

**A short report on the collection and reading of otoliths collected from Taiwanese
longline vessels**

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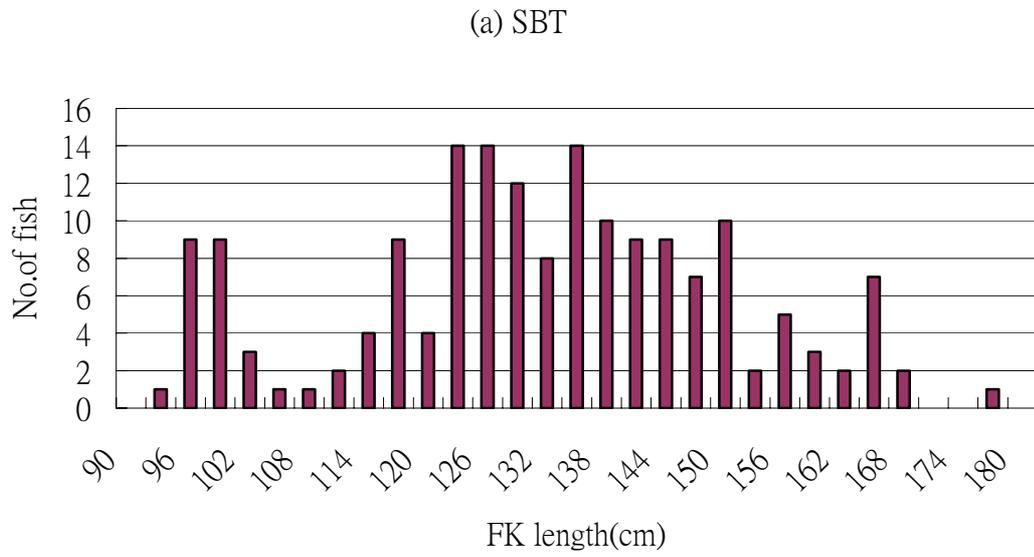
Taiwan started to train vessel observers to collect SBT otolith in 2002. To simplify observer's work and to collect more otoliths, the observers were not asked to collect a fixed number of otoliths from each length class. However, observers were asked to collect otolith from the fish of all kind of sizes that covers the full size range of the catch. Two observers were assigned to collect SBT otoliths on the SBT longline vessel in 2003. One observer successfully collected otoliths from 102 SBT while the other one failed to collect any otolith due to the breakdown of the fishing gear. The length frequency distribution for the otolith sampled fish in 2003 is generally consistent with the length frequency distribution of the total catch in 2003 (Fig. 1). Observers take training course ever year before they go on board to collect sample and data. Another 3 observers were assigned to collect SBT otoliths this year. From June this year up-to-date, they have successfully collect otoliths from about 170 SBT.

In 2003, the observer collected otoliths from 102 SBT. The location where these fish were caught was at around 30° – 32°S and 67° – 89°E from Indian Ocean. The mean length and weight of these 102 SBT were 129.2 ± 21.6 cm (ranging from 92 cm to 177 cm) and 34.3 ± 17.0 kg (ranging from 12 to 76 kg), respectively (Fig. 2).

To conduct the age estimation, the otoliths were imbedded in the resin, cut into thin section, ground and polished until the annuli were readable. To prepare the otolith thin section and to conduct the direct ageing, we generally followed the disciplines written in the “Manual for age determination of southern bluefin tuna *Thunnus maccoyii*”. The estimated age of these 102 SBT ranges from 2 to 15 year old with mean age of 5.2 ± 3 (standard deviation). To a certain extent, the 102 aged SBT can represent the age composition of the total SBT caught by Taiwan longline fishery based on the high similarity of the size composition between these 102 aged SBT and total catch. Then, the SBT ages 2 to 9 year old account for about 90% of the total catch of Taiwan longline fishery. This information will be updated after more

otoliths are aged. However, this is the first time that the age composition of SBT caught by Taiwan longline fishery is disclosed inferred from otolith directing ageing (Fig. 3).

