



**NPFC, 2025**

10th Meeting of the Technical Working Group on Chub Mackerel  
Stock Assessment

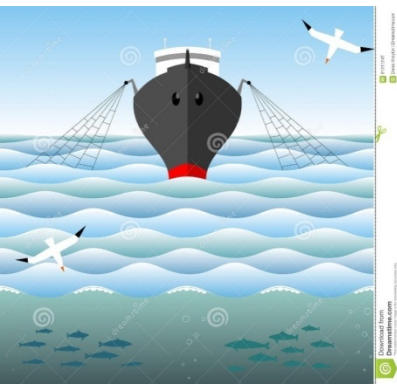


NPFC-2025-TWG CMSA10-IP03

# Review of chub mackerel fishery in China and research activities

China

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# 1. Introduction



Chub mackerel (*Scomber japonicus*) population widely distributes in the Pacific Ocean.

Recently, the CPUE of the species is decreasing from 2019 to 2023. But in 2024, the CPUE increased slightly.



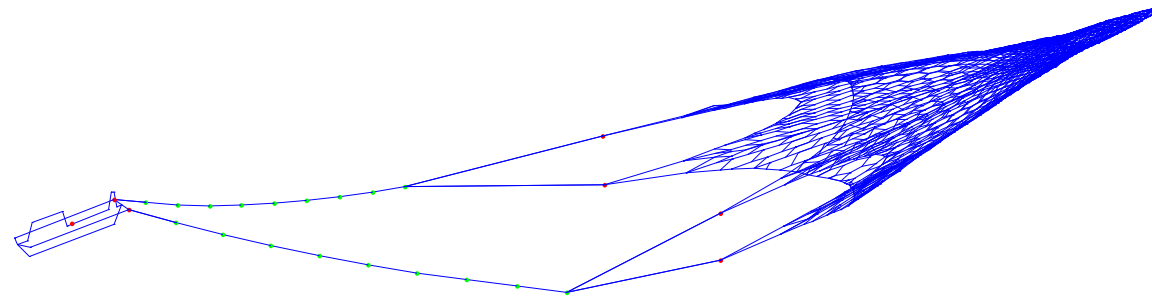


## light-purse seine

In 2024 year, China has two types of fishing nets operated in this fishery including the light-purse seine nets(>97%) and pelagic trawl nets(<3%).

## Trawl nets — **Pelagic trawling**

From one to three trawl vessels were operated in NPFC areas, every year. In 2024, Three vessels seasonally catch the chub mackerel fishery in the NPFC areas which mainly within September-December.



## 2. Description of chub mackerel fishery in China in North Pacific ocean

### Fishing effort and catch

Sample Template for chub mackerel reporting					
Fishing Gear	Statistical Area	Effort		Species name (English and scientific)	Catch Amount (Metric Tons)
		Numbers of fishing vessels	Fishing days		
purse seine	CA	103	18,260	chub mackerel (Scomber japonicus)	69227.316
				sardine (Sardinops melanostictus)	233780.938
Pelagic Trawl		3	499	chub mackerel (Scomber japonicus)	3,139.82
				sardine (Sardinops melanostictus)	27322.922

