



## **U.S. Seafood Safe and Unaffected by Radiation Contamination from Japanese Nuclear Power Plant Incident; U.S. Monitoring Control Strategy Explained**

Based on both the information currently available about radiation contamination from the Japanese nuclear power plant incident and on the control measures in place and monitoring efforts by the U.S. Environmental Protection Agency (EPA), the U.S. Food and Drug Administration (FDA) and the National Oceanic and Atmospheric Administration (NOAA) have high confidence in the safety of seafood products in the U.S. marketplace or exported U.S. seafood products.

The U.S. government's measures to monitor and control the three potential routes by which seafood contaminated with radionuclides from the Japanese nuclear power plant incident might enter the U.S. food supply are described below.

### **Monitoring the Risk of Contamination to Migratory Fish**

The only Japanese fish with levels of radiation exceeding standards is the Japanese sand lance, which does not migrate away from the Japanese coast.

Juvenile North Pacific albacore tuna (2-5 years old) typically begin an annual transoceanic migration in the spring and early summer in waters off Japan, continue migrating throughout the late summer into inshore waters off the U.S. Pacific coast, and end their migration in the late fall and winter in the western Pacific ocean. Migratory patterns of North American Pacific salmon most commonly do not reach the coastal or offshore waters of Japan. The majority of Alaska salmon spend most of their ocean residence in the Gulf of Alaska.

The migration of tuna and other species of fish from the coast of Japan to U.S. waters would take days or months under the best of circumstances, and vessels fishing beyond U.S. waters must also travel several days to return to port. During that time needed for a fish contaminated by radiation in Japan to migrate, be caught and reach the market, the level of short-lived radionuclides such as I-131 would drop significantly through natural radioactive decay. To date, no significantly elevated radiation levels have been detected in migratory species, including North Pacific albacore.

FDA has not detected any longer-lived radionuclides, such as Cs-137, in any fish imported from Japan. The longer-lived radionuclides found by Japanese tests have been at levels below the FDA threshold known as the Derived Intervention Level (DIL), and these have been detected in only the sand lance samples.

### **Monitoring Fish in Japanese Waters and Seafood Shipments to the U.S.**

FDA is in close contact with Japanese regulatory authorities, who are monitoring fish caught in the prefectures surrounding the damaged nuclear power plant. Currently, they have found only one seafood species, the Japanese sand lance, with levels of radiation exceeding standards. The Japanese sand lance is principally consumed in Japan, with some product normally making its way to the United States through fish meal and as a traditional Asian food item. However, no shipments of the Japanese sand lance have been offered for entry into the U.S. since this incident began.

FDA is performing field examinations for gamma-ray emitting radionuclides on approximately 40% of the seafood products that are being shipped to the United States. During the period from March 21, 2011 to April 25, 2011, 3,496 examinations were performed. To date, no field examinations have shown levels above background. FDA is also randomly sampling selected entries and subjecting them to laboratory analysis. To

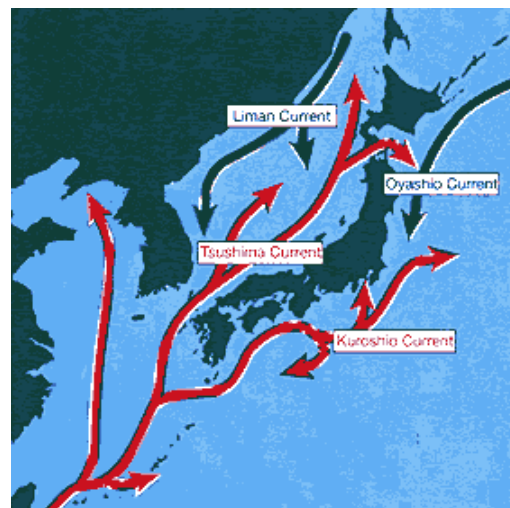
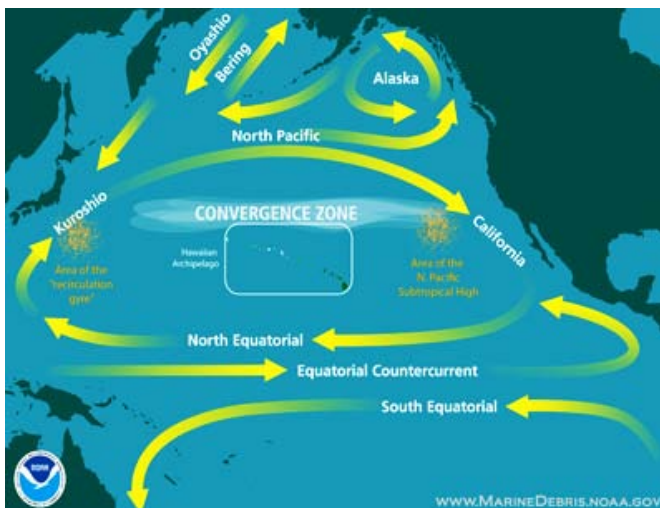
date, no gamma-ray emitting radionuclides of concern have been detected. Seafood imports from Japan represent less than one percent by volume of the seafood consumed in the United States.

### Monitoring U.S. Air and Water for Radiation Contamination

EPA's nationwide radiation monitoring system, RadNet, continuously monitors the nation's air and periodically monitors precipitation for environmental radiation. These instruments have not indicated any radiation levels that warrant concern. The RadNet system consists of [both fixed and deployable air monitors](#)<sup>1</sup> located throughout the U.S. and its territories, including at present in Alaska, Hawaii, Guam and Saipan. The detection instruments for airborne contamination are extremely sensitive and serve as an effective early warning for potential airborne contamination from the Japanese incident.

The great quantity of water in the Pacific Ocean rapidly and effectively dilutes radioactive material. Currently, testing of waters approximately 30km (18 miles) off the coast of Japan has shown that the radiation levels have dissipated rapidly, reaching drinking water standards by the 30 km test location. This means that seafood harvested in areas distant from the damaged reactor are unlikely to be affected.

FDA and NOAA do not anticipate contamination of living marine resources in U.S. waters at this time. For this reason, sampling of U.S. harvested seafood is not currently planned. Should radioactive material be deposited into the Kuroshio Current (see images below), FDA and NOAA would be quick to respond to the potential for its transport to U.S. waters. In that event, concentration values in the Kuroshio Current would be compared to known values from previous incidents to assess the potential impact. Radionuclide values are available for seawater, sediment, and various plant and animal species in many regions, including the Japan Sea, the Alaska Aleutian Islands, and Europe. Using the best scientific data available, U.S. federal agencies will continue to revisit whether testing fish for radionuclides would be appropriate.



Left: Simplified overview of dominant ocean currents in the northern Pacific Ocean (<http://marinedebris.noaa.gov>).

Right: Prevailing currents off Japan (<http://www.jamstec.go.jp/jamstec-e/earth/p2/index.html>).

To screen for longer term impacts, NOAA's National Ocean Service and, the Environmental Protection Agency are exploring approaches to monitor seawater and sediment in areas along the western U.S. coast, with sampling stations co-located with sites in NOAA's Mussel Watch program. These sites are located in coastal waters from near shore to three miles from the coast.

1. <http://www.epa.gov/japan2011/japan-faqs.html#what>