

## Report of activities for conventional and archival tagging and recapture of southern bluefin tuna by Japan in 2007/2008

日本によるミナミマグロ標識放流計画および標識再捕状況

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### 要約

2007年7月から10月に、南東インド洋において、商業延縄船からミナミマグロ中大型魚51個体のアーカイバルタグ標識放流とミナミマグロ大型魚10個体のポップアップアーカイバル標識放流を実施した。日本は7年間の公海上からの標識放流計画によって、通常標識1159個体、アーカイバルタグ401個体、ポップアップアーカイバルタグ25個体のミナミマグロ中大型魚を放流してきた。放流したアーカイバルタグは、これまでに16個体から回収されている。また、日本は、2008年1月には、CCSBT標識放流の一環として、曳縄による加入量調査で漁獲されたミナミマグロ1歳魚193個体に対し通常標識の装着・放流を実施した。そのうち20個体にはアーカイバルタグの装着放流も行った。2007年7月から2008年7月までに、日本の延縄漁船より100個体分のミナミマグロ通常標識が再捕報告された。

### Summary

Japanese archival tagging for medium and large size of southern bluefin tuna (SBT, N=51) and pop-up archival tagging for large size SBT (N=10) from the commercial longline vessel was conducted in south-eastern Indian Ocean during 9 July to 7 October 2007. During this program for seven years, the numbers of medium and large size of SBT individuals released were 1159 with conventional tags only, 401 with archival tags and 25 with pop-up archival tags. Sixteen archival tags have been recovered for seven years. Japan also conducted the conventional tagging as a part of CCSBT tagging for the mainly age-1 SBT (N=193) in the trolling survey in January 2008. Twenty of these 193 conventional- tagged fish were also put archival tags. From the Japanese longline vessels, 100 individuals with conventional tags were recovered between September 2007 and July 2008.

## **1. Japanese activity for the CCSBT Tagging Program (SRP) in 2007/2008**

### **1-1. Tag and release for medium and large size SBT**

Japan has been conducting activity of SRP tagging since 2001 (Itoh et al., 2002, 2003, 2004, Itoh and Miyauchi 2005, Itoh et al., 2006, Sakai et al., 2007). This activity is that tag and release for medium and large size individuals from offshore area in the Indian Ocean or off Cape so that SBT will be released from whole of area distributed simultaneously in conjunction with other SRP tagging programs. In order to attain these objectives, Japan has conducted tagging programs that charter a commercial longline vessel and tag and release SBT caught with conventional, archival and/or pop-up archival tags (PATs), under the plan made by NRIFSF. Since 2004, because funding situation became tightened, it have adopted the payment only for price of released fish and compensation for potential loss due to additional time and labors required for tagging instead of full-charter of the vessel. Then, it has not been able to release SBT with conventional tags only.

In 2007, the program was conducted in similar way as in 2004-2006, and archival tags (Lotek Wireless Inc.) and PATs (Wildlife Computers, Inc.) were deployed. Tagging was conducted during 9-July to 7-October 2007 in the south-eastern Indian Ocean and off Fremantle (29-41S, 87-105E; Fig. 1). When SBT in vigorous condition was caught and environmental conditions were good, the individual was landed on deck by a large scooping net for tagging. After ensuring, no or little breeding from gill and good hooking near mouth, an archival tag was inserted into the body cavity, or a PAT was attached externally. A CCSBT conventional tag was inserted in between pterygiophore at the base of the second dorsal fin. The fish was measured in length and released into sea. Usually, it took 1-2 minutes during fish were on deck. Total of 51 SBT individuals (84-162 cm FL, with mean of 118.6 cm FL) were released with archival tags, and 10 individuals (158-176 cm FL, with mean of 164.5 cm FL) were released with PATs. Fish which were not released were kept on vessel and reported to Fisheries Agency of Japan as usual commercial catch. The researcher also collected data and some biological samples for any species caught as same as scientific observers do. Otoliths were collected from 191 SBT individuals.

