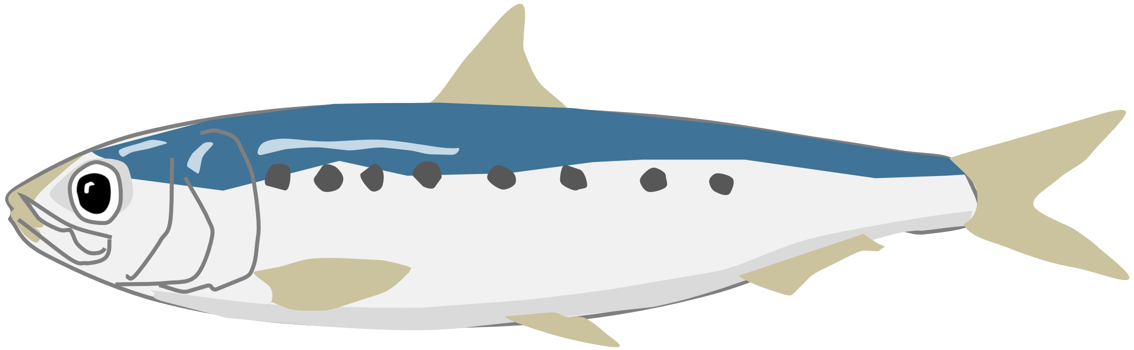
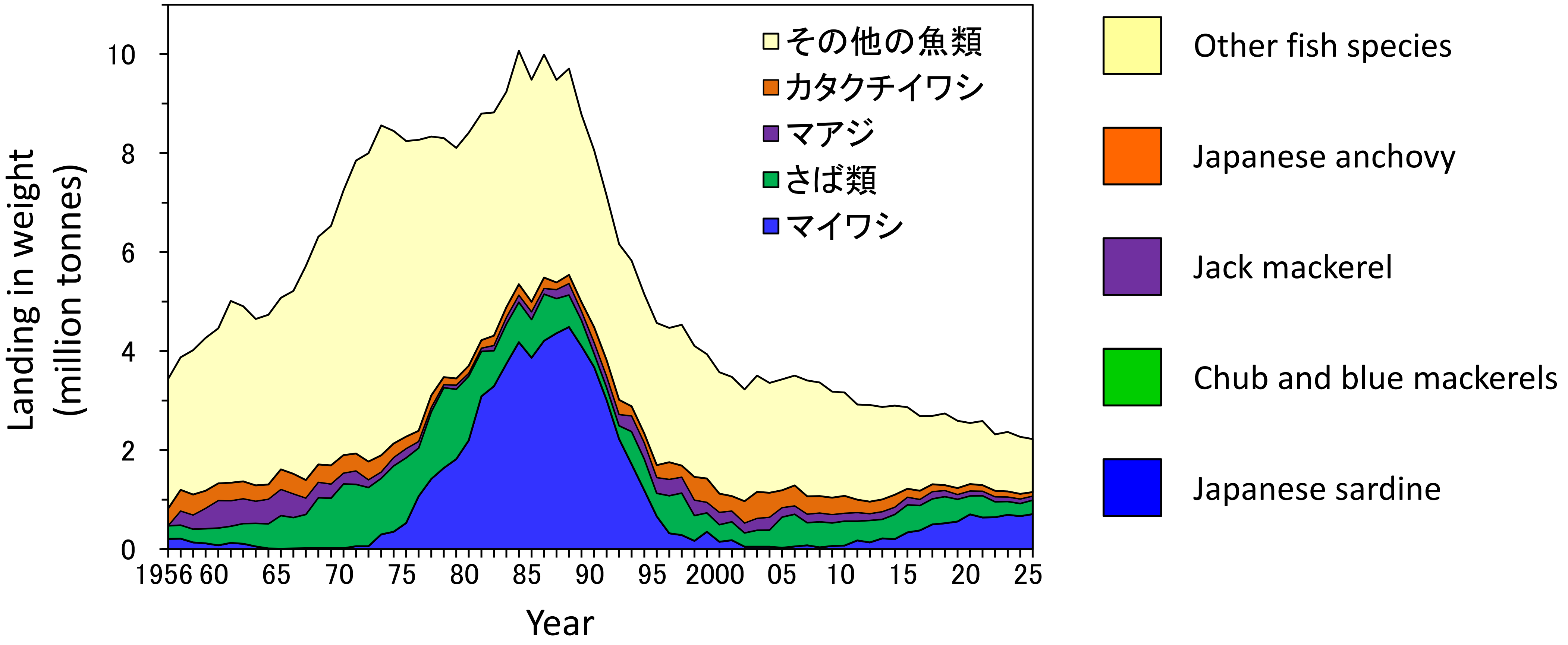
NPFC-2026-SSC JS01-IP03

