

# Releases and discards of Southern Bluefin Tuna from the Japanese longline vessels in 2012

日本延縄漁業におけるミナミマグロ放流: 2012 年

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## 要約

RTMP による漁業者からの報告に基づくと、日本延縄漁船からは 2012 年に 10101 尾のミナミマグロが放流・投棄された。目測による放流魚の重量データによると、その放流魚の 78%は 20kg 未満（4 歳魚以下）の小型魚であった。2012 年の科学オブザーバの観察データによると、通常ミナミマグロの 83%は「漁獲時に元気」である。したがって、もし漁業者が生死にかかわらずミナミマグロを放流/投棄すると仮定しても、そのうち 83%は生存放流であったと考えられた。

## Summary

The RTMP data showed that Japanese longline vessels released and discarded 10101 SBT in 2012 calendar year. According to the visual size measurement by the fishermen, 78% of them were <20 kg (correspond to age  $\leq 4$ ). Based on the scientific observer data, 83% of SBT caught by longline were in “Vigorous condition”. Therefore even if Japanese fishermen release/discard SBT regardless of the fish condition (dead or alive), it was estimated that 83% of them were “Live-release”.

## 1.背景 Background

2006 年以降、日本のミナミマグロ延縄漁業には、小型魚の漁獲が多く見られるようになった (CCSBT-ESC/1309/SBT Fisheries- Japan)。これは、日本延縄漁業だけではなく、NZ 近海の延縄漁業にも見られており (CCSBT-ESC/1208/SBT Fisheries- New Zealand)、ミナミマグロの加入の向上を反映したと考えられる。日本延縄漁業では 2006 年以降に IQ 制が導入された後、漁獲枠の超過を防ぐため、小型魚を船に取り込まずに生存個体の放流や死亡個体の投棄をする事例が増えたと考えられている。2009 年漁期からは、日本の延縄漁船からの放流・投棄の合計尾数は、RTMP により報告されている。その際、漁業者は目測により、放流・投棄魚の魚体サイズを 3 つの体重階級 (20kg 未満、20-40kg、および 40kg 以上) に区分することが求められている。この文書では、2011 年漁期に漁業者から報告された放流・投棄尾数、オブザーバの観察放流・投棄尾数、および、魚体の生残可能性について検討した。

Since 2006, catch of small-sized Southern Bluefin Tuna (SBT) caught by Japanese longline vessels has been remarkably increased (CCSBT-ESC/1309/SBT Fisheries- Japan). A similar trend has been observed in the size composition data of New Zealand fishery, which would reflect the increased abundance of small SBT (CCSBT-ESC/1208/SBT Fisheries- New Zealand). On the other hand, after the introduction of the individual quota (IQ) system for the Japanese SBT longline fishery in 2006, Japanese vessels would have begun live releases and dead discards of small SBT to prevent exceeding their individual quota. The total number of releases and discards has been reported by fishermen using RTMP since 2009 fishing season. In RTMP, fishermen are required to divide the fish size of releases and discards into the three categories (<20 kg, 20-40 kg, and ≥40 kg) by the visual measurement. In this document, we summarized the following information in 2011 fishing season: 1) release and discard number of SBT based on the RTMP report, 2) release and discard number of SBT based on the scientific observer report, and 3) fish conditions (dead or alive) when SBT were released (or discarded).

## 2. RTMP による報告値 Releases and discards reported by RTMP

RTMP による漁業者からの報告に基づくと、2012 年には日本延縄漁船から 10,101 尾のミナミマグロが放流・投棄された。総漁獲尾数に対する放流・投棄尾数の割合は、16.5%であった。放流尾数が最も多かったのは 9 海区 (4,796 尾) であり、総漁獲尾数に対し放流・投棄尾数の割合が高い海区は 2 海区 (44.4%) であった (Table 1)。

漁業者からは目測による放流魚の重量が併せて報告された (Fig. 1)。それによると、2011 年には放流・投棄魚の 77.9%が 20kg 未満、19.7%が 20-40kg、2.4%が 40kg 以上であった。これらの製品重量で換算した魚体サイズは、20kg 未満が 4 歳魚以下、20-40kg が 4-7 歳魚、40kg 以上が 7 歳魚以上に相当する。

The RTMP data showed that Japanese longline vessels released and discarded 10,101 SBT individuals (16.5% of total catch) in 2012 calendar year (Table 1). The number of release and discard were larger in the area 9 compared with the other areas. The rates of the release and discard with respect to total catch were higher in the area 4 (44.4 %).

