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Annual Report of China to the Scientific Committee

China

Annual Report of China to the 2026 SPRFMO Scientific Committee, the Squid Jigging Fishery

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Summary

In 2025, a total of 576 Chinese squid jigging vessels operated in the SPRFMO Convention Area, harvesting 484,700 tons of jumbo flying squid. The number of active vessels fluctuated monthly, ranging from a low of 297 in August to a peak of 503 in December, with total fishing efforts reaching 111,151 days and an average catch rate of 4.4 tons per day. During the 2025-2026 and 2026-2027 fishing seasons, an observer program was implemented, deploying 14 observers. In 2025 alone, 14 observers served onboard, with 12 having completed their assignments and returned to port by July 2026, while the remaining 2 continued their work at sea. The returned observers monitored 1,960 fishing days, and 47 transshipment activities, measured over 100,000 squid specimens.

1 Description of Chinese Squid Jigging Fishery

The Chinese distant-water squid jigging fleet has targeted jumbo flying squid (*Dosidicus gigas*) on the high seas of the South East Pacific since 2001 (Chen et al., 2008). Prior to 2017, Chinese squid jigging vessels primarily operated in the high seas off Peru. Subsequently, the equatorial waters of the East-central Pacific gradually emerged as another important fishing ground, leading to the establishment of the current pattern of back-and-forth movement between these two areas.

Twenty-two fishing vessels arrived in the international waters of the Southeast Pacific in 2001. The number of vessels increased to 119 in 2004 and then declined continuously in the following three years. During the period of 2006-2020, the number of active squid jigging vessels witnessed a consistent increase, reaching its peak at 557 in 2020. However, following that, there was a substantial decline, with the count dropping to 464 in 2022 (Table 1). During the last two years, the number of active

fishing vessels showed some increase, reached 576 in 2025.

Annual total catches of the Chinese squid fishery fluctuated widely in the first few years in the Southeast Pacific. However, since 2008, the annual catch has generally shown a growing trend. In 2024, due to the higher water temperature in the fish grounds caused by the El Niño, the squid catch dropped significantly and marked the second lowest level in the past decade, while in 2025, the squid catch increased again and reach a higher level of 484,700 tons (Table 1).

Table 1 Number of vessels and annual catch of the Chinese squid jigging fisheries in the Southeast Pacific during 2020-2024

Year	Number of vessels	Catch in tons
2020	557	358,000
2021	476	422,000
2022	464	514,500
2023	522	494,000
2024	528	273,900
2025	576	484,700

2 Catch, Effort and CPUE Summaries

The year 2025 represented a severe increase for China's squid jigging fleet. The total catch plummeted to 484,700 tons, significantly increased compared to 2024 (Table 2). Consequently, CPUE increased to a record low of 4.4 tons per vessel per day. This combination of significantly higher catch and lower CPUE in 2025 – yielding 76% more squid than 2024, highlights substantially higher catchability, potentially driven by adverse environmental conditions such as La Niña encountered during operations.

Monthly catches in 2025 are shown in Figure 1. Catches began relatively high in January but declined from May to August. A significant increase occurred in September, followed by the highest catch of over 70,000 tons in November.

A total of 576 squid jigging vessels operated in the Convention area in 2025. The number of active fishing vessels fluctuated between 297 and 503 throughout the year, exhibiting a pronounced seasonal pattern—peaking in December and reaching its

annual low in August. From January to April, vessel numbers remained relatively stable at approximately 360 units. A steady increase began in October, culminating in the year's maximum fleet size in December (Fig. 2).

Table 2 Catch, effort and CPUE in the past five years

Year	Catch in tons	Fishing days	CPUE (tons/day-vessel)
2021	422,000	78,120	5.4
2022	514,500	96,246	5.3
2023	494,500	100,306	4.9
2024	273,900	114,475	2.4
2025	484,700	111,151	4.4

