14	3	51
115	0	20	9	2	31
120	0	23	6	2	31
125	1	25	15	3	44
130	0	20	9	1	30
135	0	14	8	1	23
140	0	17	5	1	23
145	0	10	5	0	15
150	0	18	10	0	28
155	0	15	3	1	19
160	0	20	14	6	40
165	2	32	27	5	66
170	0	36	31	5	72
175	0	50	32	6	88
180	3	39	28	7	77
185	0	16	32	8	56
190	2	19	47	8	76
195	0	32	57	11	100
200	0	56	90	13	159
205	0	92	117	15	224
210	1	98	106	11	216
215	1	96	76	8	181
220	1	77	48	18	144
225	1	67	43	10	121
230	0	38	31	11	80
235	0	29	15	12	56
240	0	25	14	7	46
245	0	18	4	2	24
250	0	10	5	2	17
255	0	8	2	4	14
260	0	6	1	0	7
265	0	3	1	0	4
270	0	1	1	0	2
275	0	4	0	0	4
280	0	0	0	0	0
285	0	0	0	0	0
290	0	0	0	0	0
295	0	0	0	0	0
300	0	0	0	0	0
305	0	0	0	0	0
310	0	0	0	0	0
315	0	0	0	0	0
320	0	0	0	0	0
325	0	0	0	0	0
330	0	0	0	0	0
335	0	0	0	0	0
340	0	0	0	0	0
345	0	0	0	0	0
350	0	0	0	0	0
Total	12	1085	909	184	2190

