

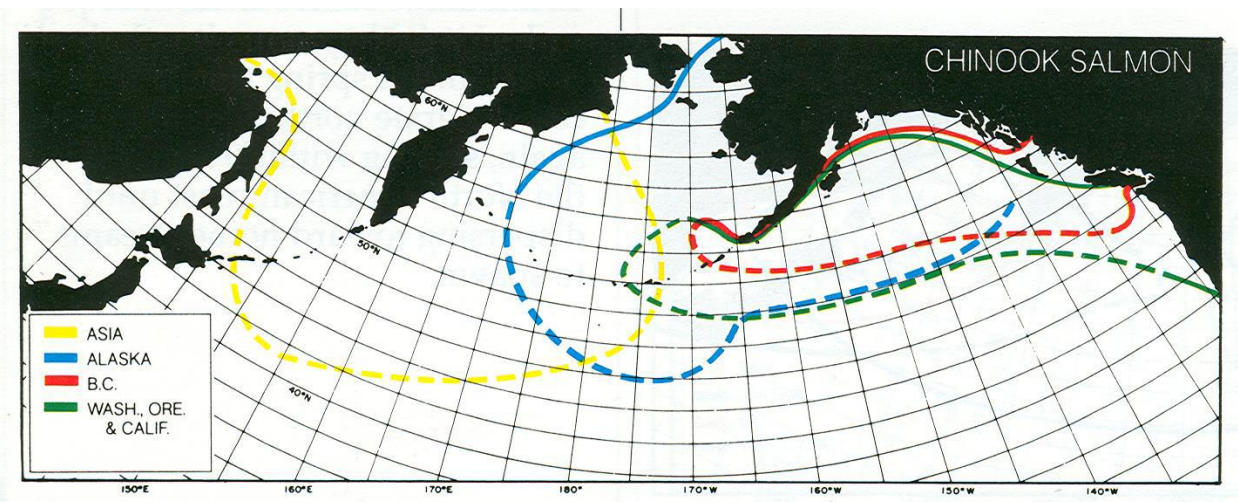
Yurok Territory- RADIATION UPDATE 2014
There are no advisories out regarding radiation.

In spite of the news about the massive radiation leaks into the Pacific, the EPA and other authorities insist that it has only local Japanese impacts and will be diluted by the Ocean waters and not impact us here in the US. However, there has been testing of different things but NO elevated levels above normal background have been detected in any resources in Yurok area. One needs to be skeptical of unfounded and unverified claims made on blogs and social media. While the concern is valid, much of the “science” behind alarmist postings is not. YTEP is taking radiation concerns seriously and is continually following up on any and all studies or reports on the subject.

1) The first radiation issue was the risk from the initial Fukushima plant shut-down as the tsunami hit in 2011. This released radioactive steam that entered the atmosphere and storm clouds brought it over the Pacific were rain in Canada/ British Columbia deposited it directly following the event. There were higher than ‘characteristic’ levels in Vancouver seaweeds – but they were taken off rocks below a storm drain outlet that concentrated particles from the rainfall and created hot spots from the urban run-off. We tested local seaweeds during the first 3 months.

- All 2011 local seaweed tests came back consistently negative.

2) Air transport of radioactive particles is a lot faster than the ocean currents or the fish swimming in them. So since then, we’ve also researched the available information on the migratory patterns of key subsistence foods (Coho salmon, Chinook salmon, steelhead, sturgeon that enter the Klamath River) and found that these fish do not swim in Japanese waters and therefore are NOT at risk of radioactive contamination. Steelhead have the longest migration but ours only go as far north as Alaska, the Alaskan populations go on to the northern Pacific region of China, and possibly into the Japanese Sea area. Japanese testing of these have come back negative and Klamath fish do not migrate that far. Below is a map of the Chinook migration patterns.



The first year’s migration of Bluefin tuna off southern California in 2012 did have radiation that was above the background level and it DID have the Fukushima 'fingerprint', meaning that the isotopes matched what Fukushima released but the levels were very low. The concern was not for those who were leaving Japan at the time of the accident, but for the young tuna that hold and fatten up in the Sea

of Japan and their East coast and would have a longer exposure to the local radiation and might carry higher levels before crossing the ocean this year.

- In August 2013, 50 tuna were tested and the Fukushima levels were undetectable.

It's known that tuna have the ability to metabolize and shed radioactive substances, (like all of us), however there is now research that Bluefin tuna excrete cesium-134 on a daily basis. So even the big fish are ok. Lamprey might be the only potentially contaminated food because they are a parasitic species and it would entirely depend on what host they latched onto in the ocean- but since the tuna came back clean and they're the only ones that might carry radiation from Japan, they too are probably clean so we haven't tested lamprey.

3) I've had time to read Michael VB's web report (2013) on the testing of 2 soil (from Willow Creek area), 1 mushroom (from up on Six Rivers Nat Forest), and 1 seaweed (from Trinidad) samples that he sent into commercial lab for Spectroscopy analysis for gamma radiation from Iodine-131, Cesium- 134 and Cesium-137.

- The 2013 seaweed was NO detect for all.
- The soils had NORMAL , low background Cesium detects (between 0.1 to 13 Bq/kg),
- The mushrooms had no detects for Cs-134 nor Iodine-131 but low level (23 Bq/kg) for Cs137. We don't have any reference for normal levels in mushrooms but EU limits are 600 Bq/kg and even the more stringent Japanese limits are 100 Bq/kg, so they seem safe.

4) In addition, Kathryn Higley, Professor and Head of the Dept. of Nuclear Engineering & Radiation Health Physics at Oregon State University has done radiation testing on ocean food. She has a grad student who is completing radiation uptake studies on crab. As with the other Fukushima studies, Kathryn says they have NOT detected any levels of radiation originating from the damaged Fukushima nuclear reactor.

YTEP staff continue to monitor this issue. It is important to keep in mind that while there is significant contamination from the leaks occurring off-shore of Japan, these contaminated waters are not reaching us here. Yurok fish do not migrate into Japanese waters and are not at risk to contamination from their normal migration patterns. Persons concerned with preventing even low-level exposure to radiation from Fukushima should avoid consuming products harvested in Japan (seaweed, seafood, etc).

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