**Megabenthic assemblages at the southern Central Indian Ridge – Spatial segregation of inactive hydrothermal vents from active-, periphery- and non-vent sites**

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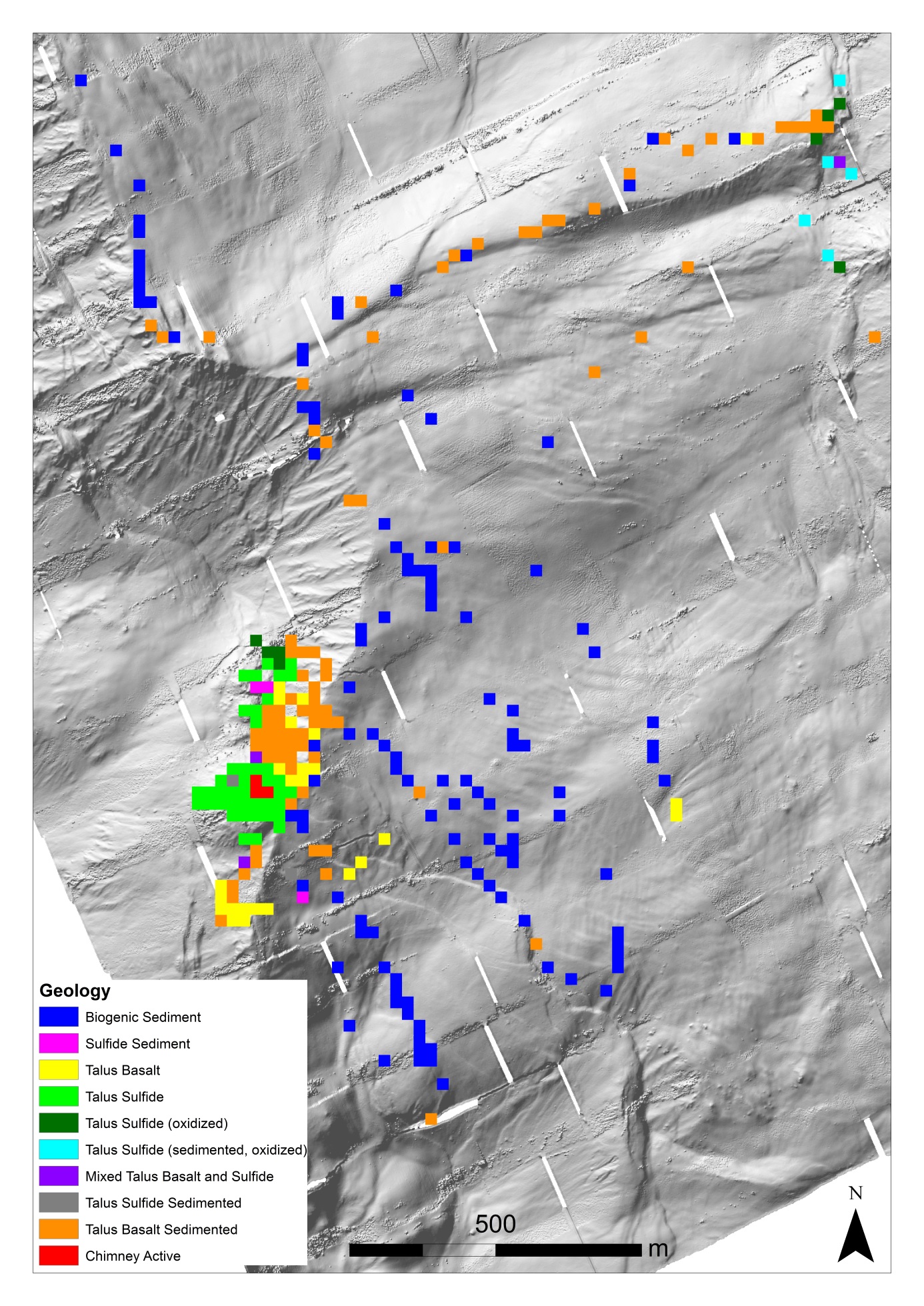
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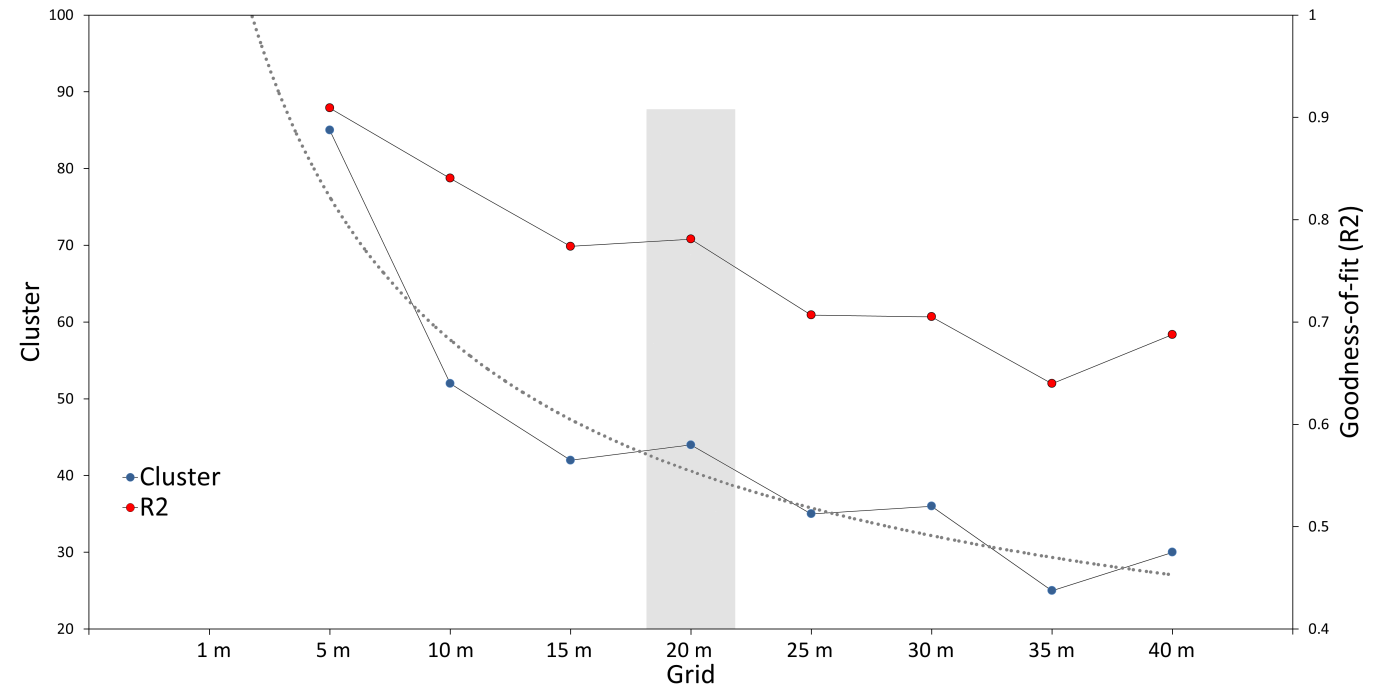
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**Supplementary Material**

