

**Making the right
smoke signals:**

**Lessons in media
engagement - the
Moytirra black smoker
case study**



Prof. Andy Wheeler
School of Biological, Earth & Environmental
Sciences,
University College Cork



What did we do?



**A voyage of discovery and scientific endeavour
– a voyage of ocean exploration**

This is an Irish good news story



**NATIONAL
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Where did we go?

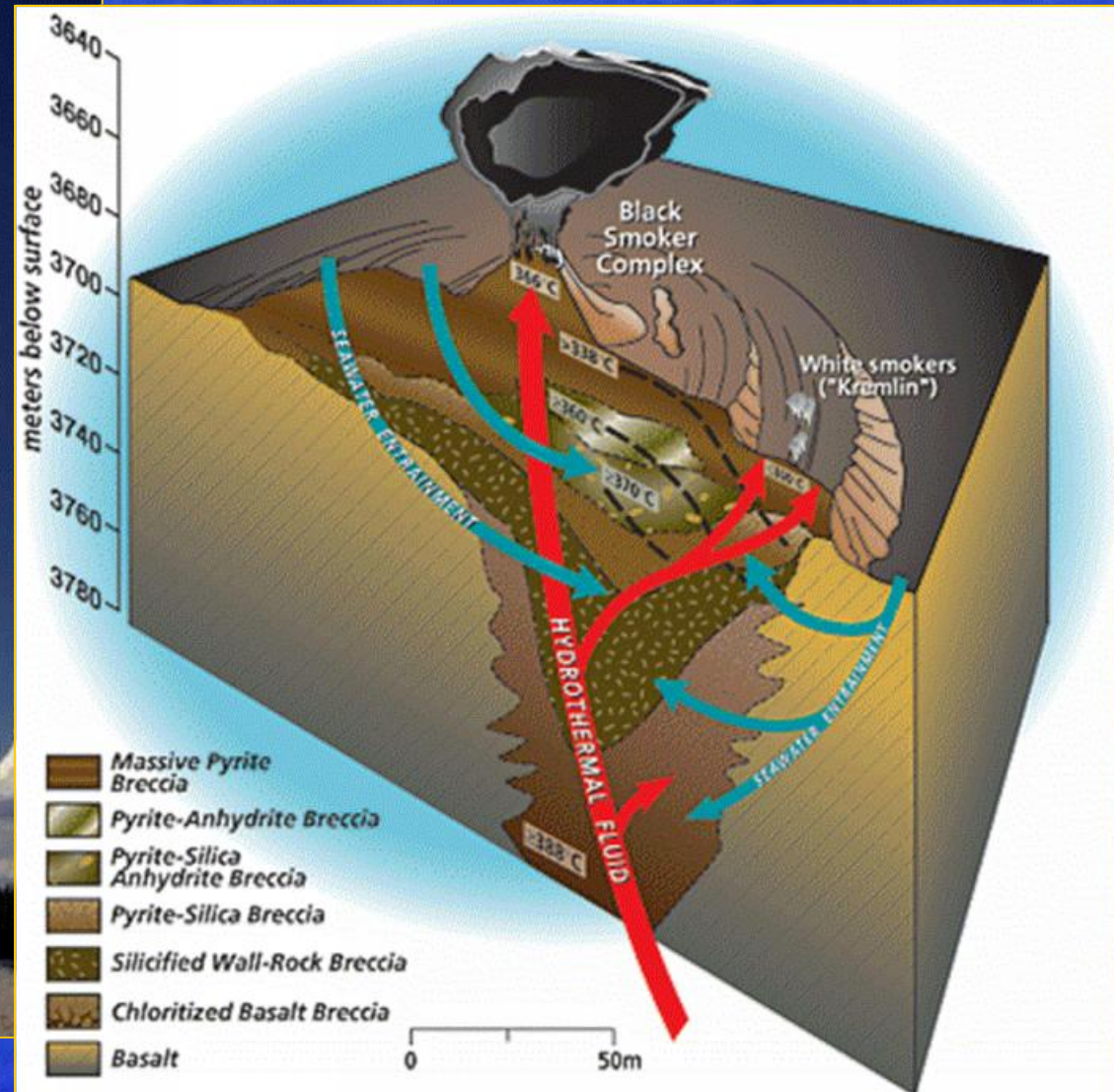
To the middle of the Atlantic
1600km from
Cork

and 3 km
beneath the wave
we discovered a
“black smoker”

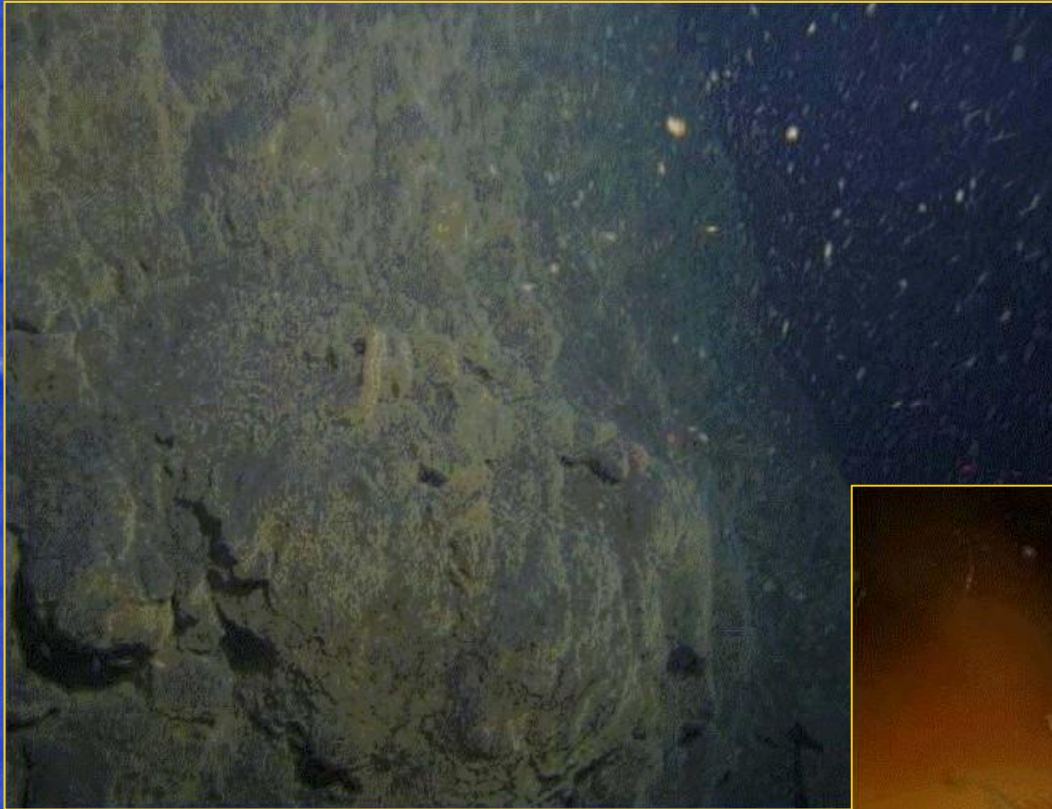
covering an area
about the size of
a football pitch



