Cesium Levels in Fish off Fukushima Not Dropping

MALCOLM FOSTER,Associated Press

TOKYO (AP) — Radioactive cesium levels in most kinds of fish caught off the coast of Fukushima haven't declined in the year following Japan's nuclear disaster, a signal that the seafloor or leakage from the damaged reactors must be continuing to contaminate the waters — possibly threatening fisheries for decades, a researcher says.

Though the vast majority of fish tested off Japan's northeast coast remain below recently tightened limits of cesium-134 and cesium-137 in food consumption, Japanese government data shows that 40 percent of bottom-dwelling fish such as cod, flounder and halibut are above the limit, Ken Buesseler, a marine chemist at the Woods Hole Oceanographic Institution in Massachusetts, wrote in an article published Thursday in the journal Science.

In analyzing extensive data collected by Japan's Ministry of Agriculture, Fisheries and Forestry, he found that the levels of contamination in almost all kinds of fish are not declining a year after the March 11, 2011 disaster. An earthquake and tsunami knocked out the Fukushima Dai-ichi plant's vital cooling system, causing three reactor cores to melt and spew radiation onto the surrounding countryside and ocean.

"The (radioactivity) numbers aren't going down. Oceans usually cause the concentrations to decrease if the spigot is turned off," Buesseler told The Associated Press in an interview. "There has to be somewhere they're picking up the cesium."

"Option one is the seafloor is the source of the continued contamination. The other source could be the reactors themselves," he said.

The safety of fish and other foods from around Fukushima remains a concern among ordinary Japanese, among the world's highest per capita consumers of seafood.

Most fish and seafood from along the Fukushima coast are barred from the domestic market and export. In June, authorities lifted bans on octopus and sea snails caught off Fukushima after testing showed very low levels of radiation.

But the most contaminated fish found yet off Fukushima were caught in August, some 17 months after the disaster. The two greenlings, which are bottom-feeders, had cesium levels of more than 25,000 becquerels per kilogram, 250 times the level the government considers safe.

A government fisheries official, Chikara Takase, acknowledged that the figure for

the greenlings was "extremely high," but he added high numbers were detected only in limited kinds of fish sampled in the restricted waters closest to the plant. He acknowledged that "we have yet to arrive at a situation that allows an overall lifting of the ban."

To bolster public confidence in food safety, the government in April tightened restrictions for cesium-134 and cesium-137 on seafood from 500 to 100 becquerels per kilogram. But the step led to confusion among consumers as people noticed more products were barred.

Plant operator Tokyo Electric Power Co. said some radioactive water used to cool the Fukushima reactors leaked into the ocean several times, most recently in April.

"Given the 30-year half-life of cesium-137, this means that even if these sources (of contamination) were to be shut off completely, the sediments would remain contaminated for decades to come," Buesseler wrote in Science.

Experts suspect that radioactive water from the plant is seeping into the ground water at the same time, and is continuing to make its way into the ocean.

Hideo Yamazaki, a marine biologist at Kinki University, agrees with Buesseler's theory that the cesium is leaking from the Fukushima nuclear plant and that it will contaminate seafood for more than a decade.

He said he believes the plant will continue to leak until cracks and other damage to the three reactors that melted down are repaired. It's unclear when that work will be completed, or even how, because radiation levels in the reactors are too high for humans or even robots.

"The current levels of contamination in the fish and seafood from the Fukushima coast will continue for a while, perhaps more than 10 years, judging from the progress in the cleanup process," Yamazaki said in an email.

Buesseler, who led an international research cruise off northeastern Japan in 2011 to study the spread of radionuclides from the Fukushima plant, says predicting patterns of contamination requires more than monitoring data on fish. Careful study of the ocean waters and sediments is also needed to determine how quickly the system will recover.

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Associated Press writer Mari Yamaguchi contributed to this report.

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