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Data description on fisheries bycatch in the chub mackerel fisheries in China

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Summary

Chub mackerel (*Scomber japonicas*), blue mackerel and sardine fishes are key economic and ecological species in the Northwest Pacific Ocean. Most of the Chub mackerel and sardine catches were harvested by the lighting purse seine fishery in China. It need noticed that the Japanese sardine catch increased from a very low production in 2014 to a peak (266615 tons) in 2022. Squid and saury are by catch or inevitable catch in the mackerel fisheries, and the annual output and proportion were very low whether in purse seine or trawl fisheries. The catch of other fish species such as pelagic species were also very low. Since it is not the main catch, it is difficult to make accurate statistics.

1. Background of the chub mackerel fisheries

As we know, all these species on the chub mackerel (*Scomber japonicas*), blue mackerel, Japanese sardine and pacific saury are highly migratory fishes or squid, widely distributed in the high seas of the Northwest Pacific Ocean.

Chub mackerel fisheries in China have resumed since 2014. These fisheries target to fish mackerels (mostly chub mackerel and a few blue mackerel), but in recently year the catch of sardine was increased greatly and became the one of mainly catch species. Hence, the mackerel fisheries mainly caught the three fish species such as chub mackerel, blue mackerel, and Japanese sardine. Meanwhile, it also inevitable caught few squid and pacific saury as bycatch. The yearly proportion of squid and pacific saury were very low.

2. fish composition on the chub mackerel fisheries

In 2014-2024, it was obviously found that mackerels and sardine were the most important fishing species in the mackerel fisheries in the NPFC convention area (Fig.1). The yield of chub mackerel fluctuates to a certain extent, with the change of fishing effort or resources and occupying a high proportion of mackerel. Blue mackerel proportion changed between 1.3 and 11.7 % in the total catch (Fig.1 and 2). It need noticed that the Japanese sardine catch increased from a very low production in 2014 to a peak in 2022. In 2023-2024 this trend was continue, which mean that the resources of sardine has recovered rapidly. The catch of sardine was remain high from 2022 to 2024, but it is expected that it will be difficult to rise again. The catch proportion (%) of sardine also implied it (Fig.2).

Squid and pacific saury both are by catch or inevitable catch in the mackerel fisheries, and the annual output and proportion were very low whether in purse seine or trawl fisheries (Fig.2). The yearly proportion of squid and pacific saury were very low (below 2.1% and 0.3%, respectively). The catch of other fish species such as pelagic species were also very low, less than 50 tons every year for total purse seine fleet or trawl fleet. Since it is not the main catch, it is difficult to make accurate statistics. Other species include the Comb pomfret (*Hyperoglyphe japonica*), dolphinfish, *Brama japonica*, etc.

In recent years, the data collect system has been improved with detail information recorded, especially in other species. For example, the data of light purse seine and trawl fishery in 2024 released Neon flying squid (0.38%), Pacific saury (0.04%), Japanese anchovy (0.001%), *Brama japonica* (0.004%), *Hyperoglyphe japonica* (0.006%), Common dolphinfish *Coryphaena hippurus*

(<0.001%), lanternfish (0.002%), Yellowtail amberjack *Seriola lalandi* (<0.001%), and released several individuals of sharks, turtles, etc.

