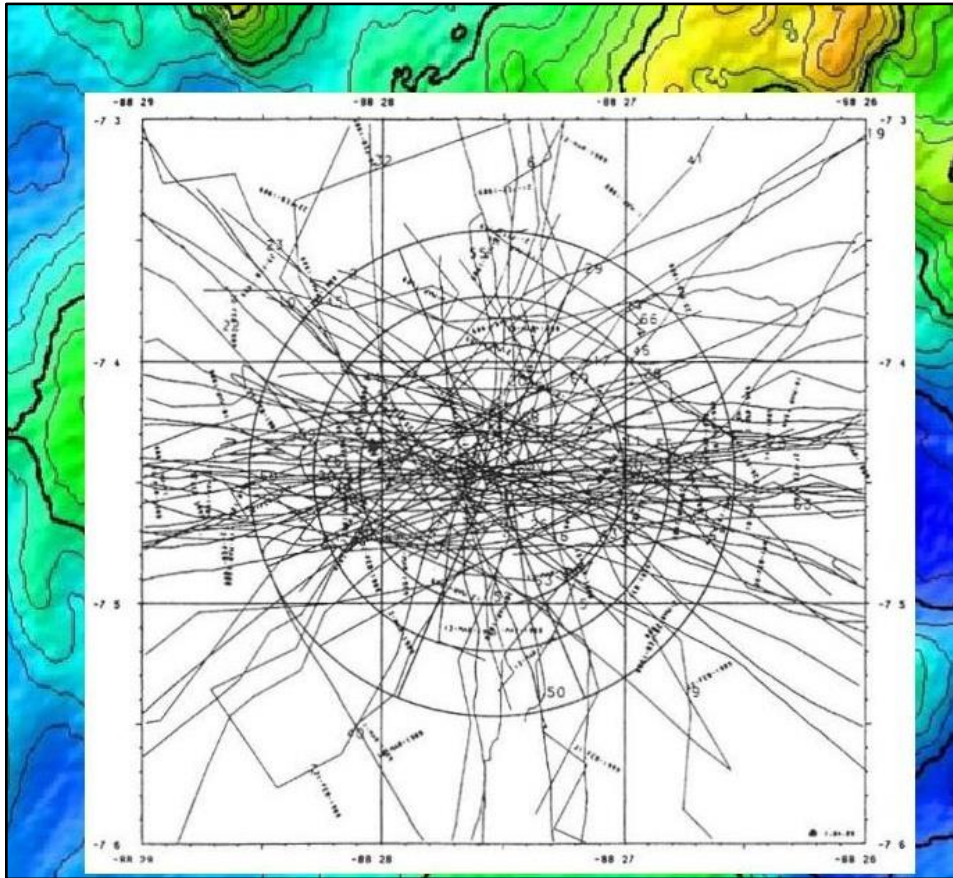


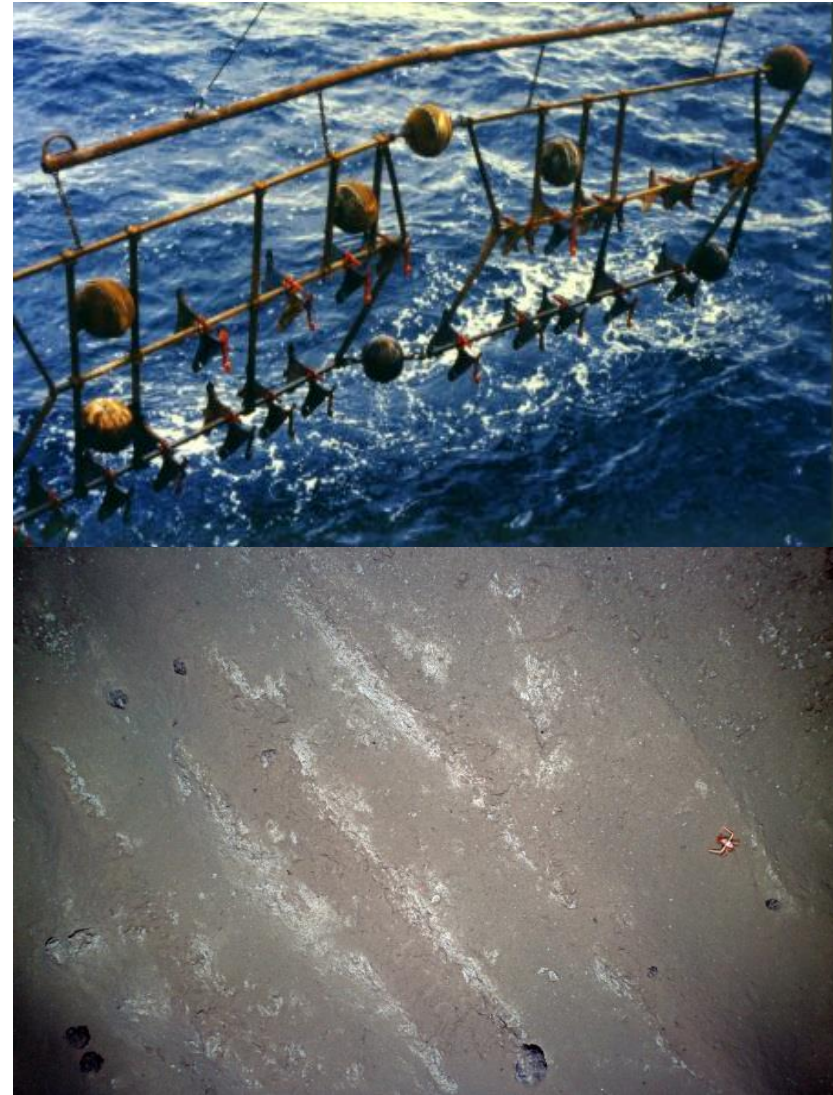
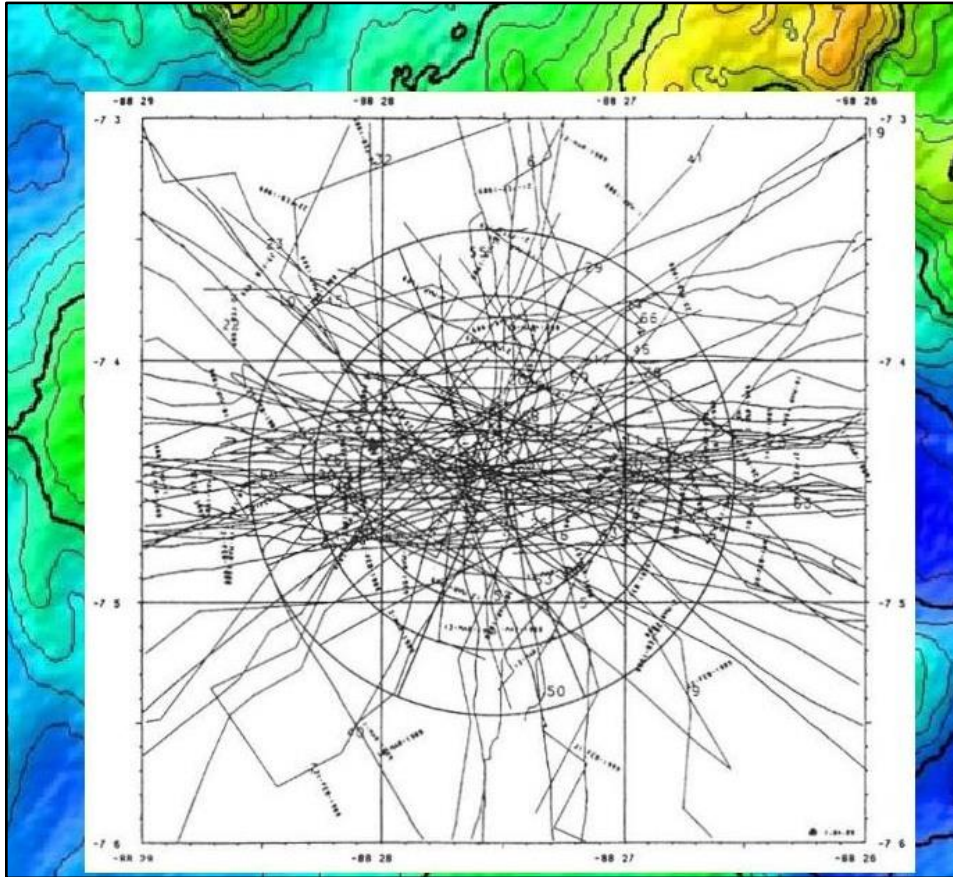
**Megafauna community structures at the DISCOL experimental disturbance site, 26 years after artificial disturbance.  
First results from 'RV SONNE' cruise SO242-2.**

