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China Observer Implementation Report

People's Republic of China

China Observer Program Implementation Report 2020-2021

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Summary

China Observer Program has been implemented for the pelagic trawl fishery and squid jigging fishery in from 2020 to 2021. Two observers (Wang Baolin and Zhu Guangjian) are well trained and then deployed to two fishing squid jigging vessels (due to the effect of COVID-19, the number of observers is limited), and the observed days were 172 and 128 days, respectively. During the observation period, eight transshipments were monitored. No birds were found to be caught by the jiggers or entangled by the lines. In addition, a sea turtle was wrapped by jig lines during the period of the observations, and released alive.

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 (CDWFA) 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 Center for Distant-water Fisheries (NDCDF), 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 Shanghai Ocean University's College of Marine Sciences structurally, 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 in 2018.

2. Observer training

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

- a) Fisheries management and CMMs of SPRFMO;
- b) Skills of data collection, sampling, measuring;
- 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 SHOU 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 NDCDF 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 related CMMs of SPRFMO, such as coverage rate. For this purpose, the studying vessels from the squid jigging fishery were designated to collect length data, other than placing observer on board. To reduce the interference to the operations of the vessel and improve the accuracy of data, the mission of studying vessels is to collect and store the samples and ensure that these samples can be delivered to SHOU in good condition.

The information of the observers from 2020-2021 is shown in table 1. Observer Wang Baolin started out at the ZHOU SHAN port on 19 August 2020, boarded NING TAI 62 on 6 October 2020 and went to work immediately. The observation ended at 8 April 2021, after that Wang Baolin as well as NIGTAI 62 returned to ZHOU SHAN Port On 11 May 2021, however the observer disembarked NIGTAI 62 till 6 June 2021. Thus, the total time that observer Wang Baolin on the sea was 291 days, while the actually observation days were 172 fishing days.

Table 1 Information of the observers from 2020-2021

| No. | Fishery | Period | Observer name | Observed vessel | Observed days |
|-----|---------------|-------------------------|---------------|-----------------|---------------|
| 1 | Squid jigging | 2020/11/3— 2021/3/16 | Zhu Guangjian | Zhou Pu 806 | 128 |
| 2 | Squid jigging | 2020/10/6— 2021/4/8 | Wang Baolin | Ning TAI 62 | 172 |

Observer Zhu Guangjian also started out at the ZHOU SHAN port, he took a fishing vessel left ZHOU ZHAN Port On 15 September, and embarked the observed squid vessel ZHOU PU 805 in the convention area on 3 November 2020. The observation work lasted until 17 March 2021, the day that ZHOU PU 805 started to return home. The observer arrived at ZHOU SHAN Port on 21 May, however he left the ZHOU PU 806 on 2 June because of the quarantine measures. During the observation period on ZHOU PU 806, a total of 128 fishing days were observed.

4. Tpye of data collected

Based on the CMM 02-2020 about data standards, the observer collected catch and effort data, biological data and other relevant information. Furthermore, the observers also monitored and recorded the fishing activities, discards, by-catch species and transshipment.

The observers collected length composition information from the catch, and some specimens were randomly selected to weight and identify sex and maturity; otherwise, the observer collected some extra samples. These extra samples were bagged with waterproof tag (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 21,682 squid were measured by observers on the sea form October 2020 to April 2021. Besides that, the other 1,062 samples were frozen and transported to the laboratory of Shanghai Ocean University. Five squid jiggers served as the studying vessels to collect length data and biological samples, they measured mantle length from 8,437 specimen onboard and sent 1,846 squid to the lab. Some samples still have been stored in the factory cold storage and are waiting for sent to the lab for analysis

because of the COVID-2019 pandemic.

The observers monitored 8 transshipments of jumbo flying squid at sea in the Convention area, the details of the transshipment operations were listed in Table 2 and Table 3.

Sea bird observations had been conducted during the observation process. The observers recorded sea birds around the vessel in the day and at night (Figure 1), the details are presented in Table 4. No birds were found to be caught by the jiggers or entangled by the lines. In addition, there was one sea turtle wrapped during the period of the observations, the turtle had been released alive.

