

CHALLENGER 150

Year 1 Highlights

This year we have worked hard to establish our 12 **Regional Scientific Research Working Groups** (RSR-WGs) covering the global ocean. The amazing scientists in these groups liaise with regional stakeholders to identify and prioritise research needs. These essential partnerships allow us to coordinate scientific research activities to identify and fill data gaps. Our regional working groups help build regional capacity in deep-sea science, moving research to policy and action.

12 REGIONAL WORKING GROUPS



Our new **Litter Recording Working Group** is developing standards for recording marine litter in the deep sea. By aligning our methods with those used on land and in shallow water, we will ensure we can combine our knowledge.

We have also established two **technical scientific research working groups** (TSR-WGs):

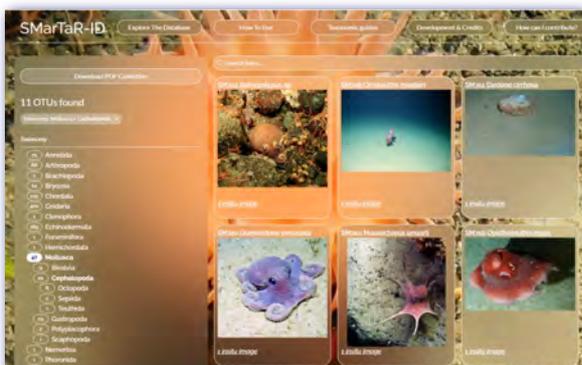
- Megafaunal Image-Based Working Group
- Litter Recording Working Group

CELEBRATING
RESEARCH OCEAN
15 **5**
CRUISES BASINS

2 TECHNICAL WORKING GROUPS

Our **Megafaunal Image-Based Working Group** is developing methods, tools and training materials to raise standards in animal identification and data collection in image analysis.

Working with our partner, **One Ocean Hub**, we saw the launch of the **Standardised Marine Taxon Reference Image Database** (SMarTaR-ID), a potent tool that helps people identify deep-sea animals from images using consistent naming conventions.



We are delighted to welcome the following projects into the Challenger 150 programme. Scan the QR code for links to our amazing partners!

- One Ocean Hub
- Deep-Ocean Genomes Program
- SMARTEX - Seabed Mining & Resilience To EXperimental impact
- COBRA - Crustal Ocean Biosphere Research Accelerator
- AleutBio - Aleutian Trench Biodiversity Studies
- IceDivA - Icelandic marine Animals meet Diversity along latitudinal gradients in the deep sea of the Atlantic
- MAREANO