Autun Purser, Yann Marcon, Antje Boetius

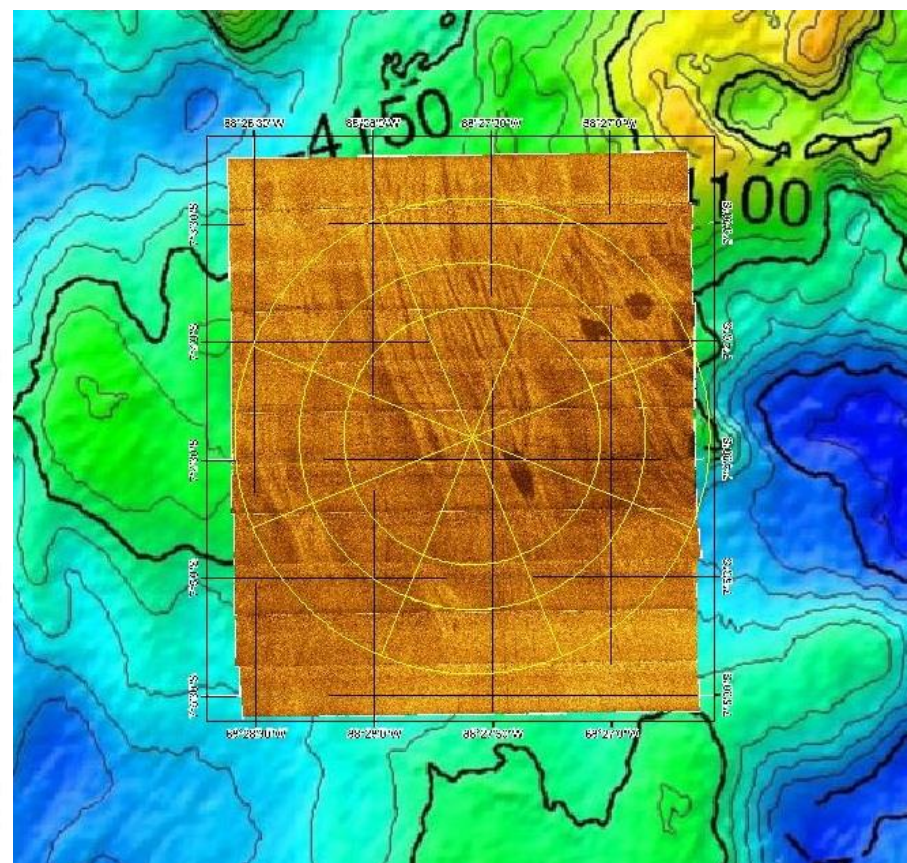
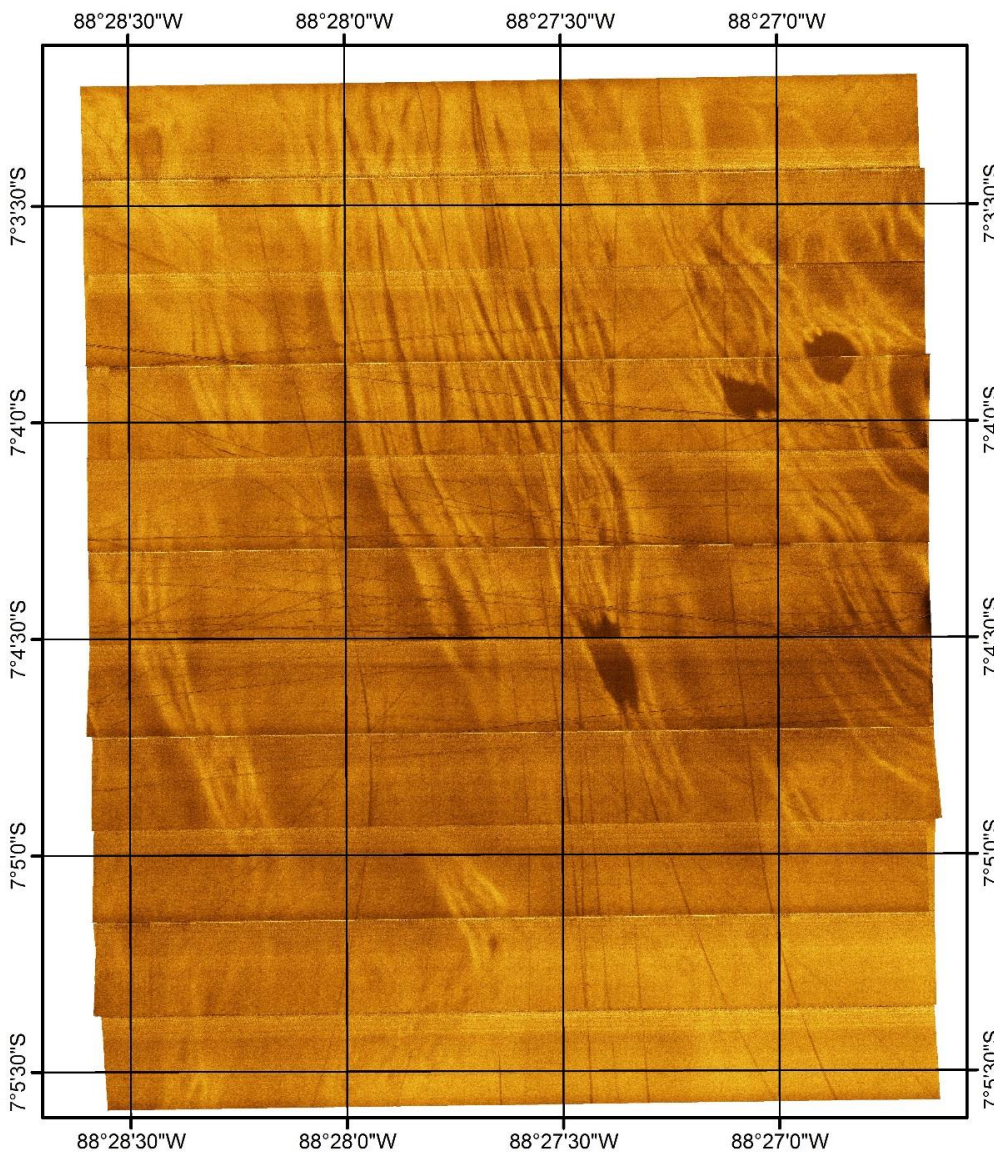




SO242-2 the second of two summer cruises to the DISCOL experimental area in 2015.



In 1989 an area of Pacific manganese nodules was artificially ploughed, in an effort to simulate the effects of deep sea mining.



