NPFC-2024-SSC NFS01-WP23

**Species in the Northwest Pacific ecosystem from Chinese survey and bycatch in fishery**

Qiuyun Ma1, Libin Dai1, Heng Zhang2, Siquan Tian1

1. College of Marine Living Resource Sciences and Management, Shanghai Ocean University, China

2. East China Sea Fisheries Research Institute, Chinese Academy of Fishery Science, China

**Summary**

This paper summarized the species belong to the marine ecosystems in Northwest Pacific Ocean, that monitored by Chinese survey, and the bycatch species in the commercial fishery. China has been conducting a scientific survey program using its fishery research vessel "Song Hang" in the NPFC convention area since 2021. During the past four years, this survey totally identified 78 fish species and 23 cephalopoda species, by mid-trawling, squid jigging, and eDNA. There is few bycatch in the stick-held dip net fishery for Pacific saury, squid-jigging fishery, and pelagic trawl fishery for Chub mackerel and Japanese sardine. In the purse seine, bycatch species include Blue mackerel, squid and Pacific saury, while other species was little recorded.

**Species identified from fishery-independent survey**

China has been conducting a scientific survey program using the fishery research vessel "Song Hang" of Shanghai Ocean University in the NPFC convention area since 2021. During the past four years, this survey totally identified 78 fish species and 23 cephalopoda species, by mid-trawling, squid jigging, and eDNA. Except the priority species of NPFC (Chub mackerel, Blue mackerel, Japanese sardine, and Neon flying squid), the ecosystem is dominated by Japanese anchovy *Engraulis japonicus*, Pacific pomfret *Brama japonica* and Boreopacific gonate squid *Gonatopsis borealis* etc. The species list and proportion of dominant species are referred to the working document of Chinese survey.

**Bycatch in the commercial fishery**

In the convention area of NPFC, there are four kinds of Chinese fleet, i.e. stick-held dip net, squid-jigging fishery, pelagic trawl net and light purse seine. The first three gears are highly selective, with few bycatch. Pacific saury is the only catch species in the stick-held dip net fishery, with low bycatch of squid. Almost catch of squid-jigging fishery is Neon flying squid, with a little of Japanese flying squid (average of 2% in the previous ten years). The catch of pelagic trawl fishery includes Chub mackerel, Japanese sardine and Blue mackerel, with low incidental catch of Pacific saury.

In the light purse fishery, the main recorded catch species contain Chub mackerel, Blue mackerel, and Japanese sardine. Furthermore, other species, such as Neon flying squid, Pacific saury, Japanese anchovy, lanternfish, tuna, sharks, marine mammals, were incidentally captured and might be released based on the CMMs of NPFC or other RFMOs. In recent years, the data collect system has been improved with detail information recorded. The data of light purse seine fishery in 2023 revealed that the bycatch species include Neon flying squid (2%), Pacific saury (1%), Japanese anchovy (0.02%), Pacific pomfret (0.01%), Pacific barrelfish *Hyperoglyphe japonica* (0.002%), Common dolphinfish *Coryphaena hippurus* (0.002%), lanternfish (0.002%), salmon (<0.001%), Yellowtail amberjack *Seriola lalandi* (<0.001%), and several individuals of sharks, turtles, and marine mammals.

**Acknowledgement**

The document is supported by the National Natural Science Foundation of China (32202934), the National Key R&D Programs of China (2024YFD2400603), and Program on the Survey, Monitoring and Assessment of Global Fishery Resources (Comprehensive scientific survey of fisheries resources at the high seas) sponsored by the Ministry of Agriculture and Rural Affairs.