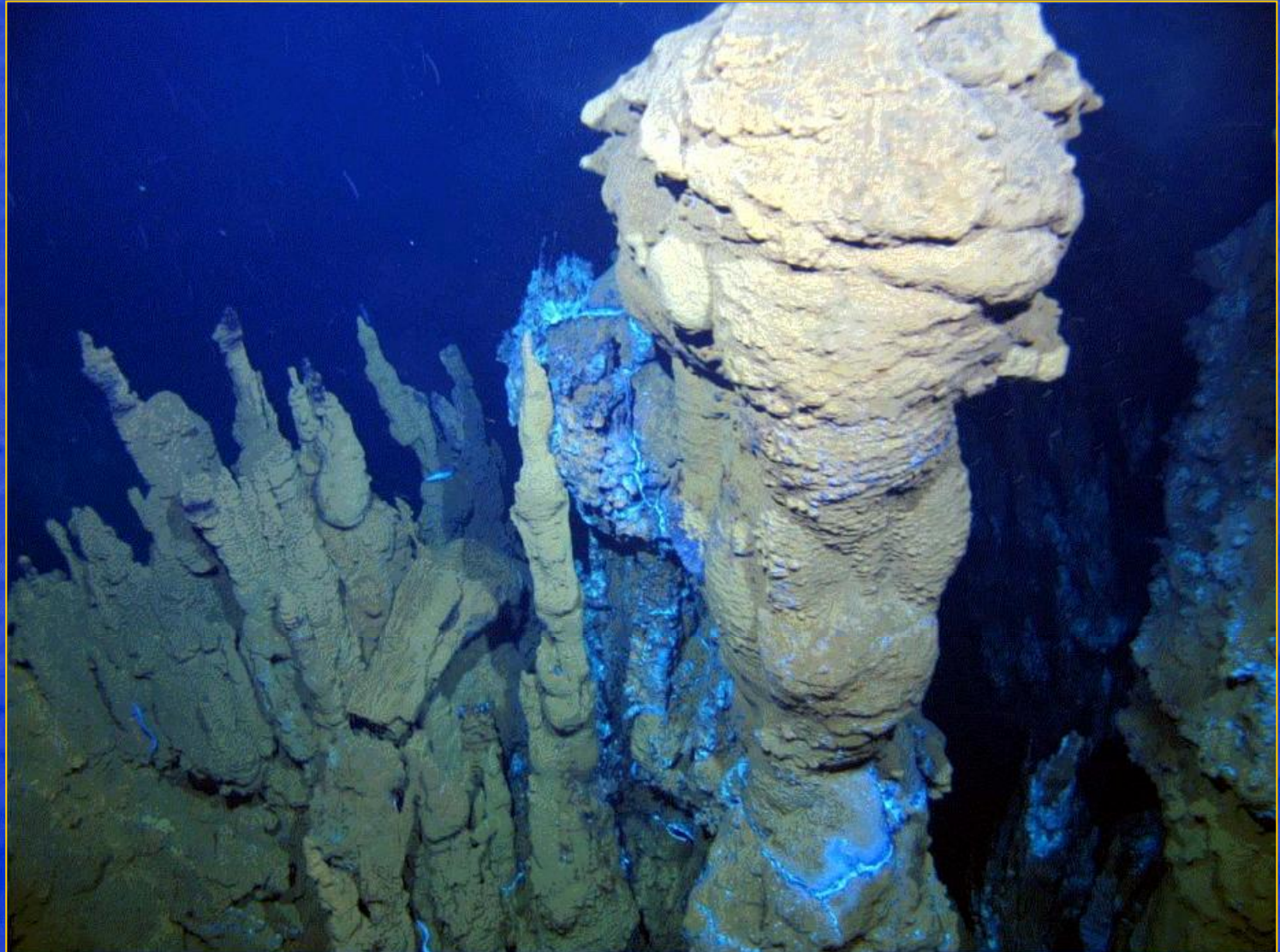
What are black smokers?



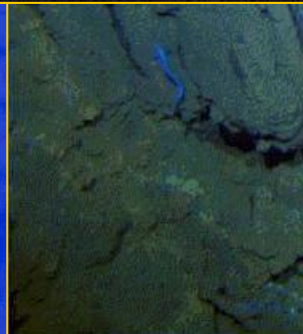
Why are they important?