(a)



(b)

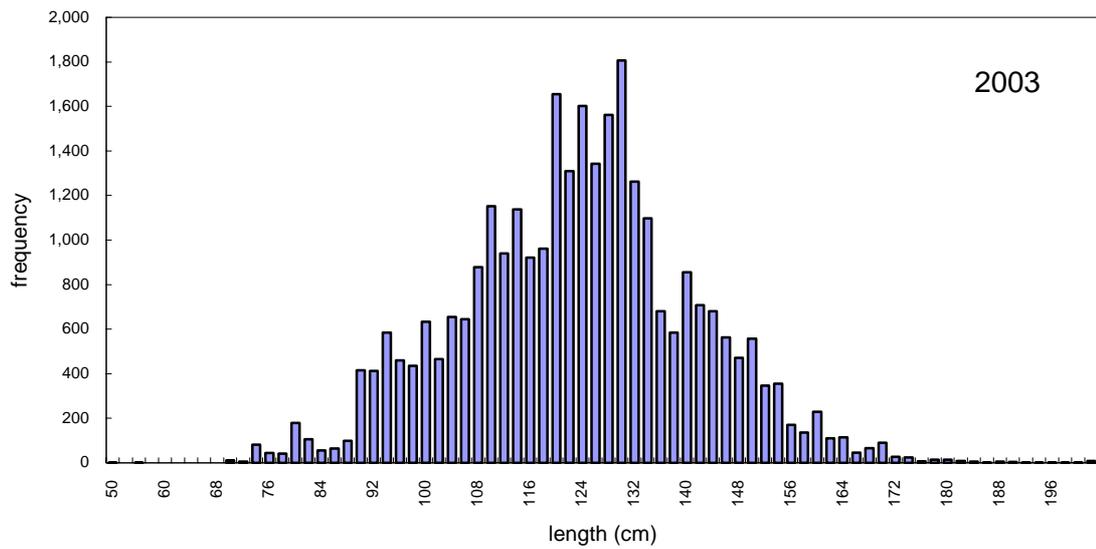


Figure 1. (a). The SBT FK length recorded by observers in 2003. (b). Length frequency of SBT by Taiwan's longline fishery in 2003. Data of 2003 is preliminary

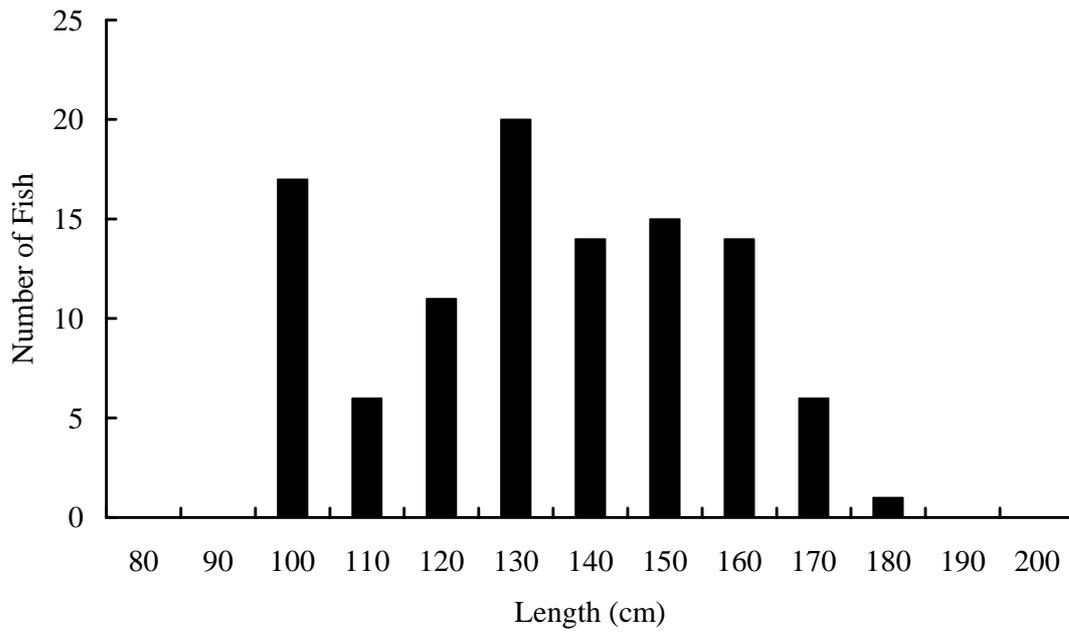


Figure 2a. Length frequency distribution of the 102 SBT that otoliths were collected.