The catch of chub mackerel in 2024 has increased compared to 2023

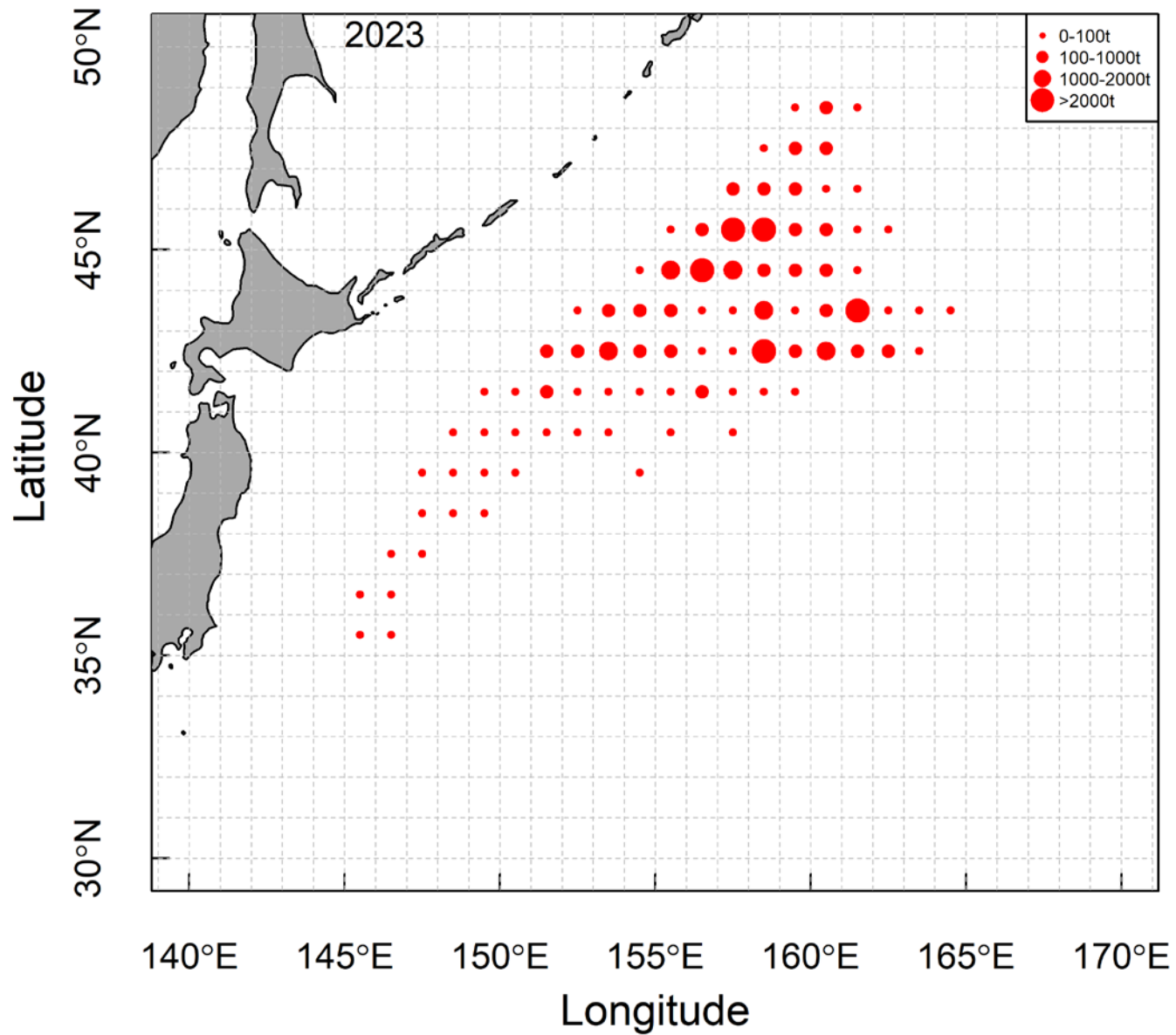
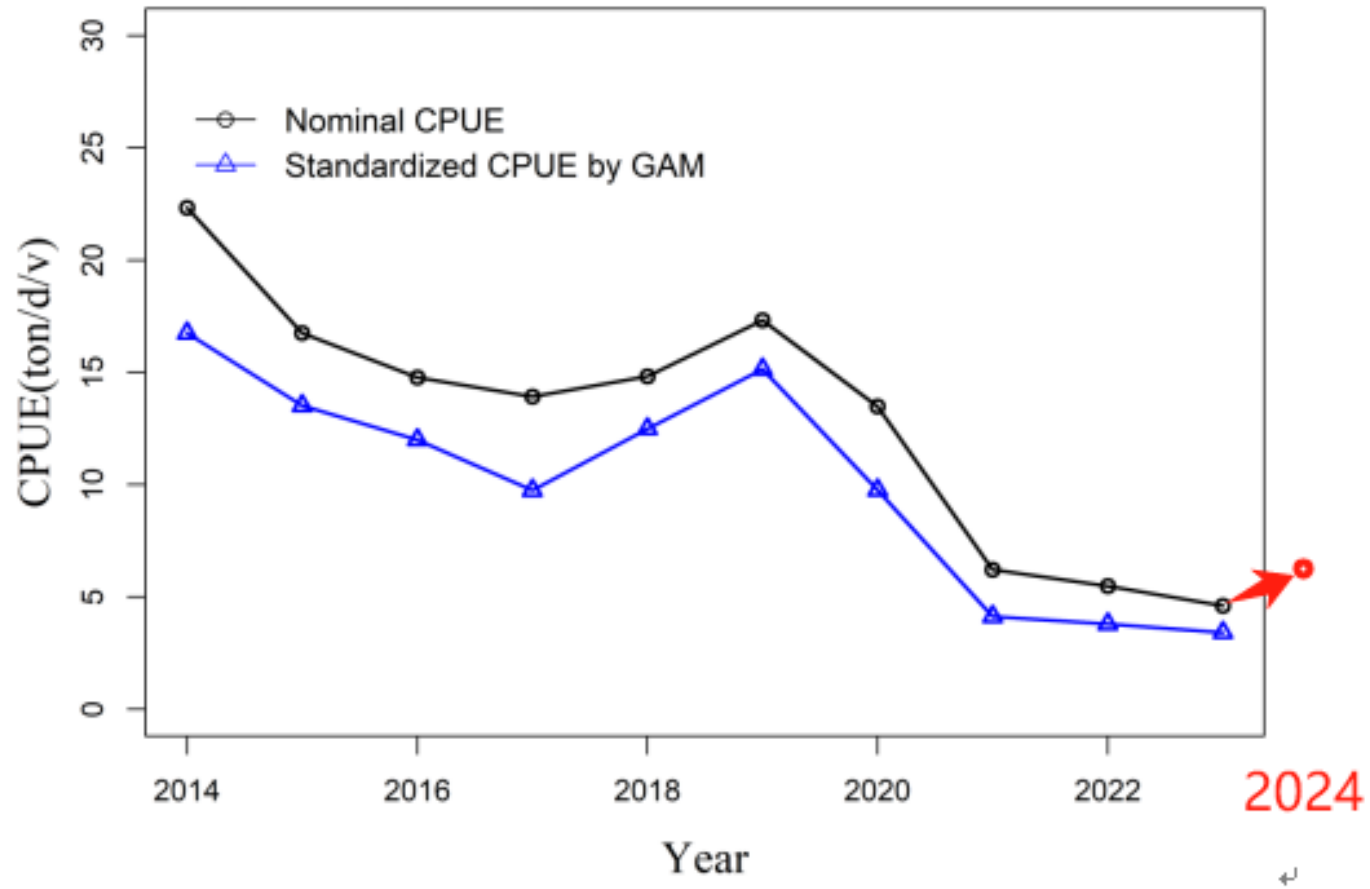


