

## REPORT ON THE KOREAN DART TAGGING EXPERIMENTS FOR ISYP DURING 1981-82

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## SUMMARY

A total of 530 ICCAT dart tags for yellowfin, bigeye and skipjack was released from 1981 to June, 1982, and 8 tags were recovered in the Gulf of Guinea. Therefore, the recovery rate appeared to be 1.5 percent.

Taking into account the straight migration from the results in this report, yellowfin moved to the north in summer and to the southeast area in winter. But bigeye and skipjack were limited to describe this because of the lack of recapture data.

In general, the length increment of yellowfin reached about 5 cm in a month for younger fish less than 50 cm in fork length.

## RESUME

En tout 530 marques à dard ICCAT apposées sur des albacores, thons obèses et listaos ont été relâchées de 1981 à juin 1982; 8 d'entre elles ont été récupérées dans le golfe de Guinée. Le taux de retour de marques semble donc être de 1,5%.

D'après les résultats du présent rapport concernant la migration, l'albacore se déplace en été vers le nord et en hiver au sud-est de cette zone. Par contre, du fait du manque de données, il est difficile de connaître les déplacements du thon obèse et du listao.

En général, la croissance de l'albacore est d'environ 5 cm par mois pour les petits poissons mesurant moins de 50 cm de longueur fourche.

## RESUMEN

Entre 1981 y junio 1982, se colocó un total de 530 marcas dardo sobre rabil, patudo y listado, recuperándose 8 de ellas en el Golfo de Guinea. La tasa de recuperación, por tanto, parece ser del 1,5%.

Teniendo en cuenta los resultados sobre migración contenidos en este informe, el rabil se desplazó hacia el Norte en verano y hacia el Sudeste de esta zona en invierno. Los datos sobre atún rojo y listado son incompletos debido a escasez de datos.

En términos generales, el incremento de talla del rabil alcanzó unos 5 cm. en un mes, para peces con menos de 50 cm. de longitud horquilla.

## INTRODUCTION

The Korean dart tagging activities as a part of the International Skipjack Year Program Plan (1980) of ICCAT have been conducting in the Gulf of Guinea by the Korean commercial bait boats at Tema, Ghana since 1980. Korean fishermen who have served in this fishery have positively exerted a lot of their efforts for these tasks. Even in the absence of chartered vessels and without the direct participation of research vessels they have accumulated the basic field data.

In contrast a scientist of Fisheries Research and Development Agency (FRDA) was dispatched there during May 1982 and directly carried out tagging activities and biological works on the Korean fishing vessels and at the port.

The basic data resulting from the vessels are sent to FRDA for checking and reviewing. Finally the compilation and analysis concerning all the data gathered together are performed by the scientists concerned.

This paper describes the outline of the Korean dart tagging experiments during the period of 1981 to June 1982.

## STATES OF DART TAGGING AND ITS RECOVERY

A total of 399 ICCAT's dart tags for yellowfin, bigeye and skipjack was released by Korean fishermen during 1981 and 131 tags by research scientist and fishermen up to June of 1982 in the Gulf of Guinea (Table 1). The number of fish released by species during these periods were 285 yellowfin (53.8 percent of the total), 240 skipjack (45.5 percent) and 5 bigeye (0.9 percent). Fig. 1 shows its numbers by species and 1° square. With regard to the mentioned above, a total of 8 tags which is composed of 6 yellowfin, 1 bigeye and 1 skipjack was recaptured and delivered to FRDA.

## RESULTS OF RELEASE AND RECAPTURE

The information on the recapture by species are represented in Table 2. Among them 6 tags were recovered in 1981 and 2 tags in 1982 which all were released during 1981. Thus its recovery rate versus the total number of tags released for 1981 seems to be 1.5 percent.

A yellowfin was recaptured after 138 days of its release which was the longest period than the others, while bigeye was recaptured after a day and generally the tagged fish appeared in fishing after more than 20 days.