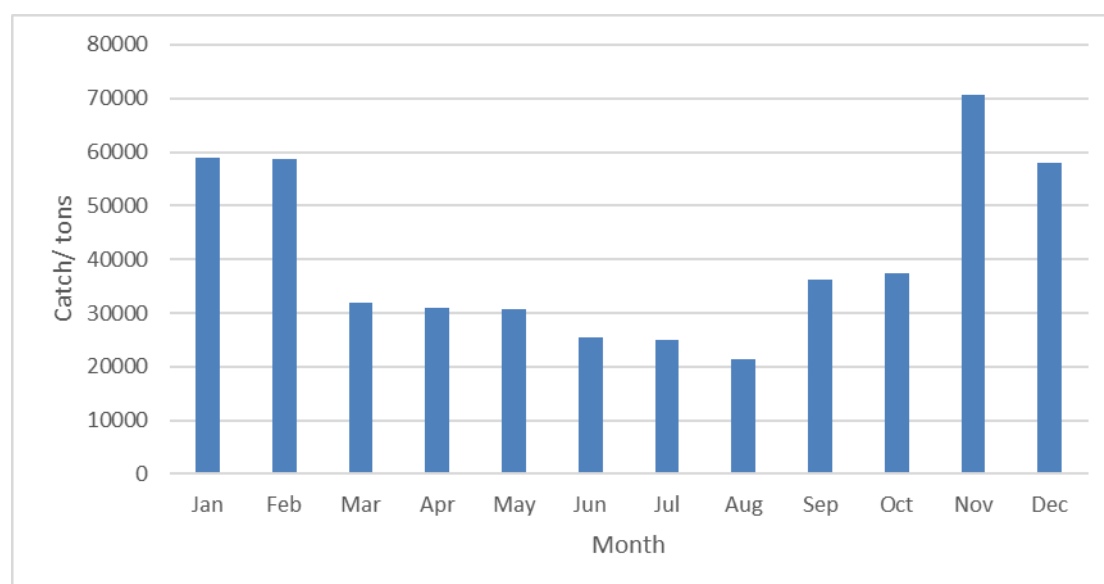


Figure 1 Monthly distribution of catch in 2025

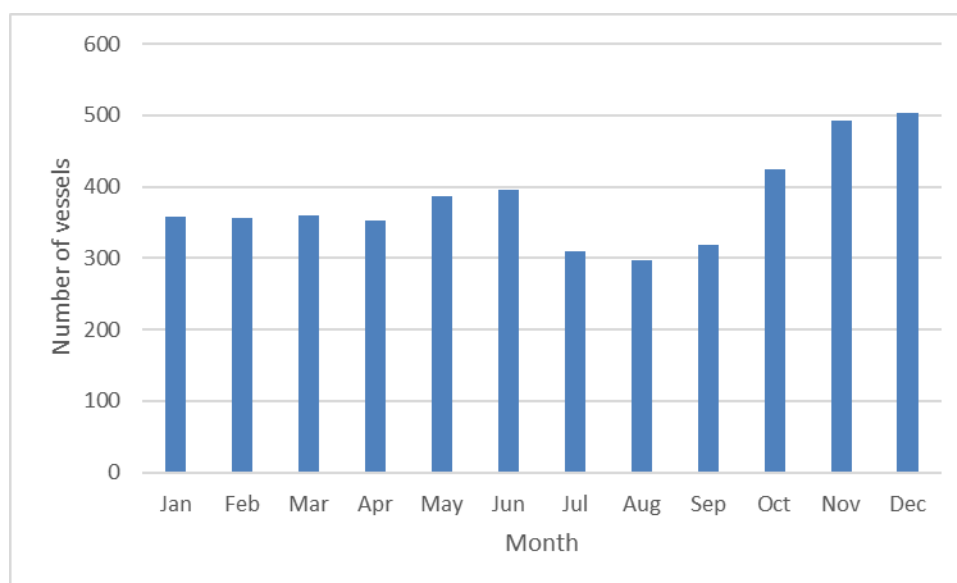


Figure 2 Monthly distribution of the number of active fishing vessels in 2024

Monthly distribution of CPUE presented in Figure 3. In 2025, the year began with relatively high CPUE values ranging from 5.8 (January) to 6.2 (February), followed by a notable decline from March to August. In September, CPUE started to increase, and by November CPUE had already reached to its January level.

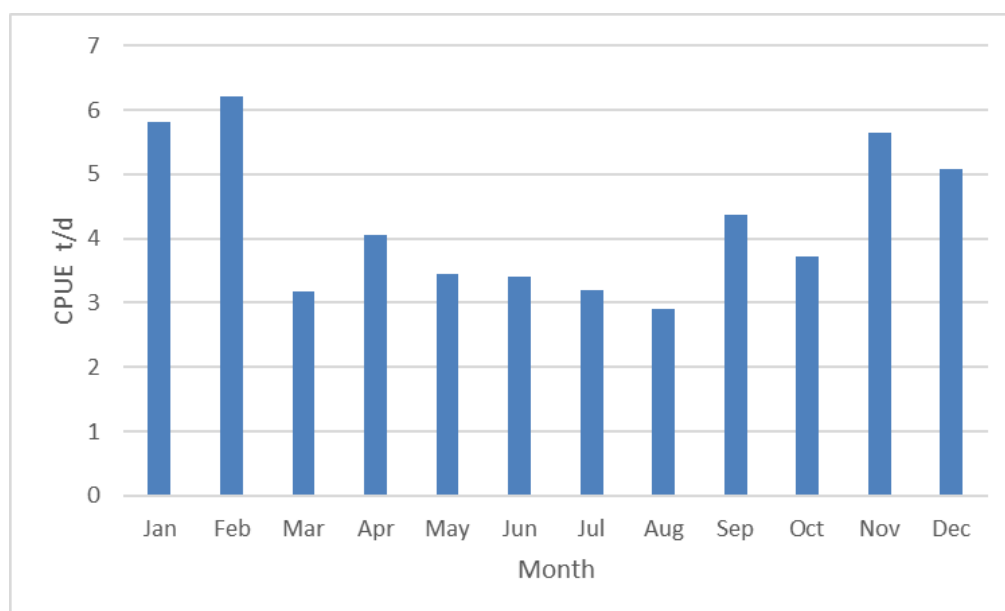


Figure 3 Monthly CPUE in 2025

Recent years' monthly CPUE distributions, as illustrated in Figures 4–8, highlight a recurring pattern of seasonal fishing ground shifts. The squid jigging fishery demonstrates a cyclical migration between the Peruvian high seas and equatorial waters, with vessels primarily concentrated in equatorial regions before May or June. Historically, fleets would transition to southern waters (10°S–20°S) afterward; however, 2025 saw an exceptional early relocation, with a substantial number of vessels moving to the Peruvian high seas by April, particularly clustering north of 20°S. By the fourth quarter, a customary northward migration occurred as fleets returned to equatorial high-seas fishing grounds.

