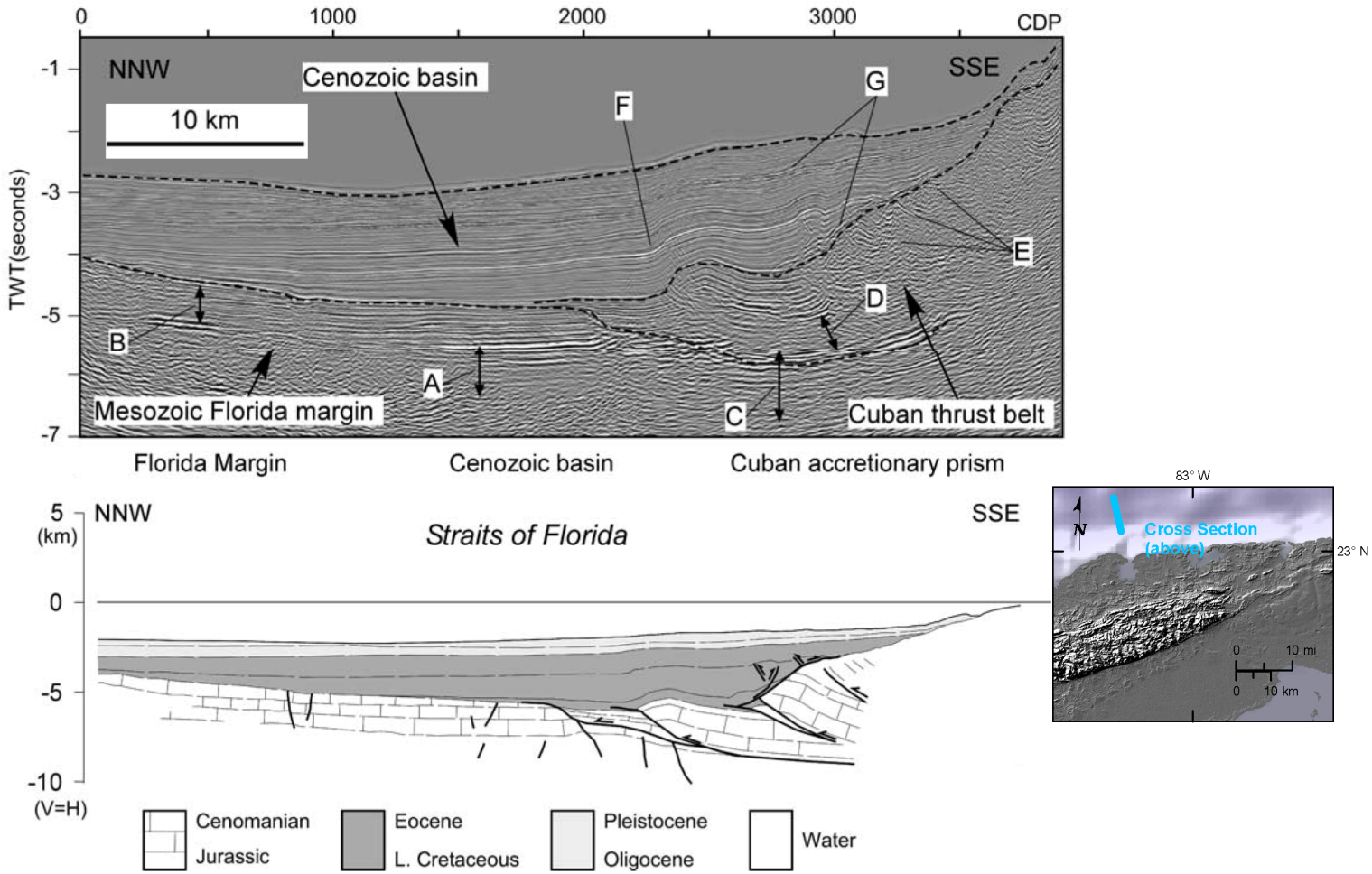
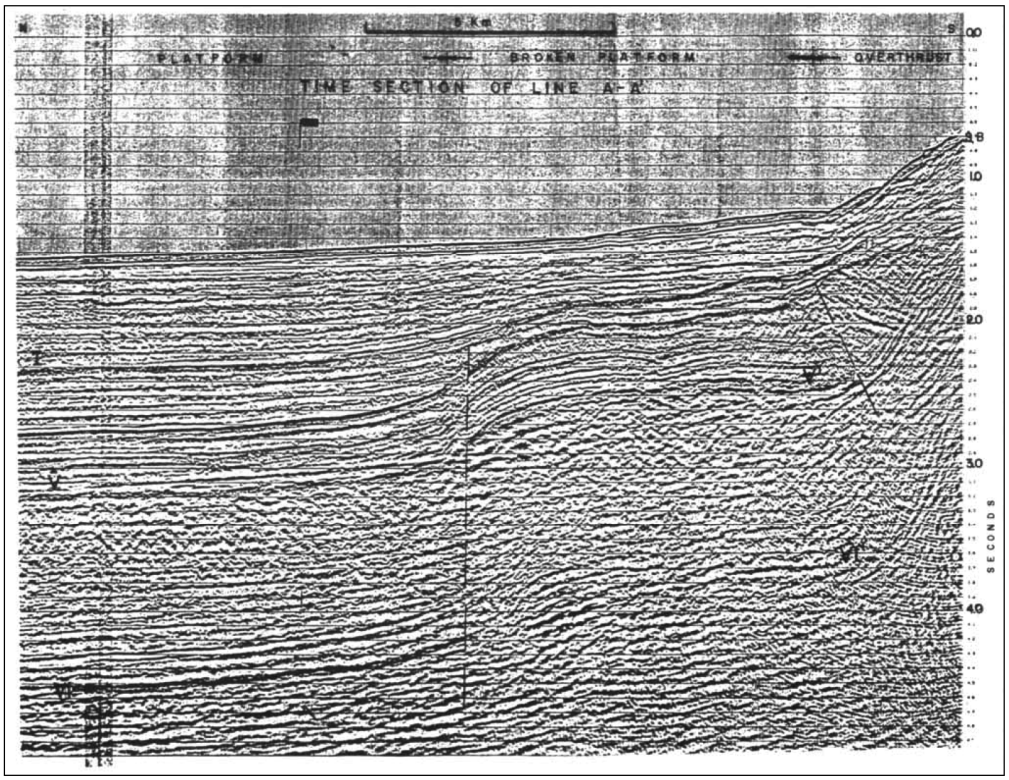
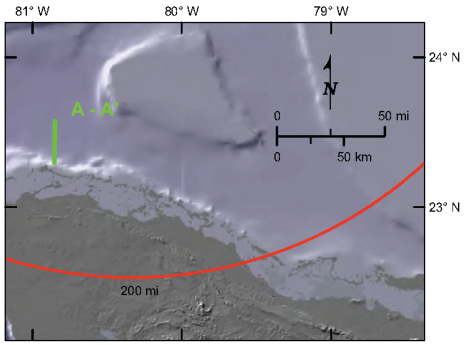
Figure 2.5.1-279 Offshore Cross Section across the Cuban Fold-and-Thrust Belt, Western Cuba



