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Auskunft:

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Einladung

Dienstag,
21. April 2020

15.00

Die holozäne Entwicklung
der Nordadria und der
anthropozäne Kollaps eines
benthischen Ökosystems –
eine paläontologische
Perspektiv

Martin Zuschin
(Universität Wien)

Der Veranstalter

Geologische Bundesanstalt
Neulinggasse 38
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Zeit und Ort

Dienstag, 21. April 2020
15.00 s.t.
Geologische Bundesanstalt
Vortragssaal

Folgen Sie bitte den Hinweistafeln!

Erreichbarkeit

Mit öffentlichen Verkehrsmitteln:

Schnellbahnstation „Rennweg“
Straßenbahn „O“ (Neulinggasse)
Autobus „4A“
(Ungargasse / Neulinggasse)

Wenn Sie mit dem Auto kommen,
beachten Sie bitte die
Kurzparkzone!

Der Vortragende

Dr. Martin Zuschin

is professor of Palaeontology at the University of Vienna and specialized on the palaeoecology and taphonomy of benthic fauna in the Cenozoic marine fossil record of Europe. He has a strong research focus on Historical Ecology and Conservation Paleobiology. For this purpose his working group studies modern environments and their very young fossil record in the Mediterranean and in the Red Sea to define ecological baselines for the differentiation of anthropogenic and non-anthropogenic change and to set realistic targets for the restoration of disturbed ecosystems. In this context he was principle investigator (PI) in the FWF-project P24901 "Historical Ecology of the northern Adriatic Sea" (finished 2017) and is currently PI of FWF-project P24901 "Red Sea coral reefs: A Pleistocene-Recent comparison".

Das Thema

The origin and collapse of Holocene benthic baseline communities in the northern Adriatic Sea was studied from sediment cores and surface grab samples at eight widely spaced sites. They cover areas with sedimentation rates spanning two orders of magnitude, with different nutrient input and with different degrees of time-averaging, ranging from decadal to millennial temporal resolution. Data from sediment cores indicate that during the trans-

gressive phase and maximum flooding, sea-level and establishment of the modern circulation pattern determined the development of benthic communities in shallow-water, vegetated habitats with epifaunal biostromes and, in deeper waters, with bryozoan meadows. After sea-level stabilization, the composition of these baseline communities remained relatively uniform and started to change markedly only with the intensification of human impacts in the late highstand (eutrophication and associated anoxic events, pollution, bottom trawling), leading to a dominance of infauna and a decline of epifauna at all sites. This profound ecological change reduced species richness, increased the abundance of infaunal suspension feeders, and led to a decline of grazers and deposit feeders. Live-dead data from grab samples give deeper insight into the degree of anthropogenic impact in historical times. At all sites the living assemblages differ strongly from the death assemblages. At some sites from oligotrophic settings with low sedimentation rates, a total overturn in the community composition is obvious: formerly abundant species have disappeared completely, while the living assemblage is numerically dominated by species that were not present before. Even at sites, which are characterized by physically stressful conditions, some species that were abundant in the death assemblage have totally disappeared from the living assemblage. Comparison with the dataset from sediment cores documents the recent establishment of an impoverished community, which has no analogue in the Holocene history of the northern Adriatic Sea.