Natural Wonders: The Smoking Hills

Kristine De Abreu

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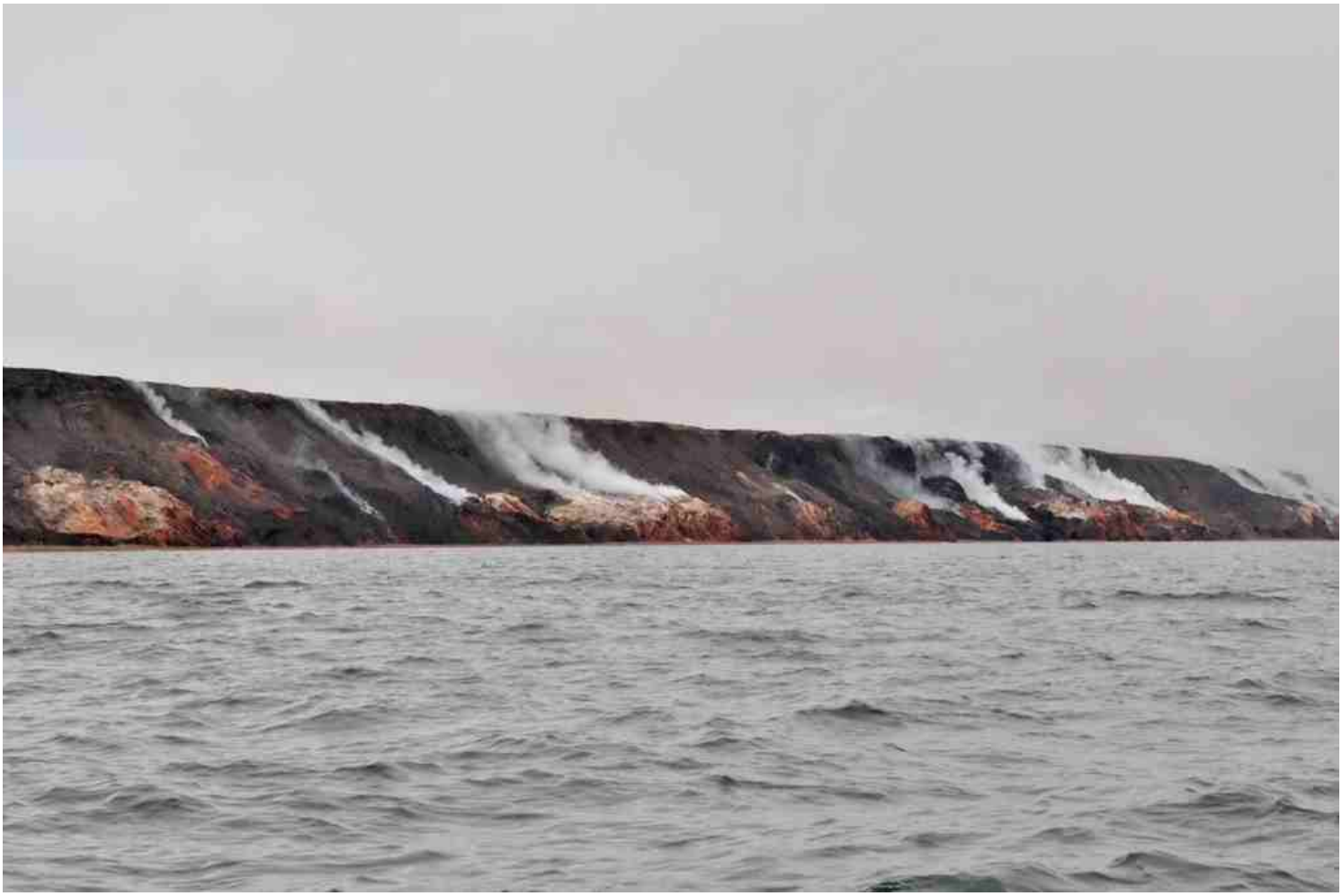
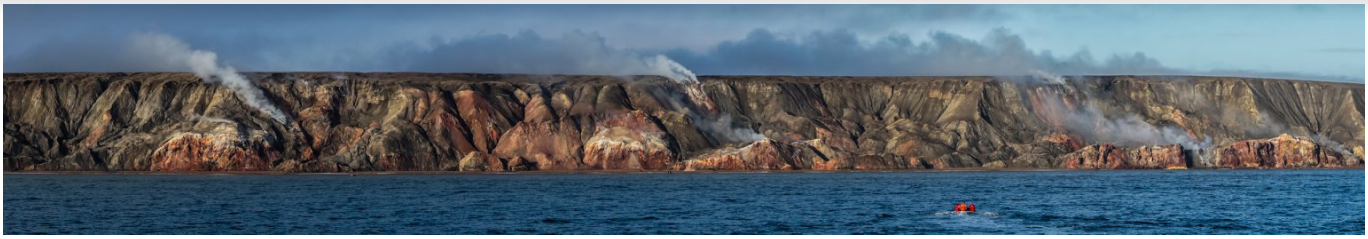