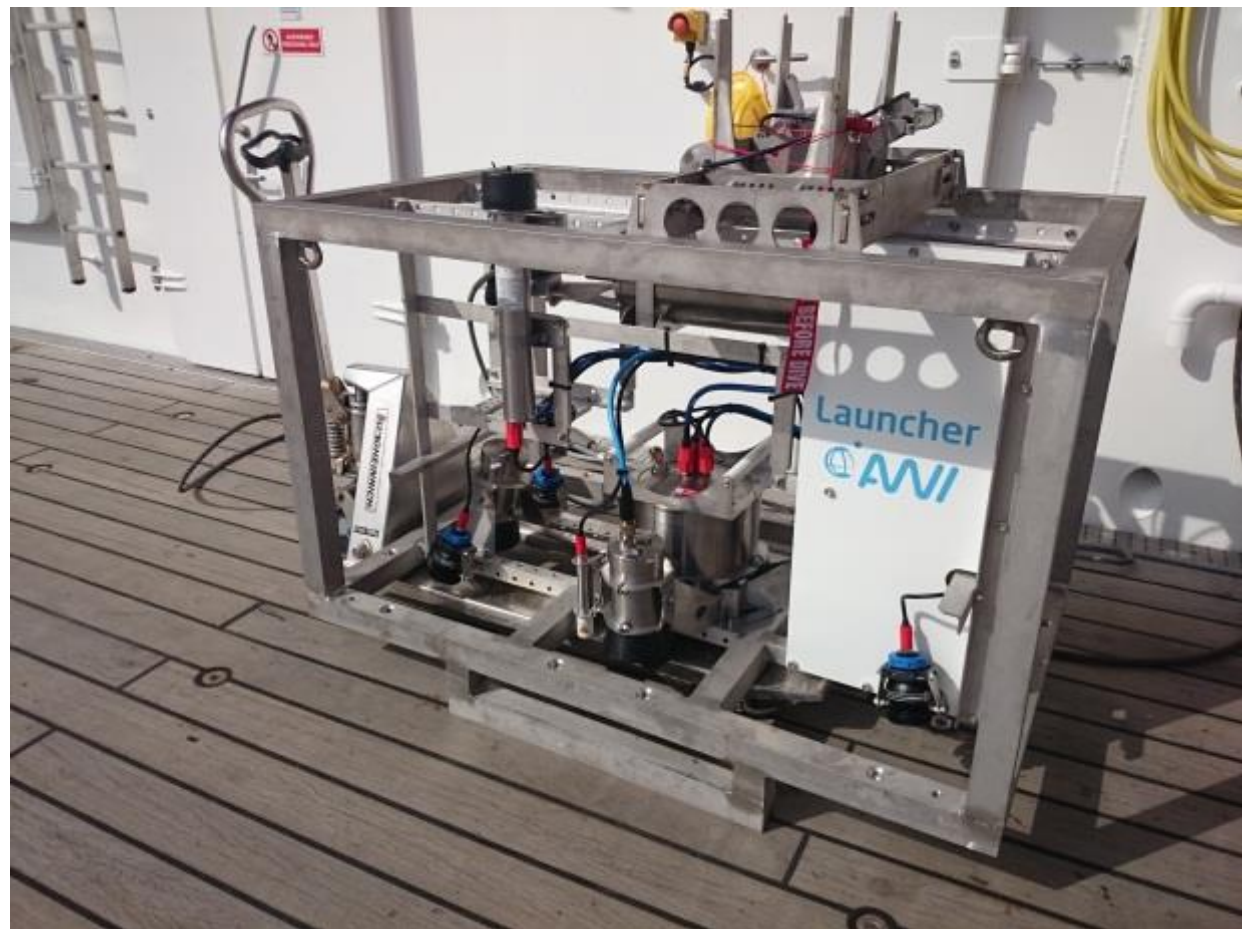
SO242-2 utilised the fine sidescan maps provided by the SO242-1 team for localised study of areas of interest. HUGE THANKS TO JENS et al...!

For investigation of megafauna, the AWI OFOS LAUNCHER was flown at a height of (usually) 1.5m to image seafloor with a 23 megapixel camera.

Regular ship speed 0.2-0.4 kts.