By this program for seven years, the numbers of medium and large size SBT released were 1159 with conventional tags only, 401 with archival tags and 25 with PAT (Table 1). Length frequency of fish with archival tag is shown in Fig. 2.

### **1-2. Tag and release for age 1 SBT in the trolling surveys as the recruitment monitoring**

In January 2008, the trolling survey was conducted in order to provide the recruitment level of age-1 SBT. During this survey, we tagged the CCSBT conventional tags, acoustic tags, and archival tags to the SBT mainly in age-1 which had no or little damage on its mouth. These SBT were caught by the trolling. Tagging was conducted during 20 January to 1 February 2008 off the south coast of Western Australia (34.2-35.3S, 117.8-120.6E; Fig. 3). Two conventional tags per one individual were inserted in between pterygiophore at the base of the second dorsal fin. The fish was measured in fork length and released into sea. Total of 193 SBT individuals (32-79 cm FL, with mean of 53.3 cm FL) were released with conventional tags. And, 38 individuals (49-74 cm FL, with mean of 54.7 cm FL), and 10 individuals (51-79 cm FL, with mean of 52.9 cm FL) of those were also released with acoustic

tag and archival tag, respectively.

## **2. Tag recapture in 2007/2008**

When Japanese commercial longline vessels were landing, we visited those vessels to recover recaptured tag. Then, we also requested the fishermen directly to report the tag recapturing in other cruises. The ports we visited were following major SBT landing ports; Shimizu port, Yaizu port and Ooigawa port.

From September 2007 to July 2008, CCSBT conventional tags from the total of 91 individuals (153 tags) which released in the CCSBT tagging activities were recovered. CSIRO tags from the total of 8 individuals (13 tags) were also recovered. In addition, a NSW tag which tagged by the NSW DPI Game Fish Tagging Program was recovered. These recapture information was reported to the CCSBT secretariat.

In seven years tagging by Japan, 16 out of 401 archival tags were recovered.

## **3. Plan for 2008/2009 activity**

We plan the trolling survey of early 2009. The design of this survey will be similar to that of 2008. We propose to use the CCSBT conventional tags for the tagging during the trolling survey as well as in 2007 and 2008.

## **Reference**

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Table 1 Summary of the tagging activities by Japan using Japanese longline fleet for medium and large size SBT individuals from offshore area in the southern Indian Ocean and off Cape.

Year	2001	2002	2003	2004	2005	2006	2007	Total
First operation	5-Nov	20-Oct	24-Oct	25-Sep	15-Oct	9-Aug	9-Jul	
Final operation	14-Jan	27-Dec	31-Dec	3-Feb	16-Dec	16-Sep	26-Oct	
Area operated	39-44S 23-48E	33-40S 30-44E	37-40S 29-44E	31-42S 99-101E	32-42S 82-111E	36-41S 96-101E	29-41S 87-105E	
Number of SBT tagged								
with conventional tags only	329	273	557					1159
with archival tag	45	40	80	40	78	67	51	401
with pop-up archival tag	7	5			3		10	25

