

Preparation of Taiwan's Southern bluefin tuna catch and effort data submission for 2019

Abstract

The Southern bluefin tuna (SBT) fishery data submitted to the Extended Commission of the Commission for the Conservation of Southern Bluefin Tuna (CCSBT) from Taiwan includes total catch by fleet, aggregated catch and effort, catch-at-size, catch-at-age and non-retained catch data. The data submitted is compiled from the electronic logbook (E-logbook) data and catch documentation scheme (CDS) data collected from authorized SBT fishing vessels with cross checking against VMS data, observer data and traders' sales records. There's no discrepancy found among datasets on catch.

1 Introduction

The Overseas Fisheries Development Council (OFDC) is entrusted by the Fisheries Agency of Taiwan (FA) to compile SBT fishery collected data, and responsible for processing SBT fishery data provided annually to CCSBT as part of the annual data exchange.

According to CCSBT Data Exchange Rule, we have submitted 5 fishery data in April 2020, namely:

- Total catch data by fleet for 2018 and 2019 by quota year and by calendar year.
- Aggregated catch and effort data for 2018 and 2019.
- Catch at size data for 2018 and 2019.
- Catch at age data for 2018 and 2019.
- Non-retained catch data for 2018 and 2019.

2 Data Sources

To compile SBT fishery data, our fishery statistics system includes several fishery data, including paper logbook collected from fishing vessels, e-logbook data transmitted daily from fishing vessels, CDS data, observer data and VMS data of authorized SBT fishing vessels.

2.1 The e-Logbook data

Since April 2015, all SBT authorized fishing vessels are required to report their fishing data through e-logbook system, in addition, the weekly catch reports of individual fishing vessel is terminated. For quota monitoring purpose, the length, weight measurement, and tag number of individual SBT catch retained are required to report through e-logbook system to the FA since 2016. Appendix A-1, A-2 and A-3 are the forms of the e-logbook, and the data fields include:

- (1) General information - information of vessel identification and trip operation.
- (2) Fishing effort - information on characters of fishing operations, hooks deployed per set, number of hooks deployed between float etc.
- (3) Retained and non-retained catch by species in number and weight.
- (4) Length and weight measurement of first 30 fish retained.
- (5) SBT catch information related length, weight and tag number of individual catch retained.

2.2 CDS data

Catch certification is collected from catch monitoring document of CCSBT and traders' sales of SBT. The data fields include:

- (1) Vessel identification.
- (2) Information on operation date, total number and weight for whole fish of catches.
- (3) Intermediate product destination section, including transshipment information or landing in intermediate port for export.
- (4) Final product destination information.
- (5) Traders' sales information on weight of SBT catch delivered to buyers.

2.3 Observer data

The data fields collected by observer include:

- (1) Vessel identification and trip information.
- (2) Gear configuration, location information of setting and hauling, and fishing effort.
- (3) Information of individual catch, including length and weight measurements, fate and gender.

2.4 VMS data

All authorized SBT fishing vessels are required to install VMS for monitoring operations. The e-logbook data and CDS data collected from authorized SBT fishing vessel with cross checking against VMS data to confirm the operation location

information recorded in E-logbook data.

3 Data compilation

The annual catch estimate of SBT is compiled from CDS data and e-logbook data, which including the catch and effort data, the catch-at-size data and non-retained SBT catch.

3.1 Definition of fishing season

The fishing season for Taiwanese SBT fishery is corresponding with the operating information, and the definition of fishing season is based on the detailed information of the e-logbook data.

3.2 Spatial Definitions

The spatial division of fishing area is in accordance with the CCSBT statistical area definition, and the operating location information is collected from the e-logbook data with cross checking against VMS data.

4 Data Validation

There are only 2 foreign ports are designated by Taiwan for SBT landing and transshipment of its flagged vessels since March, 2010 , namely Port Louis, Mauritius and Port of Cape Town, South Africa, and the government officials of the FA stationed at these 2 ports are responsible for inspecting and supervising the operations of SBT landing and transshipment. The Cianjhen Fishing Port in Kaohsiung, Taiwan, has been designated for domestic landing of SBT by fish carriers or fishing vessels. The officials of FA are responsible for monitoring all SBT landing on site since September, 2009.

All inspection and supervision in each port would make sure the SBT catch to consistent with e-logbook data and CDS data. Besides, the position or catch information recorded of e-logbook data, VMS data and CDS data are cross checked with each other. In addition, the observer data is included in the process of cross-checking to examine the position or catch information recorded. Till now, there is no discrepancy happen among datasets on catch.

