



Nava Sánchez, E.H., D.S. Gorsline & A. Molina Cruz (2001). The Baja California peninsula borderland: structure and sedimentological characteristics. *Sedimentary Geology. Special Issue. Sedimentation and tectonics along a rift margin: The Gulf of California*, 144(1-2): 63-82. DOI: 10.1016/j.physletb.2003.10.071

The Baja California peninsula borderland: structure and sedimentological characteristics

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Structural and sedimentological data from three oceanographic cruises define the peninsular margin of the Gulf of California as a borderland similar to the California Continental Borderland. Bathymetric and high resolution seismic profiles show some active normal faults with a lateral strike slip component, which are parallel and oblique at low angle to the peninsular coast, and delimit horst and graben structures. Preliminary conclusions are that, active faults are related to the movement of the peninsular block towards the northwest. As part of the opening of the Gulf (circa 6.5 my ago), grabens and half-grabens, separated by highlands, islands and banks have formed. Some of the basins are now inland, such as Santa Rosalía, Loreto and San Jose del Cabo, and are filled with Pliocene and possibly Miocene marine rocks. Other basins are modern shallow bays, like Concepción (30 m deep); others are slope basins with a range of depths, such as Alfonso and Cochimie basins at about 400 m; and La Giganta and La Paz basins at 500 and 700 m, respectively. Sedimentation in these basins is varied. Inland basins (Pliocene) are filled with shallow marine sedimentary rocks, clastics and evaporites; Concepción is a starved basin filled with some terrigenous, but mainly biogenic sediments; the modern deep basins (Alfonso, La Giganta and La Paz) are filled with terrigenous sediments on their peninsular margin, biogenic if they are limited by islands, and laminated sediments if they are stagnant or have slopes or sills intersecting the oxygen minimum layer of the water column.

Palabras clave: Specialist, Structure, Sedimentology, Borderland

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