Modified from: Reference 485

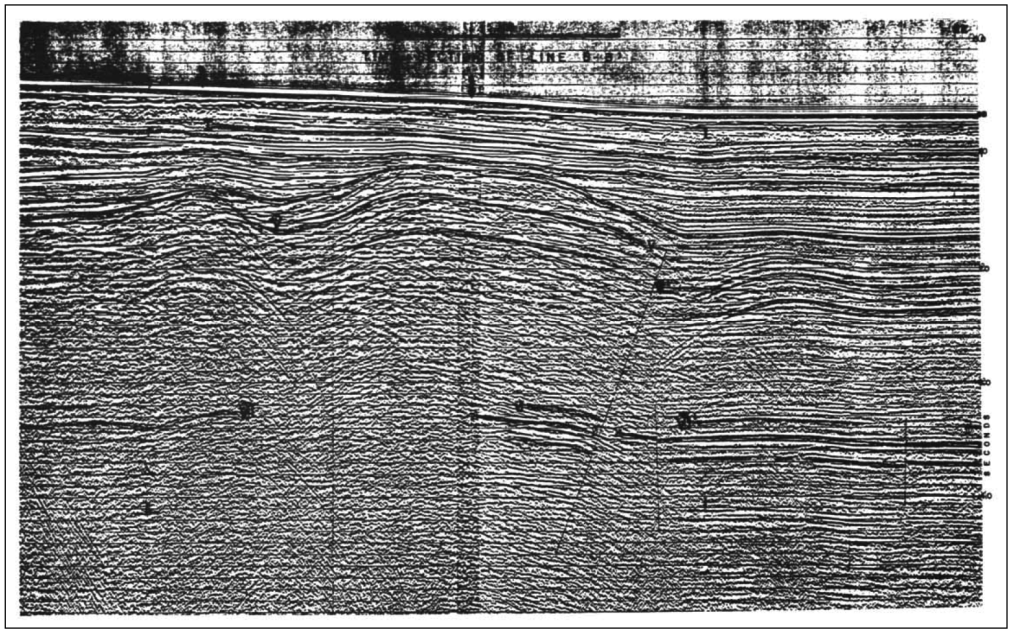
Figure 2.5.1-280 Offshore Interpreted Seismic Line, Cuban Thrust Belt

