

## **Annual Report of Korea**

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### **Introduction**

Southern bluefin tuna (SBT) fishery is the most recently developed tuna fishery by Korean distant-water fishing industry. The SBT catch taken by Korean distant-water longline fleet reached a maximum in 1998 but thereafter continuously decreased until recent years. Species composition of the catch by the longliners showed that SBT as the target species accounted for 80-95% of the total catch and remaining non-target or by-catch species consisted of other tunas, billfishes, sharks and other fish species. Korean longline fleet has voluntarily deployed a tori line to reduce seabird bycatch by longline fishing.

### **Review of SBT Fisheries**

#### ***Fleet size and distribution***

Korean SBT fishery commenced in 1991 with a few longliners shifted from tropical waters where they targeted bigeye and yellowfin tuna. Thus, in the early years of this fishery, SBT did not attract Korean fishing industry, but because of higher market price number of longliners rapidly increased to reach a maximum fleet size of 19 longliners in 1998. However, by the voluntary regulation of fleet size among fishing industries, annual fleet size for SBT fishery never exceeded 16 registered number since then and number of longline vessels active was 10 in 2002 and 4 in 2003. Annual number of fishing vessels for SBT largely depends on the market price of SBT in Japan and fishing condition on the fishing grounds.

#### ***Distribution of catch and effort***

Fishing season of Korean SBT longline fishery usually starts in March and ends by November or December. In the first half of fishing season from March to July or August, usually Korean longliners are fishing on the high seas of the western Indian Ocean off South

Africa, with occasional expanded operation to the southeastern Atlantic, while in the second half they move to the eastern Indian Ocean off the western Australia. This fishing pattern and fishing grounds have rarely been changed for the past 10 years of fishing history for SBT except for 1991, but in 2002 some catches were also taken from the western fishing grounds until October (Fig. 1).

In 2002, 10 out of 16 registered longliners fished for SBT and made a catch of 649 mt (reported as processed weight) of SBT in the usual fishing area, showing a decrease by about 18% from 2001 figure. This may be due to the decrease in fishing efforts (i.e. months) of some longliners. Catch per unit effort of Korean longline fishery for SBT has shown a decreasing trend from a peak at 8.4 fish/1,000 hooks in 1994. However, CPUE appeared to be more or less stable between 2.3 and 4.1 fish/1,000 hooks in recent years. CPUE in 2002 increased compared with that of 2001. It was noted from the monthly CPUE analyses that catch efficiency is higher from the western fishing ground, 2.7-5.6 fish/1,000 hooks than the eastern ground, 1.8-2.8 fish/1,000 hooks.

## **Fisheries Monitoring for each fleet**

Fisheries statistics are collected and reported for a calendar year. Catch and effort data based on the logbooks are routinely collected through a fisheries data collection system which was lawful in 1977. According to this domestic regulation, distant-water fishing vessels have to submit the reports of their fishing operations within 30 days (home-based) or 60 days (foreign-based) after completion of their operations to the National Fisheries Research and Development Institute (NFRDI).

## **Seabird**

According to fishermen, some bird species such as crow and hawks-like birds (fishermen's identification) are usually encountered as they set longlines. However, no detailed information or data on seabird bycatch have not been reported.

## **Other Non-target Fish**

Among the non-target species consisting of 5-20% of the total catch in weight, dominant fish are tunas including albacore, yellowfin and bigeye, with a minor portion of billfishes (Table 1). Sharks data are usually collected into a "shark" category because on-board identification is difficult to fishermen without a good guide and knowledge in taxonomy.

According to fishermen's identification, it seems that blue sharks are dominant species among shark bycatch.

## **Marine Mammal and Marine Reptiles**

No data are available for marine mammals or reptiles incidentally caught by Korean SBT longline fishery.

## **Mitigation Measures to Minimise Seabird and Other Species Bycatch**

### **Current Measures**

#### ***Mandatory Measures for Each Fleet***

Currently there are no mandatory measures formulated by Korean Government to reduce the incidental catch of seabird by its tuna longline fishery. However, the Ministry of Maritime Affairs and Fisheries (MOMAF) is developing the National Plans of Action for removing IUU fishing and reducing seabird and shark bycatch from longline fisheries.

#### ***Voluntary Measures for Each Fleet***

While no mandatory measures to reduce seabird bycatch was taken by the Korean Government, fishing industry voluntarily adopted seabird deterrent device called tori line. Based on fishermen's interview, it was around the late 1990s when Korean longliners voluntarily began to deploy tori line to deter seabirds from baited hooks. Fishermen recognized from their experiences that deterring seabirds from contacting baits during SBT longline sets was beneficial to their fishery by reducing bait and effort loss.

## **Public Relations and Education Activities**

### ***Public Relations Activities***

To avoid or reduce mortality of seabird and sea turtle by tuna longline vessels, a release manual for these species compiled by MOMAF in cooperation with Japan are in press and will be distributed to fishing boats including tuna longliners. In addition, Korean-translated pamphlets for seabird and sharks bycatch will be published by CCSBT secretariat and distributed to Korean SBT longline fleet.