Japanese longline vessels reported estimated weight (in processed weight) of the released and discarded fish based on visual measurement by fishermen (Fig. 1). According to their reports, 77.9% of fishes were <20 kg, 19.7% of fishes were 20-40 kg, 2.4% of fishes were ≥40 kg. These fish sizes correspond to age ≤4 (<20 kg fish), age 4-7 (20-40 kg fish), and age ≥7 (≥40 kg fish), respectively.

### 3. オブザーバによる報告 Releases and discards reported by scientific observers

科学オブザーバが乗船中に 4-9 海区で観察したミナミマグロ 3707 個体のうち、放流・投棄された個体は 174 尾（全体の 4.7%）であった。なお、ここでの放流・投棄魚尾数には、魚がラインを切って逃げた場合を含む。オブザーバが観察した放流・投棄ミナミマグロ 174 尾のうち、100 尾（57.5%）は生きた状態で放流された。52 尾は死んだ状態で漁獲され、投棄された。死亡個体のうち 8 尾には「サメ食い」「シャチ食い」による食害が観察された。

Scientific observers observed 3,707 SBT catch on board in the area 4-9, and they reported that 174 of them were released or discarded (4.7% of total catch) in 2012. This number includes fish fled the branch lines broken beside the ship. Scientific observers reported that 100 SBT (57.5% of released/discarded SBT) were alive at the point of catch, and released immediately (Live-release). 52 SBT had been already dead at the point of catch, and 8 of them were depredated by whale and shark.

### 4. 年齢別の漁獲時の生死 Fish condition by age

漁業者に聞き取りを行ったところ、生きていた魚体のみを放流し、「サメ食い」「シャチ食い」の魚体以外について死亡個体を投棄することは少ないようである。オブザーバが観察した漁獲時の魚体のコンディションを Fig. 2 に示す。これは 2012 年の科学オブザーバの観察データに基づく。漁獲時のミナミマグロは 16.5%が「死亡」、0.3%が「衰弱」、83.2%が「元気」であった。したがって、たとえもし漁業者が生死にかかわらずミナミマグロを放流/投棄すると仮定しても、そのうち 83%は生存放流であったと考えられた。

2012 年には、5 歳以下に相当する小型のミナミマグロの魚体のコンディションは、科学オブザーバにより観察・記録されなかった。これは、オブザーバが乗船中に小型のミナミマグロが漁獲される海域で操業しなかった、あるいは、乗船中に小型個体が直ちに放流されるために、体長測定や魚体コンディションの評価をすることが出来なかったためと考えられる。

According to the hearing from fishermen, Japanese longline vessels tend to release live SBT except for the fish depredated by whale or shark. Fig. 2 shows the fish condition when they were captured. These data was based on the scientific observer data in 2012. This result shows that most of the SBT caught by Japanese longliners were alive (e.g. “Sluggish” or “Vigorous” condition) when they were captured. In detail, “Dead” was 16.5%, “Sluggish” was 0.3%, and “Vigorous” was 83.2%. Therefore, even if Japanese fishermen release/discard the SBT regardless of the fish condition (dead or alive), it was estimated that 83% of them were “Live-release”.

In 2012, the fish condition of small sized SBT (corresponding to age  $\leq 5$ ) were not recorded in the observer data. Here are some reasons to be considered: 1) The vessel with observers did not operate in the area where small SBT were distributed, 2) Most of small SBT which were caught by the vessel with observers were released immediately, thus their fork length and fish condition were not observed.

### Reference

- Sakai O., T. Itoh, and S. Takeda 2013 Review of Japanese SBT Fisheries in 2012.  
CCSBT-ESC/1309/SBT Fisheries- Japan  
New Zealand 2012 Annual review of national SBT fisheries for the scientific committee.  
CCSBT-ESC/1208/SBT Fisheries- New Zealand

Table 1. Releases and discards SBT which was reported by RTMP in 2012. The rate of release or discard number were percentage of the total catch (retain + release + discard).

