

Fukushima Dai-ichi and the Ocean: 10 years of study and insight Abstract Submission Form : Entry # 51

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Session

Science and Society

Abstract Title (English, limited to 300 characters)

Our Radioactive Ocean: Using citizen-science to monitor North America's shores for radioactivity

Abstract (English)

The March 11, 2011 accident at the Fukushima Dai-ichi Nuclear Power Plant in Japan caused the release of an unprecedented amount of cesium and other radionuclides into the Pacific Ocean. At the time of release no government-based monitoring of North America's Pacific Coasts were established. The strong Kuroshio current in the western Pacific was predicted to bring contaminants from the accident site across the ocean and monitoring the arrival was a concern for residents. To fill the void, the program Our Radioactive Ocean was established at the Woods Hole Oceanographic Institution, in Massachusetts, USA. The program encourages citizen groups to raise funds required for them to collect a sample and have it analyzed for radioactive forms of cesium. Since beginning in 2013, the program has now collected over 250 samples from Alaska to Costa Rica with over 350 individuals and organizations donating funds for collection. Many groups have provided continued monitoring of a single location, allowing for the observation of cesium-137 increases to over three times pre-existing levels. The highest cesium-137 levels thus far were found at 38.3°N 123.1°E (Bodega Bay, CA) at 6.9 Bq/m³ +/- 0.2 on October 30, 2017. All results, along with educational material about radioactivity in the environment, are publicly available on the program website OurRadioactiveOcean.org. In addition, we have shared results at public and scientific presentations worldwide. By providing this transparency to the public and researchers, it is hoped this data may help to inform decisions made for public health (such as for the consumption of fish), for use in oceanographic studies (such as using radionuclides as tracers of ocean currents), and to increase understanding of the health of our oceans

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and anthropogenic radionuclides in our environment. The program continues to be active, and will soon be collecting an additional six samples near Los Angeles, CA associated with the decommissioning of the San Onofre nuclear power plant. Continued monitoring is warranted as our data indicates cesium-137 levels have not yet returned to levels found prior to 2011.