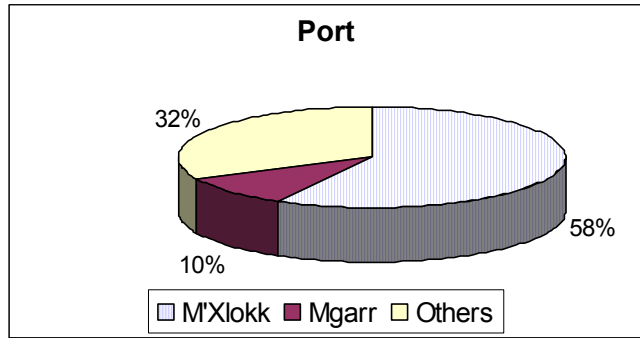


Fig.1 Number of Fishing Vessels per Port

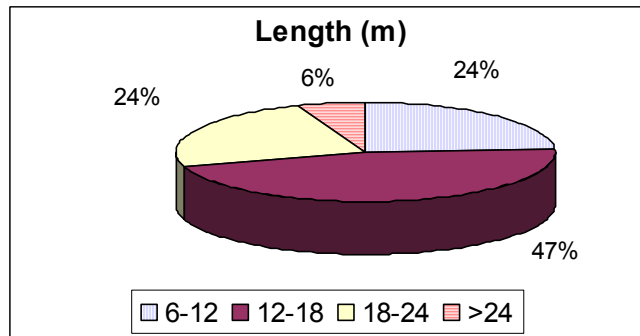


Fig. 2 Length Range of Fishing Vessels in Marsaxlokk

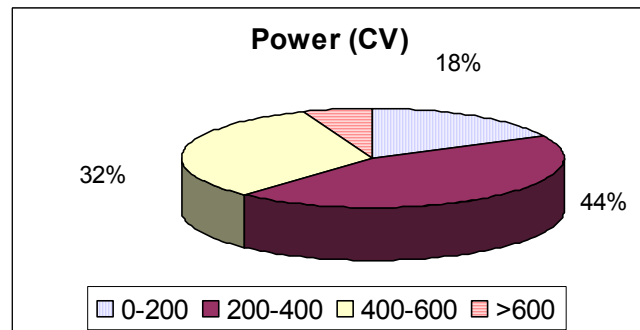


Fig.3 Power Range of Fishing Vessels in Marsaxlokk

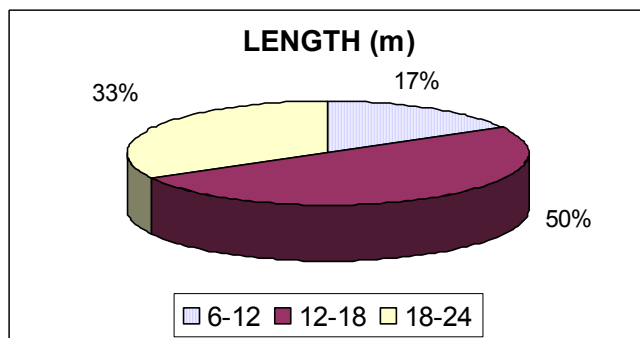


Fig.4 Length Range of Fishing Vessels in Mgarr

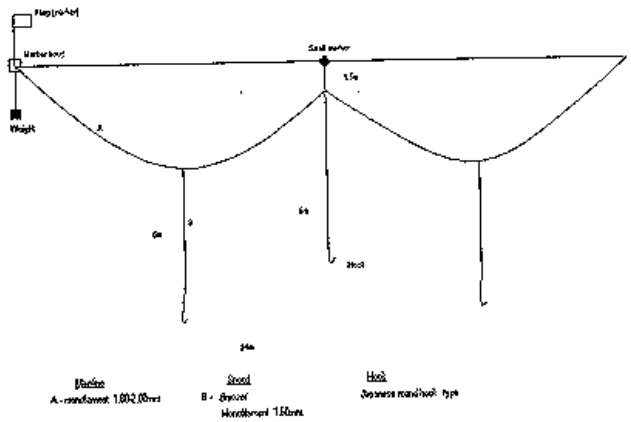


Fig.5 Typical Maltese Surface longlines - BFT

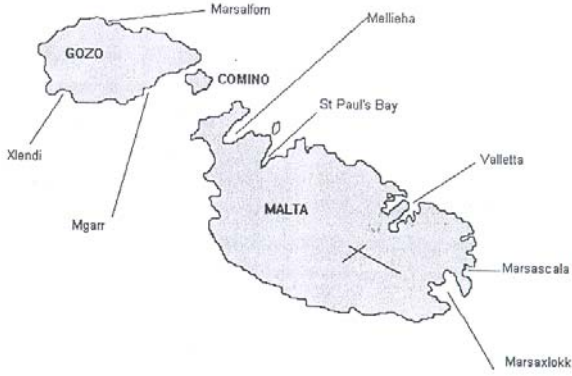


Fig. 6 Main Fishing Ports

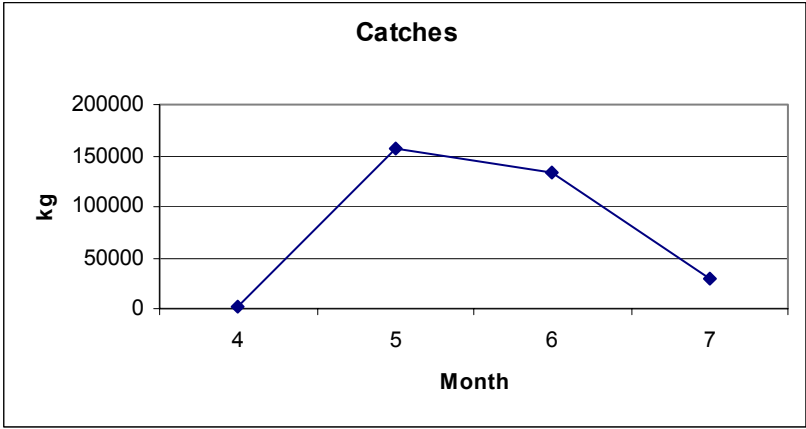


Fig. 7 Weight (kg) of BFT caught by LLHB during the Year 2000

