

One year since the start of "treated water" discharge - Where the fishing industry is now and where it is going

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1. Discharge of "treated water" into the ocean and its impact on the fishing industry

August 24 marked one year since the Tokyo Electric Power Company (TEPCO), which manages the Fukushima Daiichi Nuclear Power Plant, began discharging "treated water" stored at the plant into the ocean. Treated water is contaminated water that was injected into the plant to cool the nuclear fuel (debris) that melted down in the March 2011 and was purified with a special device. The treated water is stored in tanks, but the site is now full of tanks and has begun releasing the water.¹ Currently, the fourth release in FY2024, and the eighth release in total, is scheduled to take place by the end of August, which means that a total of approximately 62,000 tons will be released since the start of the project.

The treated water contains tritium that cannot be removed even by specialized equipment and other radioactive materials. Therefore, the concentration will be diluted to less than about 1/40th of the national standard (1,500 Becquerel²/liter), and the treated water will be disposed of over several decades. Although no radioactive materials exceeding the standard values have been detected in the discharge so far, fishermen, mainly from Fukushima Prefecture, have consistently opposed the ocean discharge of the treated water³ and China, which was the largest exporter of Japanese marine products, embargoed it after the start of the ocean discharge and continues to do so today.

In August 2023, the Sasakawa Peace Foundation published "[Urgent Proposal on the Discharge of ALPS Treated Water: An Analysis Based on Scenario Planning](#)" "" to coincide with the start of the discharge of treated water into the ocean, and recommended measures to be taken. One year after the start of the discharge, how are exports and prices of Japanese marine products faring? This report analyzes export and price trends, and discusses measures to ensure the safety of the discharge of treated water into the ocean and to gain the trust and development of Japan's fisheries industry both domestically and internationally.

2. Fisheries one year after the discharge of treated water and the future of the discharge

(1) Export and price trends after the start of discharge

On August 2, 2024, the Ministry of Agriculture, Forestry and Fisheries (MAFF) released export trends for marine products for the first half of this year (January to June). According to the report, total export value was 166.1 billion yen, down 19% from the same period last

year before the Chinese embargo took effect. Scallops (fresh and frozen), which used to account for more than 20% of Japan's total marine product exports, mainly to China, declined 37% to 24.1 billion yen. Sea cucumbers, which were also popular in China as a high-end product, dropped a substantial 47% year-on-year to 5.5 billion yen (see Table 1).

The downward trend in export value has continued since the second half of the previous year; in 2023 as a whole, exports totaled 390.1 billion yen (preliminary figures), a 0.7% increase over 2022 and a record high. However, when the impact of the embargo began to show up in statistics, exports in October were 25.4 billion yen, down 28.2% from the same month in 2022, November was down 18.8%, and December was down 8.6%, continuing the downward trend⁴. The downward trend continued in the first half of this year. It will be interesting to see how much they can recover in the second half of the year by focusing on developing sales channels outside of China.

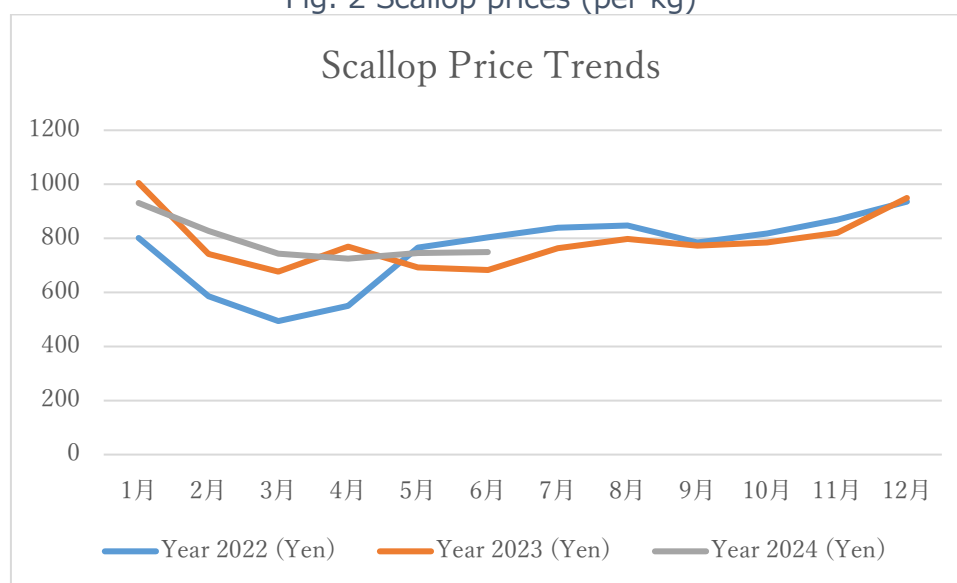
Table 1 : Japan's Marine Products Exports in the First Half of 2024/Major Commodities and Year-on-Year Comparisons