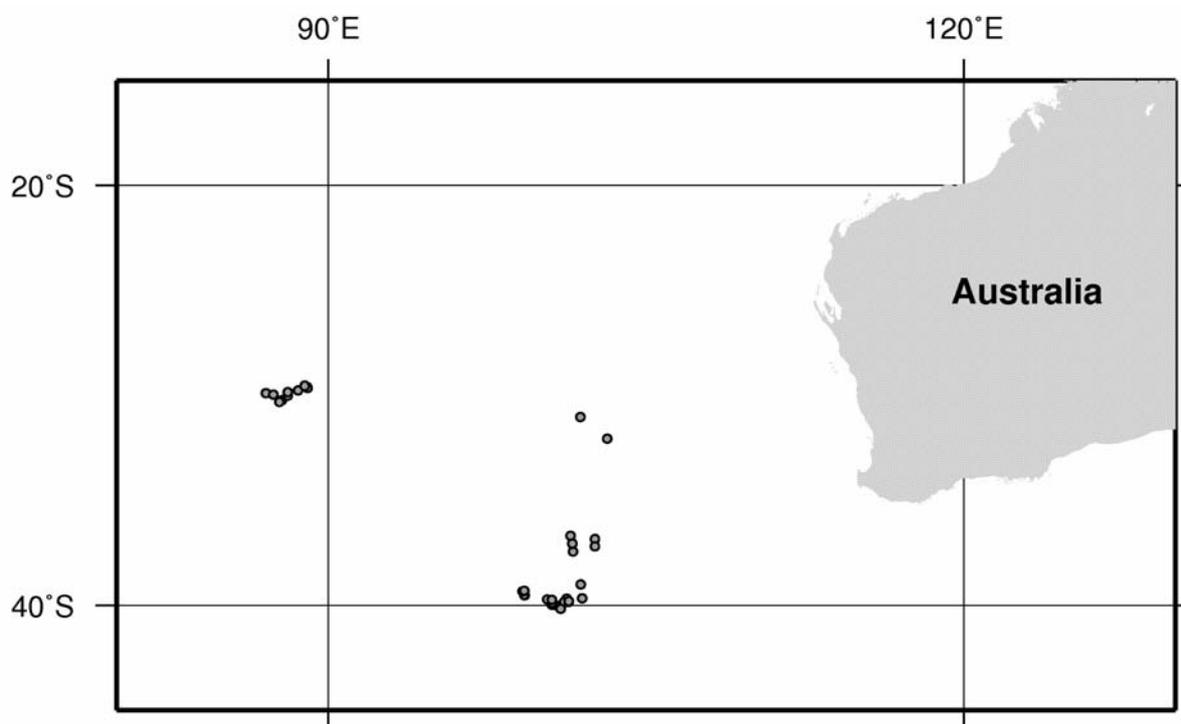


Fig. 1 Locations of SBT with archival tags / pop-up archival tags were released in Japanese tagging program in 2007 (archival tag; n=51, pop-up archival tag; n=10).