Table 2 Transshipment operation observed

| Date & time | Position | Species | Product type | No of cartons | Total of product | Observer |
|------------------------|-----------------|----------------|---------------------|----------------------|-------------------------|-----------------|
| 2020/11/19 19:00 | 14.4S, 86.6W | GIS | Frozen in 20 kg | 4,000 | 80,000 | Wang Baolin |
| 2020/12/15/ 19:00 | 5.5S, 98.5W | GIS | 20 | 5500 | 110000 | Wang Baolin |
| 2021/2/6/ 12:00 | 5.7S, 98.9W | GIS | 20 | 4000 | 80000 | Wang Baolin |
| 2021-3-25 12:00 | 2.4S, 107.5W | GIS | 20 | 5500 | 110000 | Wang Baolin |
| 2020/12/5/ 15:30 | 11.67S, 84.3W | GIS | 20 | 4500 | 90000 | Wang Baolin |
| 2020-12-26 23:40 | 5.7S, 98.8W | GIS | 20 | 5000 | 100000 | Wang Baolin |
| 2021-1-14 22:00 | 6.1S, 95.6W | GIS | 20 | 5050 | 101000 | Zhu Guangjian |
| 2021-3-7 20:50 | 3.0S, 112.06W | GIS | 20 | 5000 | 100000 | Zhu Guangjian |