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**Supplementary Figure 1:** Spatial distribution of final substrates types based on hierarchical classification.



**Supplementary Figure 2:** Number of faunal clusters and goodness-of-fit (Global R2-value) plotted for each grid size. The 1 m grid size cluster could not be calculated with a computational power of 500 GB Ram. The grey dotted line indicates the smoothed asymptotic trend of the number of clusters. The light grey box shows the selected optimal grid size.

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**Supplementary Figure 3:** Dendrogram of hierarchical clustering of the 20x20 m grids resulting in the separation of 44 faunal clusters. The separation of clusters based on the Simprof post-hoc test and global R of the 'adonis' function (R2= 0.78102). The red dotted lines indicate significant separated cluster based on the Simprof test. The colored line underneath the faunal clusters indicates the relation of each faunal cluster to the corresponding faunal assemblage.

**Supplementary Table 2:** Taxa identified during video analysis based on the created fauna catalogue. All taxa were identified to lowest taxon possible. Grey highlighted taxa are vent endemic.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Phylum** | **Taxon (grey indicate HVF taxa)** | **Faunal Assemblage** | | | | | **Total** |
| **I** | **II** | **III** | **IV** | **V** |
| **Arthropoda** | *Austinograea rodriguezensis* Tsuchida & Hashimoto, 2002 | 72 | 2 | 10 |  | 1 | **85** |
| Caridea sp. 1 | 1 | 2 | 1 | 28 |  | **32** |
| Caridea sp. 2 |  |  |  |  | 1 | **1** |
| Caridea sp. 3 |  |  |  |  | 3 | **3** |
| Caridea sp. 4 |  |  |  | 12 |  | **12** |
| *Munidopsis pallida* Alcock, 1894 | 4 | 8 | 9 |  |  | **21** |
| *Nematocarcinus* sp. 1 |  |  |  |  | 6 | **6** |
| *Nematocarcinus* sp. 2 |  |  |  |  | 1 | **1** |
| Paguroidea sp. |  |  | 1 | 21 |  | **22** |
| *Rimicaris kairei* Watabe & Hashimoto, 2002 | 21,876 | 11 | 8 | 1 |  | **21,896** |
| **Bryozoa** | Cheilostomatida sp. 1 |  | 1 |  |  |  | **1** |
| **Chordata** | *Megalodicopia hians* Oka, 1918 |  | 1 |  |  |  | **1** |
| Zoarcidae sp. 1 | 17 |  |  |  |  | **17** |
| **Cnidaria** | Actiniaria sp. 1 | 1 |  |  |  |  | **1** |
| Actiniaria sp. 4 | 2,057 | 15 | 4 |  |  | **2,076** |
| Actiniaria sp. 7 | 1 | 1 |  |  | 1 | **3** |
| *Actinostola* sp. 2 |  |  |  |  | 2 | **2** |
| *Bathypathes* cf. *patula* | 2 | 1 |  |  |  | **3** |
| *Bathyphellia* sp. 1 | 182 | 19 | 15 |  | 1 | **217** |
| *Bathyphellia* sp. 2 | 6 | 23 | 1 | 52 | 1 | **83** |
| *Candelabrum* sp. | 8 | 3 | 4 |  |  | **15** |
| *Corymorpha* sp. |  |  |  |  | 1 | **1** |
| Hydrozoa sp. 4 |  | 2 | 1 |  |  | **3** |
| Hydrozoa sp. 6 | 1 | 4 | 1 |  |  | **6** |
| Hydrozoa sp. 8 | 1 | 6 | 20 |  |  | **27** |
