Report of activities for conventional and archival tagging of southern bluefin tuna by Japan in 2005/2006 and proposal of tagging in 2006/2007.

日本によるミナミマグロ標識放流計画の 2005/2006 年度活動報告および 2006/2007 年度の活動提案

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要約

2005 年 10 月から 12 月に、南東インド洋において、延縄船からミナミマグロ中大型魚のアーカイバルタグ標識放流を実施した。5 年間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 283 個体、ポップアップアーカイバルタグ 15 個体を放流してきた。2006 年 8 月からも同様のアーカイバルタグ放流調査を実施中である。アーカイバルタグはこれまでに 11 個体から回収された。CCSBT 通常標識は 40 個体が再捕報告され、CCSBT 事務局へ報告した。

Summary

Japanese archival tagging for medium and large size southern bluefin tuna from a longline vessel was conducted in south-eastern Indian Ocean during October to December 2005. By this program for five years, the numbers of SBT individual released were 1159 with conventional tags only, 283 with archival tags and 15 with PAT. An archival tagging survey has also been conducted since August 2006 in the same manner in 2005. 11 archival tags have been recovered. 40 individuals with CCSBT tags were recovered and reported to CCSBT Secretariat.

1. Japanese activity for the CCSBT Tagging Program (SRP) in 2005

1-1. Tag and release

Japan has been conducting activity of SRP tagging since 2001 (Itoh et al. 2002, 2003, 2004, Itoh and Miyauchi 2005). One objectives is that tag and release for medium and large size individuals. In the SRP tagging in the coastal region of Australia, only small size individuals have been released. The other objective is that tag and release from offshore area in the Indian Ocean so that SBT were released from whole of area distributed simultaneously in conjunction with other SRP tagging programs. In order to attain these objectives, Japan has conducted a tagging program that charter a commercial longline vessel and tag and release SBT caught with conventional, archival and/or pop-up archival tags, under the plan made by NRIFSF. In 2004, because funding situation became tightened, it was changed from full-charter of the vessel to payment only for price of released fish and compensation for potential loss due to additional time

and labors required for tagging. Then, it was not able to release SBT with conventional tags only.

In 2005, the program was conducted in similar way as in 2004 and archival tags and PATs were deployed on SBT individuals. Details are as follows. An on-board researcher was sent to a Japanese longline vessel that usually working for southern bluefin tuna. Tagging was conducted during 15 October to 16 December 2005 in the south-eastern Indian Ocean (32-42S, 82-111E; Fig. 1). When SBT in vigorous condition was caught and environmental condition allows, 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. 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 78 SBT individuals (72-177 cmFL, with mean of 126.7 cmFL) were released with archival tags (Lotek Wireless Inc., Wildlife Computer), as well as three SBT individuals (166,162,168 cmFL) with PAT (Wildlife Computer). 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 90 SBT individuals.

By this program for five years, the numbers of SBT individuals released were 1159 with conventional tags only, 283 with archival tags and 15 with PAT (Table 1). Length frequency of fish with archival tag is shown in Fig. 2.

In 2006, the archival tagging has been conducting since early August in the south-eastern Indian Ocean. Utmost 68 SBT will be deployed archival tags.

1-2. Tag recapture and report

In the season when landing of Japanese vessel were concentrated, a person who visit the vessels to recover recaptured tag was employed. She went to the major SBT landing ports; Shimizu, Yaizu and Oigawa. She recovered tags that from recaptured fish and kept in the vessel, as well as asked fishermen directly to keep recaptured tags in the next cruise.

From August 2005 to July 2006, tags from the total of 40 individuals (68 tags) released in the CCSBT tagging activities were recovered and reported to CCSBT Secretariat. In addition, tags from the total of 21 individuals (38 tags) with CSIRO tags were recovered and reported to CSIRO.

In five years archival tagging by Japan, 11 out of 283 individuals were recovered. Among them, six were recovered from August 2005 to July 2006; three from Japanese longline vessels, two from Taiwanese longline vessels and one from Australian Farm Company. Fig. 3 shows the estimated trajectory of an individual for 802 days with the archival tag reported from a Taiwanese longline vessel.

2. Proposal for 2005/2006 activity.

The archival tagging will be conducted in the south-eastern or south-western Indian Ocean in 2007.

While it requires agreement among Australian and Japanese scientists at the workshop of the recruitment monitoring program, a conventional tagging from the trolling research surveys for age 1 SBT in Western Australia would be possible. We propose the conventional tagging using CCSBT conventional tags assuming agreement at the workshop.

A person who visits Japanese longline vessels during their landings at ports will be employed.

Reference

Itoh, T., N. Takahashi, S. Tsuji, and Y. Hosogaya (2002) Report of 2001/2002 pilot tagging program from longline vessel off Cape Area and proposal for 2002/2003 activity. CCSBT-SC/0209/21.

Itoh, T., N. Takahashi, S. Tsuji, and Y. Hosogaya (2003) Report of 2002/2003 results and proposal for 2003/2004 activities on CCSBT tagging by Japan. CCSBT-ESC/0309/35.