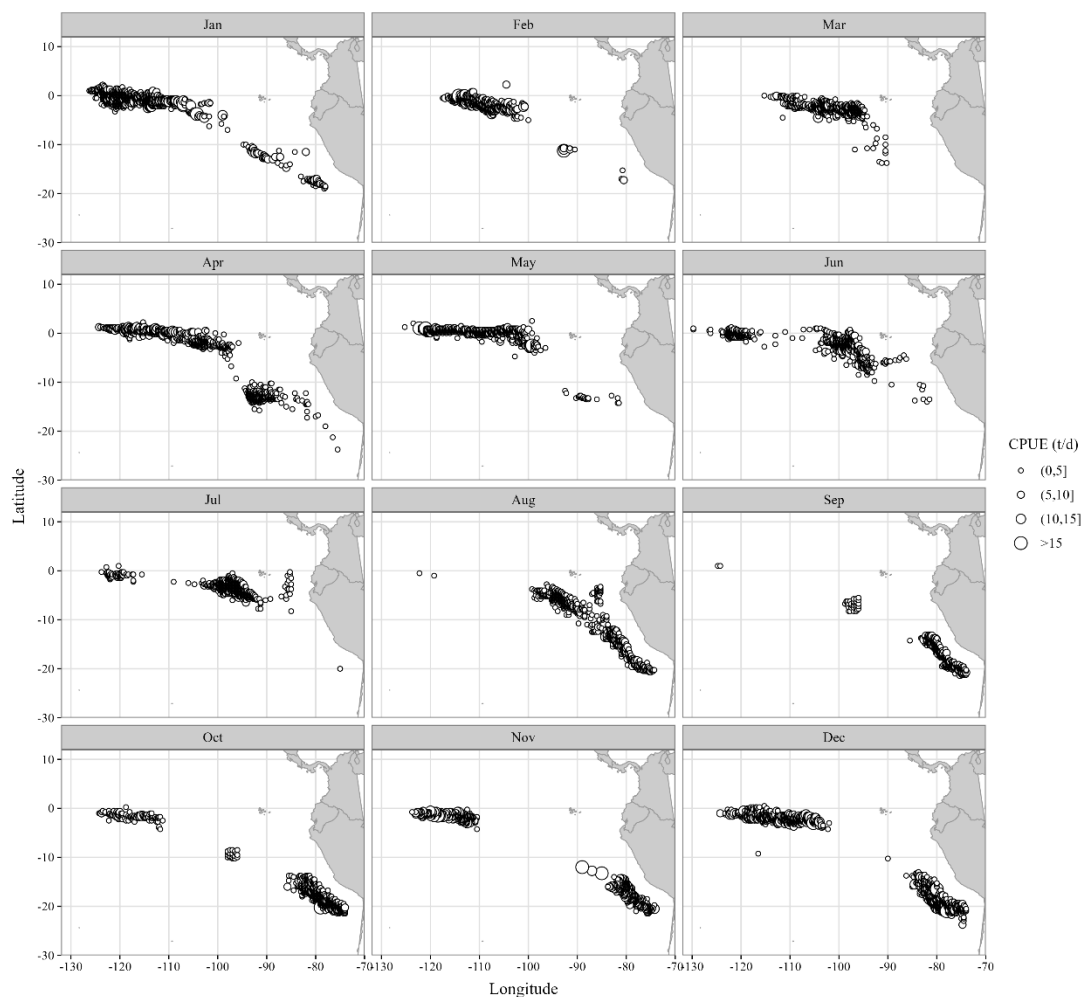


Figure 4 Monthly catch rate distribution of the Chinese squid jigging fishery in 2025

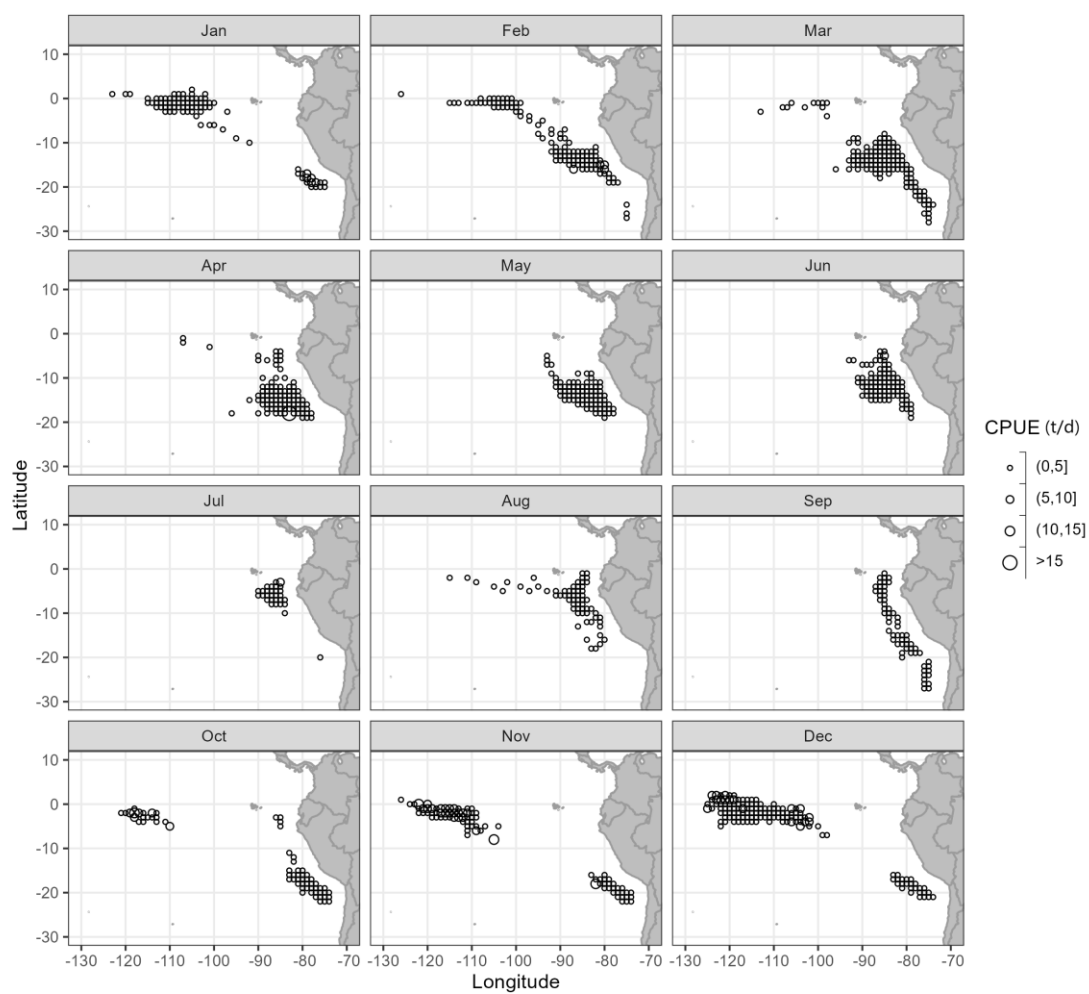


Figure 5 Monthly catch rate distribution of the Chinese squid jigging fishery in 2024