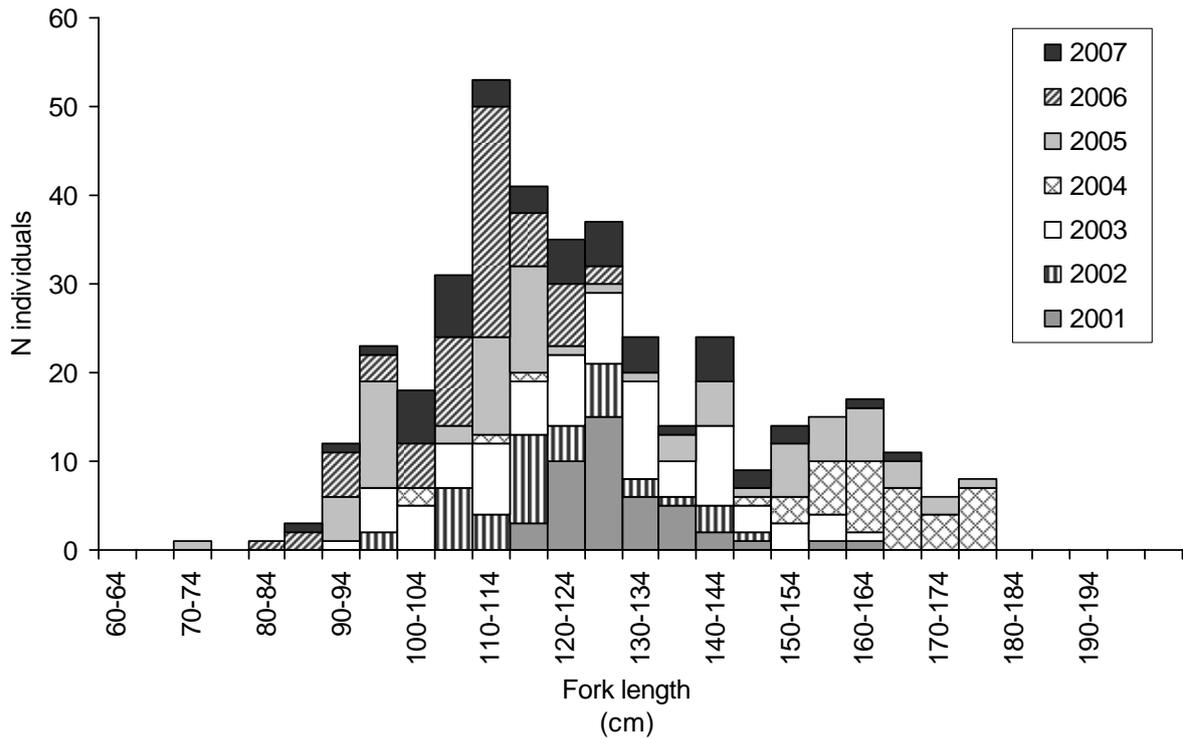


Fig. 2 Length frequency distribution of SBT with archival tags in Japanese tagging program for seven years.

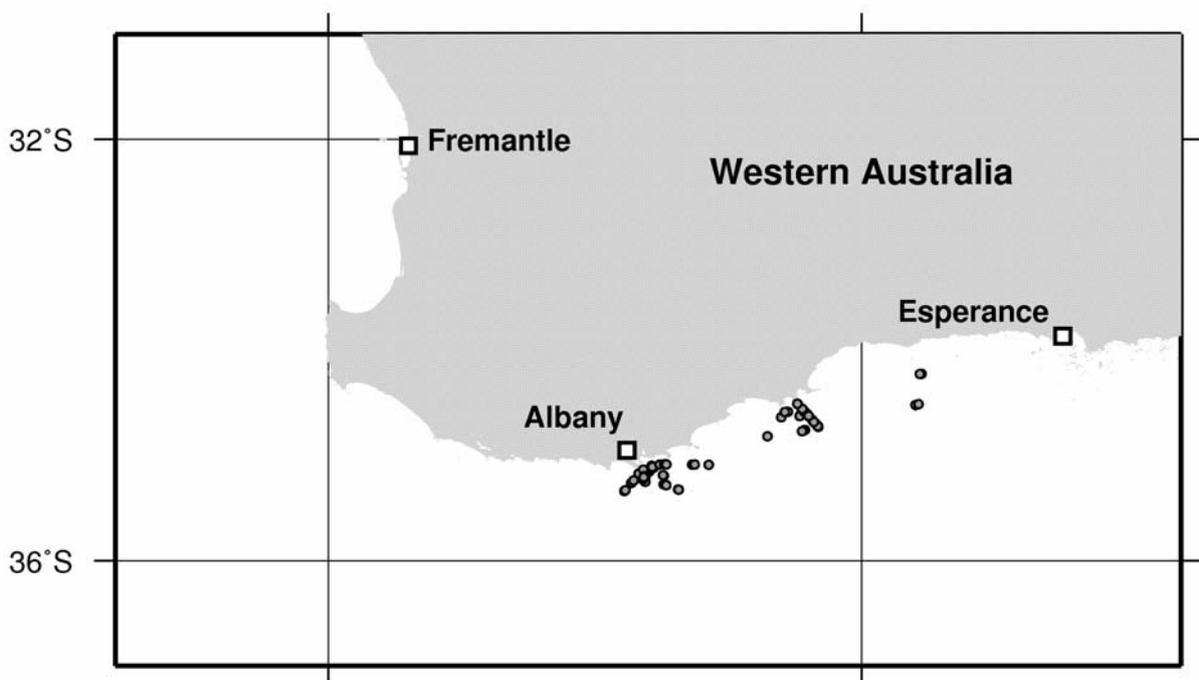


Fig. 3 Locations of SBT with conventional tags (and archival / acoustic tags) were released during the trolling survey in January 2008 (n=193).