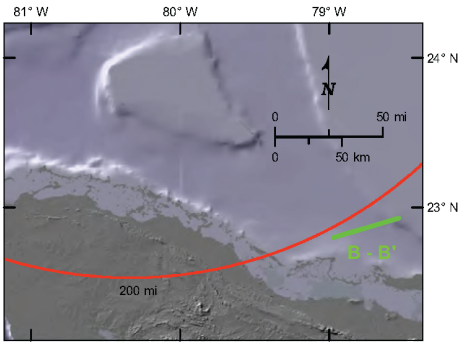




Modified from: Reference 497

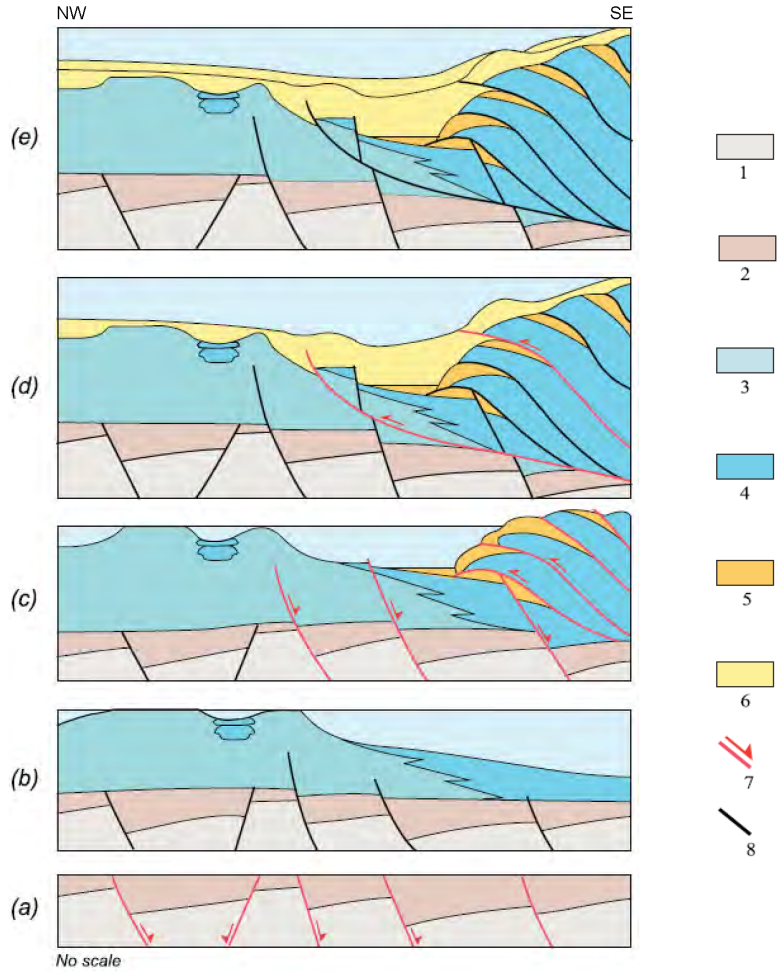
Figure 2.5.1-281 Offshore Interpreted Seismic Line, Cuban Thrust Belt