Overview of the Japanese Sardine Stock in the Western North Pacific



Ryuji Yukami, Sho Furuichi, Akihiro Manabe and Kazuhiro Oshima

Historical Changes in Japan’s Landings by Species



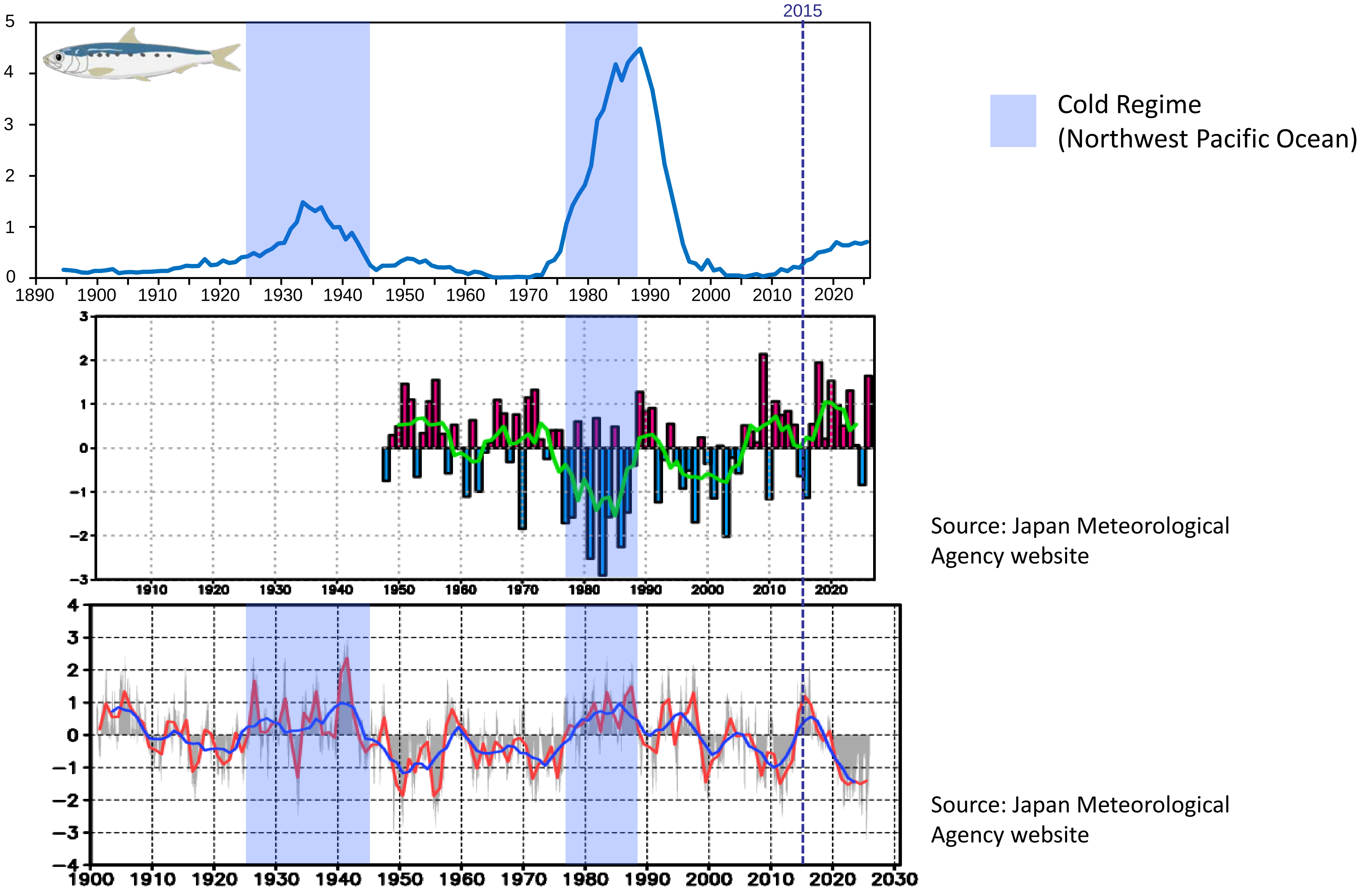
- Japanese sardine is one of the most important commercial fish species in Japan, accounting for a substantial proportion of the country's total fish landings.
- In 2025, the total fish landings in Japan were 2.22 million tonnes, of which Japanese sardine accounted for 0.71 million tonnes (>30%).