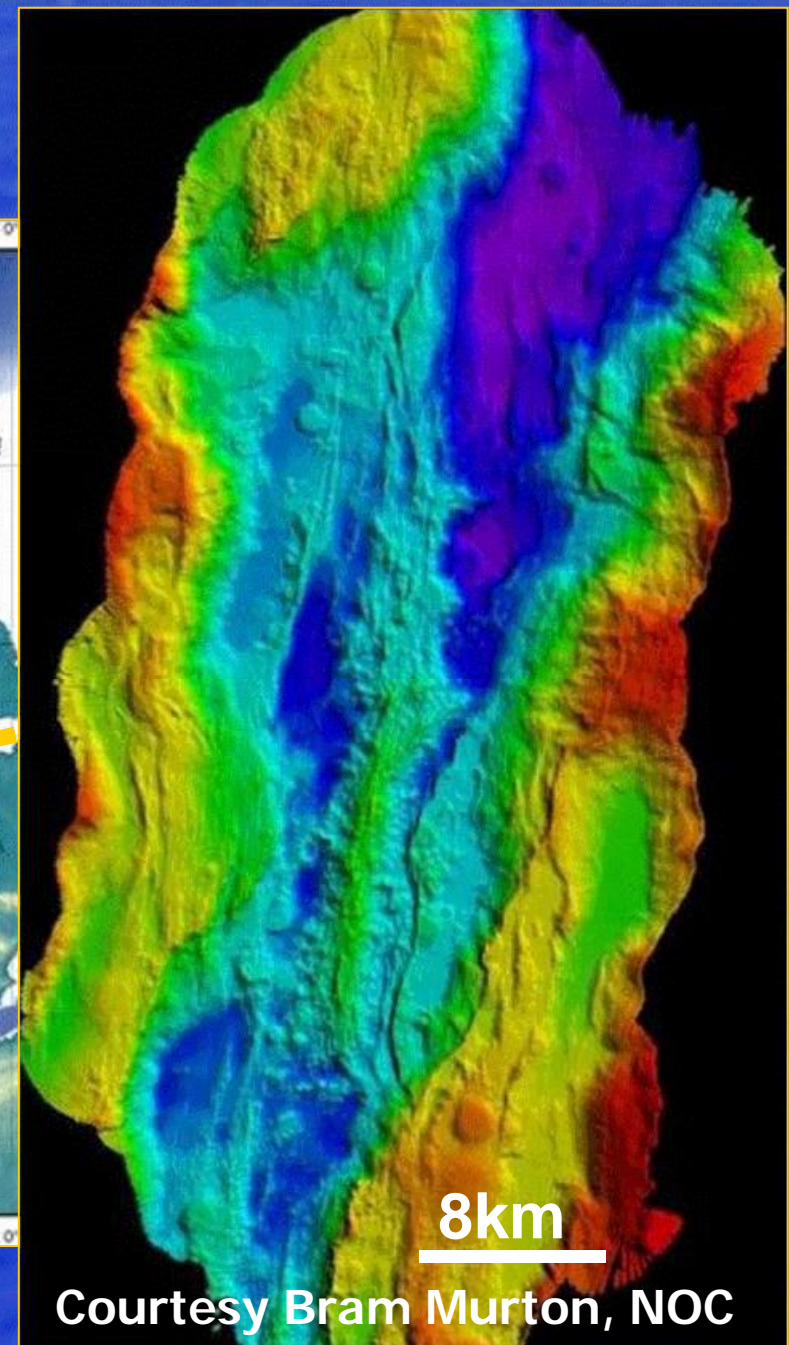
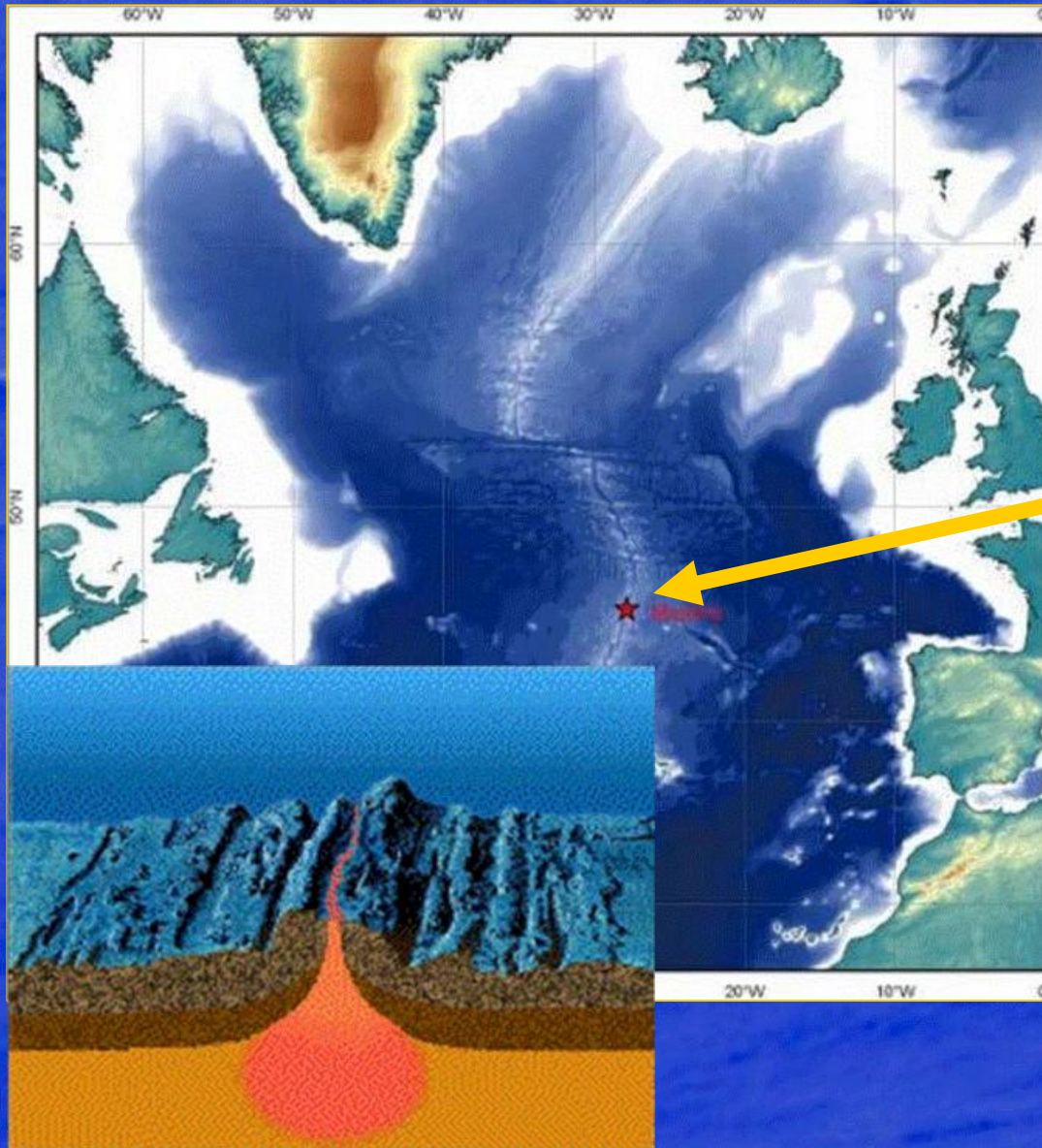
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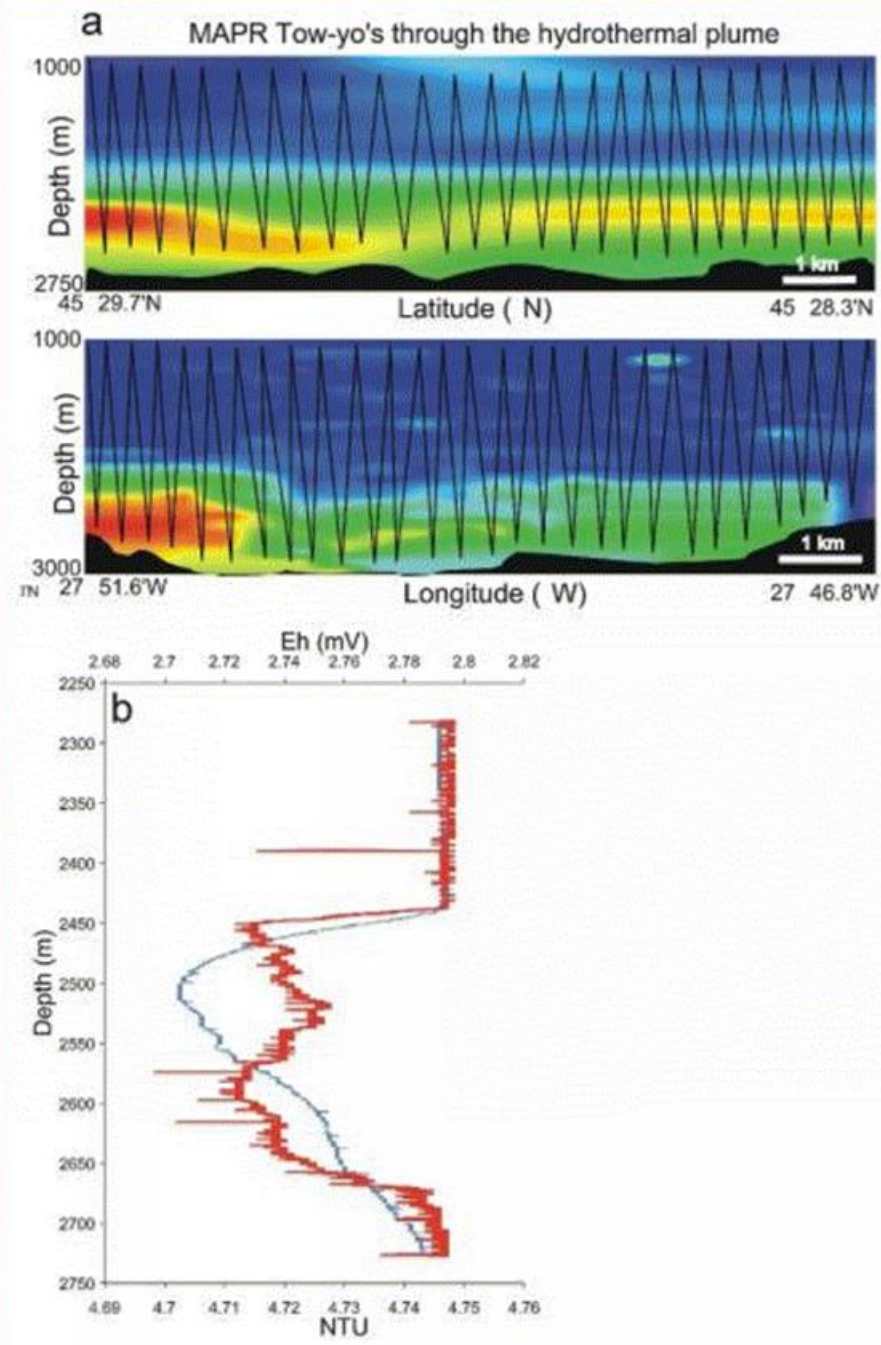