Itoh, T., N. Takahashi, S. Tsuji, and S. Harada (2004) Report of 2003/2004 results and proposal for 2004/2005 activities on CCSBT tagging by Japan. CCSBT-ESC/0409/37.

Itoh, T., K. Miyauchi (2005) Review of Japanese SBT Fisheries in 2004. CCSBT-ESC/0409/ SBT Fisheries/Japan.

Table 1 Summary of the tagging activities by Japan using Japanese longline fleet in the southern Indian Ocean.

Year	2001	2002	2003	2004	2005	Total
1st operation	Nov-5	Oct-so	Oct-24	Sep-25	Oct-15	
Final operation	Jan-14	Dec-27	Dec-31	Feb-3	Dec-16	
Area operated	39-44S	33-40S	37-40S	31-42S	32-42S	
	23-48E	30-44E	29-44E	99-101E	82-111E	
SBT						
conventional tags only	329	273	557			1159
with archival tag	45	40	80	40	78	283
with PAT	7	5			3	15

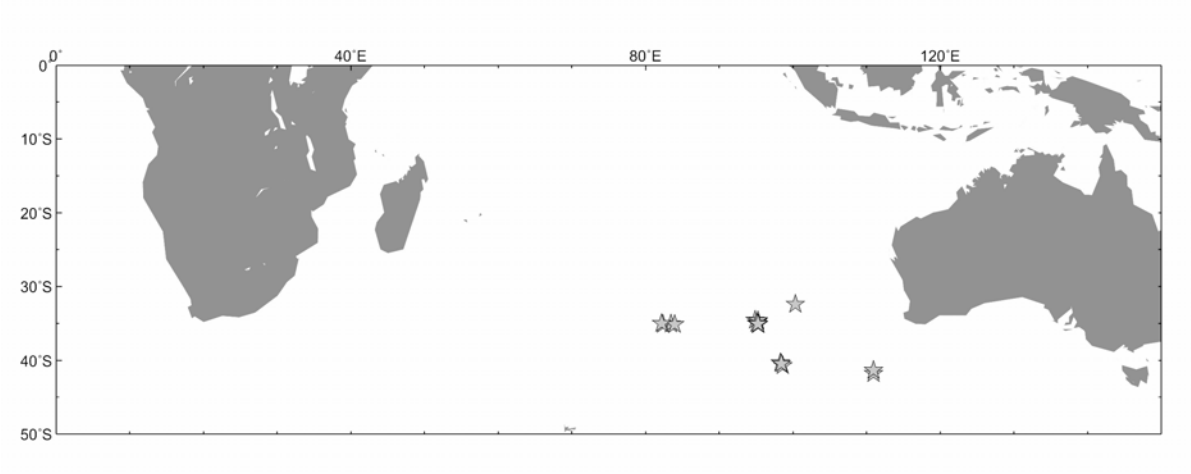

Fig. 1 Locations of SBT with archival tags were released in Japanese tagging program in 2005.

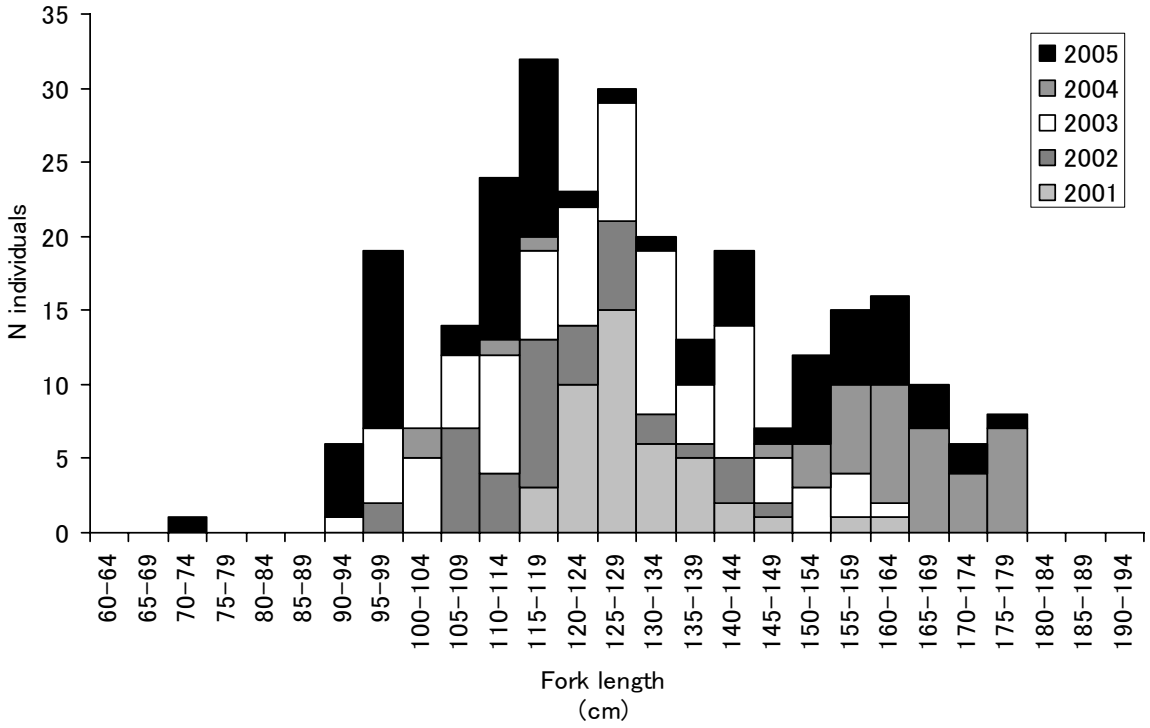

Fig. 2 Length frequency distribution of SBT with archival tags in Japanese tagging program for five years.