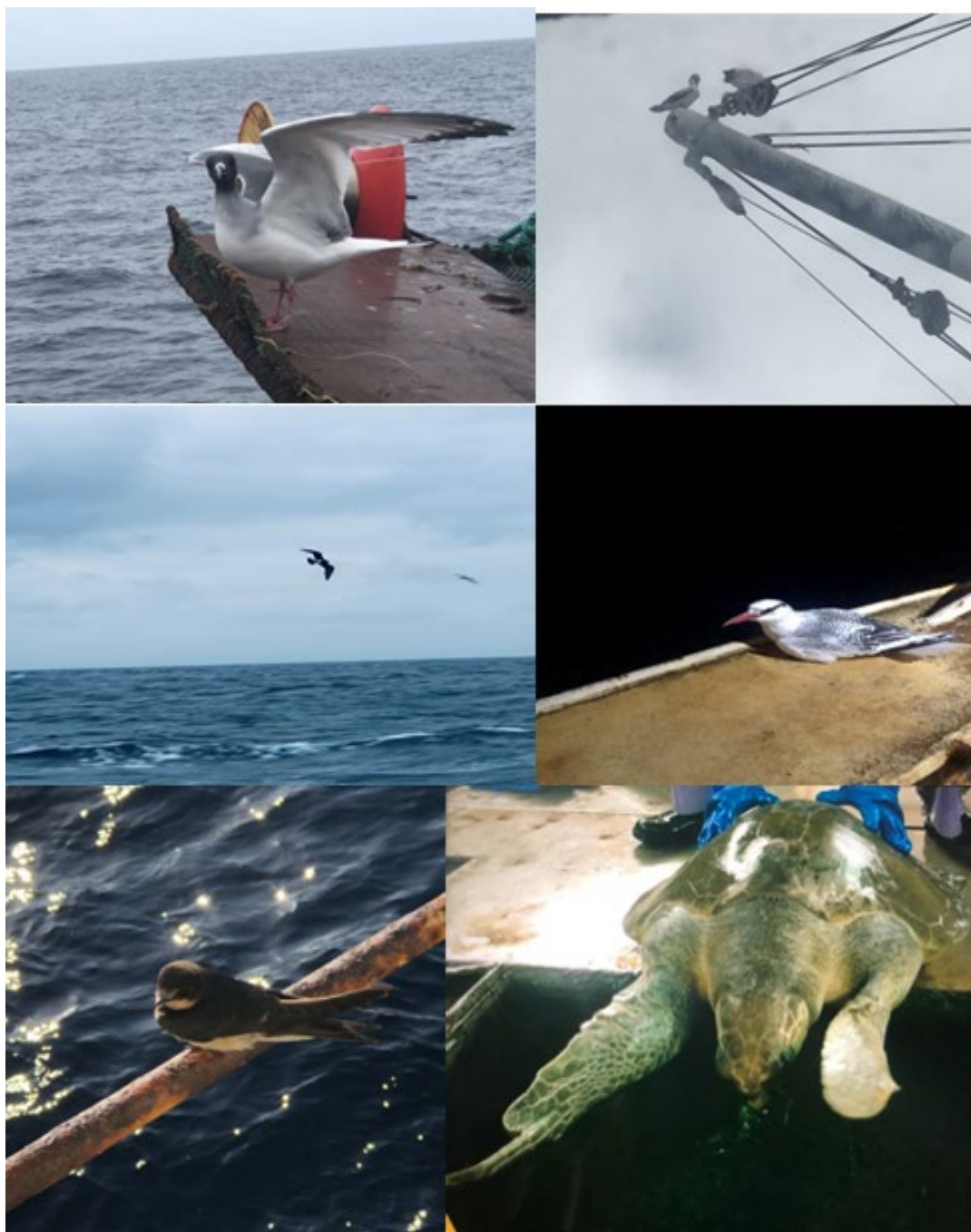


Figure 1 Some photographs of the observed sea birds and sea turtles

Table 3 Information of the unloading fishing vessel and receiving vessel

| Date | Fishing vessel | Flag | IMO | Master | Receiving vessel | Flag | IMO | Master |
|------------|----------------|-------|---------|---------|------------------|--------|---------|-----------------|
| 2020/12/5 | ZHOU PU 806 | China | 9821550 | Lu Zhou | WEI NING | China | 8779126 | TANG LIANGBO |
| 2020/12/26 | ZHOU | China | 9821550 | Lu Zhou | POSEIDO | Panama | 9158537 | MD KHRUL |

| | | | | | | | | |
|------------|----------------|-------|---------|------------------|--------------------|---------|---------|---------------------|
| | PU 806 | | | | | | | ALAM |
| 2021/1/14 | ZHOU PU 806 | China | 9821550 | Lu Zhou | HE SHUN | Panama | 9158537 | MD KHRUL ALAM |
| 2021/3/7 | ZHOU PU 806 | China | 9821550 | Hejun Yin | WEI SHUN | Panama | 8816156 | LI YINDE |
| 2019/10/11 | NING TAI 62 | China | 8778562 | Shicheng Chen | HE SHUN | Liberia | 9044358 | CHEN HONG |
| 2019/11/09 | NING TAI 62 | China | 8778562 | Shicheng Chen | TRITON REEFER | Panama | 8911102 | CAO HAIBIN |
| 2019/11/16 | NING TAI 62 | China | 8778562 | Shicheng Chen | TRITON REEFER | Panama | 8911102 | CAO HAIBIN |
| 2019/12/13 | NING TAI 62 | China | 8778562 | Shicheng Chen | NING TAI LENG 7 | China | 9821134 | ZHANG LIANGJUN |

Table 4 Results of sea birds' observations

| Date | Position | Species | Closed the vessel Y/N | Number | Observer |
|---------------------|-------------------|-----------------------|--------------------------|--------|---------------|
| 2020/10/28 9:00 | 15°52'S, 81°45'W | Unknow | Y | 4 | Wang Baolin |
| 2020/11/21 23:45 | 9°22'S, 89°53'W | <i>Isle albatross</i> | N | Unknow | Wang Baolin |
| 2020/11/28 23:00 | 4°41'S, 93°45'W | Unknow | Y | 6 | Wang Baolin |
| 2020/12/3 4:00 | 3°38' S, 101°44'W | Unknow | Y | 8 | Wang Baolin |
| 2020/12/12 9:00 | 4°11'S, 102°34'W | <i>Isle albatross</i> | Y | 7 | Wang Baolin |
| 2020/11/8 21:00 | 13°40'S, 82°18'W | Unknow | Y | 1 | Zhu Guangjian |
| 2020/12/3 | 11°30'S, 82°56'W | Unknow | N | 1 | Zhu Guangjian |
| 2020/12/5 | 11°29'S, 83°55'W | Unknow | Y | 2 | Zhu Guangjian |
| 2020/12/7 13:40 | 12°06'S, 84°54'W | Unknow | Y | 1 | Zhu Guangjian |

5. Problems encountered

It's the first time to dispatch the observers for squid jigging fishery officially since the CMM 18-2020 have entered into force in 2021. As required by CMM 18-2021, the coverage rate shall be 5% or 5 full time at sea observers, however, it's an impossible mission under the circumstance of the COVID-2019 outbreak. Some crucial aspects such as recruitment, training and dispatching had been restricted or limited greatly. Finally, only two experienced observers were recruited and willing to perform the task of the Observer Programme.