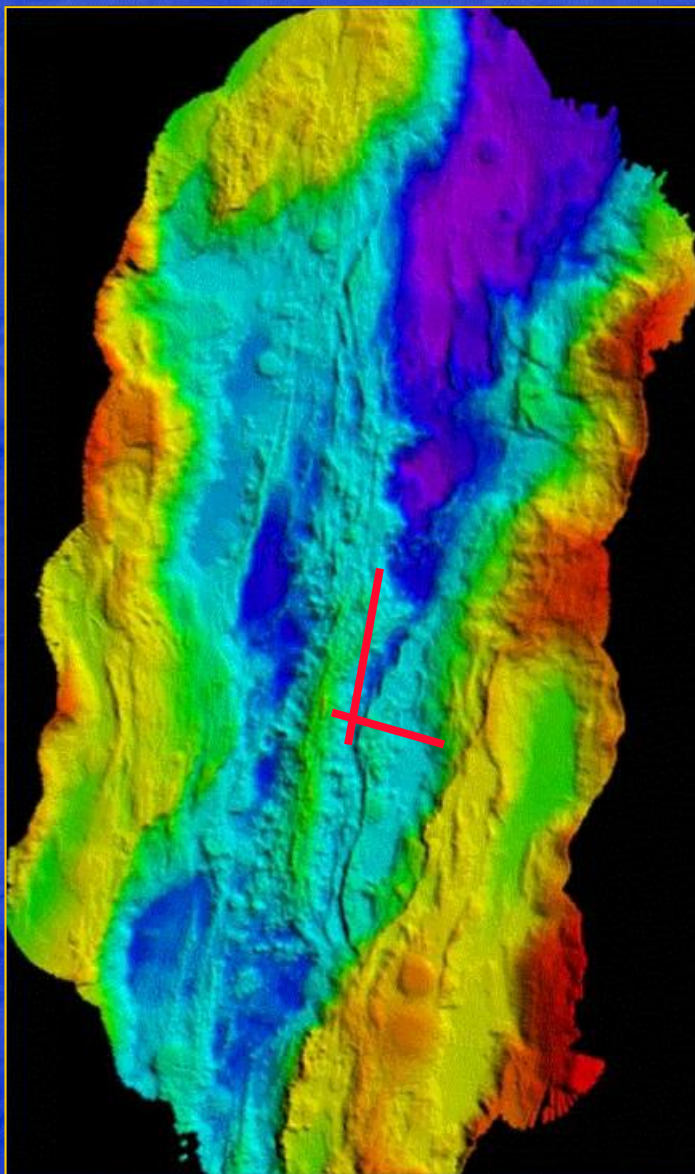
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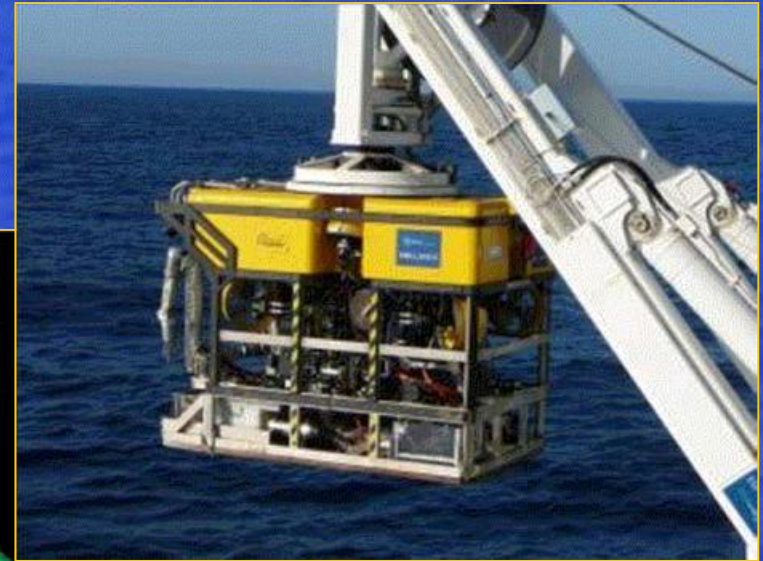
