

Releases and discards of small-sized Southern Bluefin Tuna by the Japanese longline fishery in 2011

日本延縄漁業におけるミナミマグロ小型魚放流: 2011 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 2011 年に 3988 尾のミナミマグロが放流・投棄された。全漁獲尾数に対する放流・投棄尾数の割合には、RTMP 報告とオブザーバの観察記録との間に齟齬は見られなかった。目測による放流魚の重量データによると、その放流魚の 79% は 20kg 未満 (4 歳魚以下) の小型魚であった。漁獲時に元気であった個体は放流しても生存すると仮定した場合、放流した小型魚の 84% は生残すると考えられた。

Summary

Based on the RTMP data, Japanese longline vessels released and discarded 3988 SBT in 2011 calendar year. There was no discrepancy between the release or discard rate reported by the scientific observer and that reported by the vessel during the RTMP. According to the visual size measurement by the fishermen, 79% of them were <20 kg (correspond to age ≤ 4). If “Vigorous condition” fishes when they were captured could survive after release, it was estimated that the 84% of the released small-sized SBT would be still alive.

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/1208/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, small-sized Southern Bluefin Tuna (SBT) has been remarkably caught by Japanese longline vessels (CCSBT-ESC/1208/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). At the same time, Japan implemented the individual quota (IQ) system for the Japanese SBT longline fishery, and Japanese vessels began the live releases and dead discards of small SBT to prevent exceeding their individual quota. The sum of the amount of releases and discards has been reported by fishermen using the RTMP since 2009 fishing season. Then, fishermen were 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、2011 年には日本延縄漁船から 3988 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、6.4%であった。放流尾数が最も多かったのは 7 海区 (1624 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 5 海区 (27.3%) 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 79.0%が 20kg 未満、17.1%が 20-40kg、3.9%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。

Based on the RTMP data, Japanese longline vessels released and discarded 3988 SBT individuals (6.4% of total catch) in 2011 calendar year (Table 1). The number of release and discard were larger in area 7 compared with the other area. The rates of the release and discard with respect to total catch were higher in area 5 (27.3 %).

Japanese longline vessels reported the sizes of the released and discarded fish by estimated weight (in processed weight), which was based on their visual measurement by fishermen (Fig. 1). According to their reports, 79.0% of fishes were <20 kg, 17.1% of fishes were 20-40 kg, 3.9% 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観察したミナミマグロ 8798 個体のうち、放流・投棄された個体は 549 尾（全体の 6.2%）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・投棄ミナミマグロのうち、399 尾（72.7%）は生きた状態で放流された。143 尾は死んだ状態で漁獲され、投棄された。死亡個体のうち 105 尾には「サメ食い」「シャチ食い」による食害が観察された。

オブザーバが観察報告した放流・投棄尾数の割合と、RTMP で漁業者が報告した放流・投棄尾数の割合には、齟齬が見られなかった。

Scientific observers observed 8798 SBT catch on board, and they reported that 549 of them were released or discarded (6.2% of total catch) in 2011. In this case, total number of released and discarded fishes includes the number of escaped fish by branch line broken beside the ship. Scientific observers reported that 399 SBT (72.7% of released/discarded SBT) were alive at the point of catch, and released immediately. 143 SBT had been already dead at the point of catch, and 105 of them were damaged by the whale and shark depredation.

Release or discard rate reported by the scientific observer (6.2%) was similar to that reported by the vessel during the RTMP (6.4%).

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、生きている魚体のみを放流し、「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無いようである。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 2011 年の科学オブザーバの観察データに基づく。漁獲時の 1-4 歳魚は 14.4%が「死亡」、0.3%が「衰弱」、83.8%が「元気」であった。漁獲時に元気であった個体は放流しても生存すると仮定した場合、仮に漁業者が生死を問わずミナミマグロを放流したとしても、83.8%は生残するであろう。

According to the hearing from fishermen, Japanese longline vessels tend to release only the lived condition SBT except for the depredated fish by whale or shark. Fig. 2 shows the fish condition when they were captured. These data was based on the scientific observer data in 2011. This result shows that most of the SBT which was caught by Japanese longline were alive (e.g. “Sluggish” or “Vigorous” condition) when they were captured. For the age 1-4 SBT, “Dead” was 14.4%, “Sluggish” was 0.3%, and “Vigorous” was 83.8%. Even if Japanese fishermen release the SBT without regard to the fish condition (dead or alive), under the assumption that “Vigorous” fish could survive after release, it was estimated that the 84% of the released small-sized SBT would be still alive.