Modified from: Reference 497

Figure 2.5.1-282 Schematic Evolution of Offshore Northwest Cuba

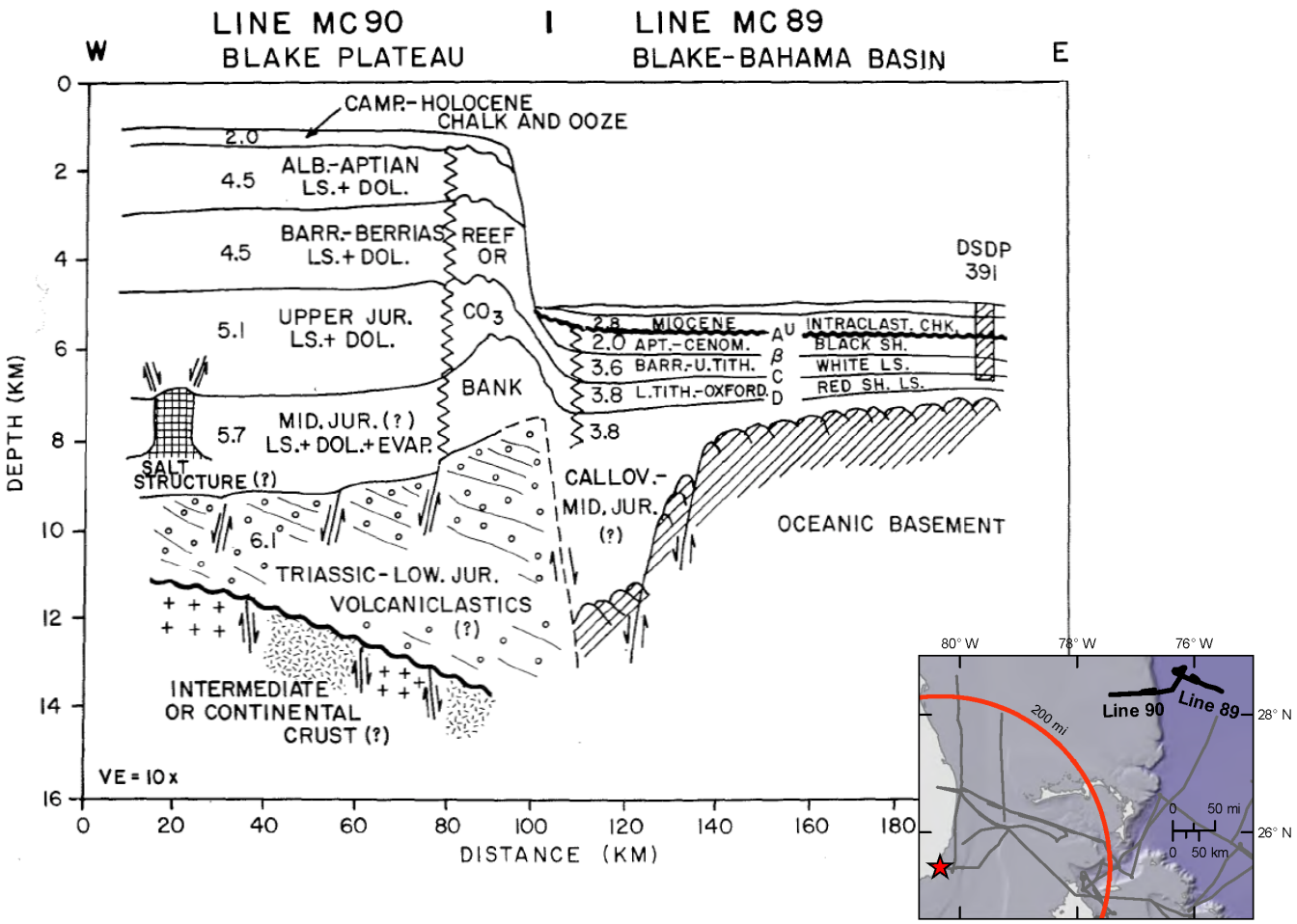


Notes:
(a) Proto-Caribbean synrift period (Early to Middle Jurassic).
(b) Post-rift subsidence.
(c) End of Cuban orogen in the early Eocene; the collision started in the Maastrichtian, caused by northeastward migration of the Cuban island arc.
(d) Infilling of the basin, which started as foreland during the previous phase. A slight Neogene compressive reactivation induced the formation of a few new inverse faults.
(e) Passive subsidence caused by the sedimentary influx from the Cuban island.

1 = continental basement
2 = synrift
3 = postrift carbonate platform (end Jurassic to Cretaceous)
4 = postrift deep-water facies (Late Jurassic to Cretaceous)
5 = Tertiary syntectonic deposit
6 = Tertiary posttectonic deposits
Active faults are in red.