Area	Retain (Number)	Release or Discard (Number)	Release or Discard (Rate)
1	105	0	0.00%
2	657	524	44.37%
4	1323	285	17.72%
5	11	0	0.00%
7	14770	2125	12.58%
8	6670	2363	26.16%
9	27633	4796	14.79%
13	2	0	0.00%
14	37	8	17.78%
15	0	0	
Total	51208	10101	16.48%

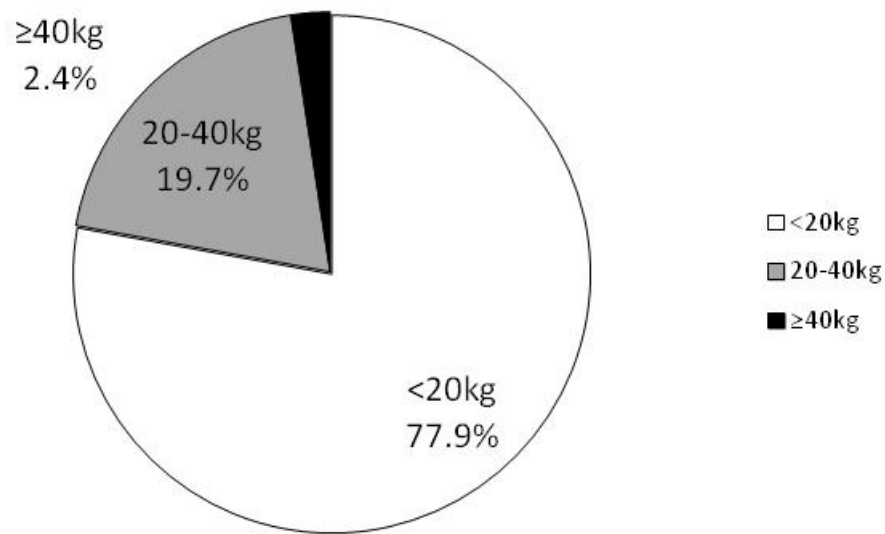


Fig. 1. Reported size of the released and discarded fish by RTMP in 2012. Fish size was reported as estimated processed weight, which was based on the visual measurement by the fishermen.

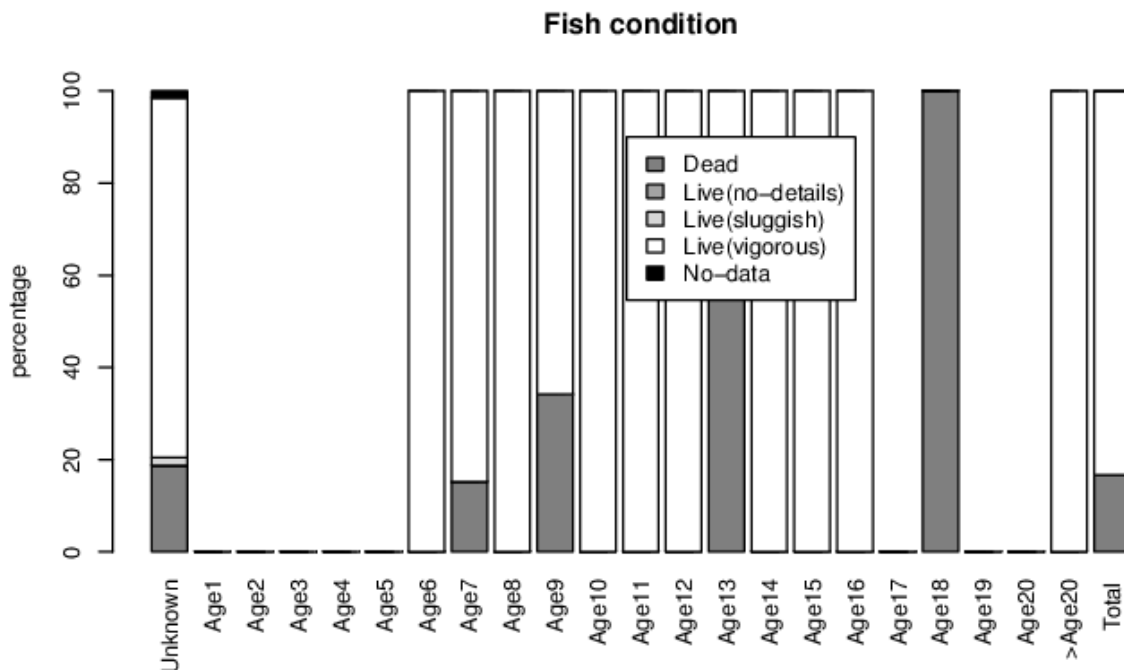


Fig. 2 Condition of each age SBT when captured. This data was based on the scientific observer data in 2012. All observers judged the fish condition on a scale of “Dead”, Live (“Sluggish”), Live (“Vigorous”), and Live(no-details) (n=3726).