

## Korean SBT otolith and ovary collection activities during 2015-2016

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### ABSTRACT

The age and growth of southern bluefin tuna (SBT) was investigated from 298 otolith samples collected during 2015-2016. The relationship between fork length and total weight was  $TW = 1E-05 \times FL^{3.1058}$  ( $R^2 = 0.943$ ). The von Bertalanffy growth's parameters were  $L_{\infty} = 176.6$  cm,  $K = 0.168/\text{year}$ ,  $t_0 = -2.057$  years. And we collected 153 gonad samples of SBT during 2015-2016, and are analyzing the gonadosomatic index (GSI), maturity stages, fecundity, etc.

### Introduction

Since 2015 we have collected samples of SBT otolith and ovary through Korean scientific observer program. In this study, we would like to present results carried out so far in order to investigate age, growth and maturity of southern bluefin tuna (SBT).

### MATERIALS AND METHODS

A total of 298 otoliths of SBT was collected by Korean scientific observer program during 2015-2016 (Fig. 1). The fork length and weight were measured onboard for each specimen by sex, and the age was determined from annuli in otolith, based on the CCSBT manual (CCSBT, 2002). We analyzed the relationship between fork length (FL) and total weight (TW), and estimated the von Bertalanffy growth equation (1938).

A total of 153 ovaries of SBT was collected by observers during 2015-2016 and has been analyzing. The result will be presented at next ESC meeting.

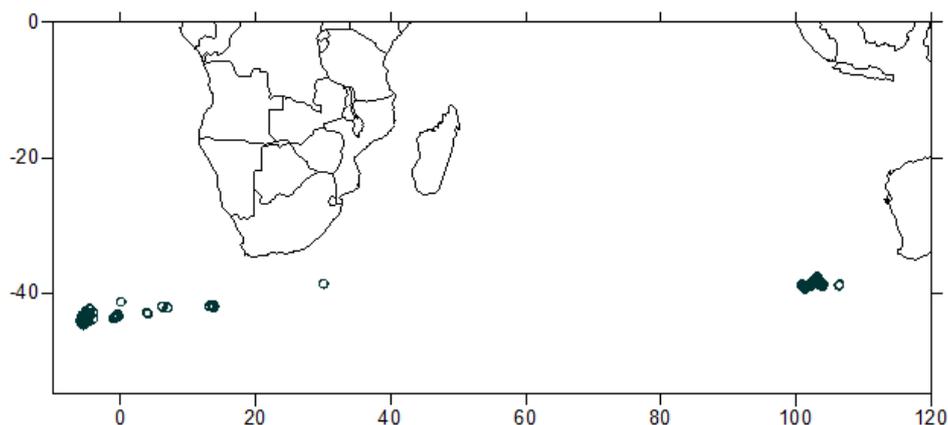


Fig. 1. Map showing the sampling area of SBT otoliths collected by Korean scientific observer program during 2015-2016.

## RESULT AND DISCUSSION

The SBT otolith samples were collected from April to September during 2015-2016. The length distributions collected for analyzing age of SBT are shown in Table 1. The length ranged from 66 cm to 178 cm with a mean of 132.4 cm.

Table 1. Length distributions of SBT collected during 2015-2016

Month	Area 8			Area 9			Total		
	No. samples	Range of FL (cm)	Mean FL (cm)	No. samples	Range of FL (cm)	Mean FL (cm)	No. samples	Range of FL (cm)	Mean FL (cm)
4				45	126-165	143.5	45	126-165	143.5
5				31	114-174	142.4	31	114-174	142.4
6				63	120-163	128.7	63	120-163	128.7
7				56	109-168	127.5	56	109-168	127.5
8	68	66-178	127.6	3	109-112	110.7	71	66-178	126.9
9	32	86-168	135.2				32	86-168	135.2
Total	100	66-178	130.0	198	109-174	133.6	298	66-178	132.4

The relationship between fork length and total weight is shown in Fig. 2, which was  $TW = 1E-05 \times FL^{3.1058}$  ( $R^2 = 0.943$ ).

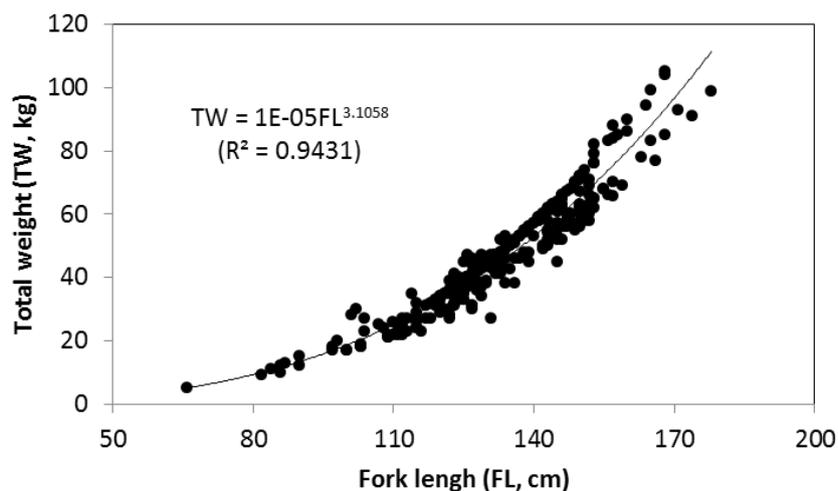


Fig. 2. Relationship between fork length and total weight of SBT collected during 2015-2016.

The von Bertalanffy's growth parameters estimated by a non-linear method were  $L_{\infty} = 176.6$  cm,  $K = 0.168/\text{year}$ ,  $t_0 = -2.057$  years (Fig. 3).

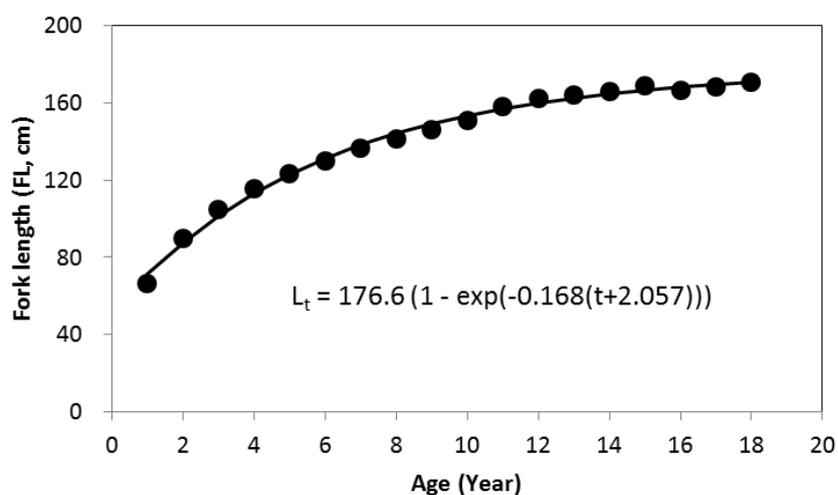


Fig. 3. The von Bertalanffy growth curve of SBT.

## REFERENCES

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