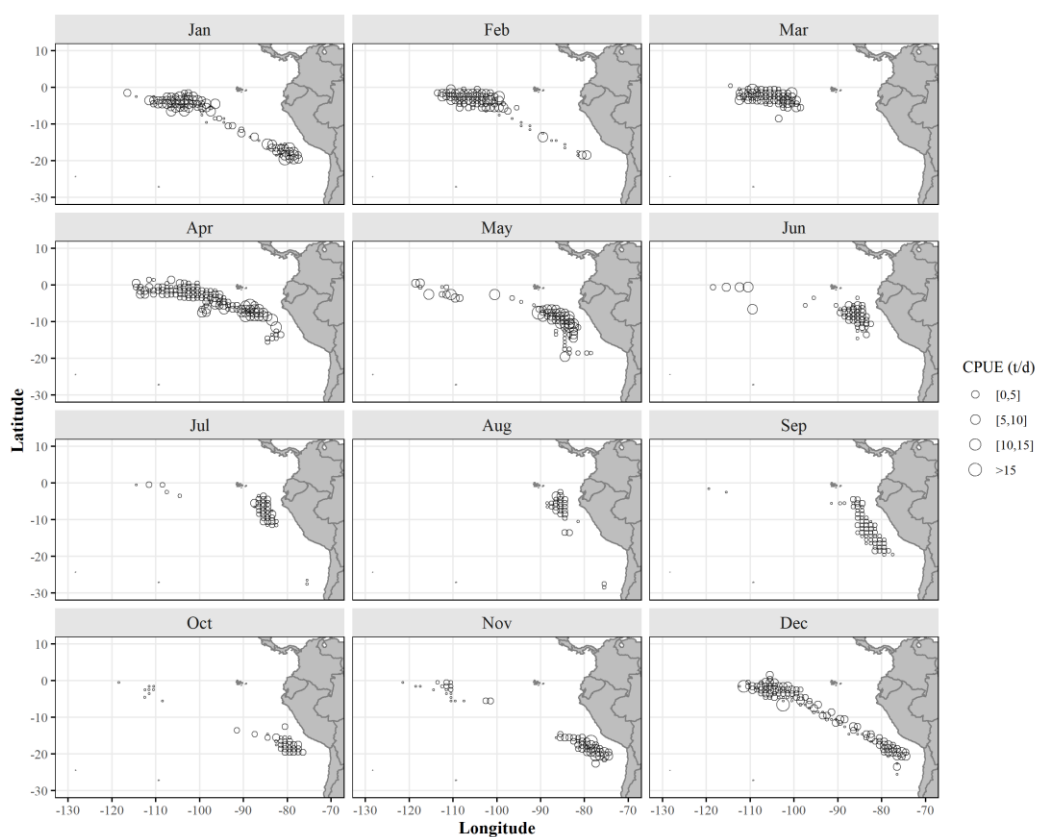


Figure 6 Monthly catch rate distribution of the Chinese squid jigging fishery in 2023

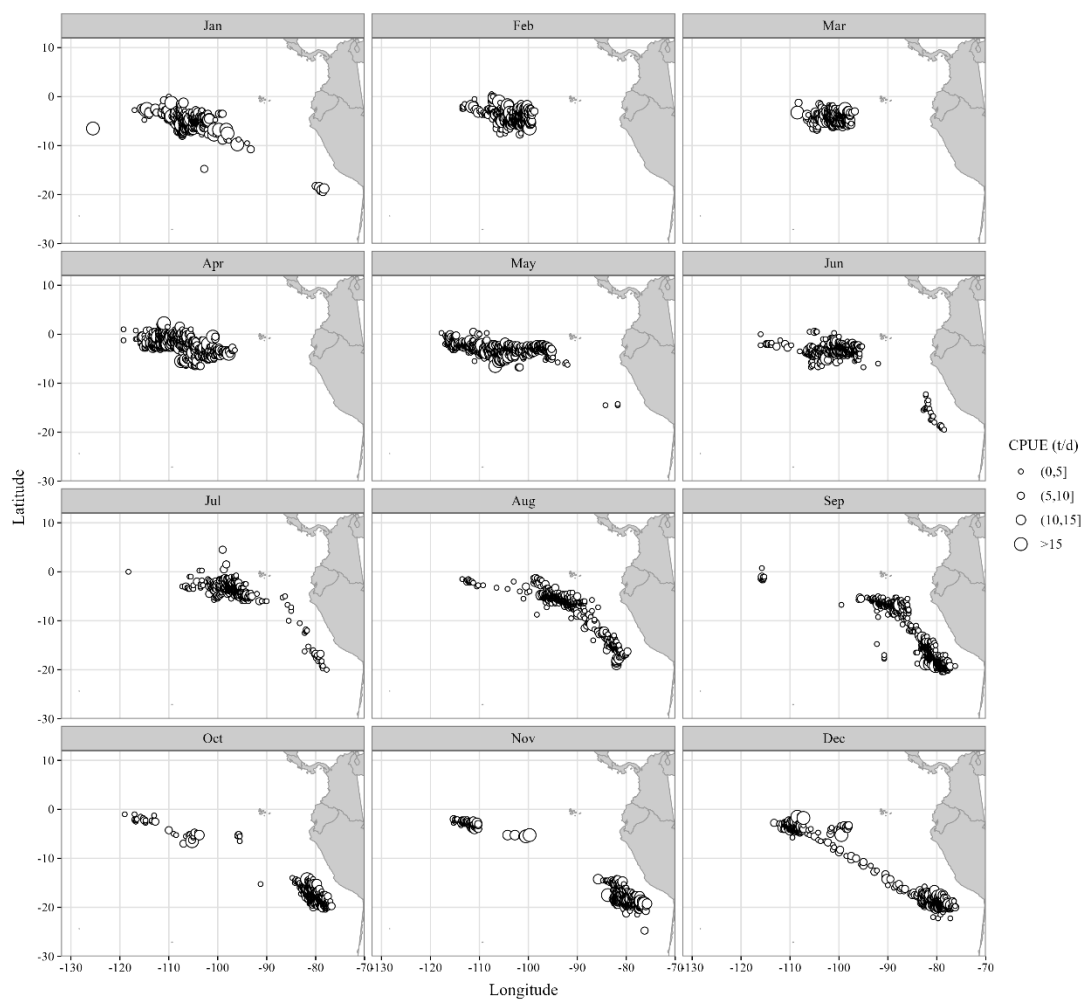


Figure 7 Monthly catch rate distribution of the Chinese squid jigging fishery in 2022