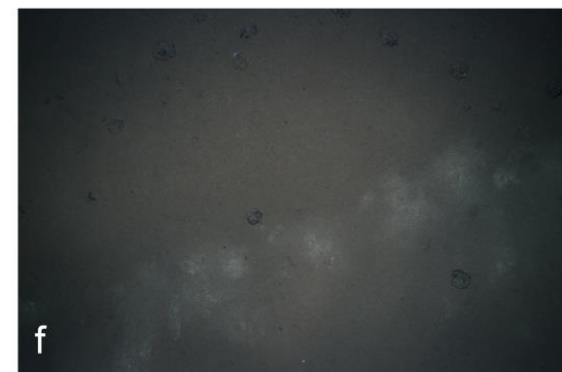
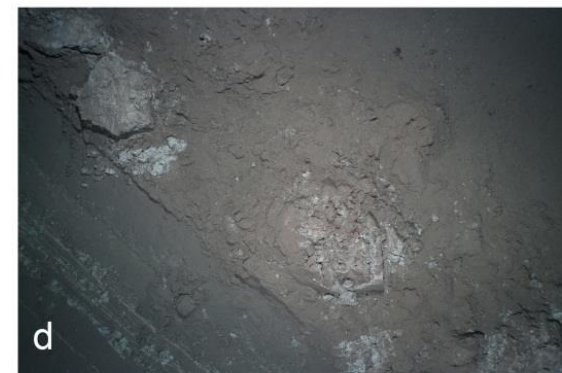
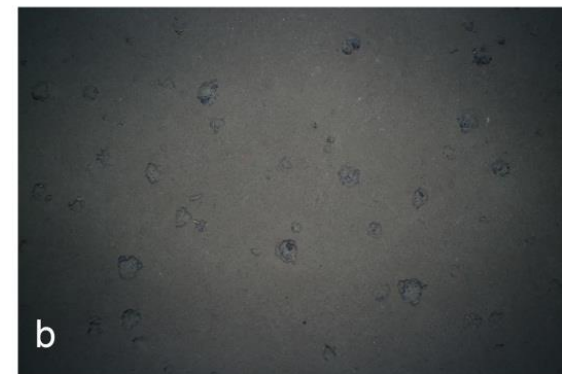
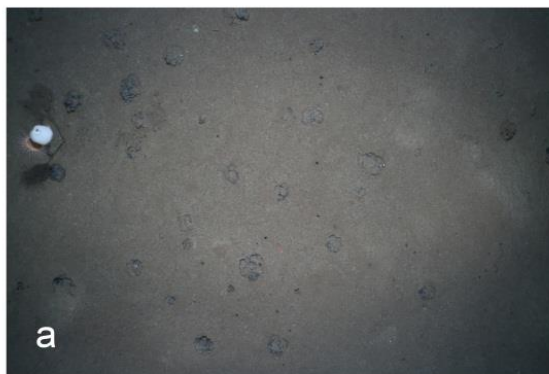
Video and still images collected (hotkey and timer)

Main aim of megafauna imaging:  
To collect image data to determine whether or not taxa reported in Bluhm, (2001), had returned to the ploughed regions or not.... 26 yrs after experimental ploughing.



OFOS survey design planned to image roughly equal areas of habitats defined in previous DISCOL publications:

- a) Nodule area within DEA (Undisturbed)
- b) Nodule area outside DEA (Reference)
- c) Epibenthic sled centre (new category)
- d) Epibenthic sled edge (new category))
- e) Ploughmark (central plough)
- f) Ploughmark (transition)



- 19.5 OFOS dives to support primarily the main objective.
- 1.5 OFOS dives to support AUV, historical OFOS and OFOS altitude methodology comparison.
- 1 OFOS dive to rescue lost GEOMAR equipment.