7 DEEP-SEA PROJECT PARTNERS



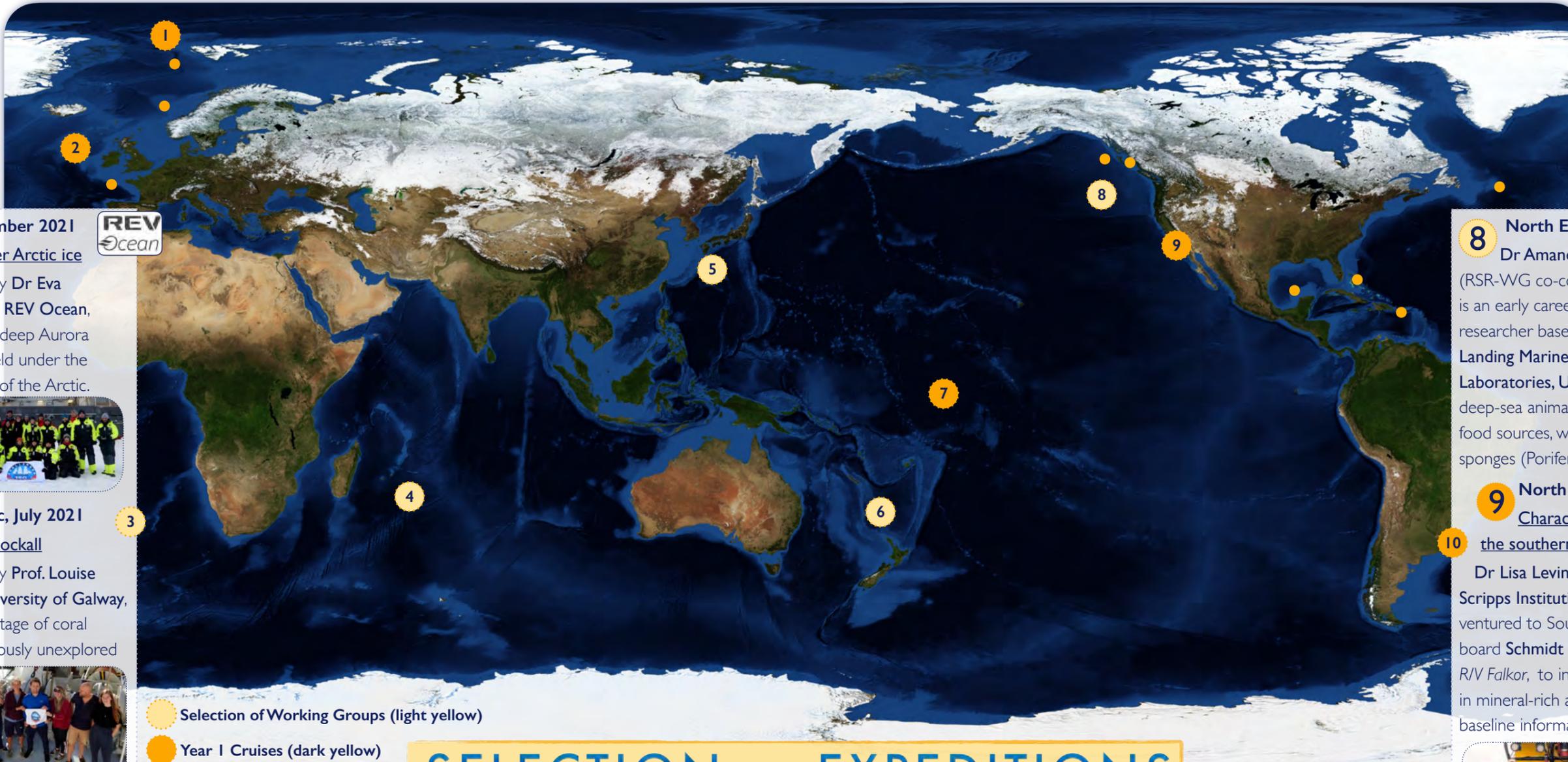
2021-2030 United Nations Decade of Ocean Science for Sustainable Development



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MEET SOME OF THE TEAM

WORKING TOGETHER ACROSS 5 OCEAN BASINS



1 Arctic, September 2021 Hot vents under Arctic ice



This expedition, led by Dr Eva Ramirez-Llodra from REV Ocean, explored the 4000m deep Aurora hydrothermal vent field under the permanent ice cover of the Arctic.



2 North Atlantic, July 2021 Resources of Rockall

This expedition, led by Prof. Louise Allcock from the University of Galway, provided the first footage of coral mounds on the previously unexplored Fangorn Bank.



3 Central and South Atlantic Dr Kirsty McQuaid

(RSR-WG co-coordinator) is a South African early career researcher based in Cape Town with expertise in mapping animal communities, focusing on the abyssal sea floor and marine protected areas.



Dr Maila Guilhon (RSR-WG co-coordinator) focuses on ecosystem-based management of the deep sea. She is an early career researcher from the University of São Paulo in Brazil.



4 Indian Ocean Prof. Agnes Muthumbi

(RSR-WG co-coordinator) is an expert on deep-sea marine worms (Nematoda) and is based at the University of Nairobi, Kenya. **Dr Baban Ingole** (RSR-WG co-coordinator) is based at the National Centre for Polar & Ocean Research, India. His expertise is in deep seabed life, particularly areas where minerals of mining interest are found.



5 North West Pacific Dr Hiromi Watanabe

(RSR-WG co-coordinator) is a research scientist with expertise in life around hydrothermal vents. She works at the Japan Agency for Marine-Earth Science and Technology.



