

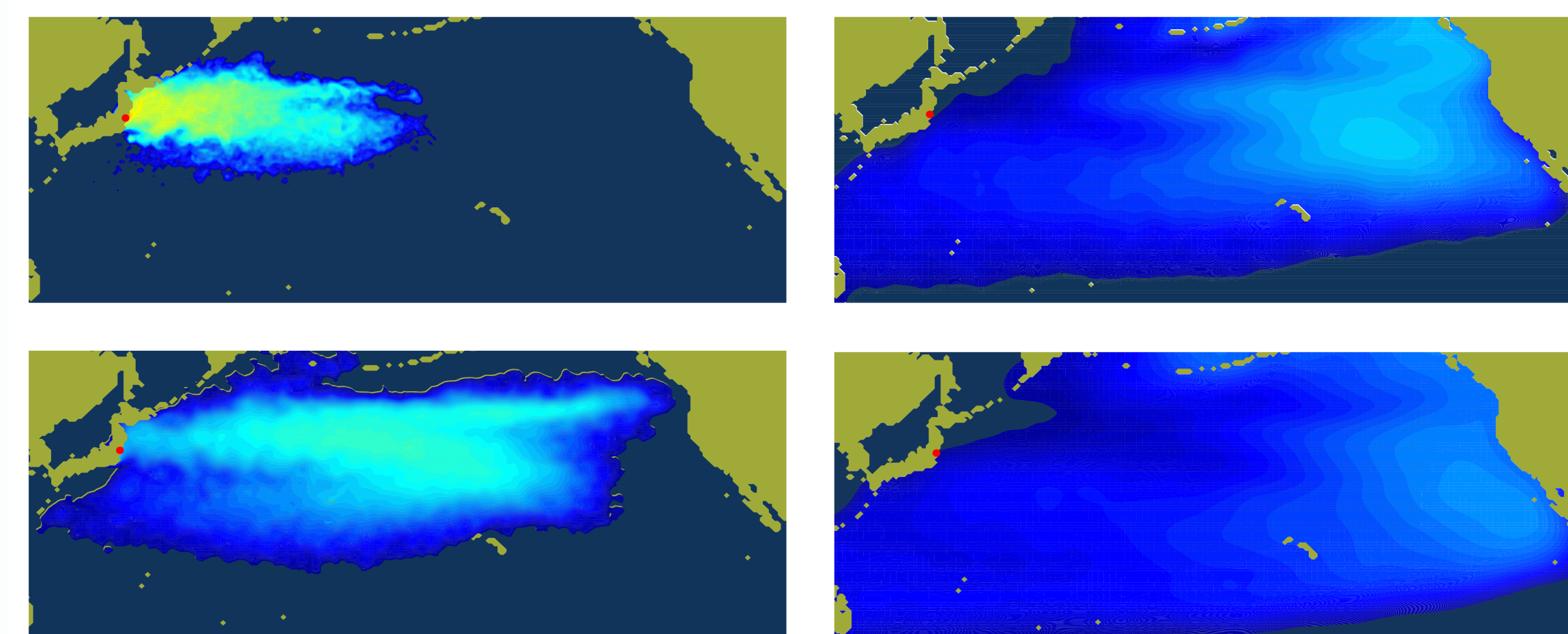
Our Radioactive Ocean: Using citizen scientists to monitor North America's shores for radionuclides

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Woods Hole Oceanographic Institution, USA • OurRadioactiveOcean.org

1. Introduction

The March 11, 2011 accident at the Fukushima Dai-ichi Nuclear Power Plant in Japan released an unprecedented amount of cesium and other radionuclides into the Pacific Ocean. The strong Kuroshio current in the western Pacific was predicted to bring contaminants from the accident site across the ocean and **monitoring the arrival of radionuclides was important for residents**. 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 radio-cesium.



Model of the spread of radioactive material from the Fukushima Dai-ichi nuclear power plant. Moved by ocean currents and diluted by seawater over space and time.

2. Why citizen science?

At the time of the Fukushima Dai-ichi accident, gaps in jurisdiction meant no government-based monitoring was occurring on North America's west coast. Citizen science allowed sampling without travel, promoted engagement of the general public and sampling of many locations over time.