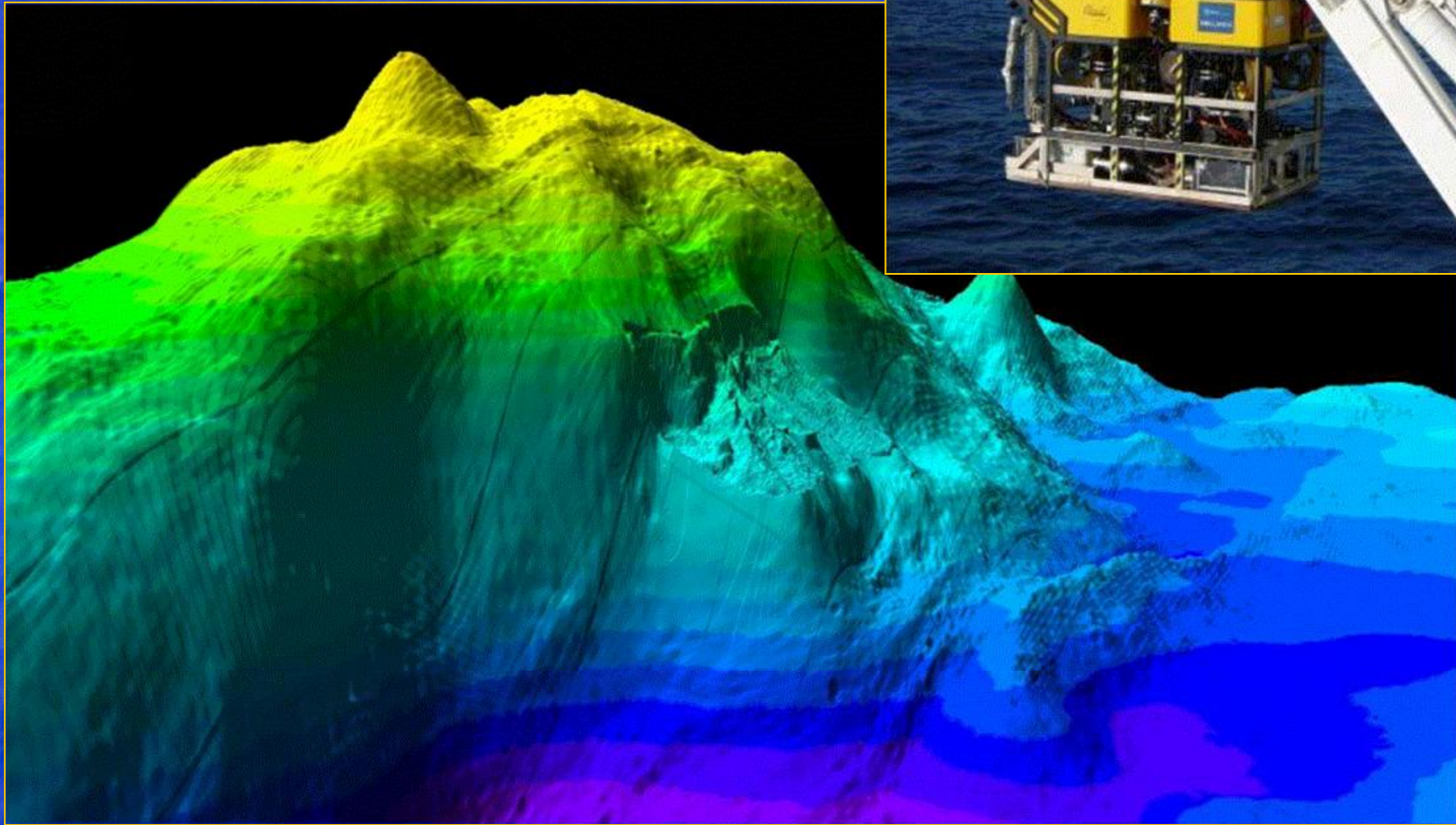
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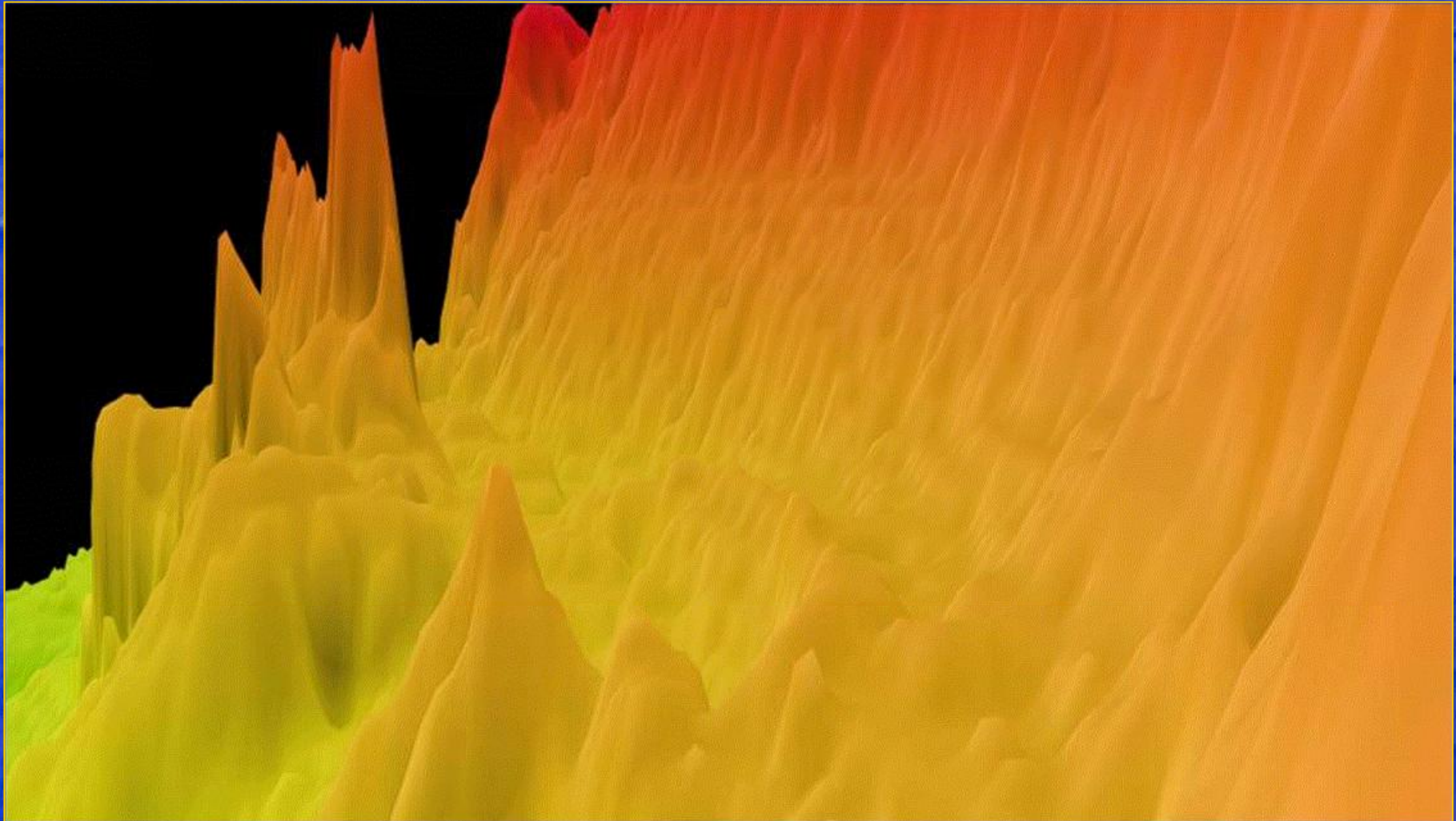
Hunting the plume



