

Dobre Mihaela Elena¹, Stan Ionel Bogdan¹, Rotaru Sabin², Alfred Vespremeanu-Stroe^{1,3}, Luminita Preoteasa^{1,3}, Laurentiu Tutuianu¹, Alexandru Berbecariu¹

¹GEODAR Research Center for Geomorphology, Geoarchaeology and Paleo-Environments, Bucharest University, 1 N. Bălcescu, 01004 Bucharest, Romania;

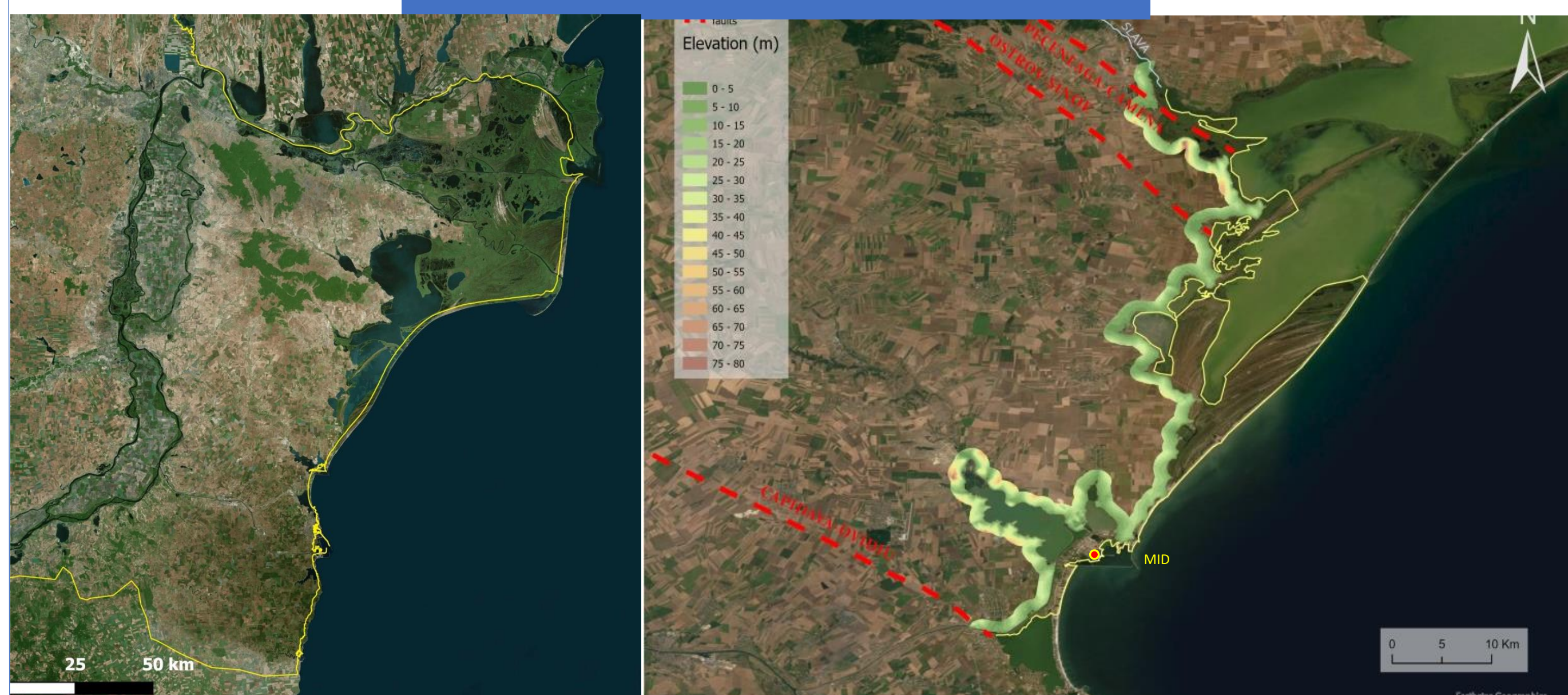
²The National Research-Development Institute for Marine Geology and Geoecology – GeoEcoMar, 304 Mamaia Blv., RO-900581

³Sfântu Gheorghe Marine & Fluvial Research Station, Faculty of Geography, Bucharest University, Sf. Gheorghe, Tulcea, Romania;