The Smoking Hills, southeast of Cape Bathurst. Photo: Ansgar Walk

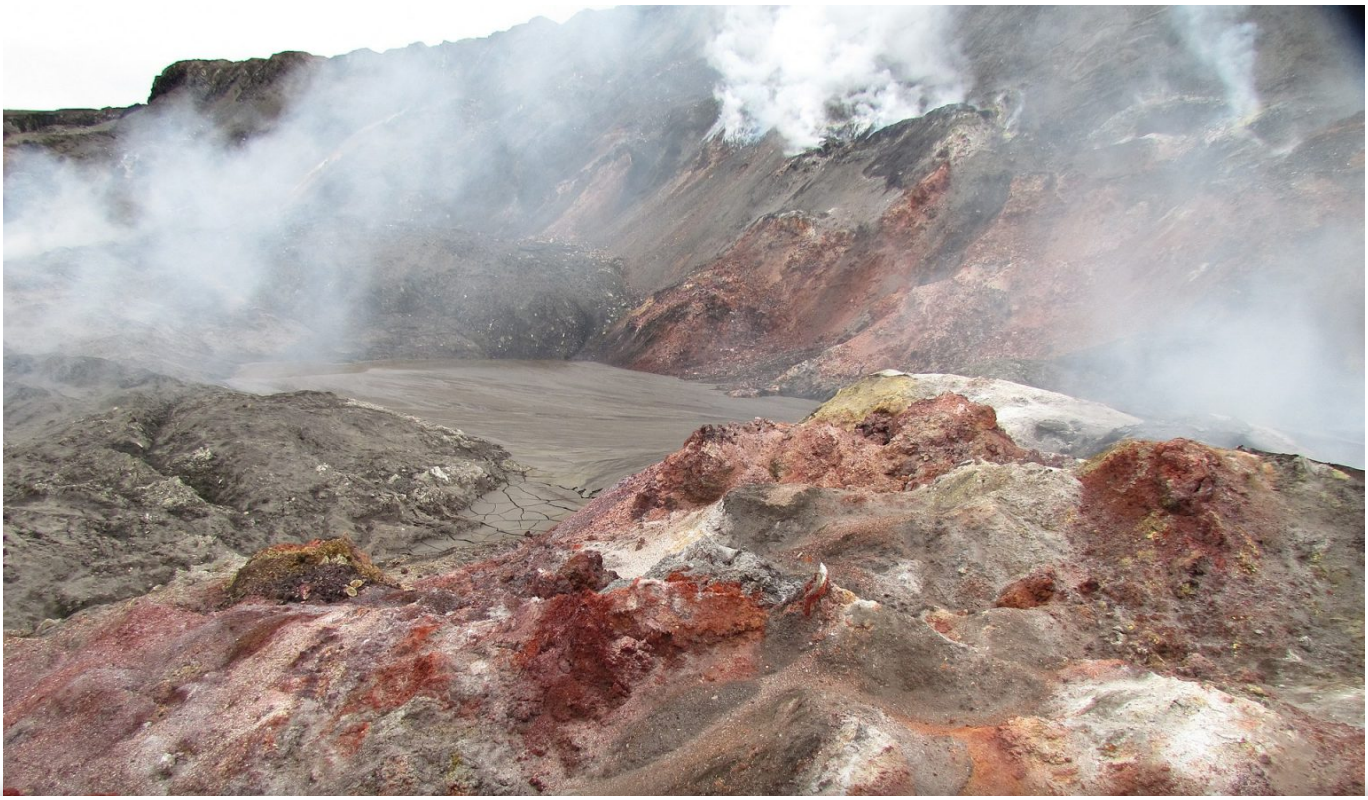
In 1850, the Irish explorer Robert McClure saw smoke rising from the eastern shoreline of Cape Bathurst, in Canada's Northwest Territories. He and his crew aboard *HMS Investigator* were elated. They hoped that this was a smoke signal from John Franklin and his lost expedition, which had disappeared while seeking the Northwest Passage five years earlier.



Smoking Hills from the Arctic Ocean. Photo: Ray Muzyka/Flickr

It was actually Sir John Franklin who first discovered and named the Smoking Hills during his earlier Mackenzie River Expedition (1825-1827). They were mapping Horton River when they saw smoke rising from the 100m hills.

The naturalist on that Mackenzie River Expedition, John Richardson, hypothesized that oxidation of sulfuric minerals and organic matter in the shale was to blame. He was right. Most originally thought that volcanic or hydrothermal activity caused the smoke. However, the unique site is home to subterranean oil shales, which spontaneously combust as the rock weathers and erodes.



These deposits are made of lignite (brown coal) and high concentrations of sulfuric substances, which ignite when they come into contact with oxygen. Oxygen consumes the electrons in the pyrite and organic material in the shale. This releases a great amount of heat and hundreds of grams of sulfur dioxide every second. The rocks that undergo this process are called “bocannes”. The varied hot temperatures turn the rocks red, black, brown, yellow, and white.

In addition to this, one-metre deep toxic ponds dot the one-hectare area. These caustic ponds contain high concentrations of minerals like aluminum, manganese, zinc, iron, cadmium, and nickel and host 14 species of acid-tolerant algae. From written records and oral tradition, it seems that the hills have burned for centuries. Occasionally, however, the exothermic reactions dissipate when oxygen levels die as the shale burns further into the cliff.

The Paulatuk people, who live almost 100km away, have always called the hills “the place of soot” or “the place of coal”.

polluting.

The hills have impacted their surroundings, especially the tundra further inland. Sulfur dioxide has acidified the soil. The closer to the sea you go, the more desolate the land, as plant life struggles to withstand the acidity.

It seems like this is one of those rare examples of natural pollution.

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About the Author

Kristine De Abreu

Kristine De Abreu is a writer (and occasional photographer) based in sunny Trinidad and Tobago.

Since graduating from the University of Leicester with a BA in English and History, she has pursued a full-time writing career, exploring multiple niches before settling on travel and exploration. While studying for an additional diploma in travel journalism with the British College of Journalism, she began writing for ExWeb.

Currently, she works at a travel magazine in Trinidad as an editorial assistant and is also ExWeb's Weird Wonder Woman, reporting on the world's natural oddities as well as general stories from the world of exploration.

Although she isn't a climber (yet!), she hikes in the bush, has been known to make friends with iguanas and quote the Lord of the Rings trilogy from start to finish.

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