**Total number of images: 15,442**

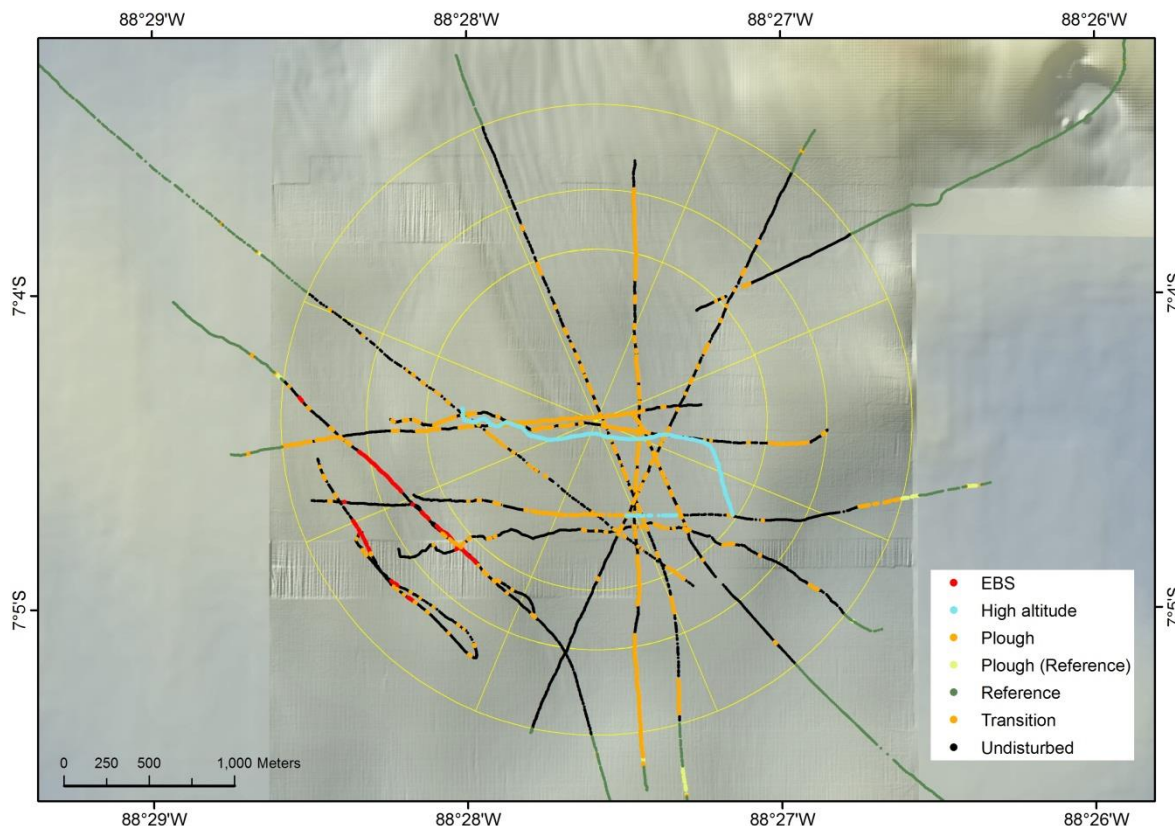
Plough marks: 1,740

Epibentic Sled: 350

Transition: 1,065

Undisturbed DEA: 6,524

Reference: 5,763



*OFOS surveys within the DISCOL Experimental Area (DEA)*


Majority of publications reporting megafauna recolonisation of the DISCOL area report abundances of 16 taxa. We have continued with this approach. After 26 years, variation in abundances across the DEA habitat types differs with taxa. We have analysed approx. 20% of images.

Image Annotator v1.4 - Yann Marcon, November 2015    Current annotator: yann

Filter OFF    Refresh / Go to image: 1    Previous image    Next image

Current selection: GP1: Holothuroidea

Image 1: 2holos.JPG



List of keywords

Load list of keywords

- GP1: Crustacea (Shrimp)
- GP1: Crustacea (Proboscipoda)
- GP1: Crustacea (Proboscipoda with Actinaria)
- GP1: Crustacea (Mundropsidae)
- GP1: Crustacea (Barnacle)
- GP1: Crustacea (Isopod)
- GP1: Crustacea (Amphipod)
- GP1: Porifera
- GP1: Ophiuroidea
- GP1: Holothuroidea
- GP2: Actinaria
- GP2: Asteroidea
- GP2: Osteichthyes
- GP2: indeterminate
- GP3: Cnidaria (other than in GP3-4)
- GP3: Cnidaria (Hydrozoa)
- GP3: Cnidaria (Sciphozoa)
- GP3: Ascidia
- GP3: Hemichordata
- GP3: Crinoidea (stalked)
- GP3: Crinoidea (non-stalked)
- GP4: Polychaeta (mobile)
- GP4: Polychaeta (sessile)
- GP4: Cnidaria (Gorgonaria)
- GP4: Cnidaria (Pennatularia)
- GP4: Cnidaria (Ceriantharia)
- GP4: Cnidaria (Antipatharia)
- GP4: Cephalopoda
- GP4: Echinoidea
- \_OTHER\_
- Gastropoda
- Salp
- Stalk
- Nodule
- Burrow
- Litter
- Unknown (possibly not fauna)
- Un-usable image
- Overlapping image
- Not sure - To be checked later