list of articles	Amount (billions of yen)	YoY change
Total Fresh Fisheries Products	1,297	-20.5%.
Scallops (including frozen)	241	-37.2
pearl	218	-2.5%.
skipjack tuna	763	-27.7
Processed marine products as a whole	364	-14.5%.
Scallops (processed)	59	-26.3
Sea cucumber (processed)	55	-47.0
boiled fish-paste products	54	+13.1% (+13.1% for the first half of the year)

Source: Prepared by the author based on "[Exports of Agricultural, Forestry, Fishery and Food Products in the First Half of 2024 \(January-June\)](#)"

In terms of price trends by commodity, scallops, Japan's largest export commodity, provide one indicator of where the fisheries industry is today. As shown in Figure 1, there is no significant price decline in the first half of 2024 compared to the past two years. Among scallops, Hokkaido Okhotsk scallops are in season from early summer to fall, while Hakodate scallops are in season from December to March. Aomori also has two seasons: May through August, when the scallops grow, and December through March, when the reproductive nests (eggs) develop. Whether or not the price will enter an upward trend from August, when the distribution volume increases, through fall and into winter, as it did in 2022 and 2023, remains to be seen. With China unlikely to lift the embargo early, stimulating domestic consumption is likely to be key.

Fig. 2 Scallop prices (per kg)



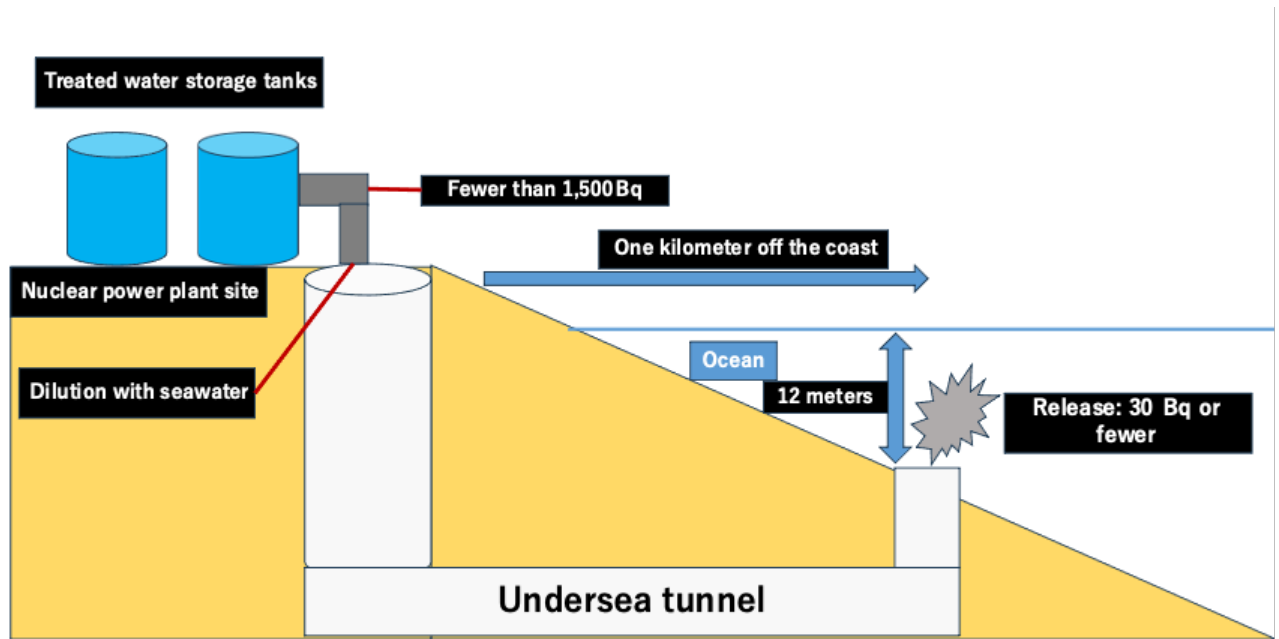
Source: Prepared by the author based on "[Market Conditions of Scallops at Toyosu Market](#)"

(2) Future of discharge of treated water into the ocean

Looking at export trends and prices of marine products in the year since the start of treated water discharge, it is clear that although prices have avoided extreme declines, the impact of the embargo by China has not been small. Trouble associated with the discharge could have a tremendous impact on Japan's entire fishery industry, and it is necessary to correctly understand how the discharge of treated water will proceed in the future.