### ***Education***

NFRDI opens a training session for fishing vessel captains as they make a visit to Korean Longline Fishery Association before they begin fishing trip. The session largely includes collection of fisheries information, reporting of target and non-target fish species, and implementation of international regulation. They are also encouraged to report on bycatch of non-fish species such as seabird and sea turtles.

Table 1. Specise composition (% in weight) of the Korean SBT longline fishery (unit: mt)

	<b>SBT</b>	<b>ALB</b>	<b>YFT</b>	<b>BET</b>	<b>BUM</b>	<b>STM</b>	<b>SWO</b>	<b>SKJ</b>	<b>SHA</b>	<b>OTH</b>	<b>TOTAL</b>
<b>1998</b>	320.7	11.5	3.0	10.6	0.7	0.1	6.0	0.1	3.8	0.0	338.4
<b>%</b>	94.8	3.4	0.9	3.1	0.2	0.0	1.8	0.0	1.1	0.0	
<b>1999</b>	564.4	5.9	103.5	4.3	0.9	0.5	5.9	0.0	4.9	0.2	690.5
<b>%</b>	81.7	0.9	15.0	0.6	0.1	0.1	0.9	0.0	0.7	0.0	
<b>2000</b>	234.3	5.6	0.2	1.3	0.0	0.1	1.0	0.0	0.8	0.0	243.3
<b>%</b>	96.3	2.3	0.1	0.5	0.0	0.1	0.4	0.0	0.3	0.0	
<b>2001</b>	333.2	1.4	0.0	0.6	0.0	0.0	0.0	0.0	27.0	39.2	401.5
<b>%</b>	83.0	0.3	0.0	0.2	0.0	0.0	0.0	0.0	6.7	9.8	
<b>2002</b>	605.9	20.7	1.6	25.6	0.1	0.0	8.8	0.0	2.9	15.5	681.2
<b>%</b>	88.9	3.0	0.2	3.8	0.0	0.0	1.3	0.0	0.4	2.3	

SBT: southern bluefin tuna ALB: albacore tuna YFT: yellowfin tuna BFT: bigeye tuna BUM: blue marlin SWO: swordfish SKJ: skipjack tuna SHA: sharks OTH: other fishes