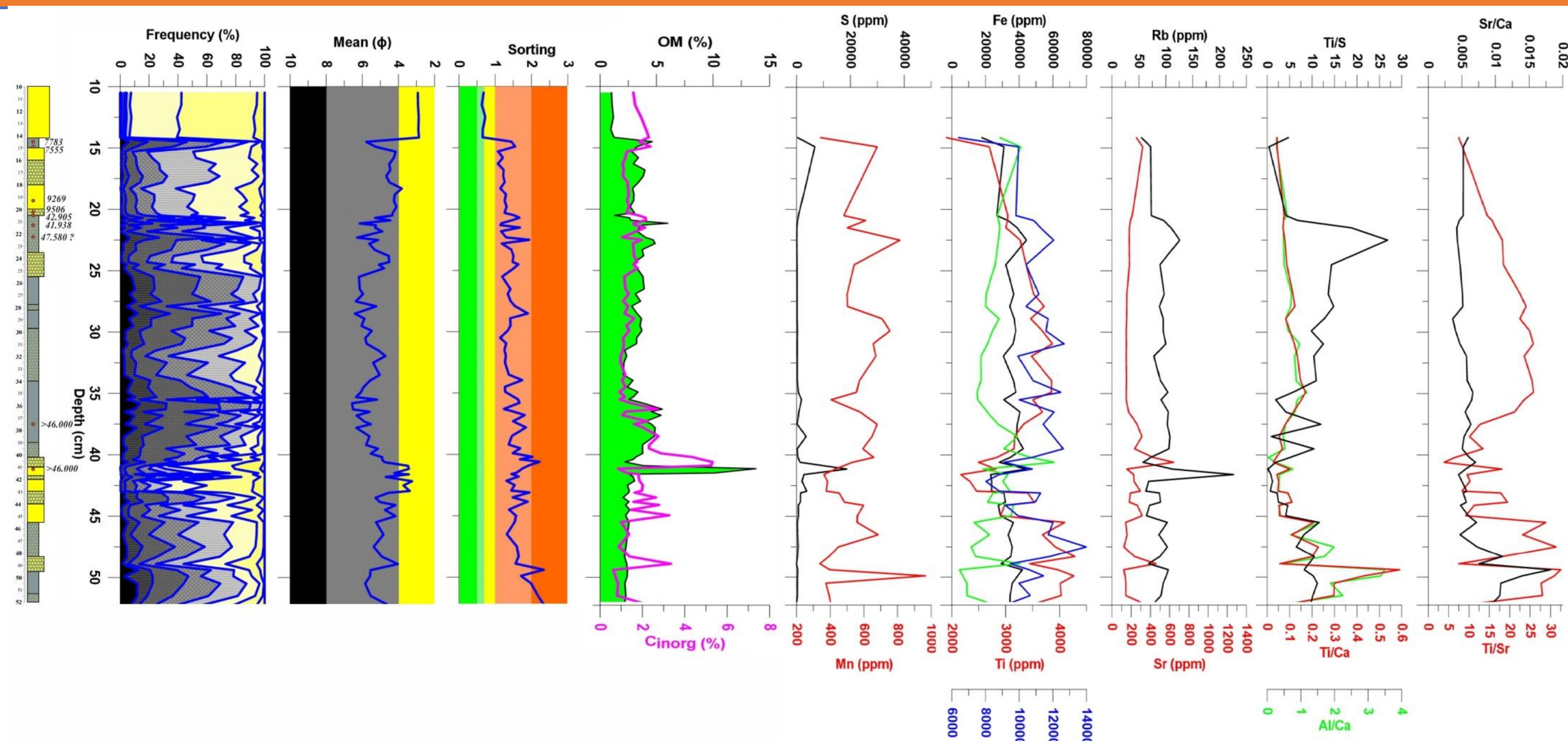
INTRODUCTION AND OBJECTIVES

A deep drill (100 m) was made in the Midia sandy barrier closing the Taşaul liman, a relict waterbody at the mouth of the Casimcea river on the western Black Sea coast. Our work has focused on the Late Pleistocene evolution of the coastal barriers from western Black Sea, in relation to past sea-level changes, in order to achieve new data on MIS 3 highstand and constrain further eustatic and paleoclimatic interpretations.