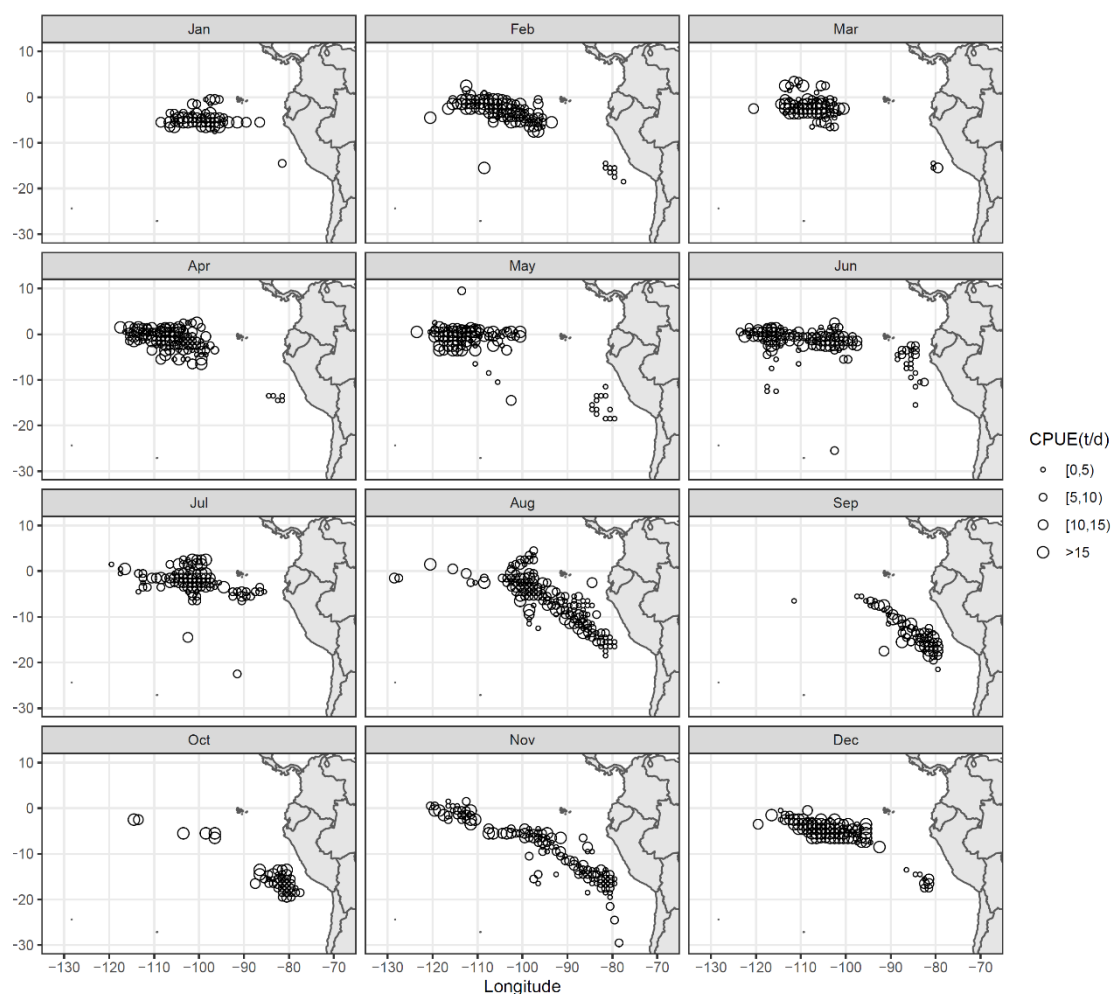


Figure 8 Monthly catch rate distribution of the Chinese squid jigging fishery in 2021

3 Fisheries Data Collection and Research Activities

For the Chinese squid jigging fishery, two primary categories of data are systematically collected: catch statistics and biological observations. The standardized logbook framework, developed by the China Distant Water Fisheries Association, incorporates comprehensive vessel-specific details—including vessel name, engine power, total lighting capacity—and granular fishing activity records. These records detail critical information such as start/end coordinates and timestamps, catch volumes. Additionally, fishing vessels are mandated to submit weekly reports containing estimated catch volumes, fleet counts, and operational status updates (active fishing, under repair,

return to port, or transiting between areas). Since 2015, data management responsibilities have been centralized at the National Data Centre for Distant-water Fisheries of China (NDCDF), which has also developed and implemented an electronic logbook system tailored to the needs of the squid fishery, enhancing data accuracy and real-time monitoring capabilities.

In 2025, fishing activity data for the squid fishery were collected, checked, and then submitted to the Secretariat this year. Concurrently, scientific observers and the studying fleet engaged in systematic biological data collection, including tissue samples and morphological measurements. Observers were tasked with recording detailed catch metrics—including species composition, by-catch incidents involving protected marine life—and collecting biological parameters such as mantle length, sex ratio, maturity stage, and reproductive characteristics. They also monitored transshipment activities at sea. For jumbo flying squid catches, random sampling protocols were enforced: each haul included measurements of mantle length for a subset of individuals, with a sub-sample further assessed for body weight, sex determination, and maturity staging. The studying fleet adhered to a standardized sampling regime: 30 individuals were randomly selected daily for on-board measurements, while weekly composite samples (15–20 kg) were collected, preserved, and dispatched to NDCDF for detailed laboratory analysis.

