

Benthic Habitat Mapping in the Iheya North Hydrothermal Field

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Deep-sea hydrothermal systems can support large and diverse populations of vent-associated organisms. In this paper, we describe a practical method to rapidly assess the distribution and diversity of megabenthos over wide areas based on a two-phase multi-resolution visual mapping technique. The technique is applied to two areas in the Iheya North Field of the Okinawa trough, in regions that were drilled to varying extents during the IODP 331 expedition. A total area of more than 30,000m² was mapped in a single dive with a remotely operated vehicle (ROV) and more than 80,000 organisms were identified from six different species. The results give insight into the effects that drilling activity has had on the distribution of megabenthos in this area. The method described forms a practical way to quantitatively assess the distribution of megabenthos over statistically meaningful spatial scales in a way that is repeatable and is suitable for comparison between sites or for monitoring sites over time.

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