Long-term Fluctuations in JS Landings Associated with Climate Variability

Catch in weight of JS in JPN (million tonnes) (1984–2025)

Winter North Pacific Index (NPI) (1959–2025)

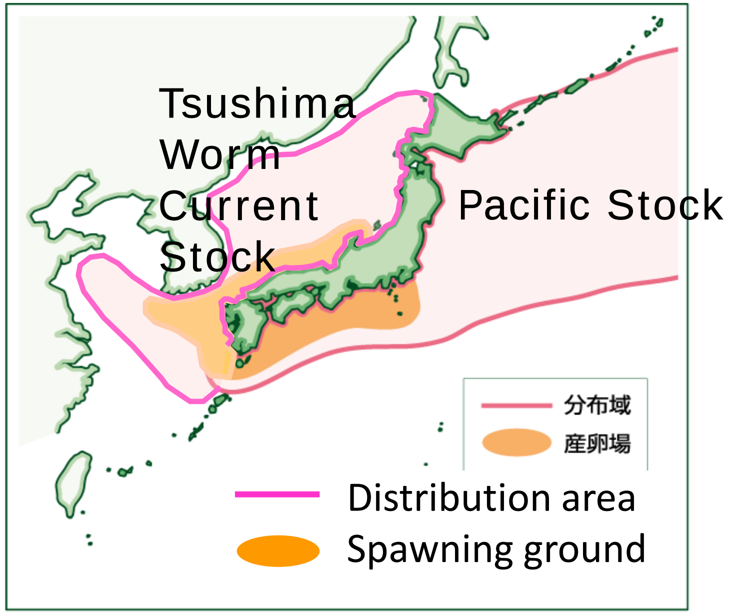
Pacific Decadal Oscillation (PDO) Index (1901–2025)



