

**11<sup>th</sup> MEETING OF THE SCIENTIFIC COMMITTEE**

*11 to 16 September 2023, Panama City, Panama*

**SC11 – Doc30**

**Annual Report of the People's Republic of China to SC11 – Observer Programme**

*People's Republic of China*

# **China Observer Program Implementation Report 2022**

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## **Summary**

Five observers as well as six studying vessels conduct the observer program for the Chinese squid during the 2021-2022 and 2022-2023 fishing years, in which a total of 595 fishing days and 23 transshipment activities were observed by the five observers in 2022. One observer departed from Zhoushan port in October 2021 and returned to the port in October 2022. The four observers embarked in late July to early August 2022 and returned to Zhoushan harbor in two batches in May and July 2023, respectively. During this period, the five observers spent an average of 10 months at sea. More than 100,000 squids were measured by observers and the studying fleet, and there are still thousands of samples waiting to be shipped back to the lab for analysis. Samples taken by the observer program covered 12 months of the year and both the northern and southern fishing grounds. No seabirds, reptile or marine mammal were observed to be caught by the jiggers.

### **1. *Description of the observer program***

Authorized by the government, Shanghai Ocean University (SHOU) has been responsible for the observer program since 2007. Initially, the program concentrates on placing observers on pelagic trawlers in the SPRFMO Convention area for biological data collection of jack mackerel. In the same year, China Distant Water Fishery Association cooperated with SHOU to send scientific observers onboard to collect fishery and environmental data to support the scientific research for jumbo flying

squid in the Southeast Pacific. In 2015, the National Data Centre for Distant-water Fisheries of China (DCDF), located at SHOU, was founded and took full responsibility for fishery data collection and China Distant-water Fishing Observer Programme. The observer program is financed by the government and organized by DCDF, which are responsible for observer missions onboard the Chinese fishing vessels and scientific data collection. The Chinese squid jigging vessels in the SPRFMO Convention area, as well as the studying vessel, were incorporated into the program from 2018.

## **2. Observer training**

The candidates for the observers are required at least a high school pass as a minimum to be eligible and received training. The training courses, including skills in data collection (length measurement, sex and maturity determination, data recording), and management measures, are made of four parts as follows:

- a) Fisheries management and CMMs of SPRFMO;
- b) Skills in data collection, sampling, and measurement;
- c) Knowledge of navigation and communication devices operation;
- d) Safety on the sea.

The Certificate received by the observers on their successful completion of all training courses is issued by the Government. Observers were chosen and received special training at Shanghai Ocean University before embarking. Captains of the studying vessels are also received simple training focused on data recording, sampling skills, method and process of sample preservation and length measurement. Furthermore, data templates on fishing activities and length frequency developed by DCDF are supplied to the captains.

Trainers are from the highly qualified personal teaching at the College of Marine Science at the Shanghai Ocean University, and most of them had been served as observers in the past and also have other qualifications of expertise.

### **3. Program design and coverage**

The observer program was designed to collect representative biological data and to meet the requirements of the relevant SPRFMO CMMs, such as coverage. To this end, the squid fishing vessels are served as the studying vessels to collect length data in addition to placing observers on board. In order to reduce interference with vessel operations and improve data accuracy, the studying vessels will be responsible for collecting and storing samples and ensuring that these samples can be delivered to SHOU in good condition. In addition, observers are requested to observe and record seabirds around fishing vessels or seabird bycatch.

The information of the observers was shown in table 1. Observer Zhu Guanjian departed from Zhoushan Port on October 13, 2021 aboard the fishing vessel NING TAI 62, arrived at the fishing grounds on November 12 and worked until August 26, 2022 when the he was transferred to a fish carrier and arrived at Shidao Port on October 8, 2022. During this period, he observed 266 fishing days, with 225 fishing days observed in 2022.

Observer Hu Maoqing and Qi Lei observers departed from Zhoushan Port on a fish carrier on August 8, 2022, and boarded fishing vessels to begin work on September 9 and September 23, respectively. Both observers concluded their observer duties in late March 2023 and arrived at Zhoushan Port on May 3, 2023 aboard the fishing vessel MING XIANG 21. The two observers spent 10 months at sea and observed a total of 343 fishing days, including 195 fishing days in 2022.

