

## Ventbase 2014

VentBase is a forum where academic, commercial, government and other stakeholders can develop a consensus on the best way to manage the mining of seafloor massive sulfide (SMS) deposits. It aims to produce best-practice documents to inform stakeholders and highlight state of the art science to underpin effective management. The inaugural Ventbase workshop was held in 2012 in Galway, Ireland. The 2014 Ventbase workshop was held on the 2<sup>nd</sup> – 4<sup>th</sup> April at the National Institute of Water and Atmospheric Research in Wellington (NIWA), New Zealand. The objectives of VentBase 2014 were to identify practical spatial management and mitigation strategies for the mining of SMS deposits and to further the development of a ‘primer-type’ document on conservation genetics at deep-sea SMS deposits.

The workshop was attended by 23 participants from 20 institutions in 9 countries. The participants were from wide-ranging backgrounds, including academic institutions, consultancies, industry, government agencies and NGOs. Generous travel bursaries from InterRidge supported the participation of two early career scientists.

A day of informative presentations and two days of fruitful discussions will be the basis for two workshop outputs; a paper on recommended spatial management and mitigation strategies for SMS mining, and a ‘primer-type’ document on conservation genetics at SMS deposits. These outputs are currently being drafted and are expected to be published open access with financial support from INDEEP.

### Presentations given during VentBase 2014

#### 1. Introduction and welcome to VentBase

- *NIWA welcome*: Rachel Boschen, NIWA/Victoria University of Wellington
- *VentBase 2012: review and outputs*: Patrick Collins, University College Dublin
- *VentBase 2014: workshop aims, structure and planned outputs*: Ashley Rowden, NIWA

#### 2. Requirements for and development of management frameworks

- *Deep-sea Environmental Impact Assessment: the ISA perspective*: David Billet, Deep Seas Environmental Solutions Ltd (given on behalf of Sandor Mulsow, International Seabed Authority)
- *SPC-EU DSM project develops environmental management frameworks*: Alison Swaddling, Secretariat of the Pacific Community
- *Implications for deep-ocean management from the EU MIDAS project*: Ashley Rowden, NIWA (given on behalf of Sabine Gollner, DZMB, German Centre for Marine Biodiversity Research, Senckenberg am Meer)

#### 3. National programmes providing information for management

- *Prospects for deep-sea mining exploration in the Azores*: Telmo Morato, IMAR, University of the Azores
- *Monitoring hydrothermal environments using the NEPTUNE cabled observatory*: Kim Juniper, Ocean Networks Canada
- *SMS mining and environmental management in New Zealand*: Malcolm Clark, NIWA & Rachel Boschen, NIWA/Victoria University of Wellington

#### 4. Science for environmental management

- *Survivor! Picking the winners for protection of vent populations*: Verena Tunnicliffe, University of Victoria
- *Faster, cheaper, better and more – implementation of novel genetic methods*: Jens Carlsson, University College Dublin
- *Environmental DNA for identifying and monitoring protected areas*: Frederic Sinniger, Japan Agency for Marine Science and Technology
- *In hot and cold waters: life history adaptations in the deep sea*: Leigh Marsh, National Oceanography Centre, Southampton
- *Fatty acid and stable isotope analysis of hydrothermal vent fauna*: Se-Jong Ju, Korea Institute of Ocean Science and Technology

#### 5. Environmental management case studies

- *Environmental management by Nautilus Minerals at Solwara 1, PNG*: Jonathan Lowe, Nautilus Minerals Inc.
- *Turning good ideas into international policy*: David Billet, Deep Seas Environmental Solutions Ltd

The future of VentBase was discussed in light of other stakeholder groups involved with the environmental management of SMS mining. Participants agreed that VentBase was an important forum and that the format of the workshop has been successful to date. However, it was also agreed that better integration with the Deep Ocean Stewardship Initiative (DOSI) would lead to more effective communication with the wider deep-sea community, in particular through hosting a permanent VentBase website.

There is increasing industry interest in SMS deposits along the mid-Atlantic Ridge, and VentBase 2016 is likely to be held in the Azores. For updates on post-workshop activities, please see the webpage, <https://www.niwa.co.nz/coasts-and-oceans/ventbase-2014>



Participants from the back, left to right: Jonathan Gardner, Rachel Boschen, Ashley Rowden, Telmo Morato, Malcolm Clark, Frederic Sinniger, Jens Carlsson, Kim Juniper, Alison Swaddling, Leigh Marsh, Amelia Connell, Anna Metaxas, Shannon Tyler, Heidi Berkenbosch, Patrick Collins, Se-Jong Ju, Ann McCrone, James Bell, Adrian Flynn, Verena Tunnicliffe and David Billett. Not pictured: Jonathan Lowe and Barry Winfield.

### Acknowledgments

The workshop was hosted by Rachel Boschen, Ashley Rowden and Malcolm Clark at the National Institute of Water and Atmospheric Research in Wellington, New Zealand. VentBase is the brain child of Patrick Collins and Jens Carlsson.

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