The Fukushima Daiichi Nuclear Power Plant has a cumulative total of over 1.31 million tons of treated water stored in tanks, but for the discharge, the treated water is purified with a special device, further diluted with seawater, and discharged 1 km offshore from the plant site through an undersea tunnel (see Figure 2).

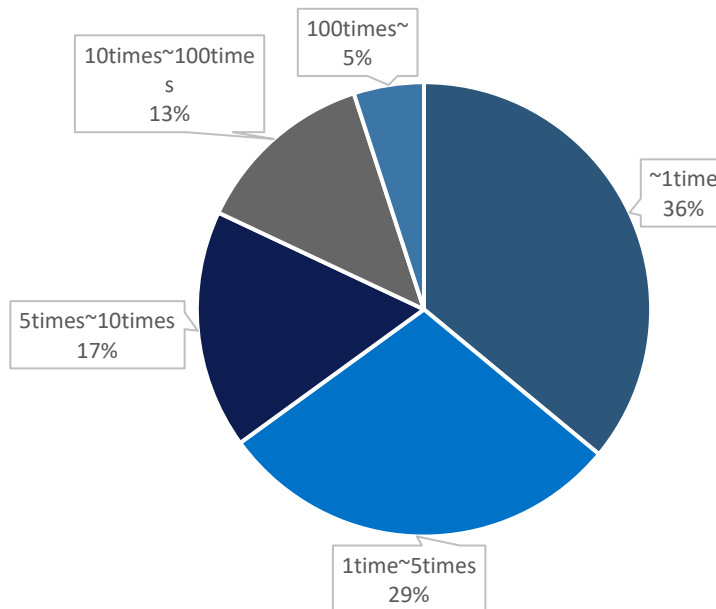
Figure 2: Overview of treated water discharge to the sea



Source: Prepared by the author

The ALPS system is said to be capable of removing most radioactive materials, except tritium, to a level lower than the "Notified Concentration Limit," which is the standard for releasing radioactive materials into the environment. However, when the system was first put into operation, it failed to remove enough radioactive materials due to a series of malfunctions. As shown in Figure 3, currently only 36% of the treated water is below the "notified concentration limit" by a factor of 1 and can be immediately discharged into the ocean. The discharge to the ocean to date has been mainly from treated water with a notified concentration limit of less than one times the limit.

Figure 3: Breakdown of ALPS treated water by "Notified Concentration"



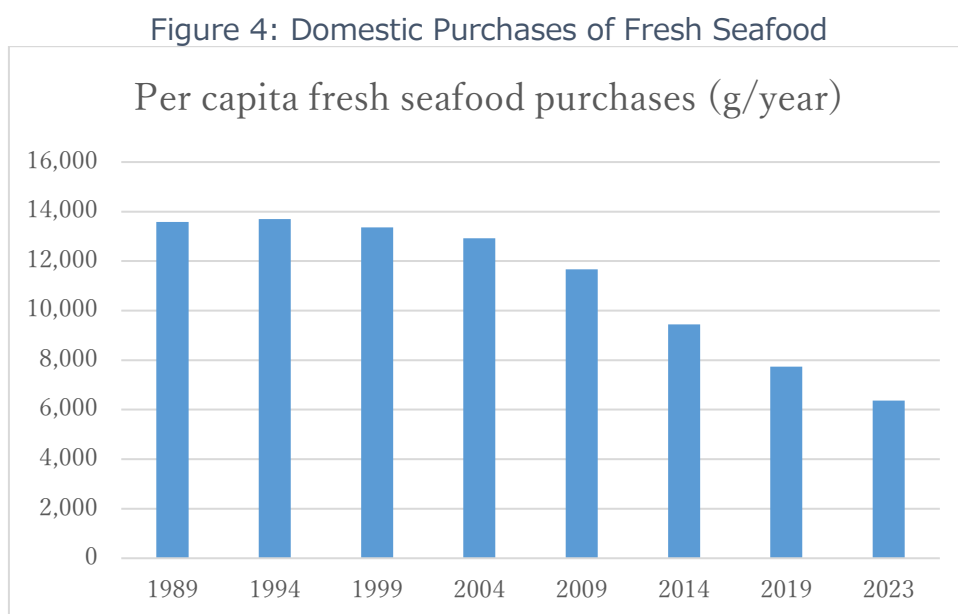
Source: Prepared by the author based on TEPCO's "[Treated Water Portal Site](#)"