6 SW Pacific Drs Malcolm Clark and Daniel Leduc

(RSR-WG co-coordinators), both based at the National Institute of Water & Atmospheric Research in New Zealand. Malcolm has worked on

deep-sea ecology & fisheries since the 1980s, with a particular focus on the management of the environmental effects of human activities (commercial fishing & potential seabed mining). **Daniel** is a benthic ecologist & nematode taxonomist, with research on community ecology & ecosystem function, from intertidal to hadal habitats. He has described over 100 new marine nematode species.



7 Central Pacific, June 2021 Discovering deep-sea corals of the Phoenix Islands

Working with our partner Schmidt Ocean Institute, Boston University's Dr. Randi Rotjan & WHOI's Dr. Tim Shank (and team!) explored the biodiversity of the US Phoenix Islands (part of the US PRIMNM) and nearby high seas.



10 South Atlantic, May 2022 YTEC-GTGM 5

This expedition, led by Dr Alejandro Tassone from the Institute of Basic, Applied and Environmental Geosciences of Buenos Aires, undertook environmental baseline studies of the physical, chemical, and biotic environment of the Argentine deep sea.



SELECTION OF EXPEDITIONS



SCAN THE QR CODE AT THE TOP OF THE PAGE FOR AN INTERACTIVE MAP & OUR FULL CREW!

CHALLENGER 150 IN ACTION

July 2022, the **NW Pacific RSR-WG** organised an online scientific workshop, showcasing expert talks on

- The Regional Biodiversity of Hadal Trenches
- Molecular Approaches in Deep-Sea Hydrothermal Vents and Seeps
- Abyssal Plain Biogeochemistry.

We also held discussions on how the NW Pacific RSR-WG can work across scales—locally, regionally and globally—to

- Address our knowledge gaps in the deep-sea,
- Help early career scientists develop their expertise, and
- Strengthen collaborations and connections with stakeholders
- Grow throughout the **UN Decade of Ocean Science** and beyond.



Dr **Saskia Brix** from our partner project **IceDivA** hosted the **Floating Classroom Satellite Activity**.

The team broadcast live from onboard R/V *Sonne* to the **Senckenberg Museum**, showcasing deep-sea research to build the clean ocean future we want.

The COBRA Project

Earlier this year, our partner project, the **Crustal Ocean Biosphere Research Accelerator (COBRA)**, designed and delivered a Master Class for early career researchers (ERCs) on deep-sea expedition leadership. This 13-week virtual program trained twelve globally-distributed and diverse ERCs in the “nuts and bolts” of expedition leadership. By the end of the Master Class, all participants reported feeling ready to propose and lead deep-sea expeditions! We cannot wait to see these new leaders in action, as we need their talents and passions more than ever. The program’s high application demand attests to the vital need for this training and COBRA is gearing up plans for a second iteration to meet the needs of the ERC community. To learn more, scan the QR code on this page!



The **Challenger 150** programme collaborates with the **Deep Ocean Observing Strategy (DOOS)** and other programmes as part of a **Deep Sea Research and Management Community of Practice** under the **Ocean Decade** to deliver the science we need for the deep-sea we want. Our parent organisation, the **Deep Ocean Stewardship Initiative (DOSI)**, uses this collaborative research to inform and advise on international policy. We are proud to play our part in this knowledge transfer chain.

Clean Ocean Laboratory

During the **UN Ocean Decade Clean Ocean Laboratory** event, **Challenger 150** member **Professor Angelika Brandt** from the **Senckenberg Society for Nature Research** in Germany, hosted and presented a presentation on the important and immediate problems posed by ocean pollution that must be tackled during the **Decade** and beyond. During this core event, we highlighted our commitment to achieving the following goals by 2030:

- Establish working groups capable of providing regional-level advice on methods to measure and report pollution in the deep sea
- Build capacity to measure and report deep sea pollution
- Double the number of nations adopting the use of the defined standards
- Advocate for the consideration of deep-sea science in both policy development and conservation initiatives

To learn more about the **Challenger 150 Ocean Decade Programme**: and our **Global Activities**, scan the QR code or contact:

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