



Living (rose bengal stained) benthic foraminifera from the oxygen minimum zone in the Gulf of Tehuantepec, Mexican Pacific.

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Bottom waters in the Mexican Pacific exhibit low concentrations of dissolved oxygen. This is due to already depleted Pacific Intermediate Waters, and high biological productivity caused by local upwelling.

The Gulf of Tehuantepec, in the southern portion of the Mexican Economic Exclusive Zone, shows concentrations below 1mL/L of dissolved oxygen in bottom waters from approximately 100 to 1200 m depth. Benthic Foraminifera thrive in the superficial sediments of this hypoxic to anoxic region, and show density, taxonomical, and morphological adaptations to these conditions.

Three assemblages are found in the superficial sediments of the gulf between 40 and 1200 m. Assemblage 1 is dominated by *Bolivina seminuda*. It is distributed throughout the gulf between 70 to 750m water depth, and oxygen concentrations below 1mL/L. Assemblage 2 is characterized by *Hanzawaia concentrica* and is found in the inner platform with oxygen concentrations above 1mL/L in bottom waters. Assemblage 3 is found in the deepest samples of the studied area, between 860m to 1200 m water depth, and dissolved oxygen values between 0.1 to 0.8mL/L. It is characterized by *Pseudoparella bradyana*.

The three assemblages are distributed according to depth and dissolved oxygen concentration, with the *B. seminuda* assemblage as the most representative of the Oxygen Minimum Zone of the Gulf of Tehuantepec. Densities of foraminiferal tests were also

related to trace metal (As, Cd, Cr, Hg, Pb, Ni and V) concentrations found in the sediments.