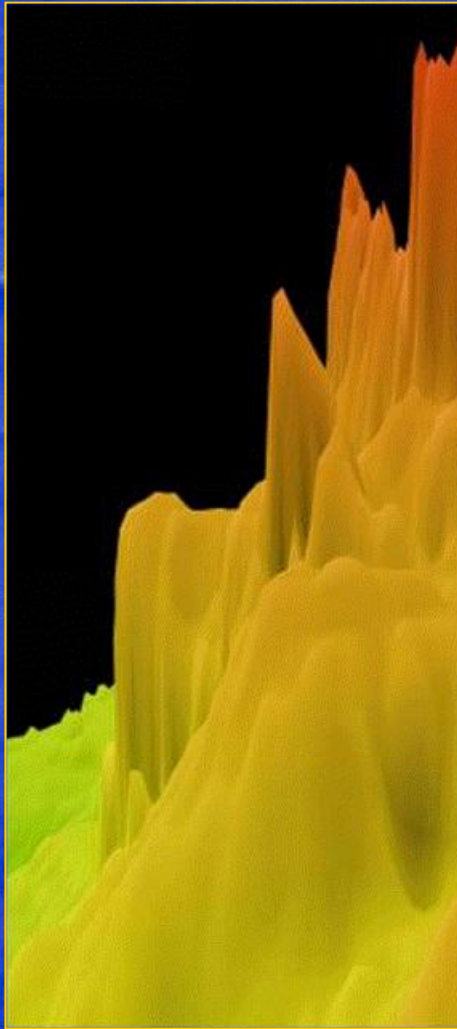
Moytirra Vent Field



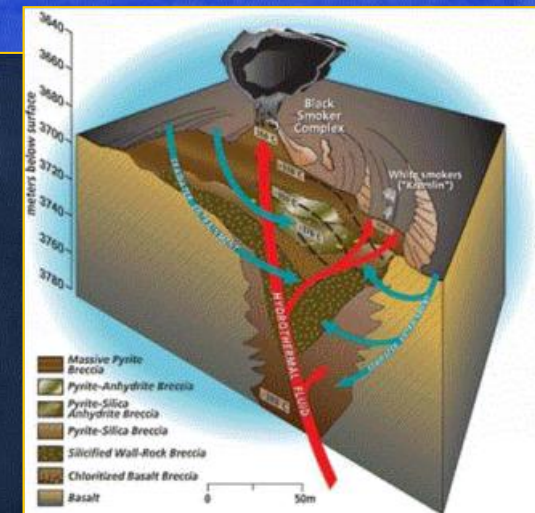
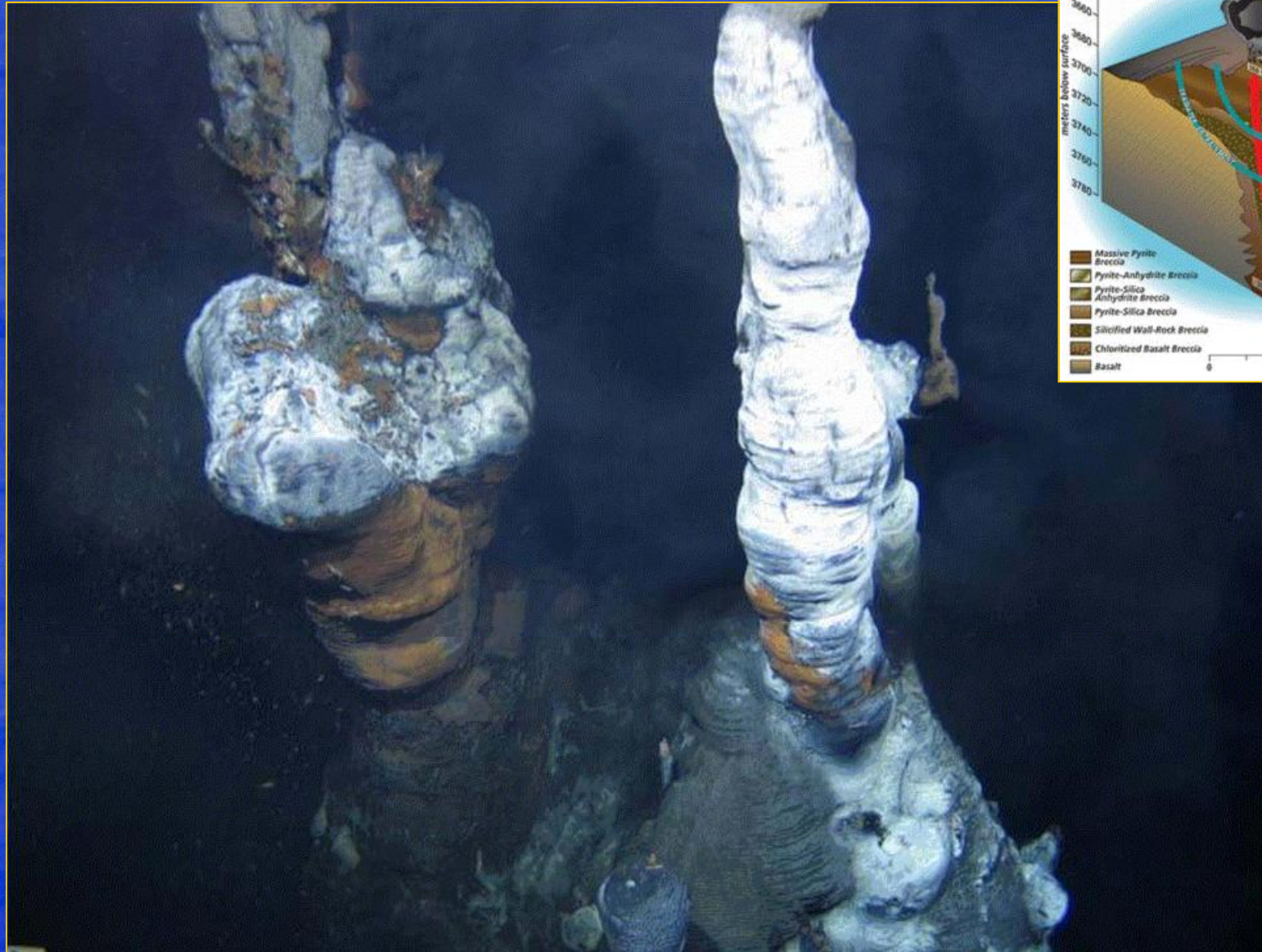
Moytirra Vent Field