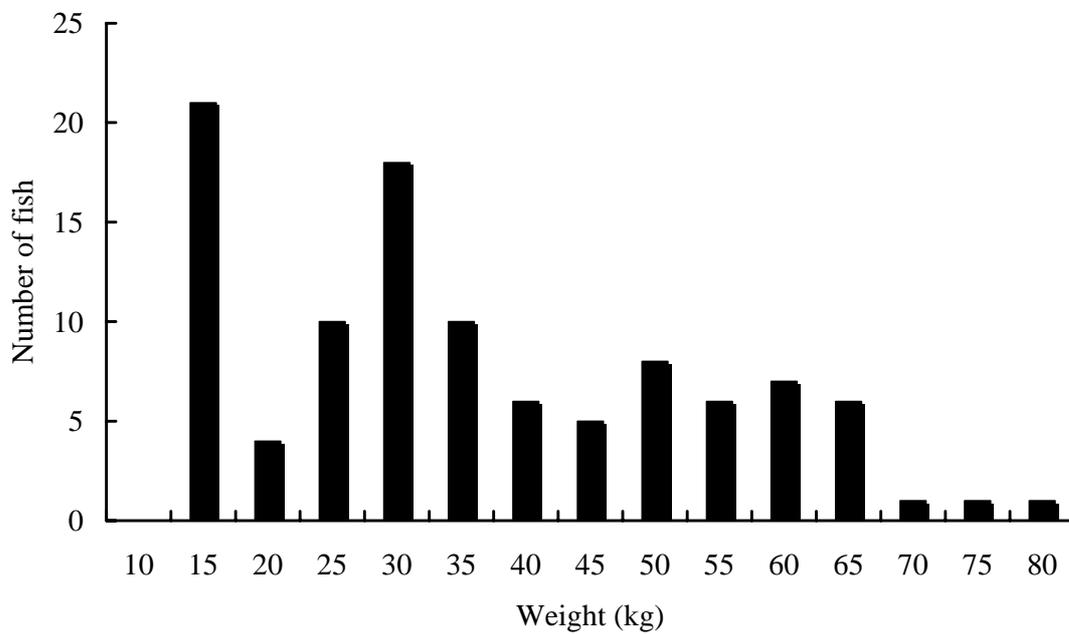


Figure 2b. Weight frequency distribution of the 102 SBT that otoliths were collected.

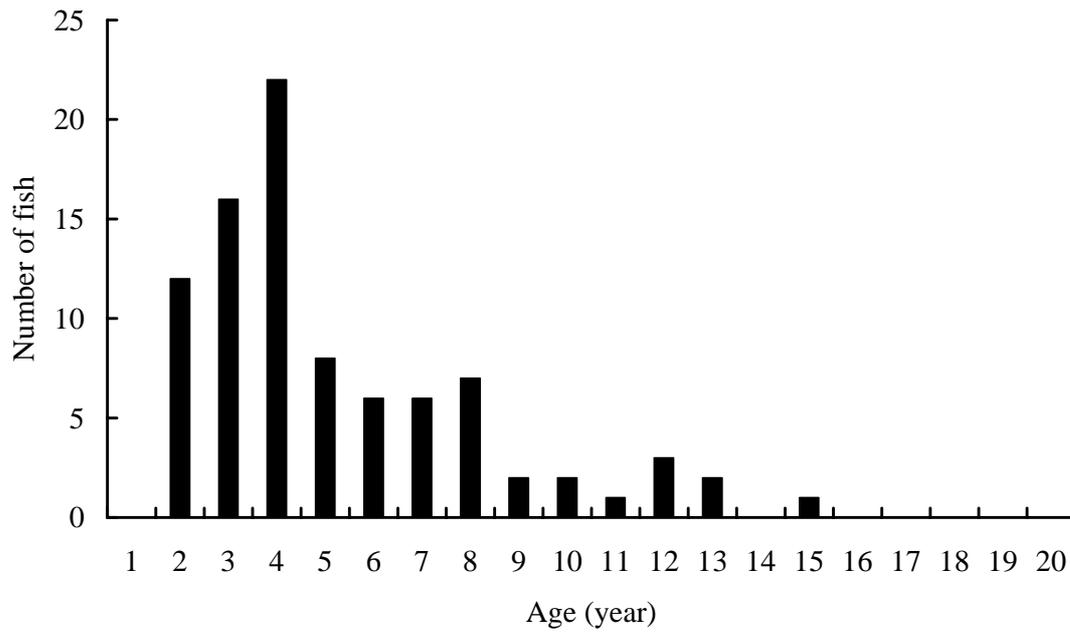


Figure 3. Age composition of the 102 SBT caught by Taiwan longline fishery in 2003.

