

# Tuna Tuned Out?

As concern grows over overfishing of albacore in the Indian Ocean, there is need to control small tuna longline vessels

**A**lbacore has been mostly used for processed can products but eating it raw as *sashimi* has become very popular in recent years. In fact, Japan's import of albacore has increased rapidly as the demand for albacore *sashimi* and *sushi* grows. In analyzing the background of this phenomenon, it becomes clear that increase of albacore supply has been caused by small tuna longline vessels, mostly below 24 m in total length.

I have noticed a rapid and substantial increase in the catch of

past, albacore in the Indian Ocean was exploited almost exclusively by large longline vessels, particularly by Chinese Taipei vessels. However, Indonesia, which uses mostly small longline vessels, remarkably increased its catch of albacore in recent years, even slightly exceeding that of Chinese Taipei for some years.

The Scientific Committee (SC) of the IOTC recognized that overfishing of the albacore stock is occurring and recommended a reduction in the catch by 20 per cent. However, Indonesia argued that its catch is much less than the figures used in the stock assessment. The arguments forced the Commission to have the SC conduct a stock assessment again next year and the management measures will be considered based on the new assessment.

I personally doubt the accuracy of the catch statistics of Indonesia. In addition, I found the trend of abundance indices used in the assessment differing among the major longline fishing countries, especially in recent years. In my view, since the size of fish taken by longline vessels is similar, the indices should show a similar trend for the longline vessels of major countries. Both the catch statistics and the interpretation of different trends in recent abundance indices should, therefore, be carefully reviewed in order to assess the stock status more certainly.

## Fishing mortality

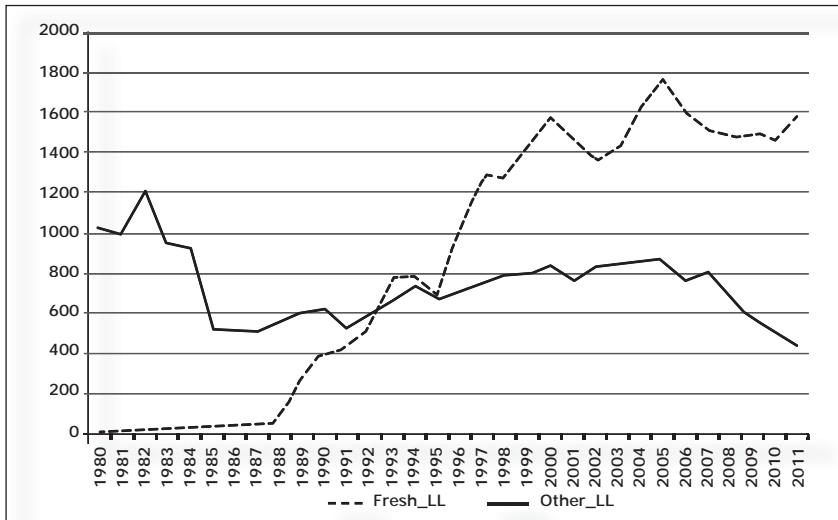
If albacore stock is really declining, its main cause would be excessive fishing mortality and may be significantly due to the increase in the number of small longline vessels. In fact, the number of small longline

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albacore by Indonesia in recent years. I felt curious about this phenomenon because I had thought Chinese Taipei is the dominant country catching albacore in the Indian Ocean, although its fleet targets bigeye tuna. My doubts were confirmed at the annual meeting of the Indian Ocean Tuna Commission (IOTC) held last May in Mauritius where serious arguments over the management of albacore stocks were reported.

A significant reduction in tuna fishing activities in the western part of the Indian Ocean has been attributed to piracy off Somalia, forcing longline fishing vessels to shift their fishing grounds to the Southern Indian Ocean. Their target fish has changed to *sashimi*-grade albacore and thus the catch amount has increased rapidly. There was another fact causing increase of albacore catch. In the

*This article, by tuna biologist Ziro Suzuki (zsuzuki@affrc.go.jp), is based on earlier pieces on the subject published in the OPRT Newsletter Nos. 37 and 45 (<http://opr.or.jp/eng/oprt-news-letter/>)*



Number of longline vessels in the Indian Ocean showing rapid increase of fresh-fish longline vessels (small longline) and decrease of other longline vessels (large longline)

Source: M Herrera, Data Manager, IOTC

vessels has rapidly increased and they now far outnumber the large longline vessels.

This seems to have occurred through improvement in the fishing efficiency and the economic competitiveness of small longline vessels, as explained later in this article. The increase of the number of small longline vessels seems not to be well recognized by the IOTC but it should start to seriously consider taking measures to control the fishing capacity of the small longline vessels in order to ensure the sustainability of the albacore fishery and the stock in the region.

In the South Pacific Ocean, a similar story, of increased small longline vessels accounting for the bulk of the albacore catch, is being played out.