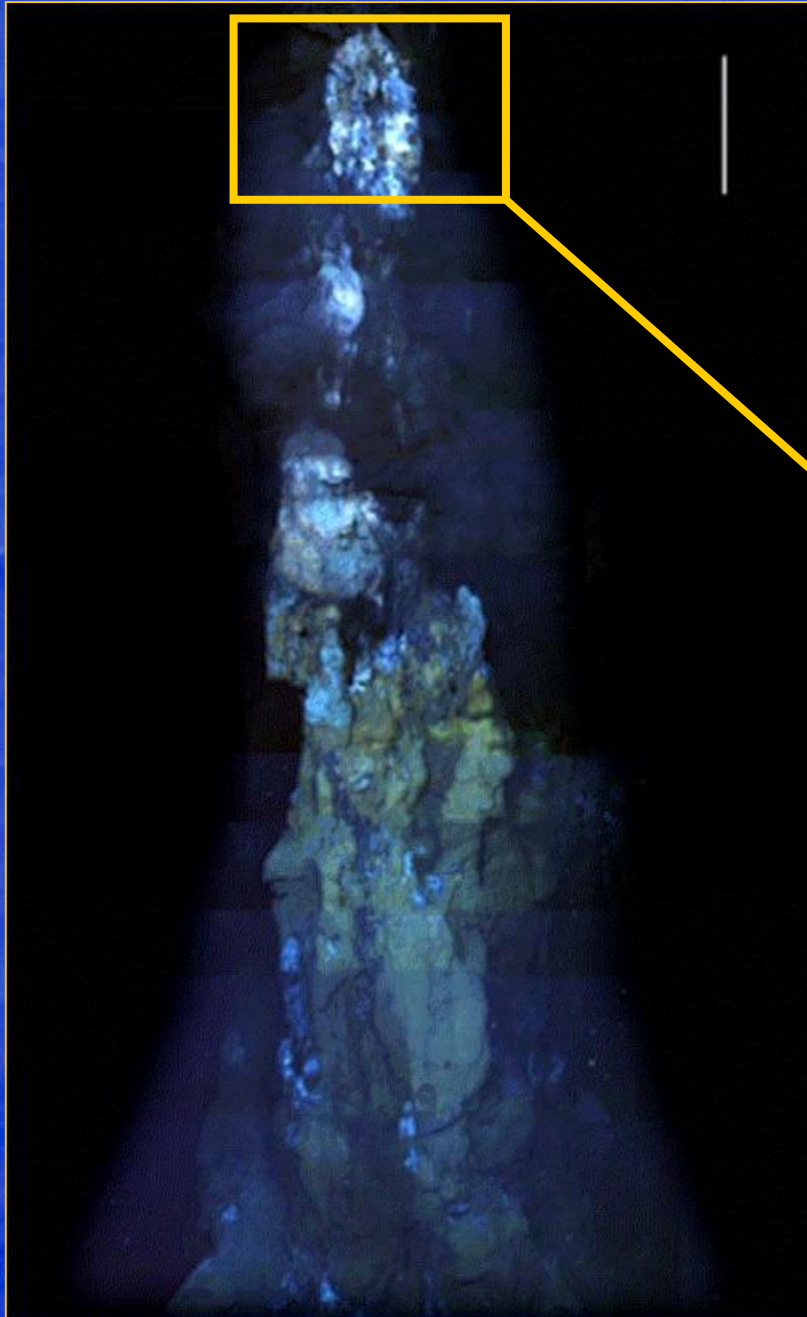
Moytirra Vent Field



Moytirra Vent Field



18m high Balor chimney

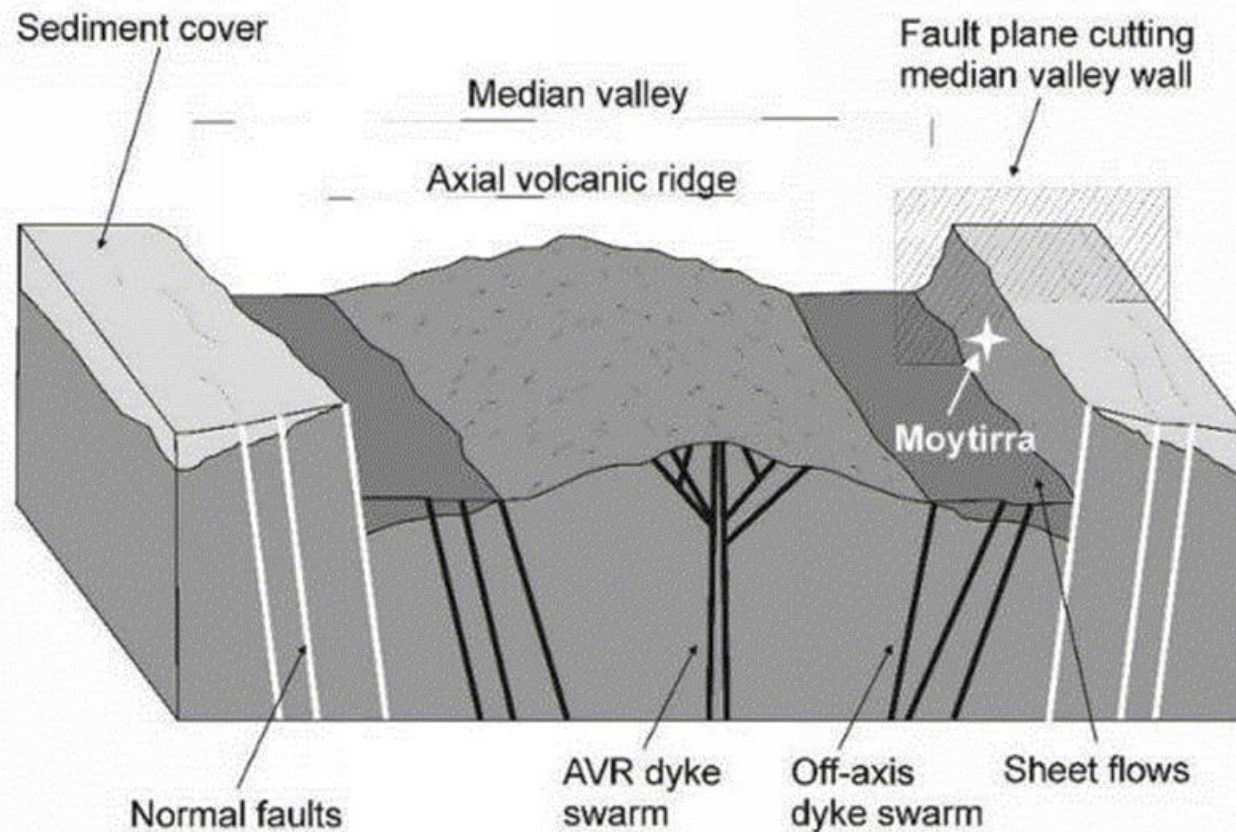






Why was this discovery so important

We found a new type and context for black smokers



Why was this discovery so important

We significantly extended the range of the Azorian hydrothermal vent fauna biozone



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The Irish Times - Thursday, May 5, 2011

What lies beneath?



A team of Irish and British scientists will soon find out, and their efforts and discoveries will be filmed by National Geographic.

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- Stem-cell research gets new horizon
- Endeavouring to launch
- Awake? Maybe not completely

In a few months, a team of Irish and British scientists will boldly go where no man has gone before – to the depths of the Atlantic ocean, writes **LORNA SIGGINS**, Marine Correspondent

WHAT SEA MONSTERS lurk in the pitch-black depths of the mid-Atlantic?

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On the next Futureproof, we will be speaking to Dr. Andy Wheeler from UCC about a groundbreaking deep-sea study that will be captured by a film crew from National Geographic.

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Irish marine expedition to map new ecosystem



Biologist Patrick Collins of NUI Galway beside the Celtic Explorer at Galway docks yesterday. He described the expedition as the "most technically challenging marine research ever undertaken by Ireland". Photograph: Joe OShaughnessy

LORNA SIGGINS, Marine Correspondent

IRISH SCIENTISTS are about to embark on one of the most challenging research expeditions undertaken by the State's research ship, *Celtic Explorer*.

National Geographic has booked berths on the ship to record the expedition, led by Dr Andy Wheeler of University College Cork, and involving marine scientists from NUI Galway, the Geological Survey of Ireland and the University of Southampton. The ship is due to leave Galway docks today.

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The Irish Times - Friday, August 5, 2011

Strange creatures lurking on floor of Atlantic may hold clues to origin of life

LORNA SIGGINS and MICHELLE McDONAGH

CLUES AS to how life began on the planet may be gleaned from the volcanic vent system which Irish and British scientists have discovered in the middle of the Atlantic Ocean.

Several unusual species, including a blind shrimp with an infrared "third eye", were identified on the deep-sea mineral-rich volcanic field some 1,500km off the Irish coast.

This shrimp has been located on other vent systems, but biologists will analyse data to see if hitherto unidentified animals can be confirmed, expedition leader Dr Andy Wheeler of University College Cork, said yesterday.

The new biogeographical area, well outside Irish waters, has been named "Moytirra", or "plain of the pillars", after a battlefield in Irish mythology. It is the first such hydrothermal system to be identified between the Azores and Iceland, lying on the mid-Atlantic ridge where Europe separates from the Americas.