Observers Duan and Chu left the port of Zhoushan on July 25, 2022, on board the fishing vessel PUYUAN 805 and arrived at the fishing grounds on September 15, 2022. On September 18, observer Duan boarded the fishing vessel ZHOUPU 806 and began the observation mission until May 20, 2023. The two observers returned at the end of

May 2023 aboard the fishing vessel PUYUAN 805 and arrived at Zhoushan Port on July 17, 2023. Between 2022 and 2023, observers Duan and Chu monitored a total of 418 fishing days, including 175 fishing days in 2022.

Table 1 Information of the observers

No.	Period	Observer name	Observed vessel	Total observed fishing days	Observed fishing days in 2022
1	2021/10/13-2022/10/8	ZHU Guangjian	NING TAI 62	266	225
2	2022/8/8-2023/5/3	HU Maoqing	MING XIANG 868	170	107
3	2022/8/8-2023/5/3	QI Lei	MING XIANG 821	173	88
4	2022/7/25-2023/7/17	DUAN Meirun	PU YUAN 805	192	89
5	2022/7/25-2023/7/17	CHU Zhao	ZHOU PU 806	226	86

#### **4. Type of data collected**

Based on the CMM 02 about data standards, the observer collected fishing activity data, biological data, transshipment data and other relevant information. In addition, the studying fleet collected length composition of the catch and biological samples.

The observers randomly selected and measured the length of 80 squid at a time, of which 30 were measured for weight, sex, and sexual maturity; otherwise, the observer collected some extra samples. These extra samples were bagged with waterproof tags (data, latitude and longitude), frozen on board and transported to the lab of SHOU finally to measure mantle length, weight, sex, maturity, stomach fullness and so on. Some hard structures and muscular tissues of jumbo flying squid were extracted for age reading, trace element, isotope testing and genetic study.

A total of 71,509 individuals of jumbo flying squid were measured for length by

observers on board, and 37% of them were also measured for weight, sex, stage of maturity, and stomach fullness. In addition, observers collected 1,676 samples for laboratory analysis. In 2022, the survey vessels measured the mantle length of a total of 35,572 squid on board, and another 833 samples were measured in the laboratory. There are still thousands of samples waiting to be returned to the lab for analysis.

During the period January-December 2022, observers recorded a total of 23 at-sea transshipment activities, information on which is presented in tables 2 and 3.

Observers also monitored the bycatch, in particular, observed and recorded seabird activities on and around the fishing vessels. No marine mammals, seabirds or turtles were caught by the jiggers.

Table 2 Transshipment operation observed

<b>Date</b>	<b>Latitude</b>	<b>Longitude</b>	<b>Carton type (kg)</b>	<b>No. of cartons</b>	<b>Total weight</b>	<b>Observer</b>
2022/1/7	-6.3	-105.3	20	6480	129600	ZHU Guangjian
2022/1/28	-4.3	-104.3	20	4500	90000	ZHU Guangjian
2022/2/8	-3.3	-106.5	20	5500	110000	ZHU Guangjian
2022/3/5	-2.1	-103.5	20	2434	48680	ZHU Guangjian
2022/3/16	-2.9	-101.5	20	5564	111280	ZHU Guangjian
2022/4/6	-3.9	-102.8	20	4731	94620	ZHU Guangjian
2022/4/18	-1.5	-108.0	20	5085	101700	ZHU Guangjian
2022/5/1	-2.3	-111.4	20	6068	121360	ZHU Guangjian
2022/5/17	-2.6	-103.4	20	5239	104780	ZHU Guangjian
2022/6/6	-3.4	-98.3	20	6301	126020	ZHU Guangjian
2022/7/2	-3.2	-96.5	20	4000	80000	ZHU Guangjian
2022/7/27	-2.1	-96.3	20	6390	127800	ZHU Guangjian
2022/10/19	-17.5	-79.3	20	7500	150000	HU Maoqing
2022/11/13	-17.0	-80.4	20	6500	130000	HU Maoqing
2022/12/06	-19.1	-79.3	20	2500	50000	HU Maoqing
2022/10/06	-17.3	-79.5	20	5300	106000	QI Lei
2022/11/10	-16.9	-80.5	20	7000	140000	QI Lei
2022/12/04	-19.0	-79.8	20	3500	70000	QI Lei
2022/10/27	-16.1	-80.2	20	5565	111300	DUAN Meirun
2022/11/15	-15.5	-81.2	20	4086	81720	DUAN Meirun
2022/12/18	-2.8	-110.1	20	3000	60000	DUAN Meirun
2022/10/29	-16.4	-81.1	20	8199	163980	CHU Zhao
2022/11/17	-2.8	-110.0	20	3030	60600	CHU Zhao