Seward, Alaska

3. How it works



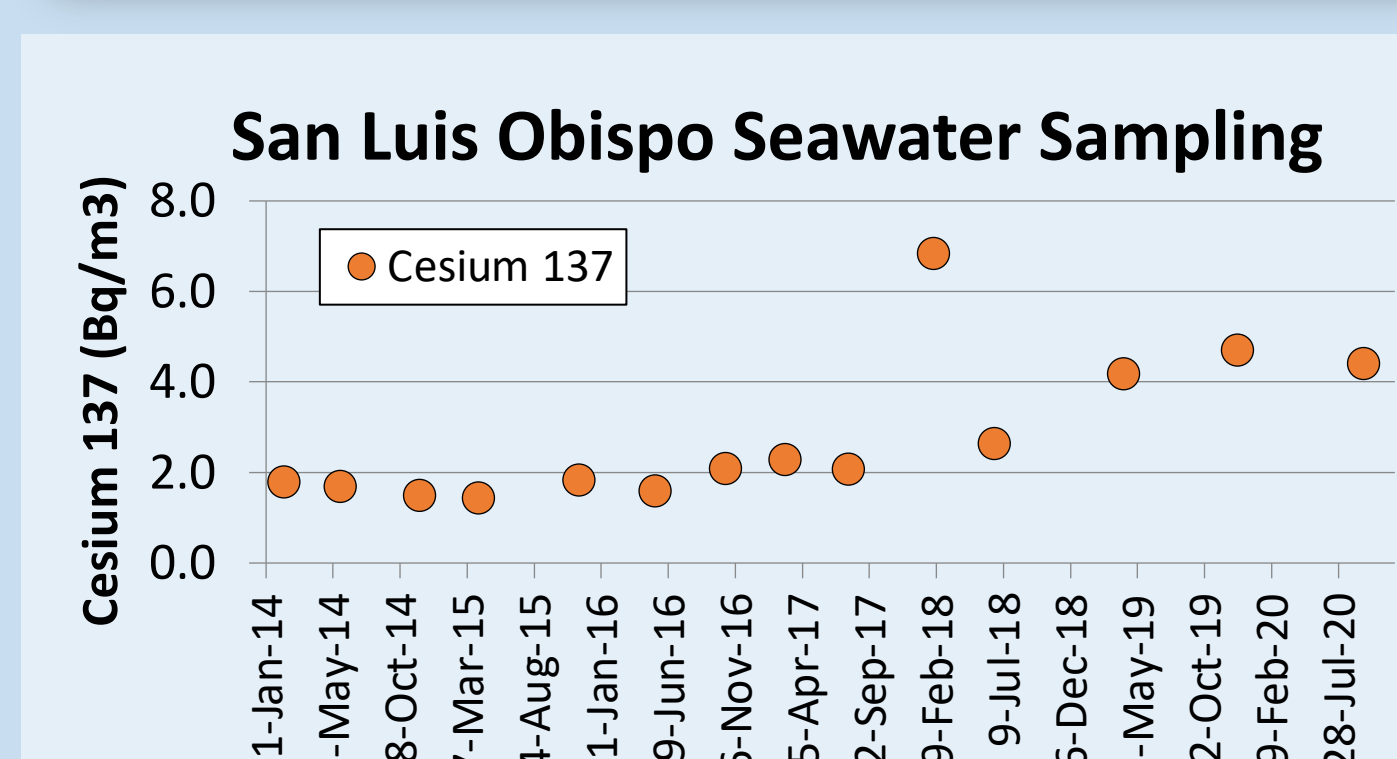
Anyone can participate! This is how it happens:

1. Propose a location where you and friends can take a seawater sample
2. Raise the funds to cover shipping and sample analysis. We will help by setting up a fundraising page for your project
3. We send you a red tote with everything you need to sample, it's easy!
4. Take a sample by filling up the container we send – the only risk is getting your feet wet.
5. Send it back to us and we process the sample and send you the results



Sampling in Pacific City, Oregon (left); Santa Cruz, California (middle) and Vancouver, British Columbia (right)