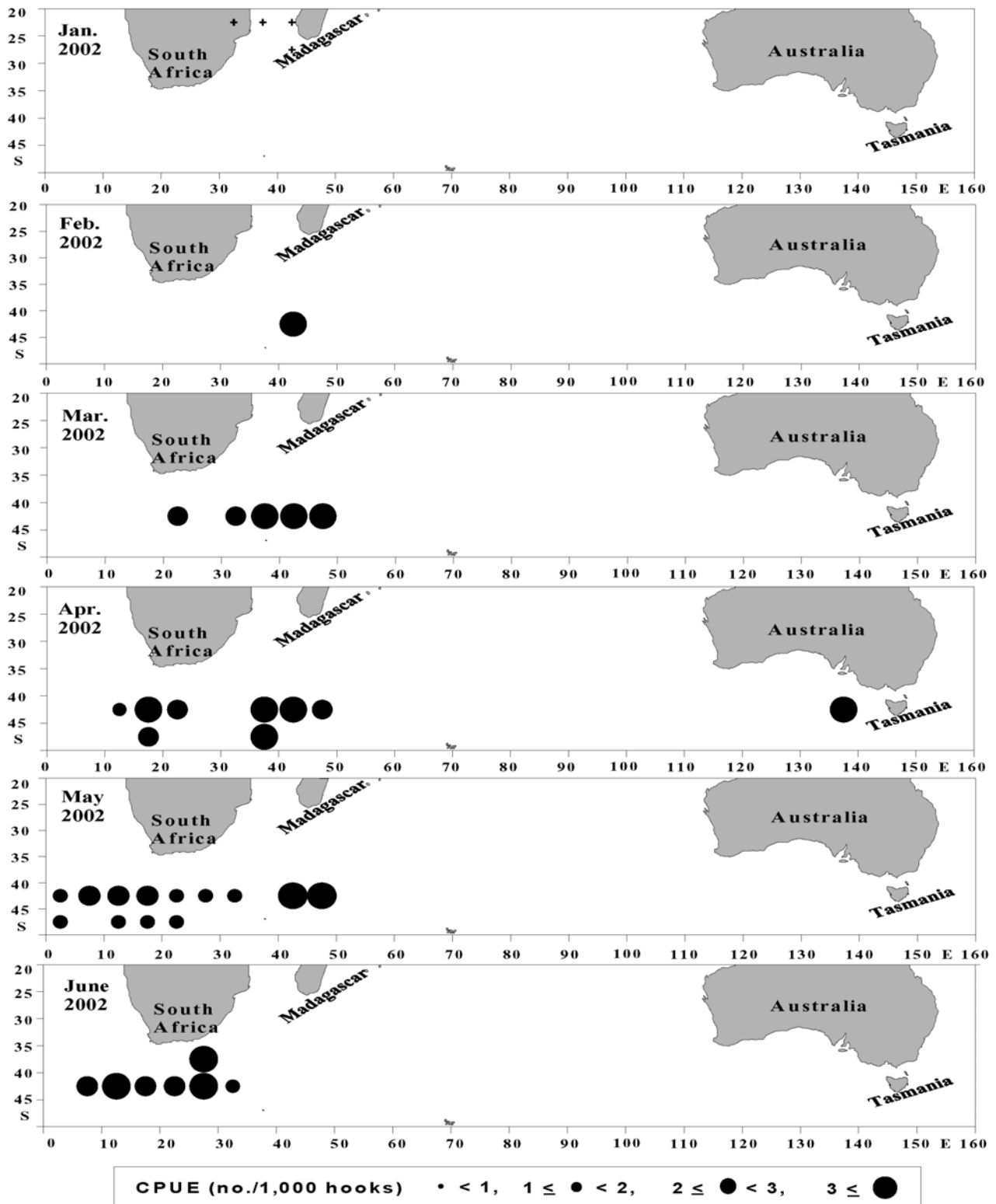


Fig. 1. Fishing area distribution of Korean SBT longline fishery in 2002.

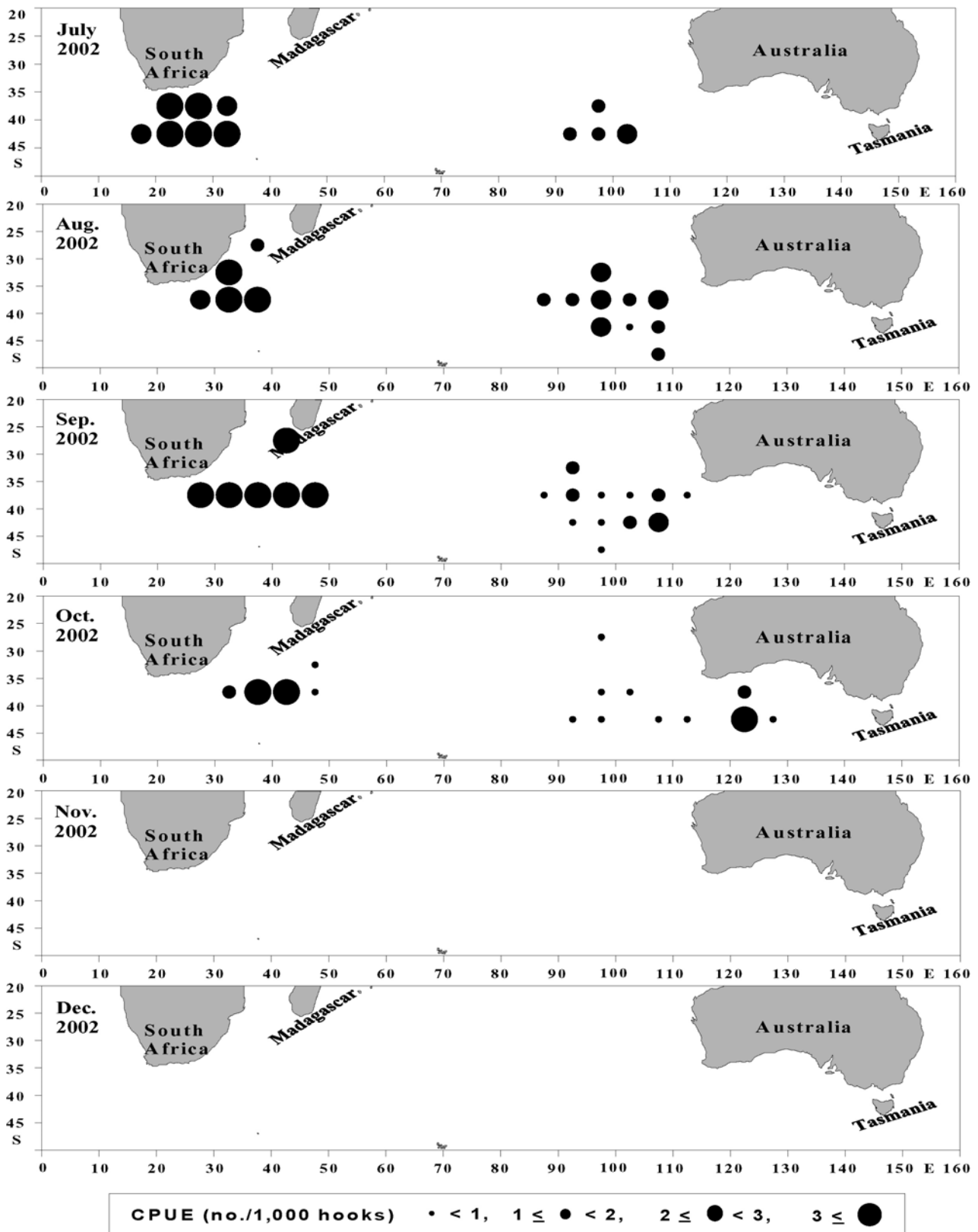


Fig. 1. continued