Table 3 Information of the unloading fishing vessel and receiving vessel

Date	Fishing vessel	IMO	Master	Receiving vessel	Flag	IMO	Master
2022/1/7	NING TAI 62	8778562	HU Jingjin	WEI NING	LBR	9064229	DONG Jianguo
2022/1/28	NING TAI 62	8778562	HU Jingjin	HE TAI	PAN	9070137	DUAN Hongjun
2022/2/8	NING TAI 62	8778562	HU Jingjin	NING TAI LENG 6	CHN	8779126	WANG Changming
2022/3/5	NING TAI 62	8778562	HU Jingjin	DA PING YU YUN 99	CHN	9931202	XING Jianzhong
2022/3/16	NING TAI 62	8778562	HU Jingjin	TRITON REEFER	PAN	8911102	WANG Lu
2022/4/7	NING TAI 62	8778562	HU Jingjin	OCEAN STAR86	PAN	9045948	LI Fengwu
2022/4/19	NING TAI 62	8778562	HU Jingjin	NING TAI LENG 7	CHN	9821134	GAO Zhenjing
2022/5/1	NING TAI 62	8778562	HU Jingjin	OCEAN STAR 86	PAN	9045948	LI Fengwu
2022/5/17	NING TAI 62	8778562	HU Jingjin	HE TAI	PAN	9070137	DUAN Hongjun
2022/6/7	NING TAI 62	8778562	HU Jingjin	DA PING YU YUN 99	CHN	9931202	XING Jianzhong
2022/10/19	MING XIANG 868	9822657	XIA Jichang	HE TAI	PAN	9070137	LE Jiafeng
2022/11/13	MING XIANG 868	9822657	XIA Jichang	NING TAI LENG 8	CHN	9882085	CHEN Songneng
2022/12/06	MING XIANG 868	9822657	XIA Jichang	OCEAN STAR 86	PAN	9045948	CHEN Hong
2022/10/06	MING XIANG 821	9822669	CHEN Pinghai	LU RONG YUAN YU YUN 898	CHN	9961178	CAO Yonglei
2022/11/10	MING XIANG 821	9822669	CHEN Pinghai	NING TAI LENG 8	CHN	9882085	CHEN Songneng
2022/12/04	MING XIANG 821	9822669	CHEN Pinghai	OCEAN STAR 86	PAN	9045948	CHEN Hong
2022/10/27	PU YUAN 805	8778603	JIN Lingmin g	SHEN JU	PAN	9189885	Mohammad BADAL
2022/11/15	PU YUAN 805	8778603	JIN Lingmin g	SHEN JU	PAN	9189885	Mohammad BADAL
2022/12/18	PU YUAN 805	8778603	JIN Lingmin g	XIN HAI LENG 1	CHN	8537360	RUI Haichao
2022/10/29	ZHOU PU 806	9821550	FENG Lunbao	SHEN JU	PAN	9189885	Mohammad BADAL
2022/11/17	ZHOU PU 806	9821550	FENG Lunbao	XIN HAI LENG 1	CHN	8537360	RUI Haichao

### 5. Problems encountered

The recruitment, training and dispatch of observers for 2022 are still being affected by the epidemic and have had to be delayed. In the end, four observers departed from Chinese ports in July and August 2022 to carry out observer missions. Fortunately, the

collection of scientific data on squid was well accomplished by the six survey vessels.

Some of the observers were transferred to the observed fishing vessels from the fish carriers in the Convention area, which reduced the actual time as well as the number of observed fishing days that the observers were on board the squid jigging vessels.