MARIE THARP LECTURE SERIES FOR OCEAN RESEARCH | **NO.43**

GEOMAR

Photo: Anna Lichtschlag

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"IT WAS VERY EXCITING IN THOSE DAYS. WE WERE EXPLORERS."

Marie-Tharp (1920-2006), Oceanographer

Friday, 10th March 2023, 11:15 CET

GEOMAR Lecture Hall East Shore Campus (Geb 8) | Wischhofstr. 1-3, 24148 Kiel

Habitat Mapping in the Deep Ocean:

Using the latest technologies to chart the Earth's last frontier

Live and in-person event!

Photo: Claudio Lo Iacono

With ever-growing pressures on terrestrial resources and ecosystems, human activities are increasingly moving into deeper and deeper waters as we look at the ocean for solutions for our onshore challenges. However, 70 years after Marie Tharp first mapped our deep ocean, 99 percent remains unexplored, and 75 percent is not yet mapped to a resolution that allows us to even start making informed decisions about marine spatial planning and conservation. Even less is known about the presence and distribution of deep-sea species and ecosystems, let alone about how they function. The main reason for this extensive knowledge gap is the vastness of the deep sea, and its inaccessibility.

Recent advances in marine robotics, however, increasingly bring this deep-sea environment within reach, and allow us to shed light on the fascinating life several kilometres below the sea surface. This presentation will give an overview of the challenges and solutions to mapping our deep-sea habitats, including the importance of capturing the environment at multiple angles and scales to obtain the full picture. It will demonstrate the surprising complexity of deep-sea systems such as submarine canyons, seamounts or cold-water coral reefs and how they can be mapped, and will illustrate the intricate spatial patterns of benthic fauna and their relationship to the terrain, water masses and currents. Finally, our observations and mapping results will be interpreted against the increasing threat of human impacts in the deep ocean, illustrating how deep-sea habitat mapping can support conservation efforts, and can give insights into ecosystem resilience and recovery after disturbance.

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