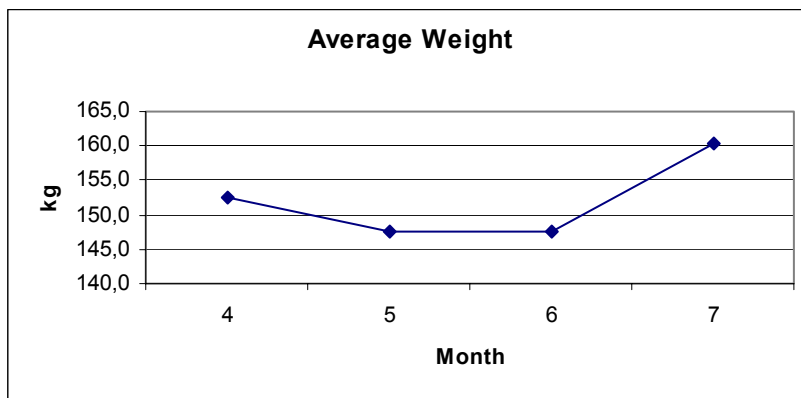


Fig. 8 Average Weight of BFT caught by LLHB during the year 2000

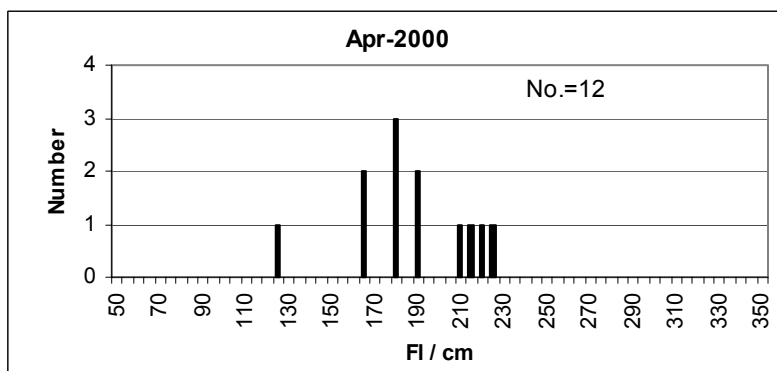


Fig.9 Distribution of Length of BFT caught by LLHB in April 2000

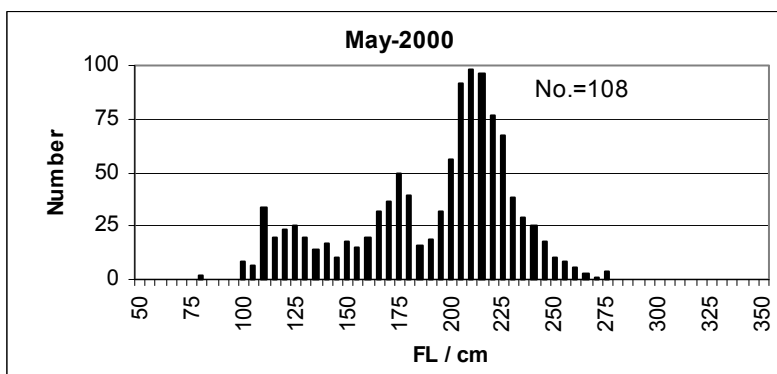


Fig. 10 Distribution of Length of BFT caught by LLHB in May 2000

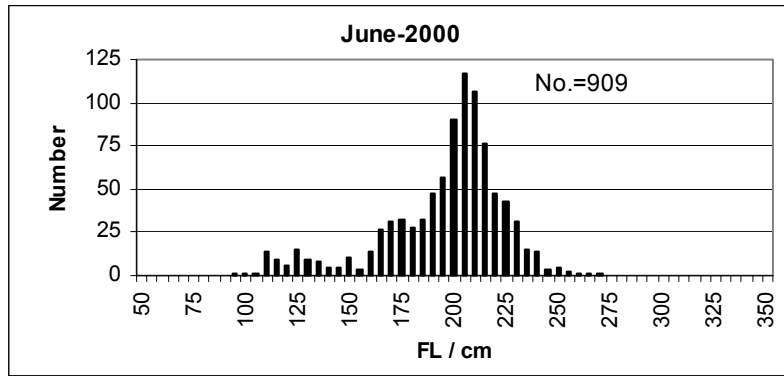


Fig.11 Distribution of Length of BFT caught by LLHB in June 2000

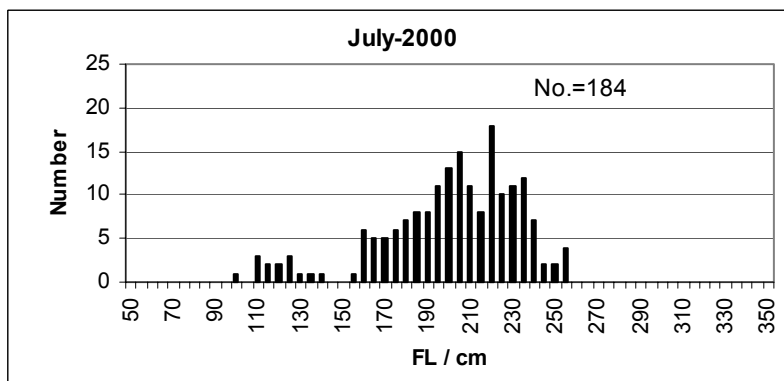


Fig. 12 Distribution of Length of BFT caught by LLHB in July 2000

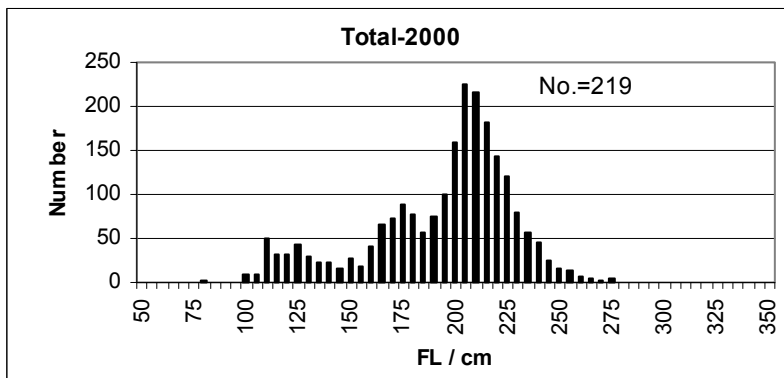


Fig. 13 Distribution of Length of all BFT caught by LLHB 2000