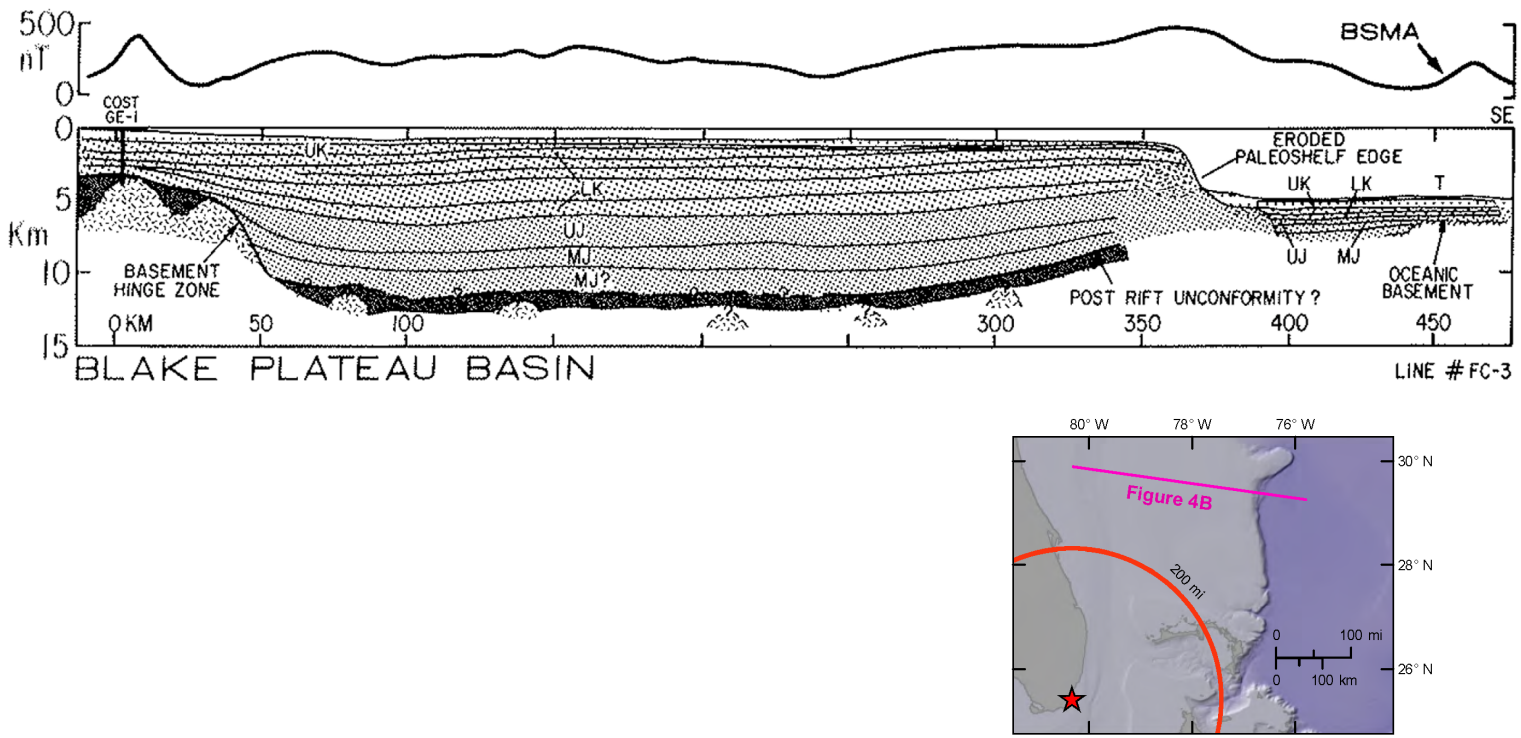
Source: Reference 484

Figure 2.5.1-283 Interpreted Seismic Line across the East Edge of the Blake Plateau