Furthermore, the circulation of water for debris cooling is still continuing, generating about 90 tons per day of contaminated water containing radioactive materials. In order to reduce or eliminate the amount of contaminated water generated, it is necessary to remove this debris, but no progress has been made. TEPCO has postponed the first debris removal from Unit 2 of the Fukushima Daiichi Nuclear Power Plant, which was scheduled for March 2024.⁵ In addition, the company was scheduled to begin removing debris on a trial basis in August of the same year, but was forced to postpone due to a flaw in the installation of equipment.⁶ The completion of the decommissioning of the plant, which has been announced as 2051, is now in jeopardy. In any case, it is certain that the ocean discharge will continue for nearly 30 years, and it remains to be seen whether it can be continued without trouble over the long term.

3. The Essential Problems Facing Japan's Fisheries Industry

It is important to avoid problems associated with the discharge of treated water into the ocean and to lift the Chinese embargo and other countries' import restrictions on Japanese marine products. On the other hand, as we pointed out in our urgent recommendations, if we

look at other data on the fisheries industry, we find that Japan's fisheries industry is heading for decline, regardless of the ocean discharge (see Figure 4). This essential issue must also be kept in mind.



Source: Prepared by the author based on Fisheries Agency, "[Trends in Japanese Fisheries since FY2022](#)."

Per capita purchases of fresh seafood in 2023 were 6,368 g, down 18% from 2019; since 2000, purchases have consistently declined through 2019, with only a slight increase in 2020 due to an increase in eating at home due to the spread of COVID-19 infection, but starting in 2021, purchases began to decline again.⁷ Last year, efforts to stimulate domestic demand, including a call for scallop consumption by the Minister of Agriculture⁸ to minimize the impact of the Chinese embargo, were not fully effective.

4. Toward the Revival of Japan's Fisheries Industry

An analysis of trends during the first year since the start of the discharge of treated water shows that the impact of the embargo by China has been significant, and this is reflected in the decrease in the export value of marine products. On the other hand, domestic consumption of marine products has been in a long-term slump regardless of the start of the discharge. We would like to make two points toward the revival of Japan's fisheries industry.

First, TEPCO and the Japanese government should not rest on their laurels, but should take all possible measures to ensure the safety of the discharge while lifting the embargo by China and restrictions on imports of Japanese marine products by other countries as soon as possible. Next, more emphasis should be placed on increasing domestic consumption of marine

products, and serious efforts should be made to maintain and develop the fisheries industry and fishing villages engaged in fish processing. Starting in 2022, the Fisheries Agency has designated the 3rd to 7th of every month as "Sakana no Hi" (Fish Day) and has begun efforts to increase consumption by holding fairs in cooperation with retailers, seafood processors, and food service providers, and by stimulating interest in marine products among the younger generation through dietary education at school lunches.⁹ I hope that the entire country will make efforts to both ensure the safety of marine releases and revive the fisheries industry.

(End)

¹ [Current status of ALPS treated water](#)," TEPCO web page.

² Bq is becquerel, a unit of measurement for the ability of a radioactive material to emit radiation. The unit for expressing the effect of radiation on the human body is sievert. The [unit for radiation and radioactivity](#)" Hokuriku Electric Power Company website.

³ "Special Resolution on the Policy of ALPS Treated Water Discharge to the Sea," All Fishermen's Federation, June 22, 2023.

⁴ [Information on Import and Export of Agricultural, Forestry and Fishery Products for November 2023](#)," Ministry of Agriculture, Forestry and Fisheries of Japan.

⁵ NHK, "[Fukushima Daiichi Nuclear Power Plant Unit 2 Nuclear Fuel Debris Test Extraction Start Rescheduled](#)," January 15, 2024.

⁶ The Yomiuri Shimbun, "[Debris removal from Fukushima Daiichi Nuclear Power Plant Unit 2 suddenly suspended due to pipe connection error](#)," August 22, 2024.

⁷ Fisheries Agency, "[Trends in Japanese Fisheries since FY2022](#)," June 11, 2024.

⁸ [Summary of Press Conference by Minister of Agriculture, Forestry, and Fisheries Miyashita](#)," September 29, 2023, Ministry of Agriculture, Forestry, and Fisheries.

⁹ See footnote 7.