Research on jumbo flying squid in 2025 was focused on the stock assessment and species distribution study. For the former, we used the updated environment-based Bayesian state-space production model approach, and updated the CPUE standardization method, abundance indices, and catch data. For the latter, artificial intelligence methods were used to identify the spatio-temporal dynamics of jumbo flying squid. Besides that, we also analyzing the differences and mechanisms of the impacts of climate change on the migratory pattern of jumbo flying squid.

4 Biological Sampling and Length Composition of Catches

In 2025, excluding samples collected by four observers still at sea, a total of 120,879

jumbo flying squid individuals were sampled by scientific observers. Among these, approximately 35% (42,034 individuals) received supplementary biological analyses including weight measurement, sex determination, and maturity staging.

The length frequency is based on jumbo flying squid sampled or measured in 2025 by observers (Figure 9). Mantle length ranged from 9 cm to 115 cm. There are three length composition modes can be distinguished obviously, 20-35 cm, 50-70 and 80-95 cm. In general, the small phenotype squid is caught in the northern fishing area around the equatorial waters, and the medium and large size squid are caught in the high seas off Peru; however, some small and immature squid were also appeared in the catch in the south fishing ground.

5 Observer Implementation Report

The observer program was designed to collect scientific data and biological samples for jumbo flying squid as well as monitor the fishery. 14 observers were designated to perform the observer program in 2025. Eleven observers have returned to the port, while there are four observers still work onboard. A total of 2081 active fishing days and 47 transshipment activities were monitored in 2025. More than 100,000 squids were measured by observers.

5.1 Description of the observer program

Authorized by the government, Shanghai Ocean University (SHOU) was responsible for the observer program in 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 (NDCDF), located at SHOU, was founded and took full responsibility for fishery data collection and China Distant-water Fishing Observer Program. The observer program is financed by the government and organized by NDCDF, 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.

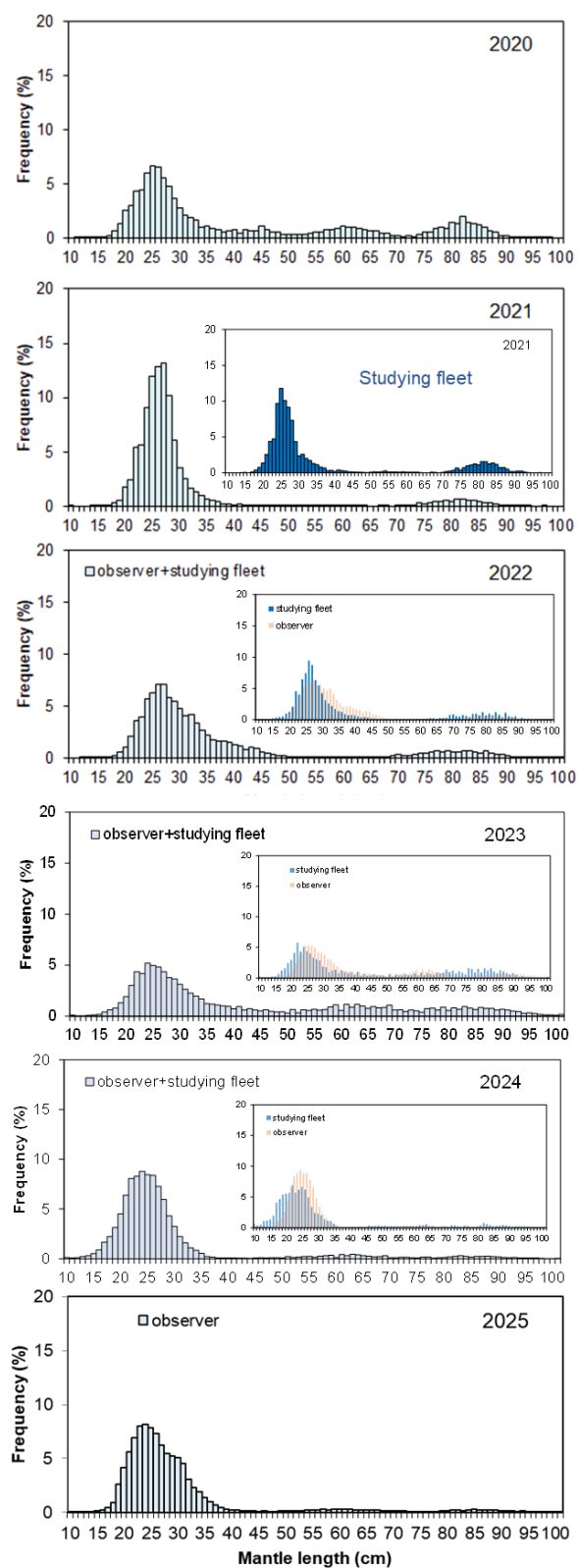


Figure 9 Size frequencies of the jumbo flying squid sampled on the high seas

5.2 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 certificates awarded to fisheries observers upon successful completion of all required training modules are officially issued by governmental authorities. Prior to deployment, selected observers undergo specialized training programs conducted at Shanghai Ocean University. Concurrently, vessel captains participate in a condensed training curriculum focusing on standardized data collection protocols, sampling techniques, sample preservation methodologies, and biological length measurement procedures. Furthermore, data templates on fishing activities and length frequency developed by NDCDF are supplied to the captains.

The trainers are exclusively drawn from the highly qualified professional faculty at Shanghai Ocean University. Many of them have previously served as fisheries observers in the field, bringing practical operational experience to their pedagogical roles.

5.3 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, some squid fishing vessels are served as the studying vessels to collect length data in addition to placing observers on board. 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.

Table 1 presents the operational deployment of observers aboard the squid fishing vessels during the 2024-2025 and 2025-2026 fishing seasons. A total of 14 certified observers were deployed across 23 vessels, accumulating 2,081 fishing days in 2025 with a coverage rate of 1.9%. Some observers carried out observation missions on

multiple vessels, which coincidentally helped the observer to expand the range of vessels observed. Among these observers, 12 of them have completed their assignments and returned to port, while the remaining 2 continue their active deployment on operational fishing vessels.