Appendix A-1

Daily fishing record (translated from Chinese)

<input type="checkbox"/> Operation <input type="checkbox"/> Navigation <input type="checkbox"/> Malfunction <input type="checkbox"/> Berth in port <input type="checkbox"/> Landing <input type="checkbox"/> Transhipment		Registration Number/name		CT□-□□□□/		Date of Set(UTC)		YY/MM/DD		Time of Set(UTC)		
		Main Line material		<input type="checkbox"/> Think rope <input type="checkbox"/> Thin Rope <input type="checkbox"/> Nylon braided <input type="checkbox"/> Nylon monofilament		Branch line material		<input type="checkbox"/> nylon monofilament line <input type="checkbox"/> Wire trace <input type="checkbox"/> Other		Length of branch line		M
				No. of branch line (No. of hooks between float)								
		Sea Surface Temperature		°C		Length between Float Line		M		Length of float line		M
Position (at noon)		Latitude : Longitude		Bait used		Length between Branch		M		Mitigation measures: <input type="checkbox"/> Tori lines <input type="checkbox"/> Night setting with minimum deck lighting <input type="checkbox"/> Line weighting: Within ___m of the hook attached ___g		
No. of light-sticks				Total number of hooks								
Catch detail	Weight Retained(kg)	Number Retained	Weight Discarded (kg)	Number Discarded	Catch detail	Weight Retained(kg)	Number Retained	Weight Discarded (kg)	Number Discarded			
Albacore ≤10 kg					Longfin mako shark							
Albacore >10 kg					Thresher shark							
Bigeye tuna ≤15kg					Bigeye thresher shark							
Bigeye tuna 16-25kg					Pelagic thresher shark							
Bigeye tuna 26-40kg					Porbeagle shark							
Bigeye tuna >40kg					Winghead hammerhead shark							
Yellowfin tuna ≤15kg					Smooth hammerhead shark							
Yellowfin tuna 16-25kg					Scalloped hammerhead shark							
Yellowfin tuna >25kg					Crocodile shark							
Southern Bluefin tuna ≤15kg					Tiger shark							
Southern Bluefin tuna 16-25kg					Great White shark							
Southern Bluefin tuna 26-40kg					Other shark							
Southern Bluefin tuna >40kg					Kawakawa							
Other tuna					Frigate tuna							
Bonito, skipjack					Bullet tuna							
Swordfish ≤25kg					Longtail tuna							
Swordfish 26-45kg					Indo-Pacific king mackerel							
Swordfish >45kg					Narrow-barred Spanish mackerel							
Striped marlin ≤40kg					Mahi mahi							
Striped marlin >40kg					Oil fish (castor)							
Blue marlin					Oil fish (escolar)							
Black marlin					Wahoo							
Sailfish					Moonfish							
Shortbill spearfish					Pomfret							
Other marlins					Mola Mola							
Blue shark					Other fish							
Silky shark					Sea turtle							
Oceanic whitetip shark					Sea bird							
Shortfin mako shark					Whale and Dolphin							

Appendix A-2

Record on length and weight (Unit: cm in length and kg in weight) Type of Weight Measurement: Estimating Onboard Weighing Onboard Ocular Estimation

Species code	Length	Weight	Species code	Length	Weight	Species code	Length	Weight	Species code	Length	Weight	Species code	Length	Weight	Species code	Length	Weight

Captain signature : _____

Species code (Species name) :

1. Albacore 2. Bigeye tuna 3. Yellowfin tuna 4. Bluefin tuna 5. Skipjack 6. Swordfish 7. Striped marlin 8. Blue marlin 9. Black marlin
10. Other marlins 11. Southern Bluefin tuna 13. Other fish 14. Other tuna 15. Sailfish 16. Shortbill spearfish 17. Longbill spearfish
19. White marlin 22. Mahi Mahi 51. Blue shark 52. Silky shark 53. Shortfin mako shark 54. Other shark 55. Longfin mako shark
58. Oceanic white tip shark 59. Bigeye thresher shark 60. Pelagic thresher shark 61. Thresher shark 62. Whale shark 63. Great white shark
64. Tiger shark 65. Porbeagle shark 66. Crocodile shark 67. Winghead hammerhead shark 68. Scalloped hammerhead shark
69. Great hammerhead shark 70. Smooth hammerhead shark 71. Oil fish (castor) 72. Oil fish (escolar)

Appendix A-3

INFORMATION OF SOUNTH BLUEFIN TUNA

Vessel name :

Registration number : CT -

Date for report : DD/MM/YYYY

list	TAG Number (TW□□-□□□□□□)	Weight (Gill and Guttred) (unit : Kg)	Lenght (Fork Length) (unit : cm)