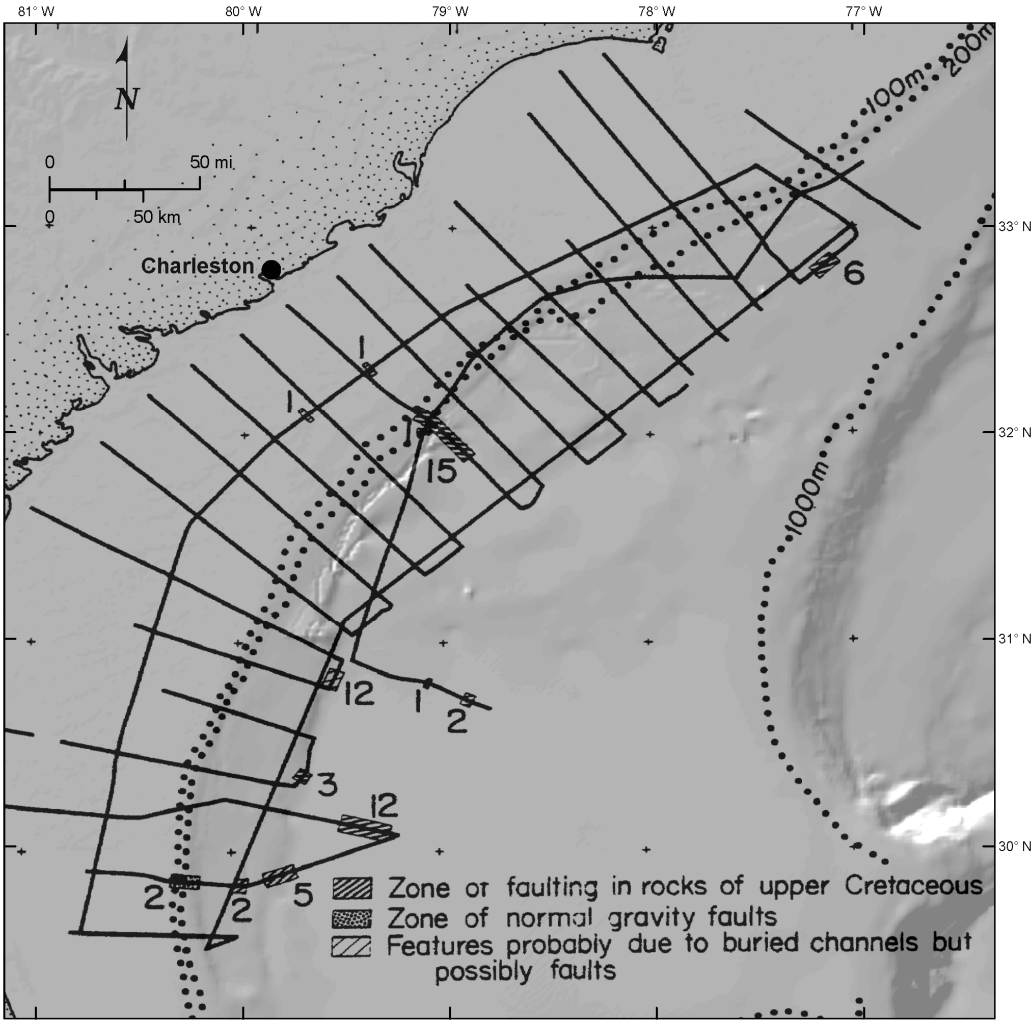
Modified from: Reference 424

Figure 2.5.1-284 Seismic Line Interpretation across Blake Plateau



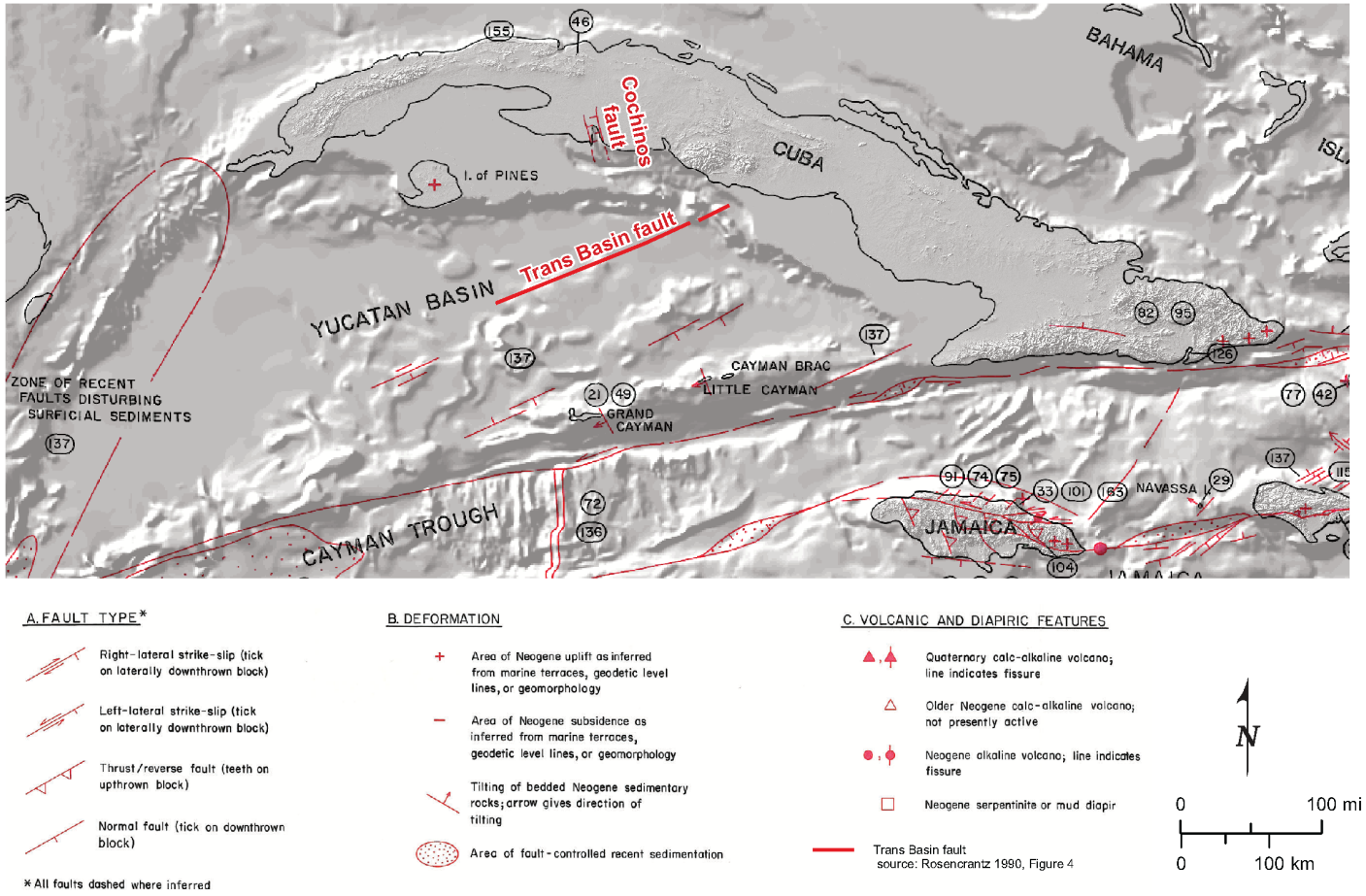
Modified from: Reference 341

Figure 2.5.1-285 Locations of Faulting Identified on Blake Plateau Seismic Survey