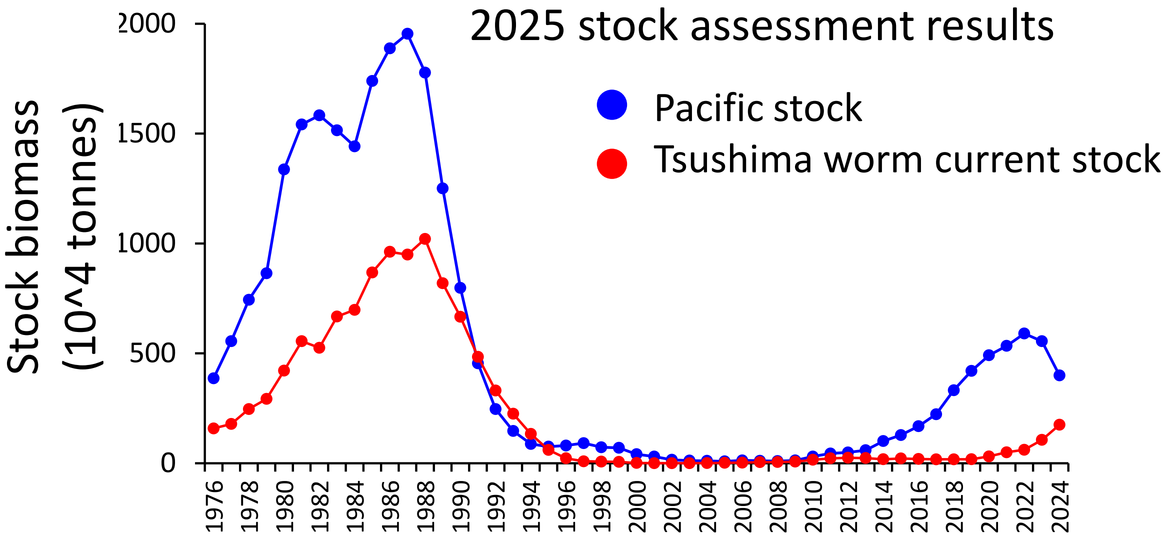
Source: Japan Meteorological Agency website

Source: Japan Meteorological Agency website

Japanese Sardine Stocks Around Japan



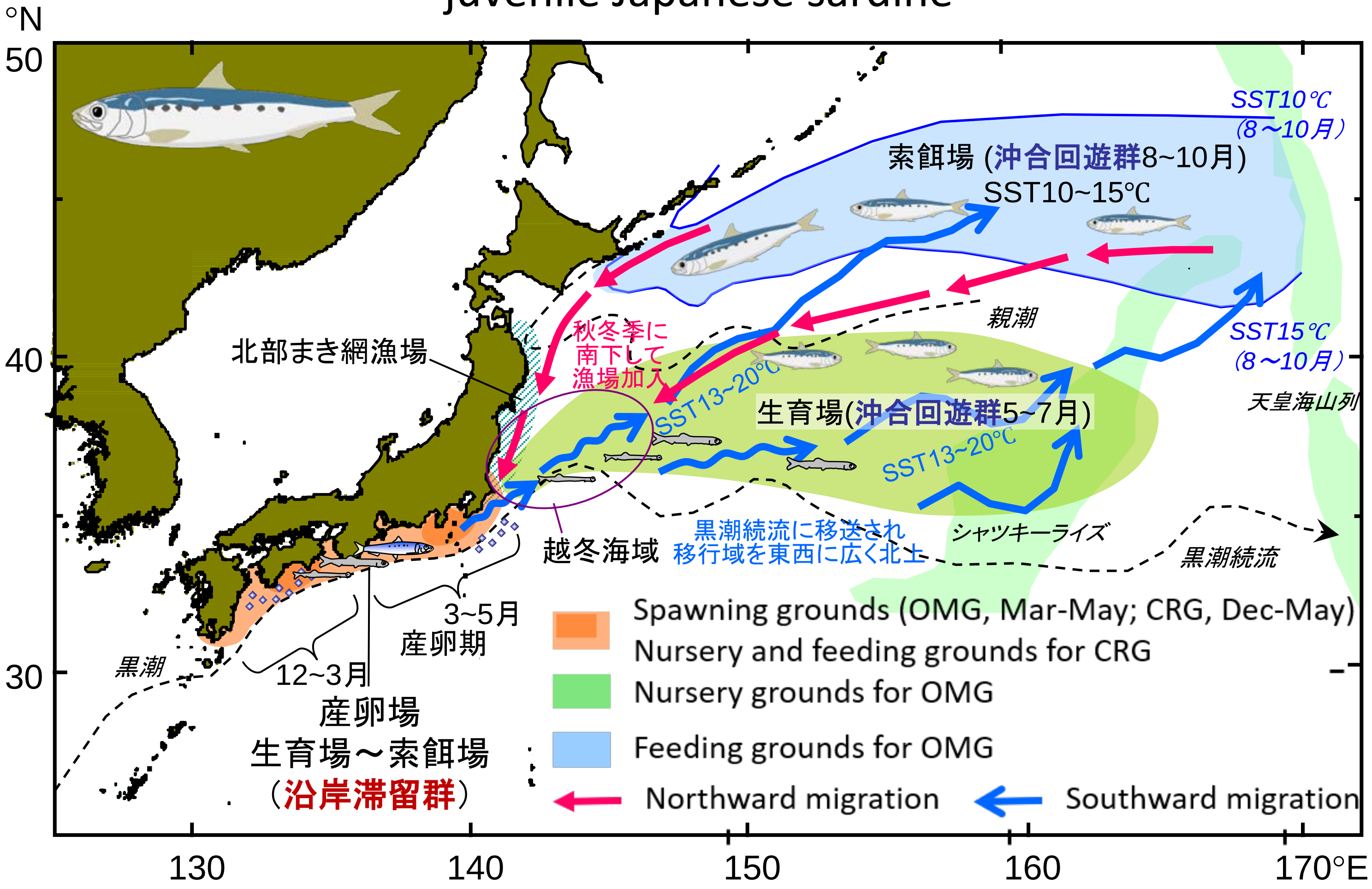
- Japanese sardine around Japan are assessed and managed as two stocks: the Pacific Stock, distributed mainly in the Pacific Ocean, and the Tsushima Warm Current Stock, distributed mainly in the Sea of Japan and the East China Sea.
- Some exchange occurs between the two stocks through the Tsugaru Strait and south of Kyushu.
- Long-term fluctuations in stock abundance have generally been synchronized between the two stocks.



