did not show a material effect on this parameter. Within the same license area, differences in community composition between working areas, regardless of nodule abundance were hardly discernible. It was shown as well, that at local scale, the presence of nodules affected positively meiobenthic diversity (at least in terms of the number of major taxa found), but in contrast influenced negatively total meiobenthic density. At a regional scale, meiofaunal density as well as composition of major groups from German and French license areas differed significantly, probably mostly due to the east-west gradient of surface bio-productivity.

O29 Recovery of biodiversity in copepods after anthropogenic disturbance in the Clarion-Clipperton Fracture Zone

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The polymetallic nodule fields in the northeastern central pacific (CCZ) are rich in commercially important metals, like nickel, copper and cobalt. This area is most likely to be mined in the future for industrial exploitation. Deep sea mining will have significant and long lasting impacts on the ecosystem in the deep sea and their fauna i.e. seabed disturbance, nodule clearance, operational and discharge plumes. Prior to mining related exploitation, we need to assess the possibility of recovery of the ecosystem after anthropogenic disturbance events in a wide time frame. In order to analyze the meiofaunal recovery potential, we compared the biodiversity of copepods in anthropogenic disturbed areas and untouched areas. The recovery which already took place was measured first in α-diversity and second in β-diversity. Sampling took place in eight different tracks on the seafloor varying in age from one day, eight months, three years, 20 years and 37 years, to see the different level of recovery after a certain timespan.

O30 Meiofauna in abyssal polymetallic nodule fields: seasonal variability and recovery following anthropogenic disturbance

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The growing demand for metals and recent developments in technology have stimulated the interest in mining polymetallic nodules in the deep sea. The largest, and hence commercially most attractive, nodule fields lie in the deep Pacific Ocean, between 4000 and 6000 m water depth. Baseline surveys are required to fully characterize the ecosystem, whereas disturbance tests are necessary to evaluate the impact on and recovery of the environment. Baseline biological and environmental studies

were conducted in the Belgian concession area in the Clarion-Clipperton Fracture Zone (CCFZ). Seasonal variability (March vs. September 2015) in meiofauna communities was assessed and related to the environmental context. In addition, two man-made tracks, an 8-months old dredge track and a 1-day old epibenthic sledge track, were targeted. ROV push cores were taken inside and outside these tracks to determine recovery of the meiofauna (in terms of abundance, composition and diversity). Strikingly, meiofauna was observed in samples from the 1-day old track. For both tracks, meiofaunal densities and taxon richness were higher outside compared to inside the track. Nematodes, which dominated the meiofauna in all samples, were identified down to genus level. These meiofaunal data from the tracks were evaluated in light of the available environmental data.

Slow recovery of abyssal meiofauna 37 years after sediment disturbance (polymetallic nodule field CCZ, Northeastern Pacific) 031

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Sediment samples were taken during cruise SO239 with the ROV dive No. 11 (station 157) by means of push cores (16 in total per dive with an inner diameter of 74 mm) in the 37-year-old mining track after the experimental dredging performed by the OMCO company in 1978. Samples were taken both inside and outside the track. The upper 5 cm were sliced per cm. The aim of these experiments was to investigate resilience and recovery of the micro- and meiofauna after mining disturbance, in relation to the environmental changes following the mining. This track had previously been studied by us in 2004 during the French cruise NODINAUT. The nematodes studied represented 78 genera from 28 families. The most abundant genus in 2015 both in the track and the reference area was *Thalassomonhystera* following *Acantholaimus* (Table 2). The main distinctions between the track and the reference area in nematode community structure was caused by the abundance of *Enchonema* (7.8% and 3.0%, respectively), *Microlaimus* (1.3% and 4.0%, respectively), *Halalaimus* (1.6% and 3.7%, respectively), and *Syringolaimus* (2.4% and 0.2%, respectively). The Principal Coordinates ordination plot shows that samples from the track and from the reference area are grouped separately indicating sufficient distinction between these two areas. The diversity indices for the nematode community inhabiting the track were lower than for the nematode community from the reference area. The rarefaction curve also indicates that nematode diversity (expressed as the expected number of genera found in a sample of certain number of randomly chosen nematode individuals) was lower in the track as compared with the reference site. In addition, there were no notable differences in nematode diversity in 2015 as compared with 2004 in both reference and impacted areas: nematode diversity in the track in 2015 was still as low as in 2004 (in comparison with the reference area). All this indicates a very slow recovery rate of benthic meiofauna