Figure Distribution on the catch (tons) of chub mackerel in China in 2023

The distribution on the chub mackerel in 2024 is likely with 2023 year



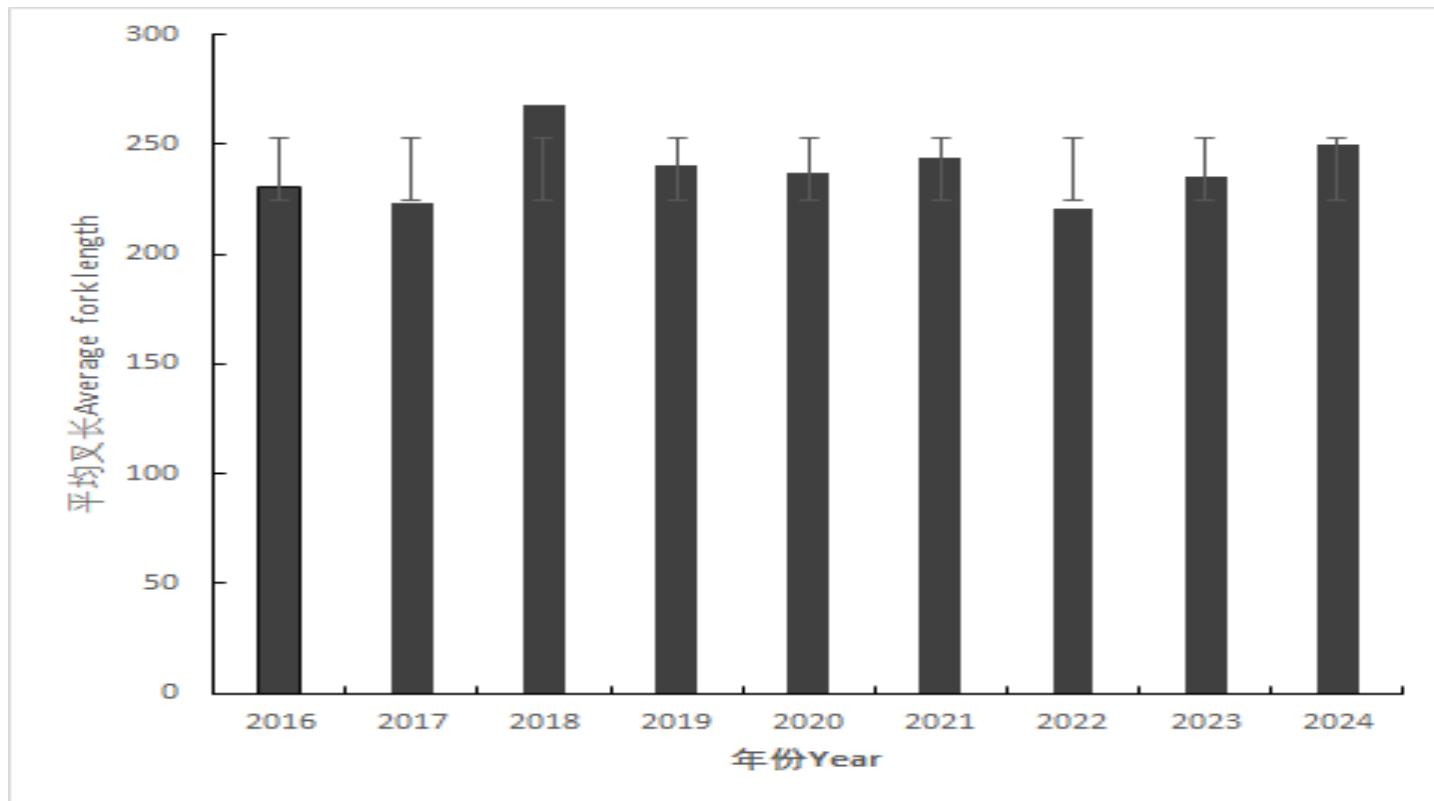