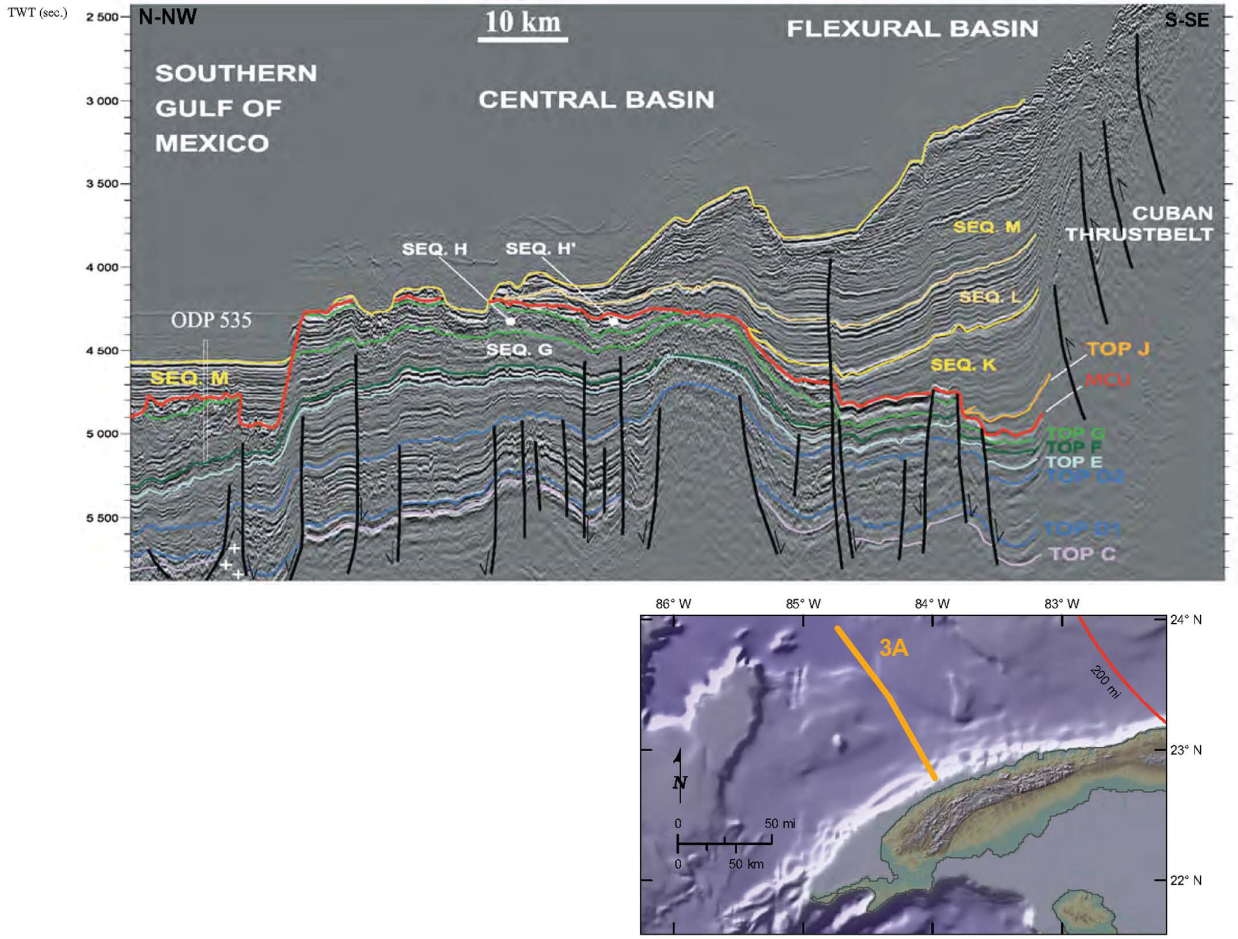
Source: Reference 487

Figure 2.5.1-286 Neotectonic Map of Cuba



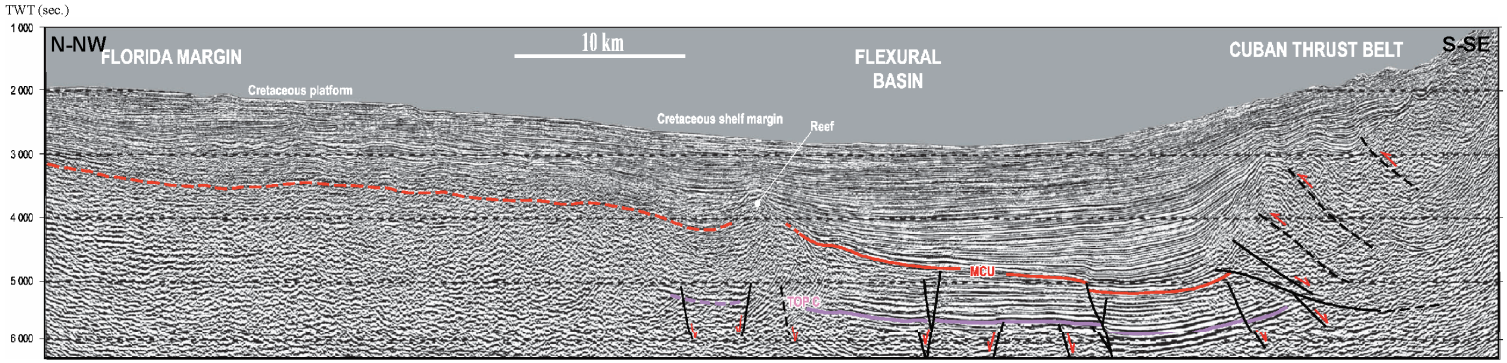
Modified from: Reference 493

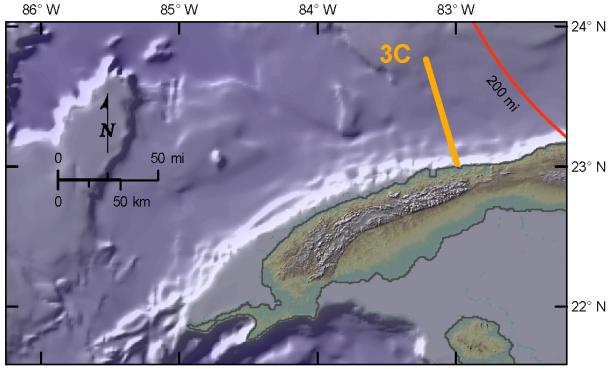
