



VIRTUAL

Environmental Consequences of Deep-sea Mining: A Comparison with Land-based Mining*

February 8-10, 2021
3:00pm – 6:00pm EST

This workshop is funded by the **Cold Spring Harbor Laboratory Corporate Sponsor Program**,

and organized by **Anna Metaxas**, Dalhousie University, and
Verena Tunnicliffe, University of Victoria;
with facilitation by Maya Breitburg-Smith, RESOLVE

The presence of metalliferous ores on the seabed is fueling speculation of greater access to metal supplies to support current and projected global demands. Most such resources lie in international waters where they fall under the jurisdiction of the International Seabed Authority. As this agency finalizes the regulations of the Mining Code to enable exploitation, the challenge is to assess the environmental consequences in the context of alternative metal supplies. This workshop will consider the supposition that the environmental trade-off between deep-sea and terrestrial extraction favors opening this new ocean frontier.

*Two virtual “pre-meetings” were held in September 2020 and January 2021

MONDAY, FEBRUARY 8

- 3:00 pm **Opening Remarks I:** Welcome and overview of meeting
Rebecca Leshan, Banbury Center, Cold Spring Harbor Laboratory
Maya Breitburg-Smith, RESOLVE, Washington, DC, USA
- 3:15 pm **Opening Remarks II:** Overview of effort and purpose
Anna Metaxas, Dalhousie University, Halifax, Canada, and
Verena Tunnicliffe, University of Victoria, Canada
- 3:30 pm **Presentation:** Pre-meeting Outcomes
Verena Tunnicliffe, University of Victoria, Canada
- 3:45 pm Comments from pre-meeting participants
- 3:55 pm Questions / Discussion
- 4:25 pm *Break*



- 4:35 pm **Remarks:** The purpose of comparing environmental impacts of deep-sea mining (DSM) with land-based mining (LBM)
Anna Metaxas, Dalhousie University, Halifax, Canada
- 4:45 pm **Presentation:** Comparing DSM and LBM
John Thompson, PetraScience Consultants, Vancouver, Canada
- 5:05 pm Questions / Discussion
- 5:45 pm **Day 1 wrap-up, homework, and plan for Day 2**

TUESDAY, FEBRUARY 9

- 3:00 pm **Welcome, preview of the day**
Maya Breitburg-Smith, RESOLVE, Washington, DC, USA
- 3:15 pm **Discussion:** LBM scenario
- 3:45 pm Questions
- 3:55 pm **Presentations:** Nodule Mining
Craig Smith, University of Hawai'i at Mānoa, Honolulu, USA (presenter) &
Diva Amon, Natural History Museum, London, UK

Samantha Smith, Blue Globe Solutions, Toronto, Canada
- 4:15 pm *Break*
- 4:25 pm **Discussion:** DSM scenario
- 4:50 pm Questions
- 5:05 pm **Discussion:** Challenges and opportunities
- 5:50 pm **Day 2 wrap-up, homework, and plan for Day 3**

WEDNESDAY, FEBRUARY 10

- 3:00 pm **Welcome; preview of the day**
Maya Breitburg-Smith, RESOLVE, Washington, DC, USA
- 3:20 pm **Breakout groups:** Comparing DSM and LBM



4:25 pm *Break*

4:40 pm Breakout Group Reporting and Discussion

5:25 pm Discussion / Planning

5:50 pm **Meeting wrap-up and next steps**

—END OF PROGRAM—

PARTICIPANTS*

Diva J. Amon, Natural History Museum, London
C. D. ("Lyn") Anglin, Anglin & Associates
Maya Breitburg-Smith, RESOLVE
Barbara Butler, Environmental Protection Agency / ORD
Adam Cross, Centre for Mine Site Restoration, Curtin University
Paul De Morgan, RESOLVE
Peter Erskine, University of Queensland
Luis E. Fernández, Wake Forest University
Tony Koslow, Scripps Institution of Oceanography
Jennifer Le
Lisa Levin, Scripps Institution of Oceanography, UCSD
Hannah Lily
Ann S. Maest, Buka Environmental
Nélia Mestre, CIMA, Universidade do Algarve
Anna Metaxas, Dalhousie University
Gavin Mudd, RMIT University
Eva Ramirez-Llodra, REV Ocean
Luis E. Sánchez, University of São Paulo
Rahul Sharma, National Institute of Oceanography
Craig Smith, University of Hawai'i at Mānoa
Samantha Smith, Blue Globe Solutions
Laura Sonter, University of Queensland
John F. H. Thompson, PetraScience Consultants
Verena Tunnicliffe, University of Victoria
Ann Vanreusel, Ghent University
Philip Weaver, Seascope Consultants, Ltd.
Stephen Wheston, Tembusu Limited

*Two virtual "pre-meetings" in September 2020 and January 2021 included a subset of participants