Chub mackerel



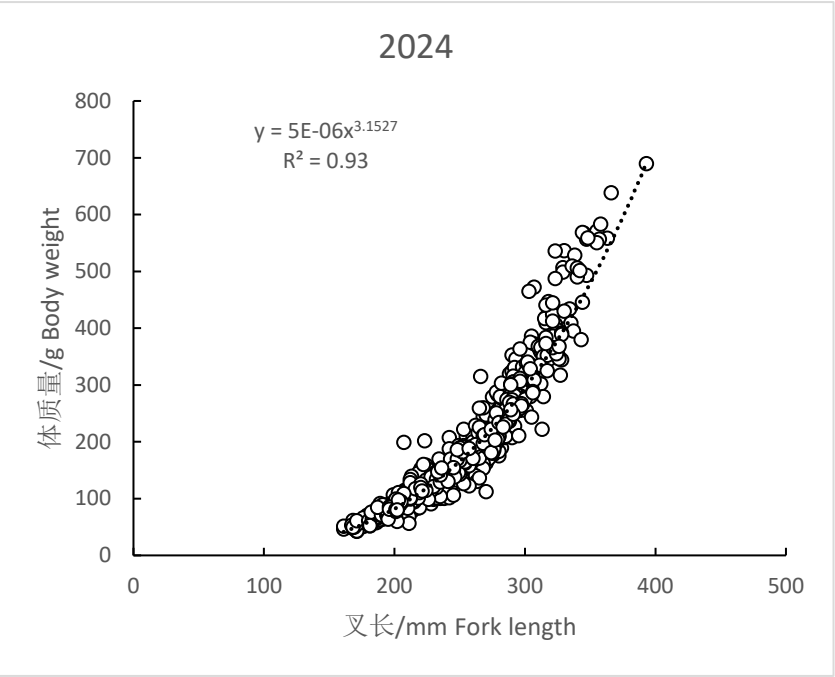
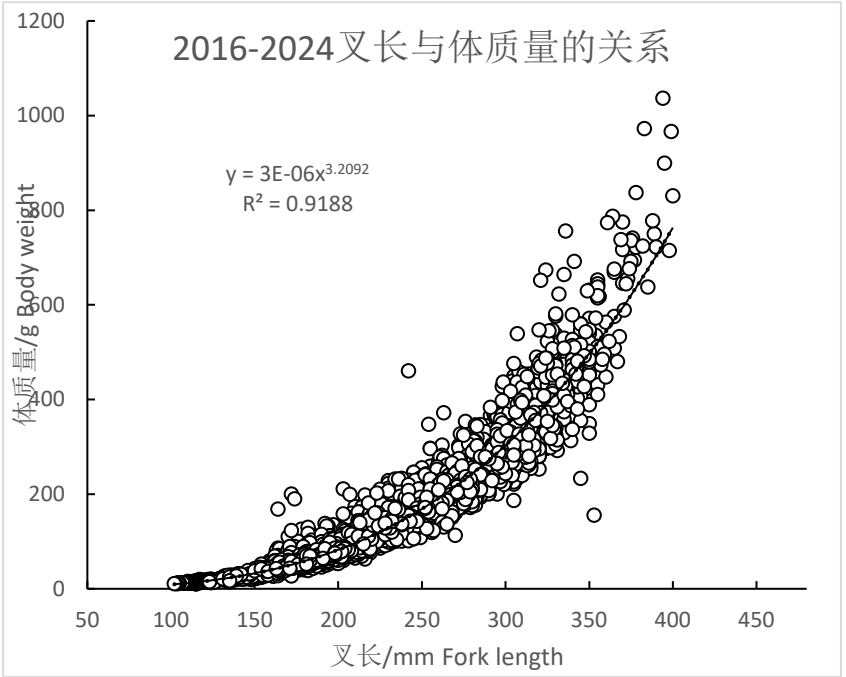
# 3. Fisheries data collection and research activities