STUDY AREA



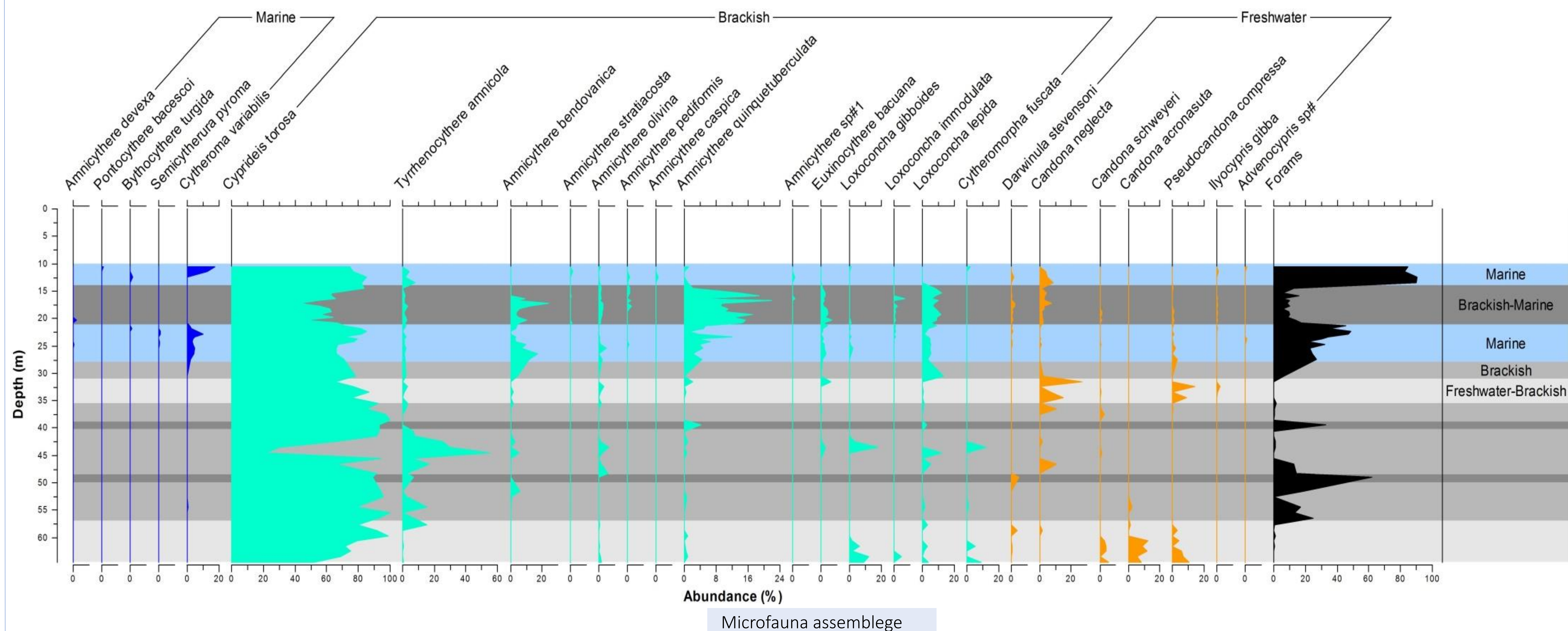
The location of the Midia Drill



• MID: Sedimentological & Geochemical parameters

METHODOLOGY

The samples were analyzed for Ostracods assemblage mainly, although we also investigated Foraminifera assemblage. Paleofauna analysis was complemented by loss on ignition (LOI), grain size, geochemical (XRF), and magnetic susceptibility analyses for paleoenvironmental reconstructions.



RESULTS AND DISCUSSIONS

AMS radiocarbon dating provided the chronology of the upper 22 m of the core where ages between 42 and 46 ka (close to the method limit) were obtained.

Ostracods assemblages show a marine environment from 10-14 m and a change to brackish and marine environment between 14-22 m, and a change to continental facies, lower than 22m. We consider the age of 42-43 ka obtained at this depth indicates that the Marine Isotope Stage 3 (MIS 3) high stand was previously underestimated on the western coast of the Black Sea.

CONCLUSIONS AND FUTURE WORK

- ✓ Western Black Sea coast barriers show a MIS3 Highstand position at 19-22 m bsl on a quasi-stable coast (Casimcea Plateau) during ca 43.000-42.000 BP. Moreover, the Mediterranean fauna proves a Black Sea reconnection to World Ocean and a global sea level higher than the Bosphorus sill (ca. -34 m)
- ✓ A better estimate of the timing of the MIS3 Highstand is required!

References

- ¹ Vespremeanu-Stroe et al., 2016. Formation of Danube delta beach ridge plains and signatures in morphology. Quaternary International xxx (2016) 1-18.
- ² Vespremeanu-Stroe et al., 2017. Holocene evolution of the Danube delta: An integral reconstruction and a revised chronology. Marine Geology 388 (2017) 38-61.
- ³ Vacchi et al., 2016. Multiproxy assessment of Holocene relative sea-level changes in the western Mediterranean: Sea-level variability and improvements in the definition of the isostatic signal. Earth-Science Reviews 155 (2016) 172-197.

Correspondence to: mihaela.dobre@rd.unibuc.ro

We wish to thank to:

❖ Cristian Panaiotu and Marius Stoica for the help provided in laboratory;