



Deep-sea benthic foraminiferal faunas and elemental composition to monitor ecosystem recovery after decades of bauxite residue disposal in Cassidaigne canyon (NW Mediterranean sea)

Laetitia Licari, Christian Grenz, Sophie Sepulcre, Pauline Gely, Deny Malengros, Thibault de Garidel-Thoron

► To cite this version:

Laetitia Licari, Christian Grenz, Sophie Sepulcre, Pauline Gely, Deny Malengros, et al.. Deep-sea benthic foraminiferal faunas and elemental composition to monitor ecosystem recovery after decades of bauxite residue disposal in Cassidaigne canyon (NW Mediterranean sea). International Symposium of LabEx DRIIHM 2024, Jun 2024, Montpellier, France. , 2024, 10.34972/driihm-993b72 . hal-04622196

HAL Id: hal-04622196

<https://hal.science/hal-04622196>

Submitted on 24 Jun 2024

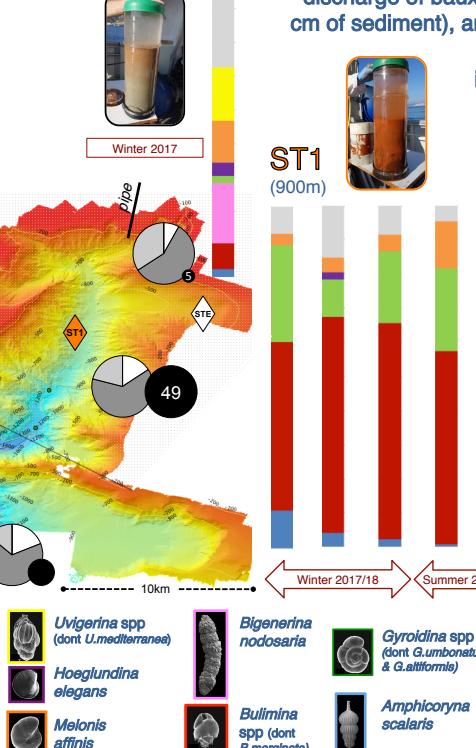
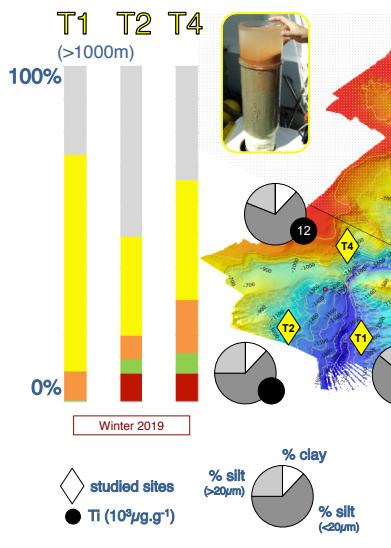
HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

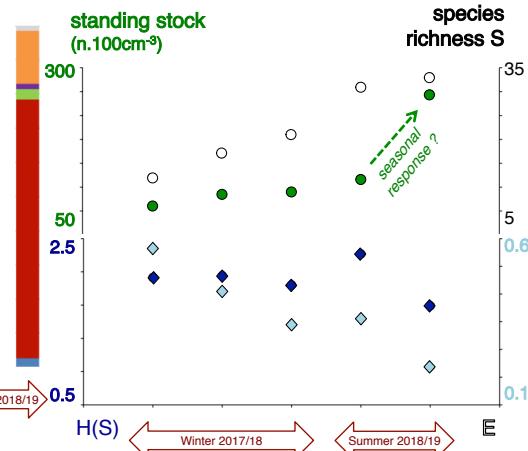
¹ Aix Marseille Université, CNRS, IRD, INRAE, CEREGE - Aix en Provence, France; ² Aix Marseille Université, Université de Toulon, CNRS, IRD, MIO - Marseille, France;
³ Université Paris-Saclay, CNRS, GEOPS - Orsay, France

^a Université Paris-Saclay, CNRS, GEOPS - Orsay, France

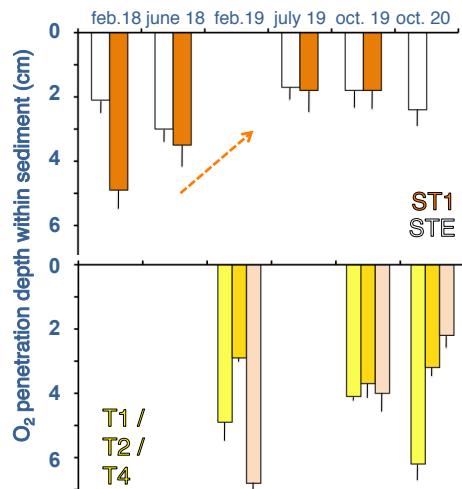
(1) Foraminiferal faunas



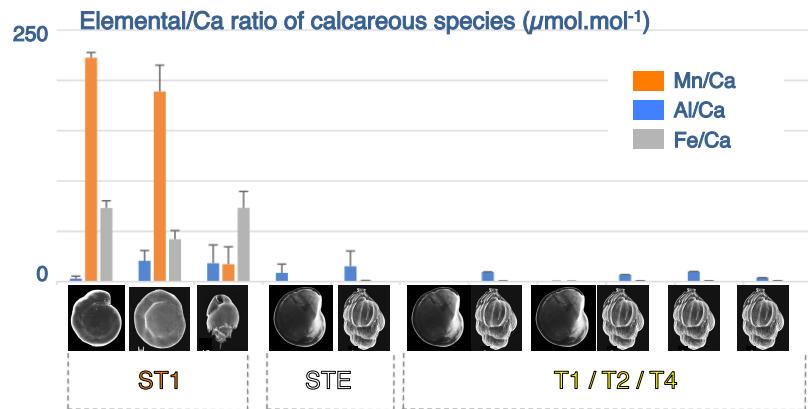
From 2017 to 2020, we studied living benthic foraminifera and benthic metabolism in Cassidaigne canyon, an area subjected to a continuous discharge of bauxite residues from 1963 to 2015. (1) Faunal data (1st cm of sediment), and (2) O₂ vertical profiles within sediment suggest a slow recolonization of sediment in the most impacted canyon axis (site ST1). (3) Analysis of the elemental composition of several calcareous species indicates an enrichment in Fe.



(2) Benthic metabolism



(3) Foraminiferal geochemistry



ACKNOWLEDGEMENT. We thank the authorities of Parc National des Calanques for the permission to collect samples in the Park, and the crew of R/V Antédon II and R/V Téthys II for successful sampling cruises. This study was funded by LabEx OT-Med and LabEx DRILHM. P.Gely benefited from a TIGER (France 2030) scholarship.