| Isididae sp. 1 | 4 |  | 12 |  |  | **16** |
| Isididae sp. 2 |  |  |  |  | 1 | **1** |
| Isididae sp. 5 | 1 | 10 | 5 |  |  | **16** |
| *Maractis* sp. | 17,063 | 82 | 5 |  |  | **17,150** |
| Pennatulacea sp. 1 | 1 |  |  |  | 1 | **2** |
| Primnoidae sp. 1 |  |  |  |  | 1 | **1** |
| Scleractinia sp. |  | 1 |  |  |  | **1** |
| *Umbellula* sp. |  |  | 1 | 4 |  | **5** |
| Zoantharia sp. | 743 | 480 |  |  |  | **1,223** |
| **Echinodermata** | Brisingidae sp. 1 |  |  | 1 |  |  | **1** |
| *Chiridota* sp. 1 | 10 |  |  |  |  | **10** |
| *Circeaster marcelli* Koehler, 1909 | 2 | 1 | 1 |  | 3 | **7** |
| Crinoidea sp. 1 |  |  |  |  | 1 | **1** |
| Crinoidea sp. 3 |  |  |  |  | 2 | **2** |
| *Enypniastes* cf. *eximia* |  |  | 1 |  |  | **1** |
| Freyellidae sp. 1 |  |  | 1 | 1 | 2 | **4** |
| *Oneirophanta* sp. |  |  | 1 |  |  | **1** |
| Ophiuroidea sp. 3 |  |  |  |  | 2 | **2** |
| *Sperosoma* sp. 1 |  |  |  | 2 |  | **2** |
| *Sperosoma* sp. 2 |  |  |  |  | 1 | **1** |
| *Styracaster caroli* Ludwig, 1907 |  |  |  |  | 2 | **2** |
| *Synallactes aenigma* Ludwig, 1894 |  |  |  |  | 1 | **1** |
| Synallactidae sp. 2 |  |  |  | 2 | 1 | **3** |
| **Foraminifera** | Xenophyophoroidea sp. 4 |  |  |  |  | 1 | **1** |
| **Mollusca** | *Bathymodiolus septemdierum* Hashimoto & Okutani, 1994 | 13 |  |  |  |  | **13** |
| **Polychaeta** | *Oasisia* sp. 1 | 127 |  |  |  |  | **127** |
| Sabellidae sp. 1 |  |  |  |  | 2 | **2** |
| **Porifera** | *Abyssocladia* sp. 1 |  |  | 2 |  | 1 | **3** |
| *Caulophacus* sp. |  | 1 |  |  | 4 | **5** |
| *Chonelasma* sp. |  |  |  | 1 | 6 | **7** |
| Cladorhizidae sp. 1 | 1 |  | 1 |  |  | **2** |
| *Euchelipluma* sp. 1 |  | 20 | 11 |  |  | **31** |
| *Geodia* sp. |  |  | 5 |  | 1 | **6** |
| *Hyalonema* sp. 1 |  | 4 | 1 | 2 |  | **7** |
| *Hyalonema* sp. 2 | 1 |  | 7 | 1 |  | **9** |
| Stalked Porifera | 17 | 49 | 32 |  | 1 | **99** |
| Stalked Porifera sp. 1 | 1 |  |  |  |  | **1** |
| *Tedania* sp. | 5 |  |  | 6 |  | **11** |
|  | **Total Abundance** | **42,218** | **747** | **162** | **133** | **52** | **43,312** |
|  | **Total Taxa** | **28** | **24** | **28** | **13** | **29** | **63** |
|  | **HVF Taxa** | **10** | **6** | **5** | **1** | **1** | **10** |
|  | **Inactive/ Non-Vent Taxa** | **18** | **18** | **23** | **12** | **28** | **53** |

**Supplementary Table 1:** Imagery data base (Raw data) of photograph and video annotation of all six transects of both gears (38MFT, 44MFT, 47MFT, 39ROV, 49ROV, 51ROV) including taxa occurrences, observed substrate type and grid affiliation of each grid size (1-40 m), beside technical information. File provided as a separate Excel Table.

**Supplementary Data 1:** Fauna Catalogue used for identification of megafauna. File provided as a separate Pdf-document.