The largest of its volcanic chimneys, towering over 10m at the foot of a cliff, has been named "Balor" after the legendary Irish giant, according to Patrick Collins from NUI Galway's Ryan Institute, who led Ireland's marine biological team on board.

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Irish scientists find new life in Atlantic's depths

By Eoin English

FRIDAY, AUGUST 05, 2011

THEY are creatures from the abyss described as the closest things to extra-terrestrial life which can be found on this planet.

Irish scientists who have charted a previously unknown system of deep sea vents in the middle of the Atlantic revealed stunning images yesterday of potential new species they found living near underwater volcanoes some three kilometres below the ocean surface almost 1,500 kilometres off the west coast.

Vivid orange shrimp-like animals which see in infrared through a third eye, and scaly alien-like snails and worms are among many new lifeforms which thrive in these deep dark toxic depths.

"It is too early to say whether some of them are new species or not but we are confident that at least three will prove to be," VENTuRE mission leader Dr Andy Wheeler, from University College Cork (UCC) said.

How they survive in these extreme conditions could have huge potential for medical purposes, and how the vents form could also help the country's mining industry, he said.



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Gold rush under the ocean for Irish mid-Atlantic team

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By Ralph Riegel

Friday August 05 2011

IRISH scientists have struck gold in a deep-sea discovery that could yield a multi-million-euro mining boost.

The Irish-led team made the discovery 3km down on the Atlantic ocean floor by identifying a field of volcanic vents spewing up rare metals from the earth's core.

Backed by the [National Geographic Society](#), they discovered the new volcanic vent field in the mid-Atlantic between the Azores and [Iceland](#).

While it is in international waters, [Ireland's](#) role in identifying and mapping the area will yield a key share in the available rare metal resources, including copper, gold, zinc and sulphides.

However, the capability of exploiting the rare metals will be some years away as technology is still being developed to cope with the enormous pressures at such sea depths.

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Aug 04, 2011

Explorers discover deep-sea hydrothermal vents

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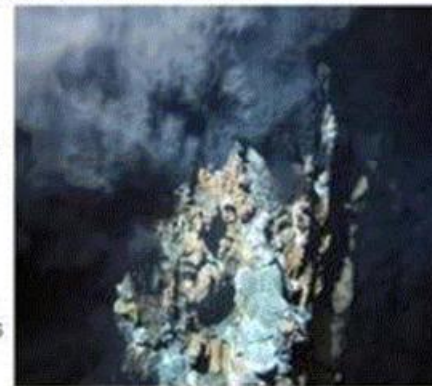


By [Dan Vergano](#), USA
TODAY

Updated

An Irish-headed expedition reports the discovery of a deep sea vent field almost 10,000 feet down in the Atlantic Ocean.

The Moytirra Vent Field, reported by a team led by Andy Wheeler of University College, in Cork, Ireland, rests on the mid-Atlantic ridge north of the Azores islands. Hydrothermal vents typically form deep-sea chimneys covered with minerals and release boiling waters into undersea ecosystems crawling with strange shrimp, snails and



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Major Deep-Sea Smokers Found—"Evolution in Overdrive"

Teeming with strange animals, volcanic vent field is North Atlantic first.



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Major Deep-Sea Smokers Found

A hotbed of "evolution in overdrive" the newfound volcanic vent field, which teems with odd animals, is a North Atlantic first.



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By MARK DUNPHY - Tue Aug 16, 4:08 pm

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RTSea Blog

keeping an eye on nature

Sunday, July 17, 2011

North Atlantic's Hydrothermal Vents: Irish expedition sets out to study the Mid-Atlantic Ridge



Marine scientists have examined some of the world's deep ocean thermal vents that harbor remarkable sealife found no where else on the planet. Living without sunlight, sometimes in temperatures that could bake bread, bacteria, worms, and crabs flourish at the site of these vents which often spew what looks like smoke but is actually a rich cocktail of minerals. The vents typically exist along fault lines that run deep in the ocean.

Welcome to the RTSea Blog!

RTSea Productions believes that one of the best ways to educate and motivate the public regarding conservation is through open communication. It is hoped that through blogs like this one, information will be disseminated across the Internet and, in so doing, will illuminate others as to the serious challenges that lay before us in preserving and protecting our natural resources.

To visit the RTSea Productions web site, [click here](#).

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New Field of Hydrothermal Vents Discovered Along the Mid-Atlantic Ridge

ScienceDaily (Aug. 5, 2011) — The Irish-led VENTuRE scientific expedition aboard the national research vessel RV *Celtic Explorer* has discovered a previously uncharted field of hydrothermal vents along the Mid-Atlantic Ridge -- the first to be explored north of the Azores.

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The mission, led by Dr. Andy Wheeler of University College, Cork (UCC), together with scientists from the National Oceanography Centre and the University of Southampton in the UK, NUI Galway and the Geological Survey of Ireland, returned to Cork on August 4th from an investigation 3,000 metres below the surface of the sea using the Remotely Operated Vehicle (ROV) Holland 1.

Hydrothermal vents, which spew mineral-rich seawater heated to boiling point by volcanic rock in Earth's crust below, are home to a rich variety of marine life that thrives in complete darkness on bacteria fed by chemicals. The investigation was supported by the Marine Institute under the 2011 Ship-Time



First time ever seen by human eyes, the Moytirra vent field. Picture shows chimneys of metal sulphides (black and rust coloured) formed at 3,030 metres below sea level. They have been precipitated from hot fluid erupting from the volcanic mid-Atlantic Ridge. The white material is anhydrite. (Credit: Image courtesy of Marine Institute - Foras na Mara)

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Ireland: Scientific Expedition Discovers New Field Of Hydrothermal Vents Along Mid-Atlantic Ridge

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The Irish-led Venture scientific expedition aboard the national research vessel RV Celtic Explorer has discovered a previously uncharted field of hydrothermal vents along the Mid-Atlantic Ridge — the first to be explored north of the Azores.

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Irish scientists discover new life beneath the sea

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A TEAM of scientists from Ireland have made a fascinating discovery – new life beneath the sea.

The VENTuRE team, which comprises marine scientists from University College Cork (Biological, Earth and Environmental Sciences), the National University of Ireland (NUI) Galway, Geological Survey of Ireland and University of Southampton and National Oceanography Centre in the UK, made the discoveries at the mid-Atlantic ridge in the Atlantic Ocean.



First time ever seen by human eyes, the Moytirra vent field. Picture shows chimneys of metal sulphides (black and rust coloured) formed at 3,030 metres below sea level.

Image: Marine.ie

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Field of hydrothermal vents discovered along the Mid-Atlantic Ridge

BY CHILLYMANJARO- AUGUST 9, 2011

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The Irish-led VENTuRE scientific expedition aboard the national research vessel RV *Celtic Explorer* has discovered a previously uncharted field of hydrothermal vents along the Mid-Atlantic Ridge – the first to be explored north of the Azores.

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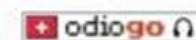
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IRISH SCIENTISTS are about to embark on one of the most challenging research expeditions undertaken by the State's research ship, *Celtic Explorer*.

National Geographic has booked berths on the ship to record the expedition, led by Dr Andy Wheeler of University College Cork, and involving marine scientists from NUI Galway, the Geological Survey of Ireland and the University of Southampton. The ship is due to leave Galway docks today.

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