Replace a keyword in all images

Draw usable area

Draw scale

scale [m] 0.5    Apply

Export summary results



































































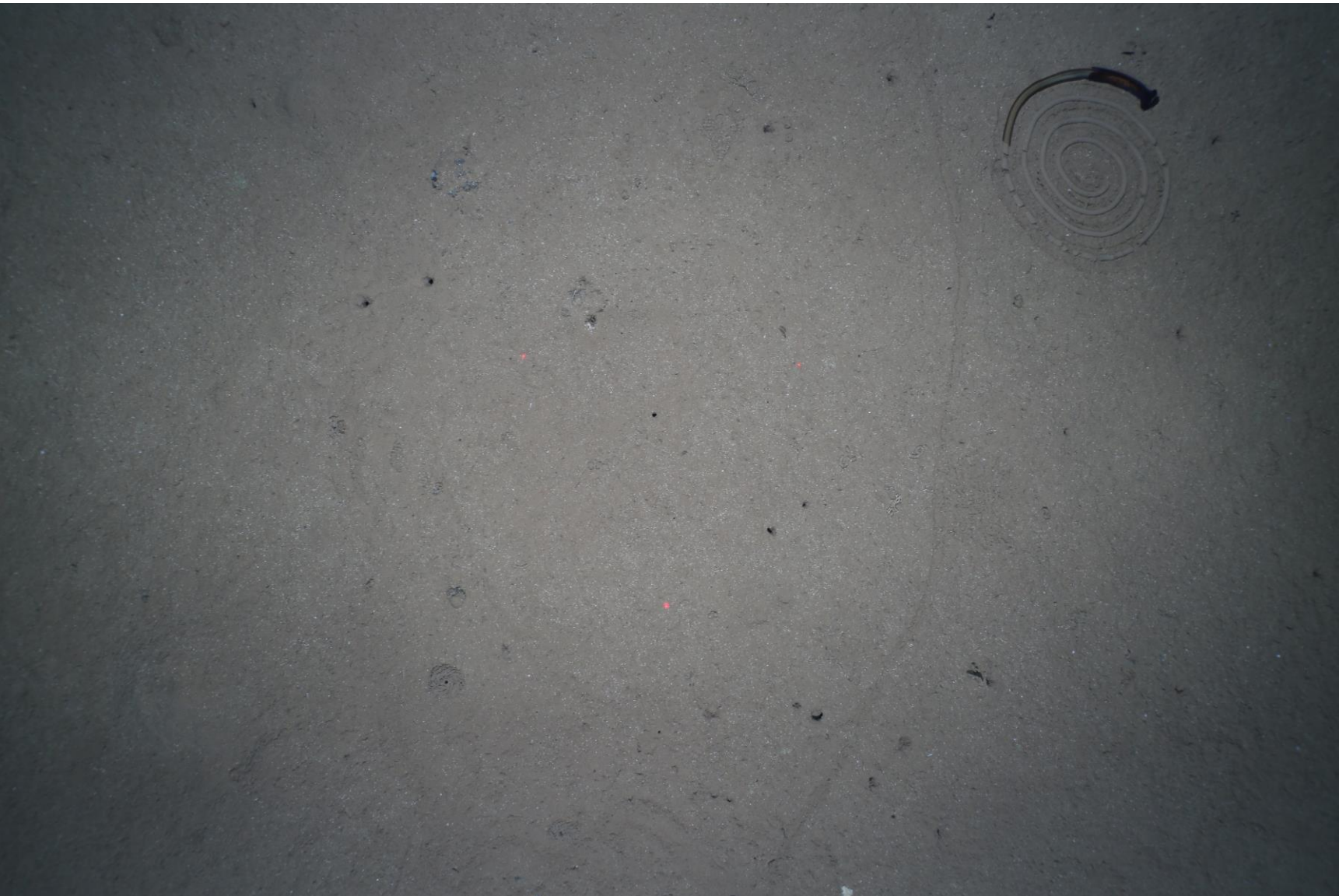


















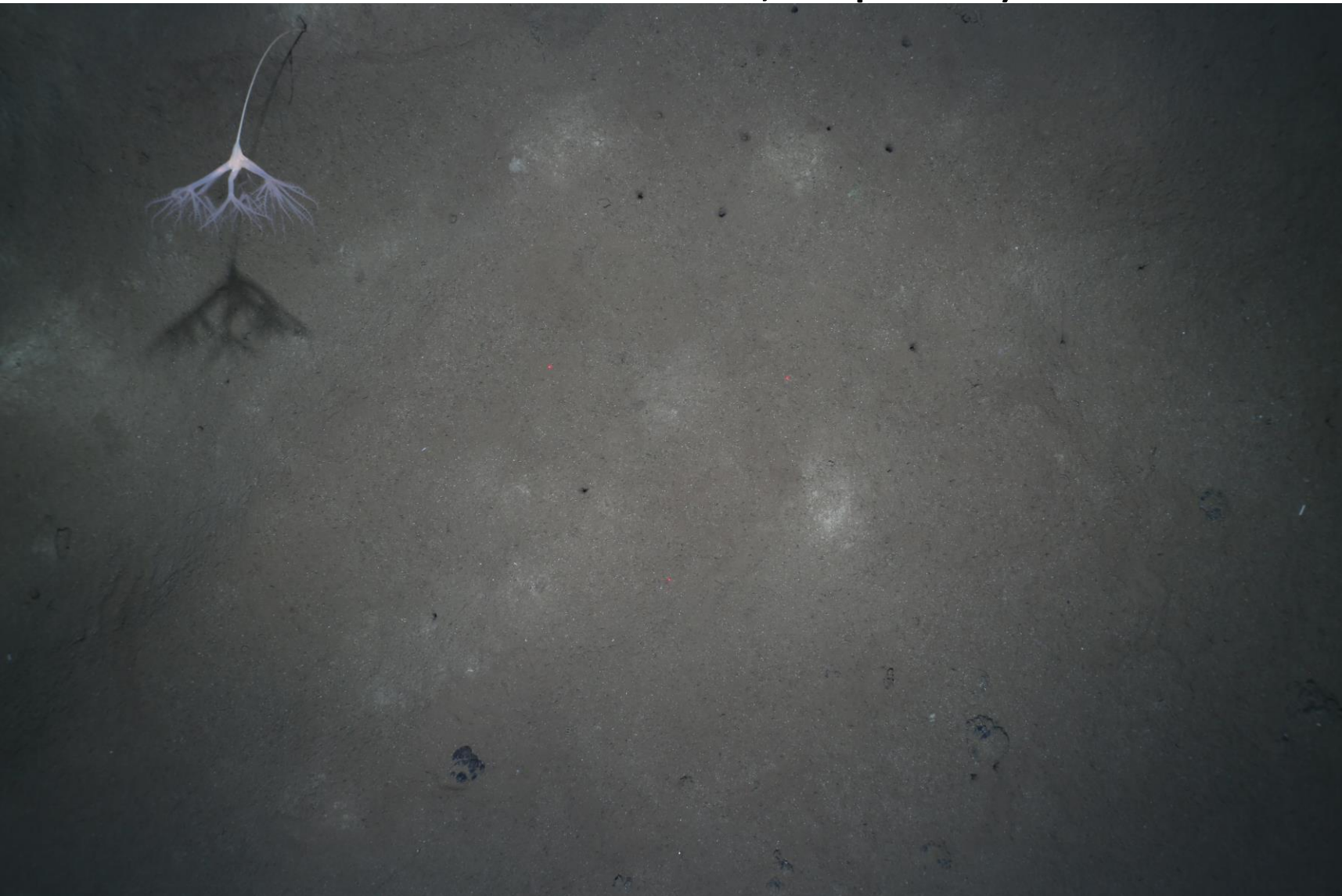


























# Preliminary results from SO242/2 (2015)

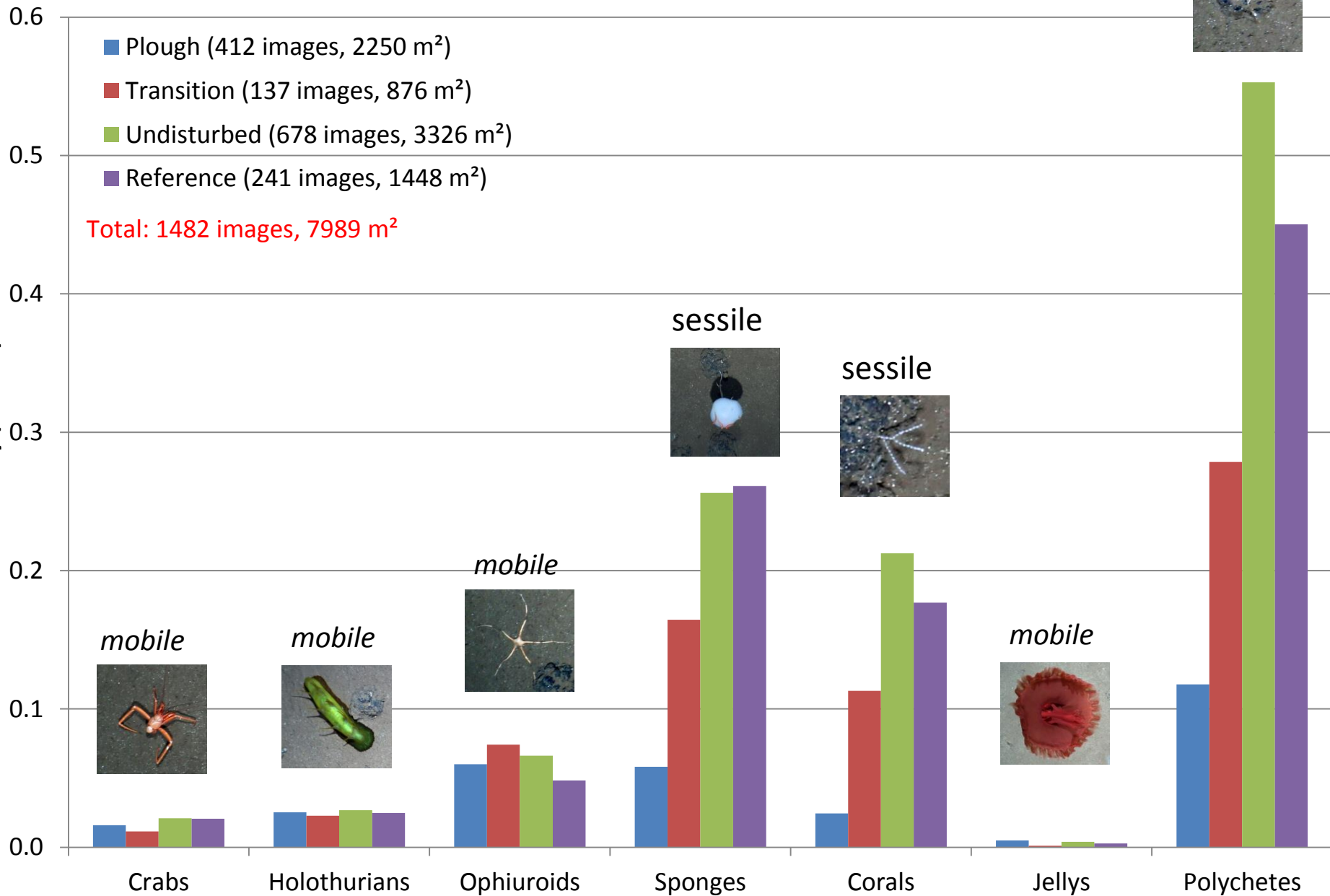
Mobile/sessile



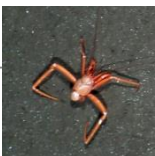
- Plough (412 images, 2250 m<sup>2</sup>)
- Transition (137 images, 876 m<sup>2</sup>)
- Undisturbed (678 images, 3326 m<sup>2</sup>)
- Reference (241 images, 1448 m<sup>2</sup>)

Total: 1482 images, 7989 m<sup>2</sup>

Density (ind/m<sup>2</sup>)



*mobile*



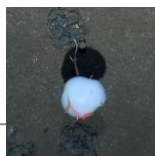
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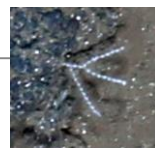
*mobile*



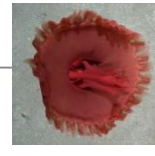
sessile



sessile



*mobile*



Thank you for listening!

Thank you for listening!