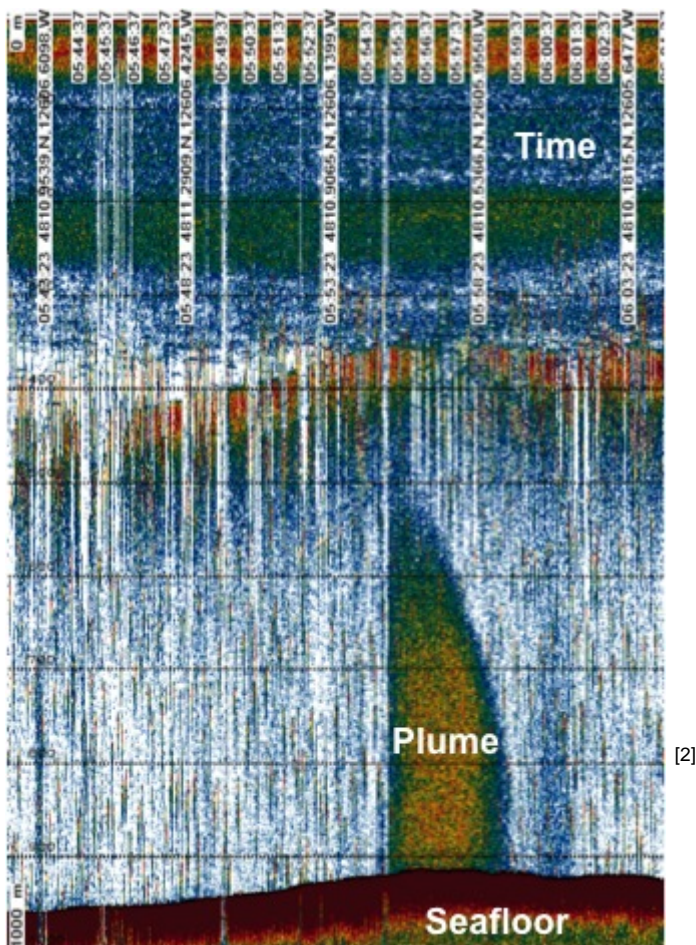


Gas Plume Detected ^[1]

Submitted by Dwight Owens Tue, 2013-05-28 00:00

Ocean Networks Canada's first summer expedition aboard the CCGS John P. Tully returned to port with confirmation of a major discovery: an impressive plume of gas rising from the seafloor off Vancouver Island in a region monitored by the NEPTUNE observatory that has been discharging since at least 2010.



During the final leg of the month-long expedition in the Northeast Pacific Ocean, the vessel conducted sonar surveys near the observatory's Barkley Canyon study site at a location discovered by Natural Resources Canada. On a 2010 Japanese-Canadian earthquake monitoring expedition, evidence of these gas seeps was first discovered. The site was visited

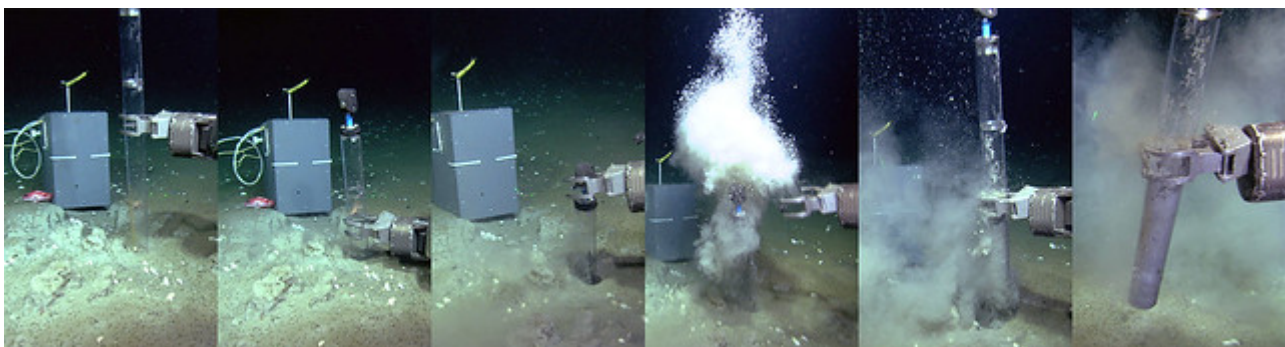
again in 2011.

"We know there are seeps releasing gas, mostly methane, from below the seabed up and down the continental slope, but we know little about how big they can be or how long they last," said ONC scientist Steve Mihaly, who was on board. "It was exciting to discover that this seep has been active for at least three years. We were able to measure its size and the rate that gas bubbles are rising from the seabed."

The plumes were seen on the CCGS John P. Tully sonars showing a column of gas bubbles rising from the 900 m deep seabed and then disappearing in the water column at about 500 m below the sea surface. These data will be used by scientists to estimate the size of the individual bubbles and judge the volume of gas that is being discharged from the seafloor.

Ocean Networks Canada is monitoring the stability of methane hydrates that forms below the seafloor at two other locations off Vancouver Island, using instruments connected to its underwater observatory network. Hydrates are ice-like forms of gas, in this case methane, which can become unstable and release gas when temperatures warm or pressures are reduced.

"We're continually monitoring sonars to detect the naturally changing gas release from hydrates," notes Martin Scherwath, Ocean Networks Canada's hydrates specialist. "These new discoveries will be integrated with other gas hydrate experiments on NEPTUNE to better answer questions about these deposits on Canada's coastal doorstep—questions like 'if gas is escaping, is new methane hydrate forming at the same rate? Are these reserves growing, shrinking or remaining stable?'"



Global Interest

Globally, the interest in methane hydrates stems from their potential as an energy source.

Japan recently became the first country to conduct an offshore study, producing natural gas from methane hydrate. Other research includes, for example, shallow gas hydrate reservoirs such as in the Arctic where methane can be released from hydrate into the atmosphere as a powerful greenhouse gas. Finally, gas hydrates can also play an important role in the stability of the seafloor where its dissociation could lead to underwater landslides.

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