

UC SANTA BARBARA

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Oiled Birds Prompt Study by UCSB Experts of Oil Seeps in Santa Barbara Channel

Oil-coated birds turning up on southern California beaches in recent weeks have raised concern about potential oil sources. The Coal Oil Point seep field, located offshore and adjacent to the University of California, Santa Barbara, is one of the biggest natural marine oil and gas seeps in the world and is the predominant source of oil to southern California waters.

Extensive oil slicks have been observed near Coal Oil Point since the recent severe storms pummeled the region in January. These slicks are significantly larger than typically seen in the area, including just before the storms. Since 1994, scientists at UCSB have been studying the Coal Oil Point seep field, including using sonar to map the seepage.

Recently UCSB scientists participated in aerial surveys of the northern channel. Current oil emissions appear to be many times pre-storm levels, estimated at 4,200 gallons per day. (Photos at www.ia.ucsb.edu/pa/1233-seep/)

New areas of seepage have appeared and were confirmed by boat surveys. Scientists at UCSB are studying a possible relationship between the storms and these increased oil emissions.

Bruce Luyendyk, professor of marine geophysics at UCSB, poses two hypotheses for the apparently vast increase in oil seepage following the storms. "The rain may have changed the subsurface hydrology, creating higher driving pressure of the seepage," he said.

A second hypothesis is that sea floor tar and sediment blockages may have been removed by the storms, allowing an increase in the flow.

"Both oil and gas are coming out," explained Ira Leifer, a scientist with UCSB's Marine Science Institute. "Gas drives the oil because it is lighter," he said. "We can measure the amount of gas with sonar because the sonar's sound bounces off the bubbles. We also measure how much oil is escaping with the gas."

Many agencies are involved in supporting the research and funding of studies of seeps and the environment. The University of California Energy Institute has funded this work at UCSB. Other participating agencies that support seep research include the Minerals Management Service of the U.S. Department of Interior, the Office of Spill Prevention and Response of the California Department of Fish and Game, the Petroleum Research Fund of the American Chemical Society, and the United States Geological Survey.

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