Observers are typically deployed via carrier vessels or squid jigging vessels from domestic ports, requiring approximately 45 days to reach the fishing grounds in the Southeast Pacific Ocean. This deployment model decreases both the actual duration and the number of observed fishing days that the observers were on board the squid jigging vessels. For example, observer CAI Jialin was deployed at sea for 253 days during the 2024-2025 fishing season, yet the actual monitored fishing days aboard operational squid jigging vessels totaled only 147 days, nearly 100 days for the round-trip transit to fishing grounds.

Table 1 Information on the 2024-2025 and 2025-2026 observer mission

Fishing season	Period	Observer name	Observed vessel	Total observed fishing days	Observed fishing days in 2025
23-25	2023/8/10-2025/7/8	HU Maoqing	MING XIANG 821 MING XIANG 817 MING XIANG 801 MING XIANG 868	451	146
23-26	2023/8/10-2026/4/27	QI Lei	NING TAI 66 NING TAI 616 NING TAI 55 NING TAI 62	619	153
24-25	2024/10/21-2025/7/1	CAI Jialin	HONG RUN 17 HONG RUN 668	174	124
24-25	2024/11/8-2025/6/27	YUE Zhinen	PU YUAN 878	148	124
24-25	2024/11/2-2025/6/22	YU Liandong	DONG YU 1529	148	135
24-25	2024/11/15-2025/7/25	ZHONG Guanyu	PU YUAN 856	173	160
24-25	2024/11/8-2025/9/15	WU HAI	SHUN ZE 86	37	37
24-25	2024/8/20-2025/12/12	HAN Wei	JIA DE 8 NING TAI 69	376	312
24-25	2024/10/21-2025/11/11	WANG Jun	HONG RUN 107	316	277

24-26	2024.11.5- 2026.7.3	WEI Bo	HUA YING 87	434	287
25-26	2025/9/15- 2026/4/4	CHENG Lei	HUA LI 19	144	144
25-26	2025/10/1- 2026/3/27	HU Yun	HAI FENG LONG 6	140	61
25-26	2025/08/28-	Zhao Xiaochen	YUAN JIA 1	64*	64
25-26	2025/9/15-	Wang Haiqing	HONG PU 701	57*	57

*Note: As of July 31, 2026

5.4 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.

In 2025, excluding the 2 observers currently deployed at sea, onboard observers conducted biological measurements on 120,879 jumbo flying squid specimens. All individuals measured length, while 35% of the cohort received comprehensive biological assessment including weight measurement, sex determination, maturity staging, and stomach content analysis. In parallel with field measurements, observers implemented a standardized sampling protocol requiring weekly collection of 20kg squid specimens for laboratory analysis. The studying vessels conducted mantle length measurements for 30 individuals daily for on-board measurements, while weekly composite samples (15–20 kg) were collected, preserved, and dispatched to NDCFC for detailed laboratory analysis.

During the period January-December 2025, observers recorded a total of 47 at-sea

transshipment activities, detailed information on which is presented in tables 2 and 3. They also monitored the bycatch, in particular, the seabird activities on and around the fishing vessels. No marine mammals, seabirds or turtles were caught by the jiggers.

Table 2 Transshipment operation observed

Date	Latitude	Longitude	Carton type (kg)	No. of cartons	Total weight	Observer
2025/1/15	-0.01	-116.65	20	10044	200880	Wei HAN
2025/1/19	0.29	-113.58	20	6000	120000	Maoqing HU
2025/1/20	-0.30	-114.73	20/12.5	7268/469	151222.5	Wei HAN
2025/2/4	-0.07	-112.17	20	6500	130000	Maoqing HU
2025/2/8	-2.30	-108.50	20	5619	112380	Zhien YUE
2025/2/17	-0.32	-114.65	17.5	6000	105000	Jun Wang
2025/2/17	-0.35	-114.94	20	6500	130000	Maoqing HU
2025/2/18	-0.15	-114.27	20	5692	113840	Jialin CAI
2025/2/24	-0.18	-112.47	20	7500	150000	Wei HAN
2025/2/28	-0.40	-110.60	20	6317	126340	Zhien YUE
2025/3/4	-2.65	-103.83	17.5	7000	122500	Jun Wang
2025/3/10	-2.83	-98.59	20	6000	120000	Maoqing HU
2025/4/1	-1.24	-104.83	17.5	5800	101500	Jun Wang
2025/4/5	-2.34	-97.39	20	5475	109500	Jialin CAI
2025/4/26	0.97	-118.33	20	5000	100000	Maoqing HU
2025/4/29	0.53	-114.43	20	5750	115000	Zhien YUE
2025/5/10	-0.55	-113.31	20	8000	160000	Wei HAN
2025/5/10	0.59	-113.82	17.5	7101	124267.5	Jun Wang
2025/5/27	0.73	-120.53	20	3500	70000	Maoqing HU
2025/6/3	-1.95	-98.00	20	4055	81100	Wei HAN
2025/6/30	-3.74	-95.56	20	5340	106800	Wei HAN
2025/8/5	-4.30	-94.05	17.5	10300	180250	Jun Wang
2025/8/21	-13.12	-81.73	20	4257	85140	Wei HAN
2025/9/13	-14.08	-80.67	17.5	2900	50750	Jun Wang
2025/9/26	-18.34	-77.16	20	5482	109640	Wei HAN
2025/9/26	-13.59	-81.22	19	6393	121467	Jun Wang
2025/10/17	-16.09	-81.03	17.5	4768	83440	Jun Wang
2025/10/24	-19.32	-77.33	20	3187	63740	Wei HAN
2025/11/11	-15.34	-80.30	17.5	4000	70000	Jun Wang
2025/11/18	-15.67	-79.91	20	4576	91520	Wei HAN
2025/11/21	-1.28	-112.17	20	6000	120000	Lei CHENG
2025/12/7	-20.66	-78.16	20	5189	103780	Wei HAN
2025/12/19	-1.42	-114.45	20/12.5	3150/4600	120500	Yun HU
2025/12/19	-1.26	-114.44	20	5900	118000	Lei CHENG
2025/2/5	-1.83	-109.16	20	6038	120760	Lei QI