- About 40 years ago, fluctuations in the Tsushima Warm Current Stock lagged those in the Pacific Stock by approximately 2–3 years.
- The recent increase, beginning around 2015, shows a time lag of approximately seven years between the two stocks.
- The Pacific Stock has been declining since 2023.

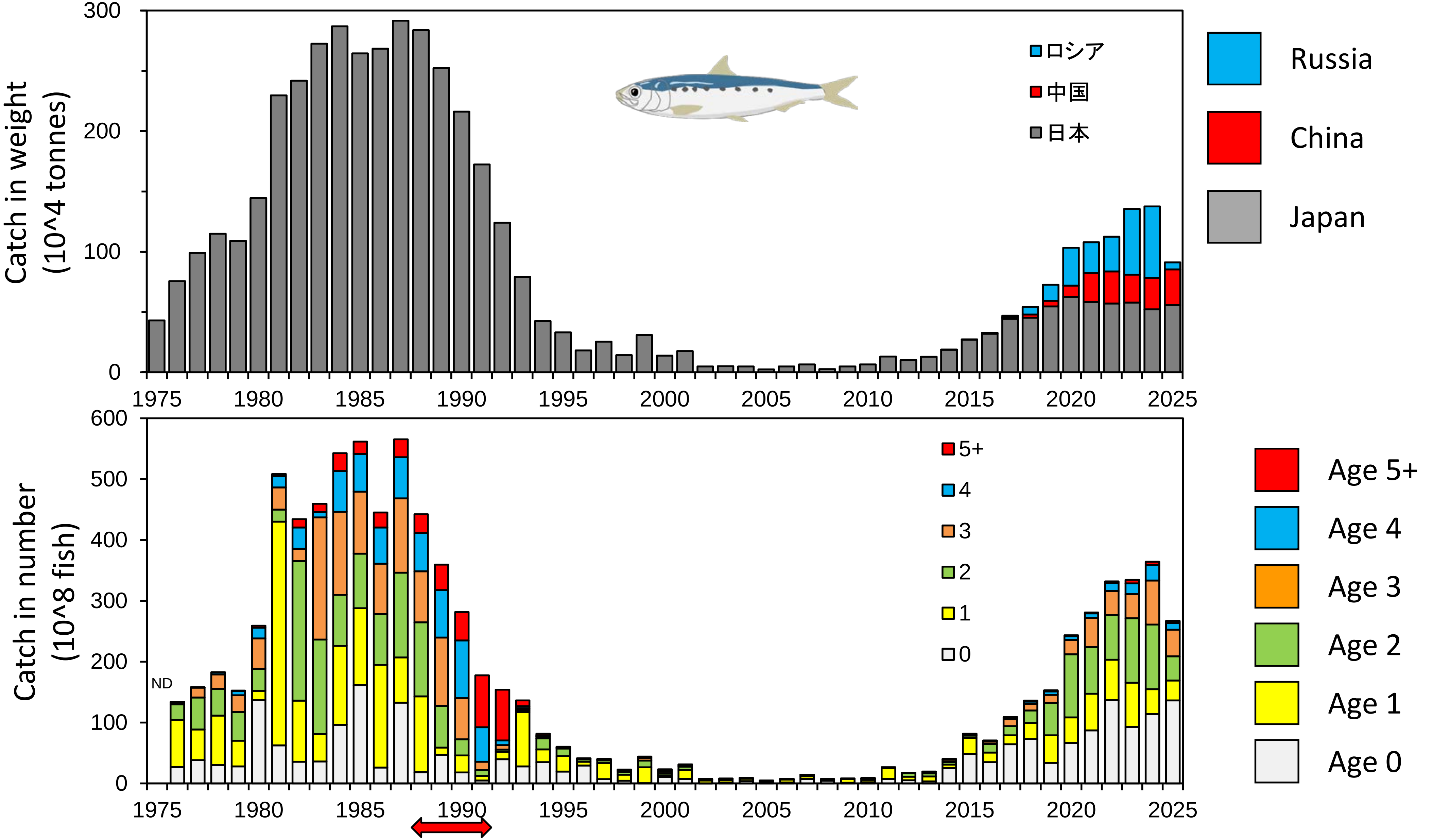
Life history of the Pacific Stock of Japanese Sardine

Schematic illustration of the distribution and migration of juvenile Japanese sardine



- Coastal resident group (CRG): Distributed mainly along the Pacific coast of Japan with relatively limited seasonal migration.
- Offshore migratory group (OMG): Eggs and larvae are transported eastward by the Kuroshio Current, and juveniles utilize the broad western North Pacific as nursery and feeding grounds. This group becomes the dominant component of the stock during periods of stock expansion.