The straight migration routes of yellowfin derived from Table 2 are shown in Fig. 2. Taking account of the above, this fish seems to migrate toward the north from the south of equator during summer season and in winter season contrarily they seem to move to the south-east from the north of equator in the Gulf of Guinea. The longest distance of the straight movement was in the vicinity of 780 miles during 51 days at liberty, which was tagged at 05°15'N, 05°40'W on November 8, 1981 and recaptured at 02°02'S, 08°20'E on December 29, 1981 (see Table 2).

The mean velocity per day in the straight migration was derived from Table 2 that it appeared to be 6.8 miles/day with the range of 2.5 miles/day to 15.5 miles/day, and the movement to the northward which has an average speed of 8.1 miles/day revealed to be more rapid than that of the southward which was 5.9 miles/day. It is clear, however, that the actual migratory velocity is likely to be much more rapid than the data described in this report because there is no evidence that fishes move toward their destinations straightly. On the other hand, explanation of tagging results on skipjack and bigeye are limited because of the lack of information but detail data regarding release and recapture are enumerated in Table 2.

As shown in Table 2 it is difficult to estimate the status of growth from the relationship between the length increments at released and recapture. Because there was significant difference in days of liberty in the sea while there was nearly constant length increment in each fish. Nevertheless, in general, the mean increment of 5 cm in a month for young yellowfin (less than 50 cm) is likely to be existed. This is similar to the values in the conversion table for yellowfin (Data Record of ICCAT 1976) which are tabulated from the result of Coan (1976).

LITERATURE CITED

Coan A. 1976. Length, weight and age conversion tables for Atlantic tunas. ICCAT Col. Vol. Sci. Papers V (SCRS-1975) : 64-66.  
 ICCAT. 1980. International Skipjack Year Program Plan, Report of the Subcommittee on Skipjack, July 23-27, 1979. COM-SCRS/79/24.