2025/1/23	-0.45	-113.79	20	5902	118040	Lei QI
2025/4/27	1.07	-118.08	20	5000	100000	Guanyu ZHONG
2025/2/1	-0.75	-113.21	20	5800	116000	Guanyu ZHONG
2025/2/1	-0.47	-112.68	17.5	7000	122500	Jun Wang
2025/2/2	-0.37	-112.41	20	6478	129560	Jialin CAI
2025/2/17	-0.50	-114.33	20	4886	97720	Guanyu ZHONG
2025/1/9	0.23	-122.87	20	4489	89780	Guanyu ZHONG
2025/1/21	-0.15	-114.05	20	5203	104060	Jialin CAI
2025/1/25	-2.31	-114.06	20	7450	149000	Zhien YUE
2025/3/4	-2.34	-99.51	20	7131	142620	Jialin CAI
2025/3/7	-2.73	-101.33	20	4800	96000	Guanyu ZHONG
2025/5/21	0.63	-111.22	20	4000	80000	Guanyu ZHONG

Table 3 Information of the unloading fishing vessel and receiving vessel

Date	Fishing vessel	IMO	Receiving vessel	Flag	IMO
2025/1/15	PU YUAN 856	8780008	SHEN JU	VUT	9189885
2025/1/19	PU YUAN 856	8780008	SHEN JU	VUT	9189885
2025/1/20	PU YUAN 856	8780008	HUA YANG	VUT	9014767
2025/2/4	PU YUAN 856	8780008	FENG YU	PAN	9016076
2025/2/8	PU YUAN 856	8780008	SHEN JU	VUT	9189885
2025/2/17	PU YUAN 856	8780008	SHEN JU	VUT	9189885
2025/2/17	HONGRUN 668	8776954	FUYUANYULENG 222	CHN	8779451
2025/2/18	HONGRUN 668	8776954	Hua Yang	VUT	9014767
2025/2/24	HONGRUN 668	8776954	HE TAI	PAN	9070137
2025/2/28	HONGRUN 668	8776954	NINGFENGLENG 1	CHN	9995131
2025/3/4	HONGRUN 668	8776954	HUIZELENGYUAN 15	CHN	1023243
2025/3/10	NINGTAI66	8778512	TRITON REEFER	PAN	8911102
2025/4/1	NINGTAI66	8778512	TRITON REEFER	PAN	8911102
2025/4/5	MING XIANG 817	8776253	TRITON REEFER	PAN	8911102
2025/4/26	MING XIANG 817	8776253	HE TAI	PAN	9070137
2025/4/29	MING XIANG 817	8776253	NINGFENGLENG 1	CHN	9995131
2025/5/10	MING XIANG 817	8776253	NINGFENGLENG 1	CHN	9995131
2025/5/10	MING XIANG 817	8776253	TRITON REEFER	PAN	8911102

2025/5/27	MING XIANG 817	8776253	LUWEIYUANYUYUN 777	CHN	8782654
2025/6/3	JIA DE 8	8776241	SHUNZELENGYUN5	CHN	9844514
2025/6/30	JIA DE 8	8776241	SHUNZELENGYUN5	CHN	9844514
2025/8/5	JIA DE 8	8776241	SHUNZELENGYUN5	CHN	9844514
2025/8/21	JIA DE 8	8776241	HUIZELENGYUN15	CHN	1023243
2025/9/13	NING TAI 69	8778524	NING TAI LENG 2(XINGBANG99)	CHN	8779463
2025/9/26	NING TAI 69	8778524	NINGFENGLENG1	CHN	9995131
2025/9/26	NING TAI 69	8778524	NING FENG LENG 6	CHN	1046386
2025/10/17	NING TAI 69	8778524	WEI NING	CHN	9064229
2025/10/24	NING TAI 69	8778524	HE TAI	CHN	9070137
2025/11/11	NING TAI 69	8778524	HE TAI	CHN	9070137
2025/11/18	NING TAI 69	8778524	TRITON REEFER	CHN	8911102
2025/11/21	HONGPU 701	8780292	HUAN XIANG 8	CHN	9930533
2025/12/7	HONGPU 701	8780292	HUA YANG	VUT	9014767
2025/12/19	HONGPU 701	8780292	HUA YANG	VUT	9014767
2025/12/19	HONGPU 701	8780292	HAI JI LI	PAN	9677595
2025/2/5	HONG RUN107	8775508	HUA YANG	VUT	9014767
2025/1/23	HONG RUN107	8775508	HONG RUN LENG 2	CHN	1064479
2025/4/27	HONG RUN107	8775508	HONG RUN LENG 2	CHN	1064479
2025/2/1	HONG RUN107	8775508	HONGRUNLENG1	CHN	1034709
2025/2/1	HONG RUN107	8775508	HONGRUNLENG1	CHN	1034709
2025/2/2	HONG RUN107	8775508	HONG RUN LENG 2	CHN	1064479
2025/2/17	HONG RUN107	8775508	HONG RUN LENG 2	CHN	1064479
2025/1/9	HONG RUN107	8775508	HONGRUNLENG1	CHN	1034709
2025/1/21	HONG RUN107	8775508	HONGRUNLENG1	CHN	1034709
2025/1/25	HONG RUN107	8775508	HONGRUNLENG1	CHN	1034709
2025/3/4	HUA LI 19	8779138	NING FENG LENG 7	LBR	1067550
2025/3/7	HUA LI 19	8779138	NINGFENGLENG16	CHN	1097892
2025/5/21	HAI FENG LONG 6	9893682	XINHAILENG1	CHN	8537360

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