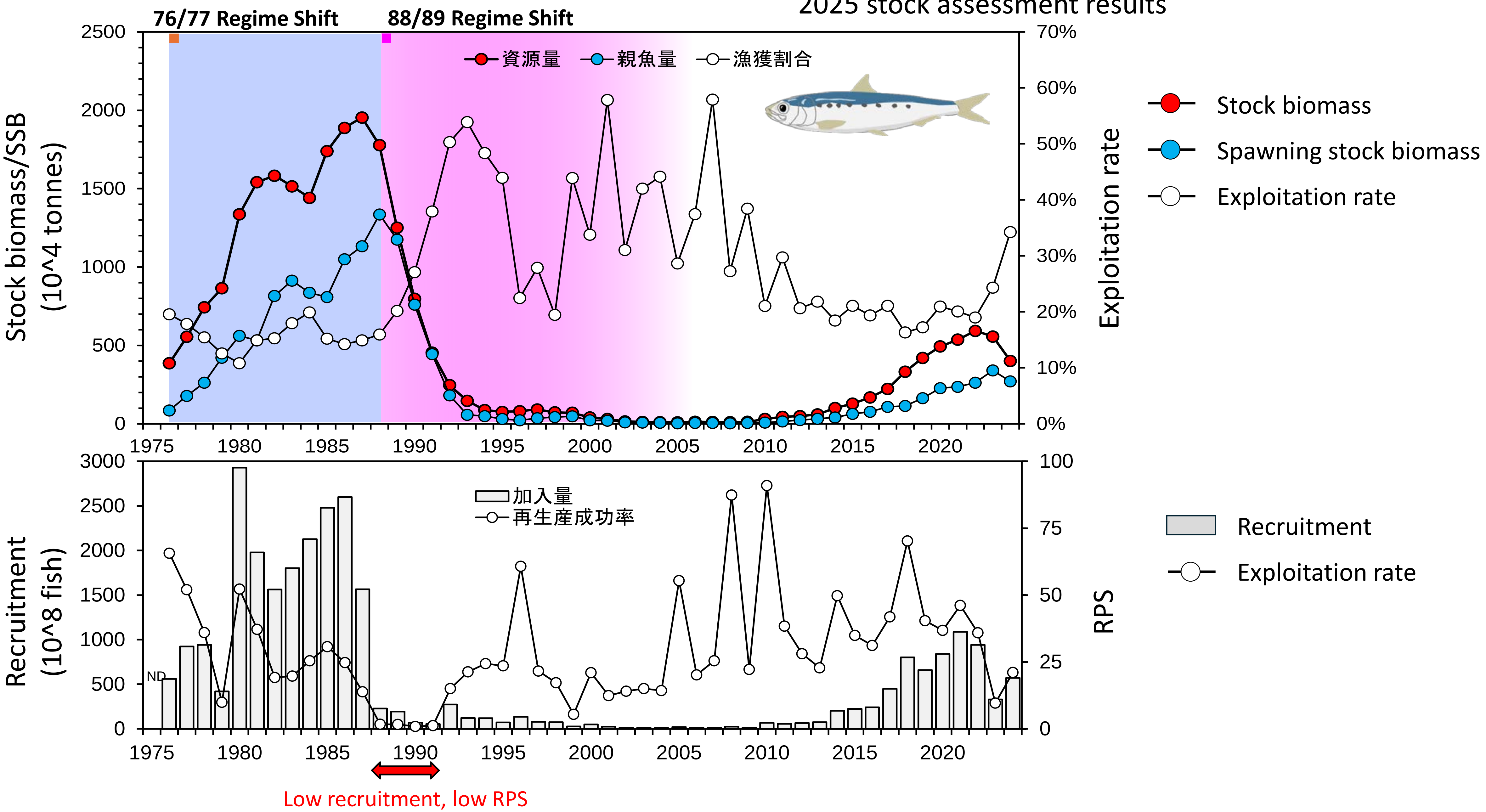
Landings and Catch-at-age in the Pacific Stock of Japanese Sardine



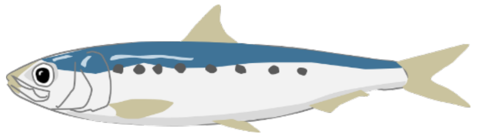
The age composition shifted rapidly toward older fish.

Stock Biomass, Spawning Stock Biomass and Recruitment

2025 stock assessment results



Summary



- Japanese sardine is one of the most important commercial fish species in Japan, accounting for more than 30% of Japan's total fish landings in 2025.
- Japanese sardine around Japan are assessed and managed as two stocks. This presentation focuses on the Pacific Stock, which is distributed throughout the NPFC Convention Area.
- Long-term fluctuations in the Pacific Stock have been closely associated with climate variability in the North Pacific.
- The Pacific Stock consists of coastal resident and offshore migratory groups, with the offshore migratory group dominating during periods of high stock abundance.
- During the recent period of increasing catches, age-0 fish dominated the catches, while catches by Russia and China increased.
- The Pacific Stock has declined since 2023 despite a high spawning stock biomass, and the recent decline has been associated with poor recruitment and low recruitment per spawner (RPS).