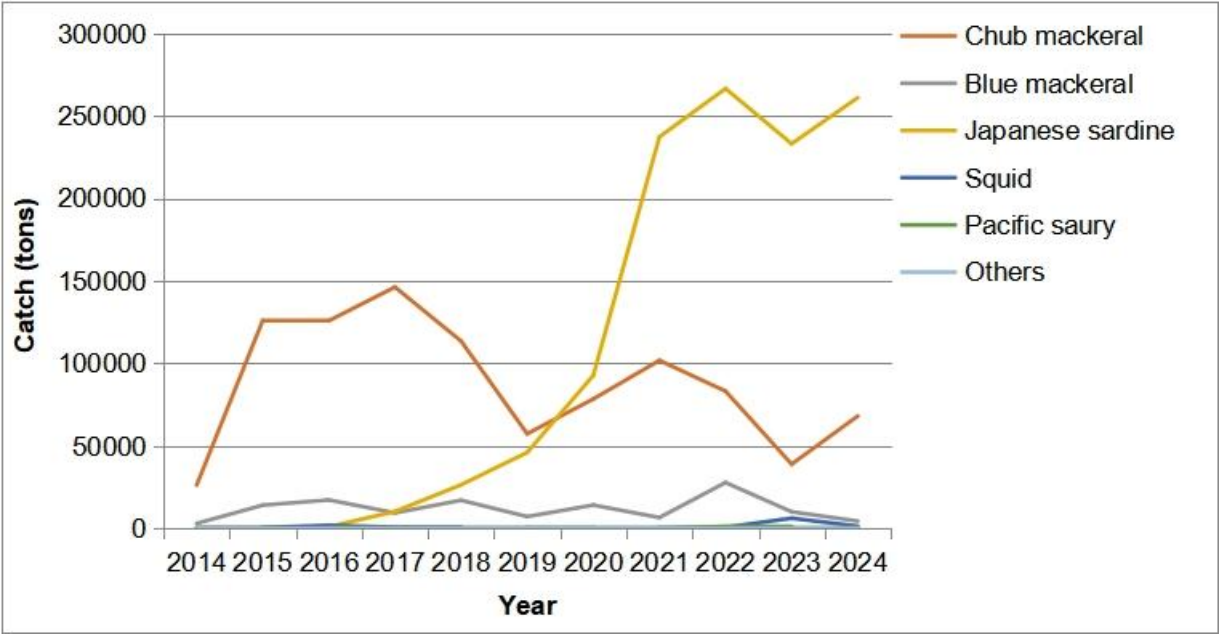


Fig.1 Catches on the fishing species in the mackerel fisheries in China in the NPFC convention area

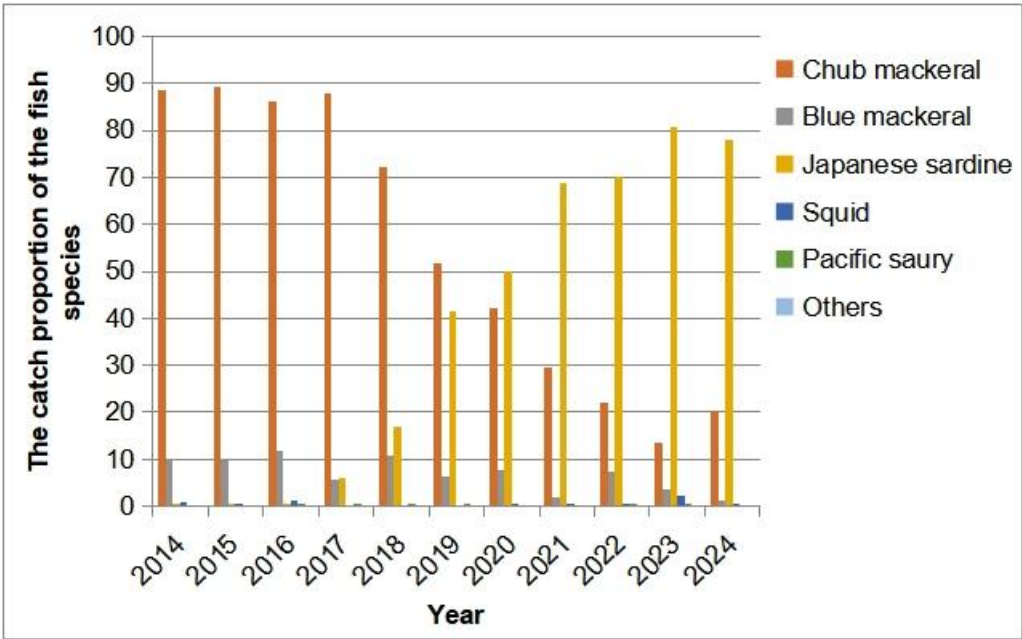


Fig.2 The catch proportion (%) of the fish species in the chub mackerel fisheries in China