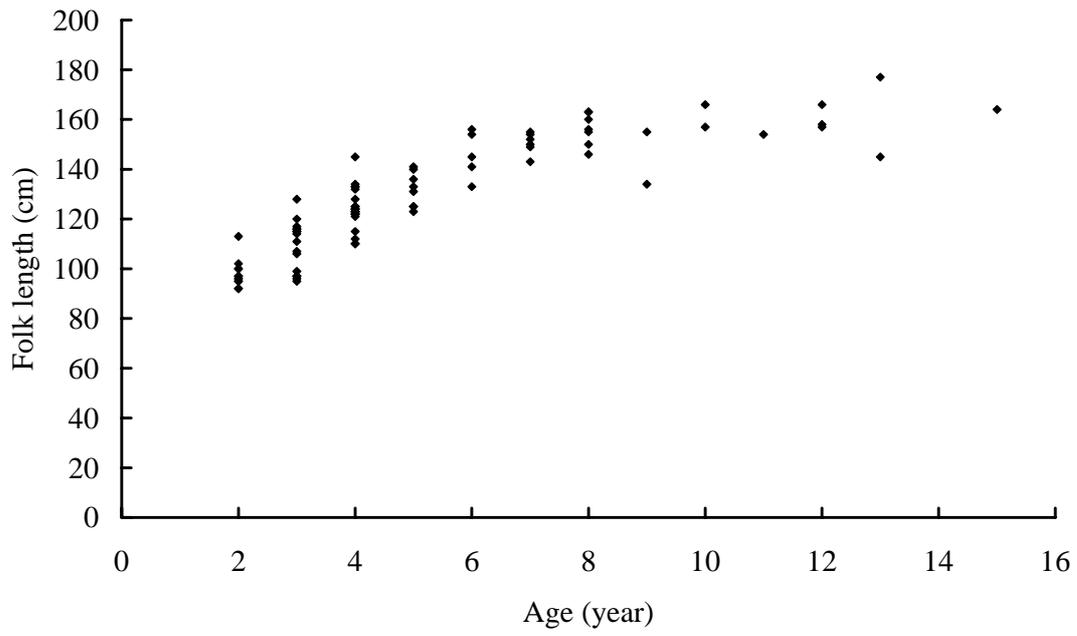


Figure 4a. The length at age of the 102 SBT inferred from otolith direct ageing.

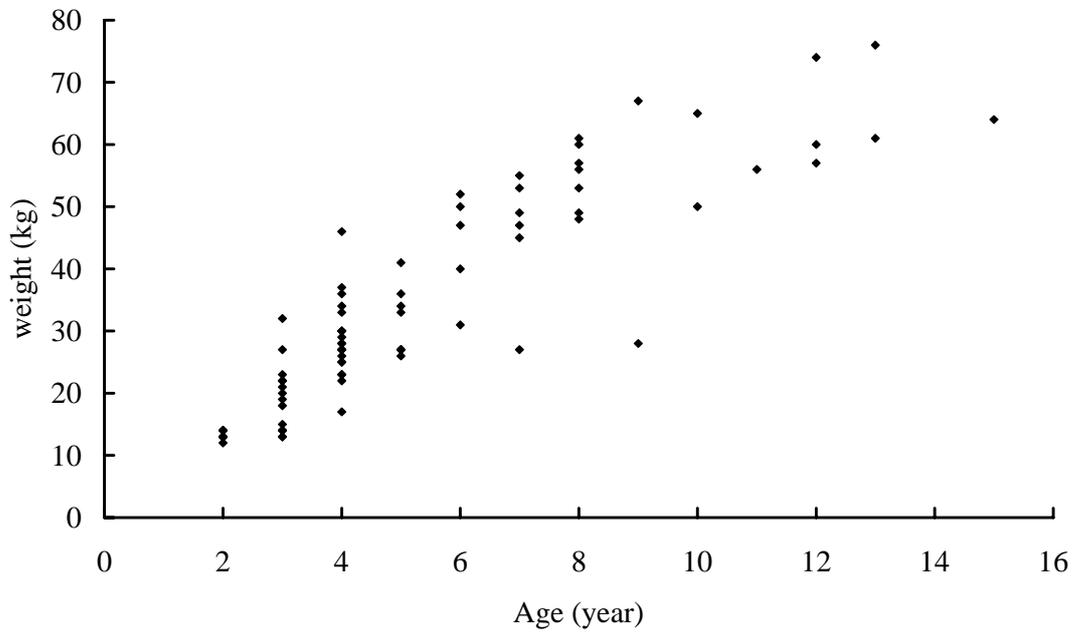


Figure 4b. The weight at age of the 102 SBT inferred from otolith direct ageing.