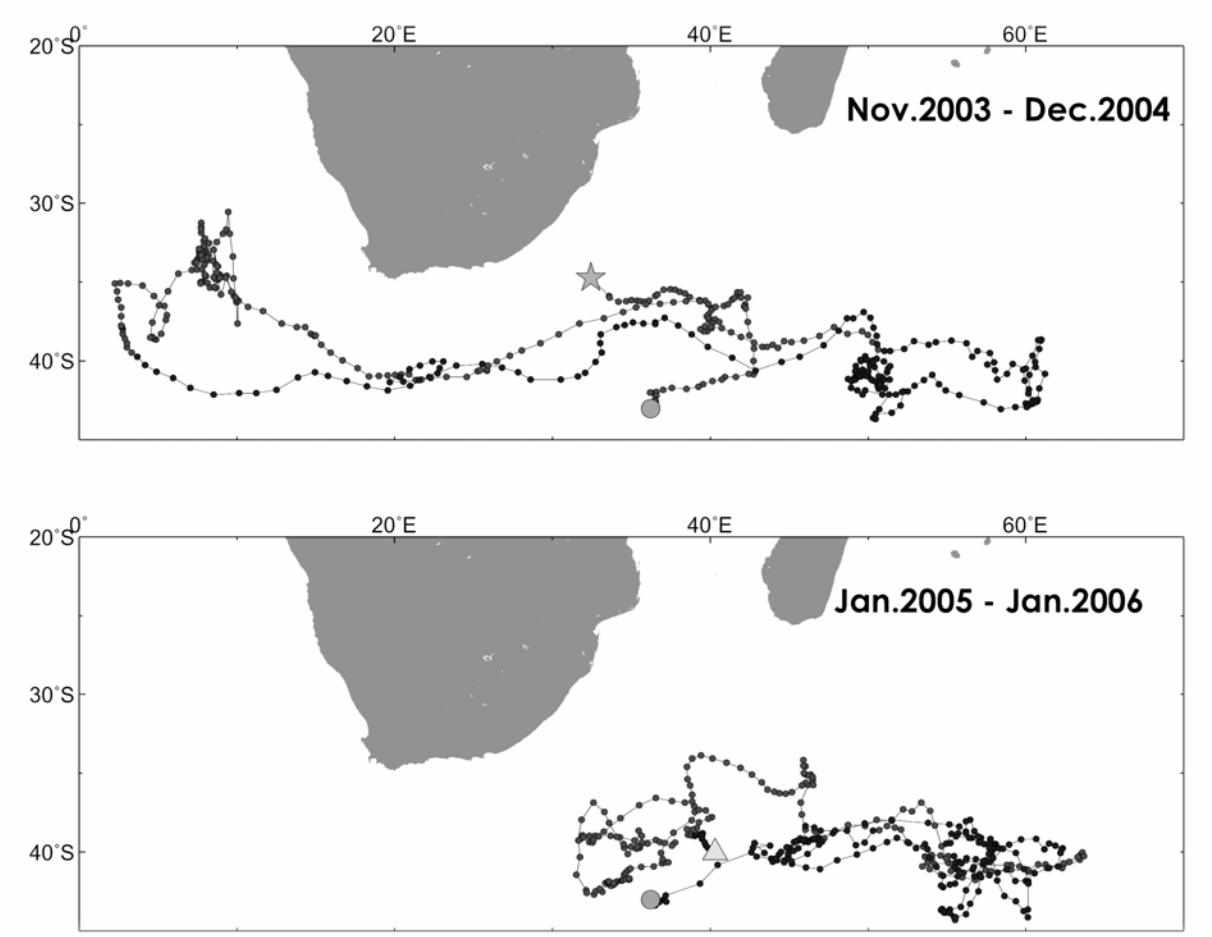

Fig. 3 Estimated movement trajectory of southern bluefin tuna with an archival tag (ID A1399) which was recaptured by a Taiwanese longline vessel.

Every dot is daily location estimated. Longitudes were estimated from light level change during a day observed by the archival tag, and latitudes were estimated from sea surface temperature map obtained by satellite. In addition, running averages for five days were calculated for latitude and longitude, after anomalous location data were excluded. Note that these locations estimated are preliminary. The star and the triangle represent the first and final location, respectively. Large dot is on the 1-January 2005, which connects points of both figures.