

## Research Highlights

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# Seabed seepage

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Large quantities of methane — a potent greenhouse gas — lie frozen beneath northern oceans in a form known as hydrates, leading to concern that they could be destabilized as waters warm. Now scientists have found plumes of the gas bubbling up from the Arctic seabed near Norway's Svalbard archipelago.

In autumn 2008, Graham Westbrook of the University of Birmingham and colleagues discovered more than 250 gaseous plumes, mostly of methane, emanating from the sea floor off West Spitsbergen at depths of 150–400 metres. Some of the plumes came within 50 metres of the sea surface. Temperature records show the West Spitsbergen current has warmed 1 °C in this area over the last three decades, and the researchers say that as a consequence, hydrates are now dissolving in areas where they formerly remained safely frozen. While methane hydrates were stable to a depth of 360 metres just 30 years ago, they are now stable only below around 400 metres.

As warming of the shallow Arctic seabed continues, tens of millions of tonnes of methane could be released each year. Some of this gas will enter the atmosphere, but most will dissolve in the ocean, contributing to acidification and lowering oxygen levels.



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