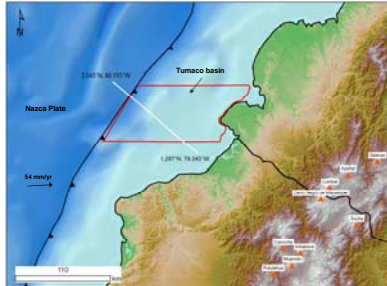


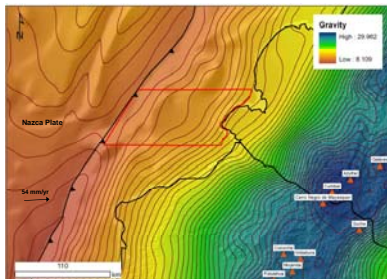
Abstract

9,750km² of bathymetric high-resolution data was recorded using a multi-beam ecosounder along the Pacific margin of Colombia (1°25'N - 2°00'N and 78°44'W - 80°14'W). This area has experienced four great subduction earthquakes during the twentieth century (1906, Mw = 8.8; 1942, Mw = 7.8; 1958, Mw = 7.7, 1979, Mw=8.2). Among the most relevant morphological features are the Tumaco High, the Emerald Canyon, the Mira Canyon and the Ancon Fault, limited on its western side by the Manglares High. The Mira Canyon defines a 50-km-long scarp which is associated with a recent landslide that displaced marine sediments between 50 and 1000 m water depth, and was probably triggered by an historical earthquake. The interpretation of seismic reflection and gravity data suggests the presence of bathymetric highs as fragments of basement raised during the accretion process and/or the presence of oceanic asperities subducted beneath the prism.

Bathymetry and free-air anomalies

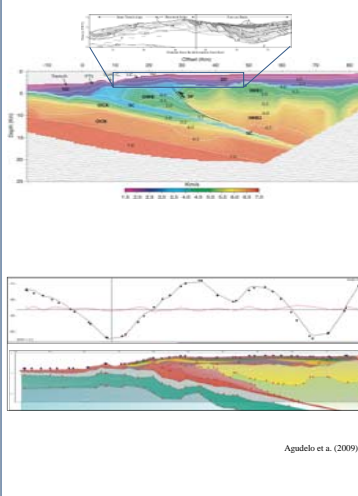


Amante, C. and B. W. Eakins, ETOPO1 1 Arc-Minute Global Relief Model: Procedures, Data Sources and Analysis, National Geophysical Data Center, NESDIS, NOAA, U.S. Department of Commerce, Boulder, CO, August 2008



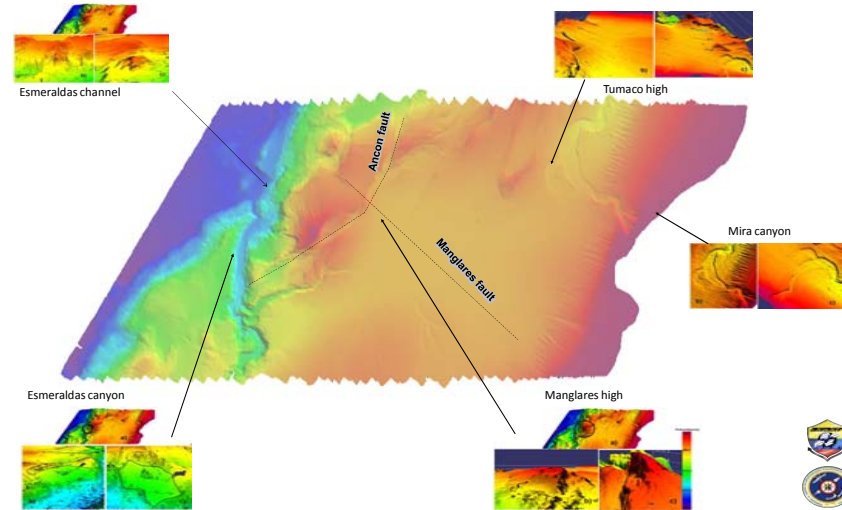
Earth Gravitational Model EGM2008
2.5 x 2.5-Minute Free-Air Gravity Anomaly Grid
European Geosciences Union General Assembly held in Vienna, Austria, April 13-18, 2008

Subduction controls on basin geometry

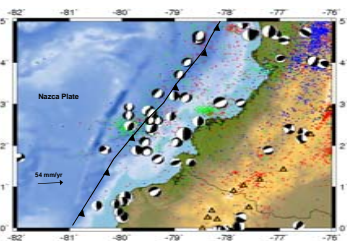


Agudelo et al. (2009)

Morphology of the Tumaco offshore basin from high-resolution bathymetry



Great subduction earthquakes nest



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