



Modern Foraminifera from a depth transect offshore Brunei Darussalam: diversity, sedimentation rate and preservation pathways.

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For this study, 11 samples have been collected by scuba diving from 5 to 35 meters water depth off shore Brunei Darussalam. The locations sampled are known as: Pelong Rock (5 samples, shallow reef with soft and stony corals and larger foraminifera, 5 to 8 meters water depth), Abana Rock (1 sample, shallow reef with mainly soft corals and larger foraminifera, 13 to 18 meters water depth), Oil Rig wreck (1 sample, very sandy bottom with larger foraminifera, 18 meters water depth), Dolphin wreck (1 sample, muddy sand with many small rotaliids, 24 meters water depth), US wreck, (1 sample, sand with small clay fraction, 28 meters water depth), Australian wreck (1 sample, mainly medium to coarse sand with larger foraminifera, 34 meters water depth) and Blue water wreck (1 sample, mainly coarse sand, coral rubble and larger foraminifera, 35 meters water depth).

Those samples closer to the river inputs are normally richer in clay, while the most distant samples are purely sandy. Some additional samples have been collected next to reef environments which, even if very shallow, are mainly sandy with almost no clay fraction. The deepest sample, which is 30 km offshore, contains some planktonic foraminifera and is characterized by a large range of preservations concerning foraminifera, thus testifying the presence of relict sediments at the sea bottom. The presence of relict sediments was already pointed out by older oil-related field studies offshore Brunei Darussalam, and now it is possible to draw the depth limit of these deposits.

The diversity of the benthic foraminiferal fauna is relatively high but not as higher as neighboring regions as some studies have highlighted. The species collected and identified are more than 50: in reef environment the most abundant are *Calcarina defranci*, *Neorotalia calcar* and the amphisteginidae; deeper in the muddy sediments the most abundant is *Pararotalia schroeteriana* and in the deepest sandy sample the most abundant are *Calcarina hispida*, followed by *Operculina ammonoides*.