In the South Pacific, almost all albacore tuna (apart from small amounts taken by troll vessels) are caught by longline fishing vessels, focusing on large-size adult fish. The catch began to increase from the 1990s, with major fishing grounds being in the area 10S-20S, 160E-160W, which includes Fiji, Samoa and Cook Islands. The overall catch in recent years from the South Pacific (south of the equator) has been about 90,000 tonnes, half of which is caught by Chinese Taipei and Chinese longline fishing vessels, and the other half by vessels from the South Pacific island countries. For the South Pacific

island countries, albacore fishery is a genuine domestic longline fishery developed by their own effort mostly, and thus very important for the island countries' economies. However, China has emerged rapidly as the largest harvester of South Pacific albacore, exceeding, for some recent years, Chinese Taipei that was traditionally the largest harvester. The bulk of the catch is exported to foreign countries for *sashimi* and canned tuna materials.

It is the view of the Western and Central Pacific Fisheries Commission (WCPFC) Scientific Committee that the South Pacific albacore stock is

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A small Chinese longline boat unloading its catch in Ponpei in the Federated States of Micronesia

considerably robust against fishing pressures and the current catch is sustainable and overfishing is not occurring, partly because of selective fishing operations by longline fishing that aims to catch matured, large-size fish. The maximum sustainable yield (MSY) is estimated at approximately 100,000 tonnes, the level of the latest catch.

However, its biomass and longline catch per unit effort (CPUE) show continued decline, falling to nearly half of the early state of exploitation. This is a serious economic concern for the developing island countries that target albacore. Based on the recommendation of its Scientific Committee, the WCPFC introduced regulatory measures not to increase the number of fishing vessels actively catching albacore for the Western and Central Pacific Fisheries Convention areas south of 20S from the 2000-2004 or 2005 level in order to ensure stable development of fisheries. But the number of longline vessels has increased to a record high, mostly due

**...the number of the transport boats worldwide for sashimi-grade tunas has been decreasing recently...**

to small longline vessels. It seems that this simple control of the number of fishing vessels is inadequate because fishing efficiency and catch transport capability of the fishing vessels have been considerably improved as explained in the following paragraphs.

Conventionally, the size of the majority of small-scale longline fishing vessels was less than 50 gross tonnes, and the catch used to be stored in ice. The fishing operation period lasted around one month, and the catch per fishing period was about five to 10 gross tonnes, with the main targets being yellowfin and bigeye tuna. On interviewing an executive of the Chinese company that operated the Chinese fleet, and observing the vessels landing their catch in

Micronesia a few years ago, I was told that the company intends to convert the vessels from ice-storing type into freezing vessels.

With regard to Chinese Taipei small-scale longline fishing vessels, Chinese Taipei's report to the WCPFC in 2008 indicated that the overall number of vessels was 1,750. The report said that some of those vessels were already equipped with freezing facilities. I assume that the transition from ice-storing vessels into freezing vessels has advanced further in recent years.

There is information that 50-60 ice-storing small-scale longline fishing vessels are being reformed into freezing vessels in Chinese Taipei recently. Furthermore, it appears that low-priced fibre-reinforced plastic (FRP) fishing vessels having super-low-temperature fish holds are being constructed in Chinese Taipei and other countries as well. It seems that these small-scale longline fishing vessels will actively participate in the albacore fishery—a type of fishery outside the current WCPFC regulations.

The following is the fishing capacity of small-scale longline fishing vessels (90-150 gross tonnes) in recent years: Number of hooks: 3,200 hooks/day. Freezing capacity: 1.5-2.5 tonnes/day. Fish hold capacity: 60 tonnes.

Thus it is probable that the fishing capacity of small-scale longline vessels is now comparable to that of large-scale vessels.

### **Transportation**

The catch of tuna longline fishing vessels operating in distant areas used to be shipped by transport boats. But the number of transport boats worldwide for *sashimi*-grade tunas has been decreasing recently. It appears that only about 20 are now operating—a sharp decrease from about 70 in the peak period. The major cause of the decrease seems to be the drop in transported volume due to tightened fishing regulations. On the other hand, transportation of tuna in super-low-temperature containers (minus 35 to minus 60 degrees centigrade) seems to be increasing. Details of the actual status, including

quantities, are not available. It is said that a freezing container has similar advantages while its transportation costs are more or less the same as that of a super-low-temperature transport boat, and it is capable of transporting small-lot cargoes of about 24 tonnes, and the catch can be transported by ordinary container vessels. The development of freezing-container transportation made it possible to transport the catch of small-scale longline fishing vessels easily, resulting in their higher profitability.

In general, management of small longline vessels (less than 24 m in length) has been a rather low-key issue hidden under the focus given to the management of large longline vessels. However, in view of the facts reported above, concern is rising in the Indian Ocean and also in the South Western Pacific about the increase of the number and capacity of small longline vessels. I think the regional fisheries management organizations (RFMOs) and their parties should now pay more attention to the impact on tuna resources. I should point out that the impact of the unlimited expansion of small longline vessels is not only on albacore but also on yellowfin and bigeye tuna. 3



A container with ultra-deep freezer capable of maintaining temperatures of upto minus 60 degrees centigrade

#### For more



[www.iotc.org](http://www.iotc.org)

**Indian Ocean Tuna Commission (IOTC)**

[www.wcpfc.int/](http://www.wcpfc.int/)

**Western and Central Pacific Fisheries Commission (WCPFC)**

[opr.t.or.jp/eng/](http://opr.t.or.jp/eng/)

**Organization for the Promotion of Responsible Tuna Fisheries**