- Population biology

In 2023, the average length was 231.1mm, which a little larger than that in 2022. In 2024, the average length was 249.4mm



- Relation between weight and fork length



Length-weight relationship of China's chub mackerel

# Biological and Aging method

- Fork length (mm), weight(g)
- Maturity: The maturity of gonads is divided into I-V Phase by visual observations. **Phase III as a sign of maturity.** Phase III: Individuals whose gonads are maturing. The gonads are already well-developed, and the ovarian volume increases, accounting for 1/3-1/2 of the entire abdominal cavity. The naked eye can clearly see that the ovaries are filled with opaque slightly white or light yellow egg granules.
- Maturity at age: 0-1+age individuals are not maturity, 2 + age individuals at least 30~40% have matured, 3 + age individuals are almost matured, larger than 4 age are 100% maturity. The situation varies every year.

# Aging- otolith age rings reading method

Table 4 Sample sizes of age determination

Year	month	samples	individuals
2017	December	2	40
2018	April to October	14	260
2019	April to November	16	469
2020	April to December	18	322
2021	April to November	23	255
2022	April to December	25	235

In 2023, we increased the number of otolith measurements to 500+

In 2024, the number of otolith measurements is 600+

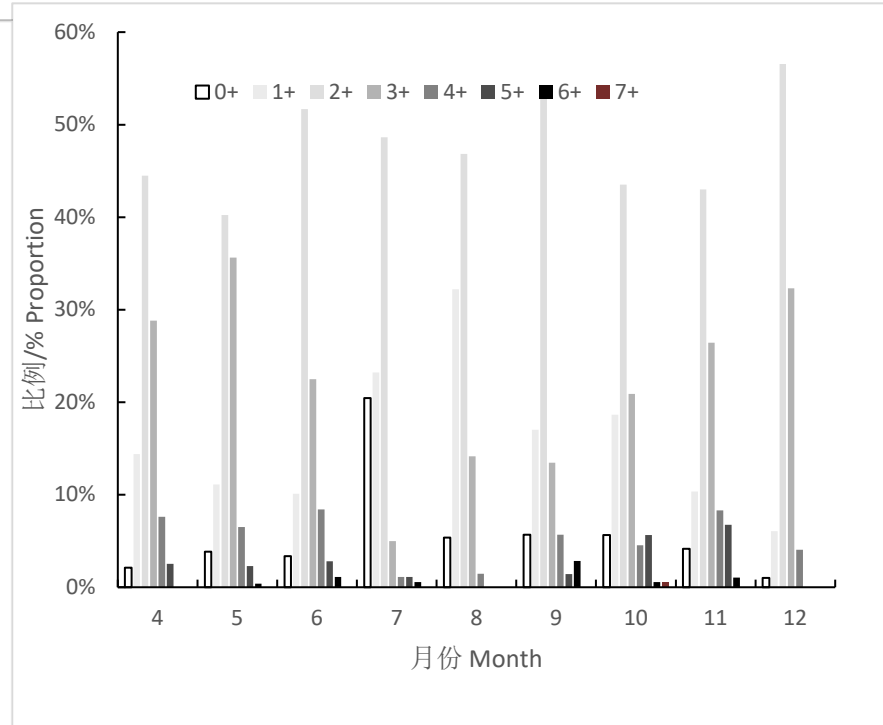
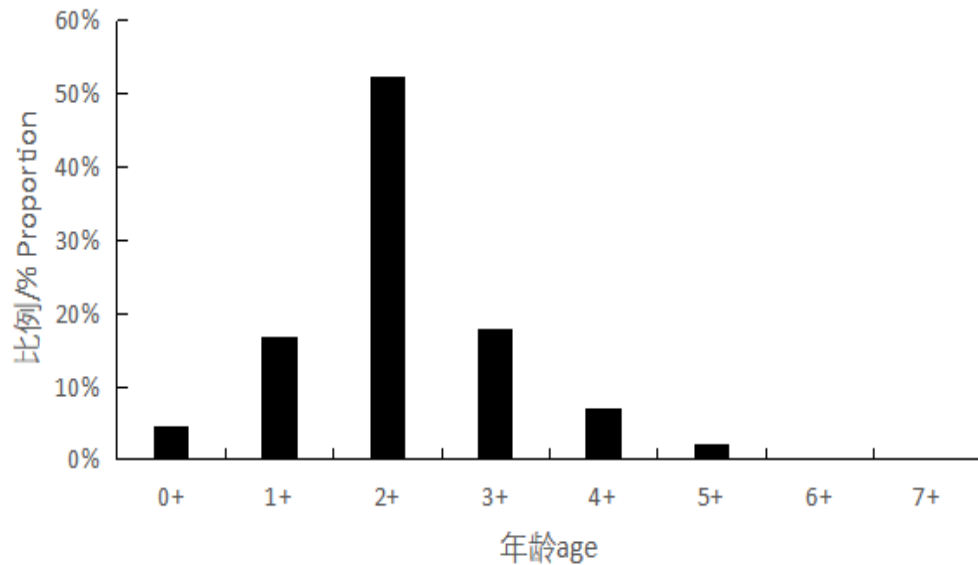
# ALK table

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS							
1	2024	Age and quantity of otoliths in each fork length group																																																		
2	Jan-Mar	FL(cm)	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	sum	ratio												
3	age																																																			
4	0	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/					
5	1	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/					
6	2	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/				
7	3	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/			
8	4	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/			
9	5	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/			
10	6	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/			
11	7+	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/			
12	sum																																																			
13	Apr-Jun																																																			
14	age																																																			
15	0									1	2	3	1																																					7	0.04	
16	1										1	6	6	5	5	3																																		26	0.17	
17	2										1	1	10	16	17	12	9	9	5	2																															82	0.52
18	3															1	1	2	4	4	3	3	6	4																										28	0.18	
19	4																				1	1	2	2	2	2	2	1																					11	0.07		
20	5																											1	1	1																			3	0.02		
21	6																																																0	0		
22	7+																																																0	0		
23	sum									1	2	4	8	7	15	21	21	13	11	13	10	6	5	8	6	3	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	157			
24	Jul-Sep																																																			
25	age																																																			
26	0																																																			
27	1																																																			
28	2																																																			
29	3																																																			
30	4																																																			
31	5																																																			
32	6																																																			
33	7+																																																			

1-3 years old is the dominant age group, FL 19~34cm is the dominant length group.

# Changes in age composition

2024年日本鯖年龄结构比例



In 2024, the main individuals at age range from 1+ to 3+. Similar to other years  
The higher proportion of young individuals in the lower age group from July to August indicates that they migrated to the open sea during this period

# Research activities and training

- ◆ Collection and analysis of all fishing logbooks every year
- ◆ Research Specialist Staff went to fishing vessels or in the ports to collect the samples data
- ◆ Monitor the monthly ratio of chub and blue mackerel catch
- ◆ Biological feature monitoring



- Starting from 2023, we have increased sample collection for large pelagic trawl nets in the North Pacific.
- The fork length frequency in trawl nets is very similar to the purse seine fishery, with very little difference. Further analysis is needed.



• Thank you very much!