Reference

Sakai O., T. Itoh, and Y. Akatsuka 2012 Review of Japanese SBT Fisheries in 2011.

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New Zealand 2012 Annual review of national SBT fisheries for the scientific committee.

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Table 1. Releases and discards SBT which was reported by RTMP in 2011. 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	23	0	0.00%
2	2327	436	15.78%
4	2907	411	12.39%
5	101	38	27.34%
7	14404	1626	10.14%
8	6385	585	8.39%
9	31425	786	2.44%
12	33	0	0.00%
14	808	106	11.60%
15	0	0	
Total	58413	3988	6.39%

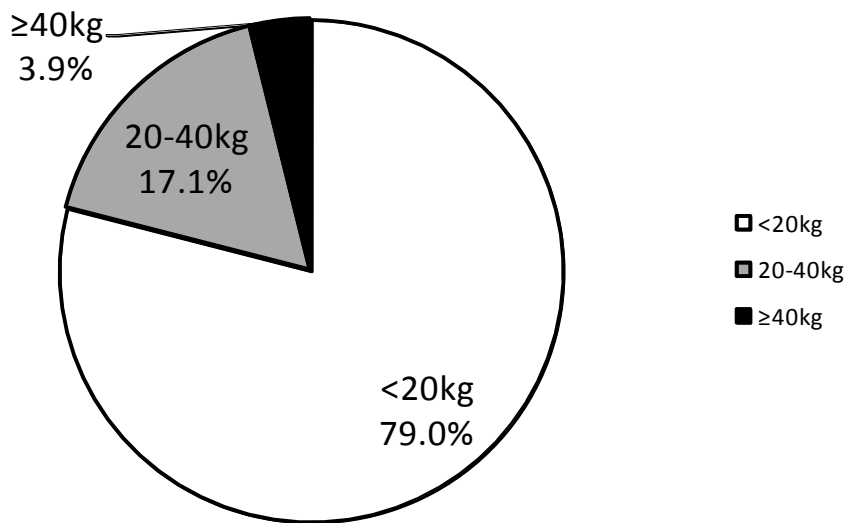


Fig. 1. Reported size of the released and discarded fish by RTMP in 2011. Fish size was reported as estimated processed weight, which was based on the visual measurement by the fishermen.

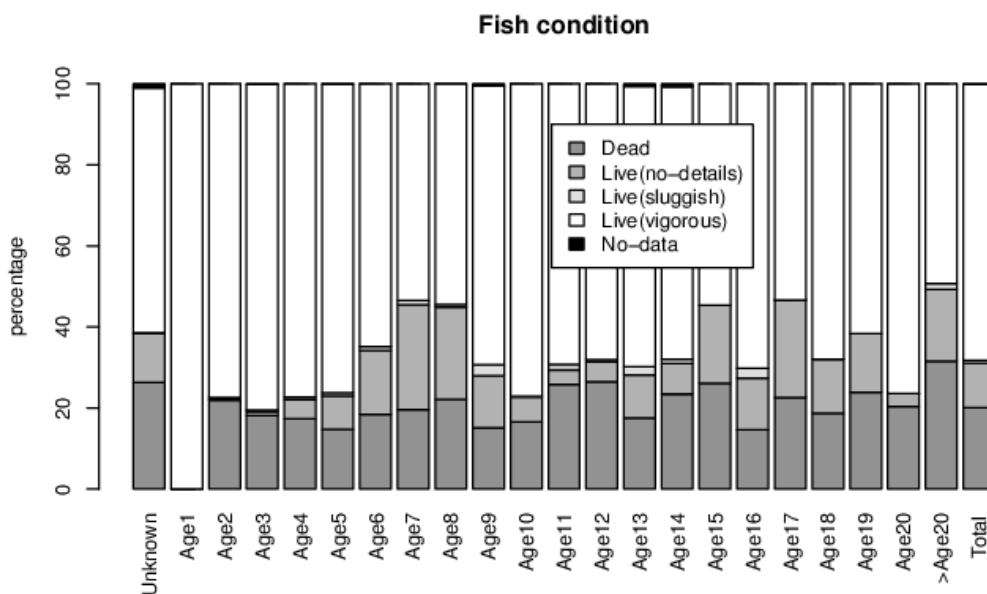


Fig. 2 Condition of each age SBT when captured. This data was based on the scientific observer data in 2011. All observers judged the fish condition on a scale of “Dead”, Live (“Sluggish”), Live (“Vigorous”), and Live(no-details) (n=8798).