

Bodega Bay radar used for salmon but detected tsunami

Bob Norberg, Santa Rosa Press Democrat, 9-5-11

A high-frequency radar station at Bodega Bay is part of a California coastal network that was able to detect the tsunami in March as it approached from Japan, the first such use of radar technology.

Scientists said the radar network is not yet part of the West Coast tsunami warning system, but has the capability to provide more precise predictions in the future.

“There is no plan to implement it as warning system now, but I think we will be talking soon if we could use the data to improve the model,” said John Largier, a professor of oceanography at UC Davis' Bodega Marine Lab. “It is something that should happen.”

Tsunami warnings now are issued by the West Coast and Alaska Warning Center in Palmer, Alaska, which has a mathematical model to assess whether quakes will create tsunamis and then deep-ocean and coastal buoys to track the tsunami progress.

It can predict tsunamis within a 30 percent plus or minus range.

In the March event, when Japan was hit by a devastating quake and tsunami, the Alaska-based center accurately predicted what occurred in Crescent City, which had a surge of 8 feet, 2 inches, and Bodega Bay, where the surge was measured at 3 feet, 2 inches, said Paul Whitmore, the center's director.

Largier said the California coastal radar network can be used to supplement and refine the information that the Alaska center develops.

The network, called CODAR, was developed over the past decade at a cost of \$21 million as part of a salmon recovery program, tracking where juvenile salmon would be swept after leaving the Russian River or San Francisco Bay in the critical first two weeks the fish are in the ocean.

Using 50 high-frequency radar stations stretched along the California coast, CODAR is able to detect ocean currents as far as 20 miles out to sea.

Scientists have found over the past decade that it has uses beyond just the salmon recovery program.

The radar gives scientists an idea of how the ocean functions in general, and the ability to see the direction of currents is used by the Coast Guard to search for people who may have been lost overboard or survived plane crashes.

The detection of the tsunami by the radar was reported in the Aug. 3 edition of the scientific journal *Remote Sensing*.

“The tsunami thing was not a surprise, the developer always thought it was useful for tsunamis,” Largier said. “It required figuring out how to see that signal, and because we can see it so well in a variety of circumstances in California and Japan, it means it is useful in general.”

The Alaskan warning center opened in 1967 in response to the March 28, 1964, Alaskan quake, dubbed the

Good Friday earthquake. It measured a 9.2 magnitude and caused a tsunami that killed 11 people in Crescent City and four in Newport, Ore.

At that time, Crescent City only had a few hours warning, which came after the tsunami had already been seen along the coast of British Columbia, Whitmore said.

However, in the March tsunami, Whitmore said the West Coast center was able to give Californians eight hours of warning and accurate predictions of its timing and impact.

Whitmore sees the radar data as helpful in predicting tsunamis from near-shore earthquakes, when there may be as little as five minutes to seek higher ground.

The ocean currents are displayed on the marine lab website, www.bml.ucdavis.edu/boon/current_plots.html.