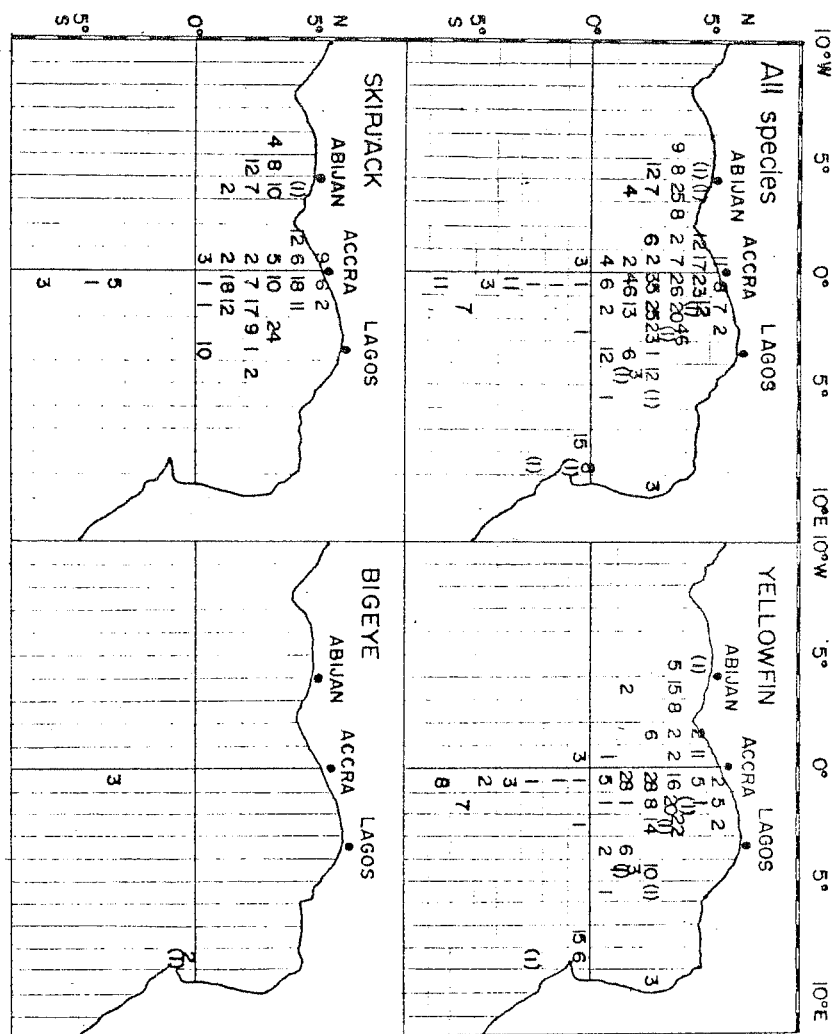


Fig. 1. Number of fish released and recaptured (parenthesis) by species and 1° square.

Table 1. The number of fish released by species, 1981 - June 1982

Year	Total	Yellowfin	Bigeye	Skipjack
1981	399	210	5	175
1982 (Jan.- Jun.)	131	66		65
Total	530	285 (53.8%)	5 (0.9%)	240 (45.3%)

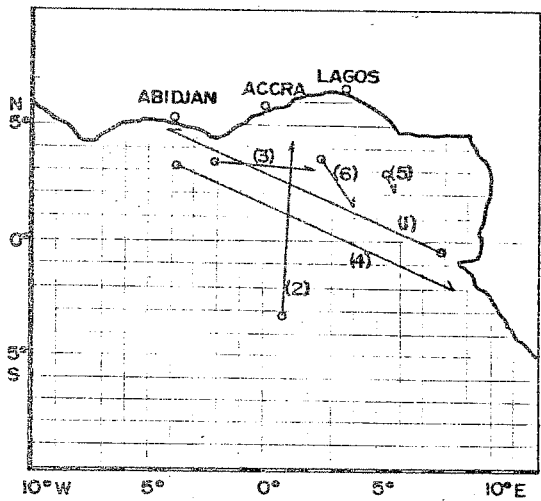


Fig. 2. The strait migration routes of yellowfin. The numbers on this chart are identified with those in the position column of table 2.

Table 2. Recapture data for tunas tagged by Korea In 1981 as of June 1982

Species	Date		Days At Liberty	Position		Pork-length (cm)		
	Recapture	Release		Recapture	Release	Recapture	Release	Increment
Yellowfin	Sep. 19, 1981	Jul. 8, 1981	72	1) 04°-50'N, 00°-27'S 04°-20'W	00°-27'S 07°-59'E	42.2	37.2	5.0
"	Sep. 25, 1981	May 10, 1981	138	2) 04°-18'N, 03°-05'S 01°-09'E	03°-05'S 00°-47'E	Unknown	40.0	?
"	Dec. 19, 1981	Nov. 9, 1981	40	3) 03°-00'N, 05°-20'W 02°-00'E	05°-20'N 02°-00'W	54.0	44.2	9.8
"	Dec. 29, 1981	Nov. 8, 1981	51	4) 02°-02'S, 03°-15'N 08°-20'W	03°-15'N 03°-40'W	71.0	43.5	?
"	Jan. 21, 1982	Jan. 1, 1982	20	5) 02°-12'N, 02°-50'N 04°-35'E	02°-50'N 04°-30'E	48.0	43.0	5.0
"	Jan. 23, 1982	Dec. 20, 1981	34	6) 01°-30'N, 03°-39'N 04°-00'E	03°-39'N 02°-30'E	49.4	44.1	5.3
Bigeye	Jul. 9, 1981	Jul. 8, 1981	1	00°-29'S, 00°-45'S 08°-01'E	00°-45'S 08°-20'E	45.0	44.2	0.8
Skipjack	Nov. 27, 1981	Nov. 7, 1981	20	04°-40'N, 03°-15'N 03°-40'W	03°-15'N 03°-33'W	44.0	43.5	0.5