5. Sampling continues

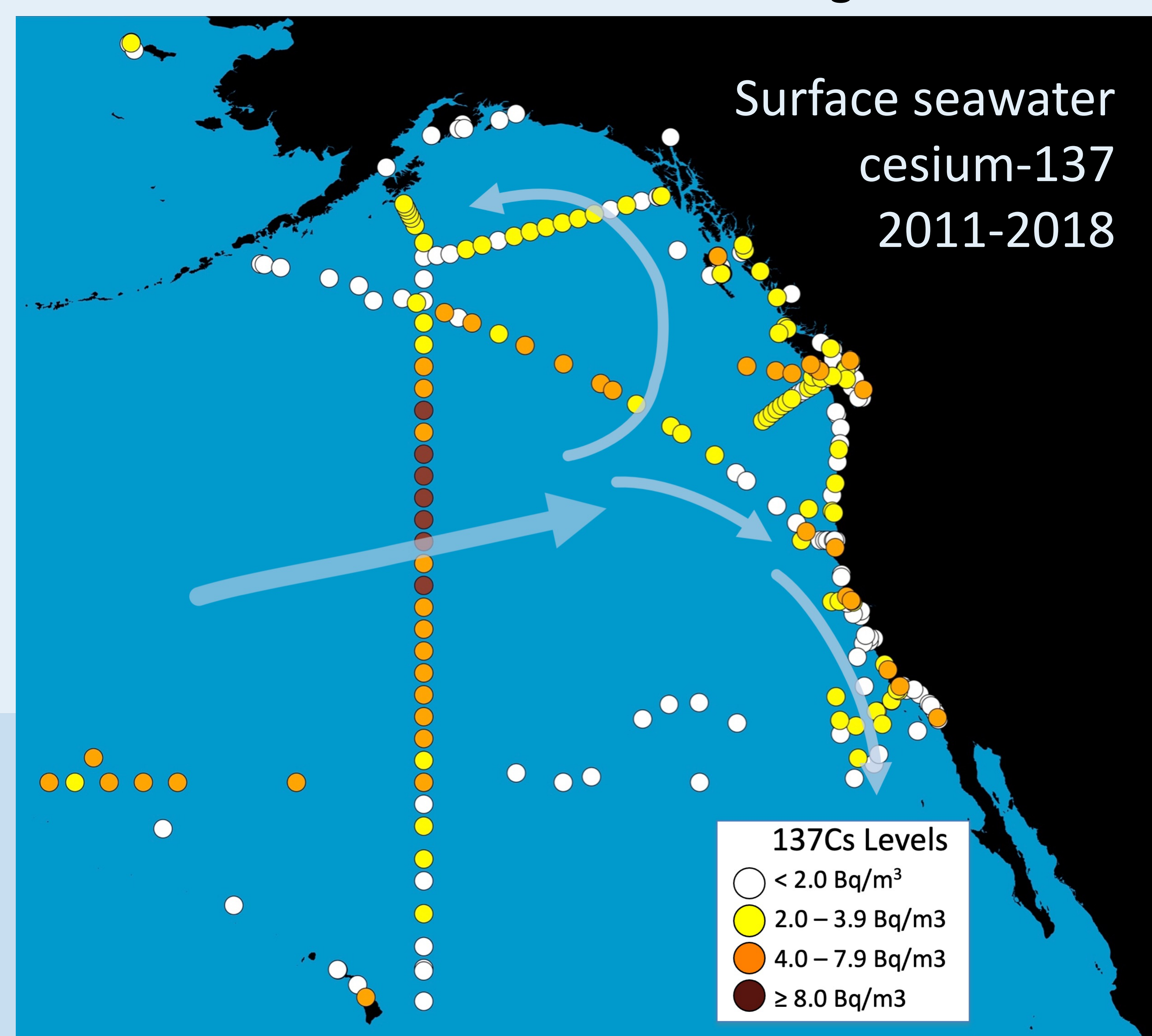


Continued monitoring is needed as data indicates cesium-137 levels have not yet returned to pre-accident levels. Contact us to ask questions, get involved or to make a donation to the effort!

4. Results

- Over 250 samples collected along the coast from Alaska to Costa Rica
- Over 350 individuals and organizations donating funds for collection
- 3 grade school classroom fundraising and collection efforts
- Evidence of contaminants from Fukushima Dai-ichi first encountered February, 2015 in Uclulet, British Columbia, Canada
- Highest coastal sample taken Oct. 17, 2017 at Bodega Head, California, USA - 6.9 ± 0.2 Bq/m³ of Cesium-137
- All Results available on the website:

OurRadioactiveOcean.org



Samples taken by citizen scientist volunteers as well as those taken on opportunistic research expeditions from 2011 to 2018.

Acknowledgement

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