Figure 2.5.1-287 Interpreted Seismic Line across Cuban Thrust Belt, Line 3A



Modified from: Reference 484

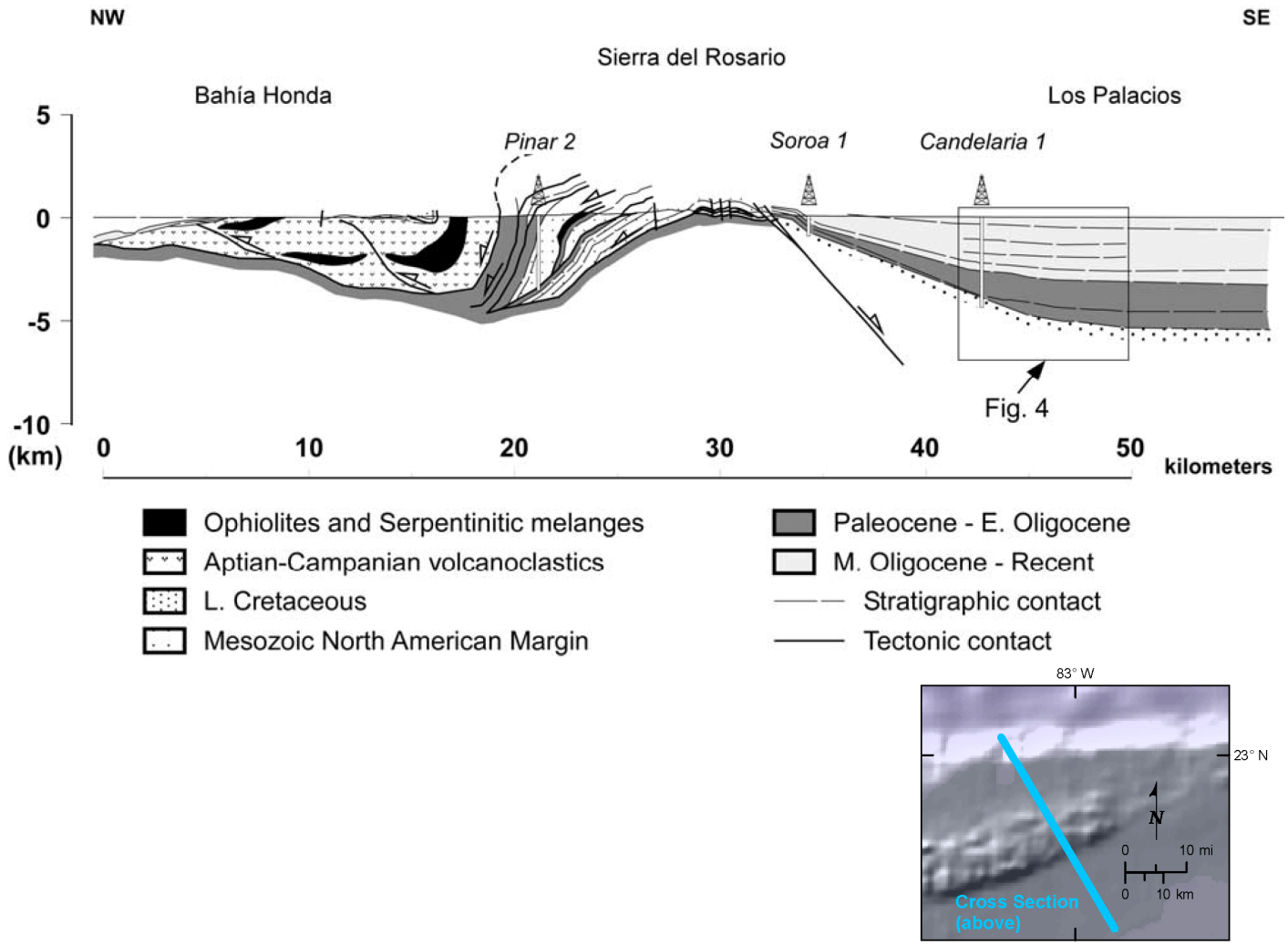
Figure 2.5.1-288 Interpreted Seismic Line across Cuban Thrust Belt, Line 3C





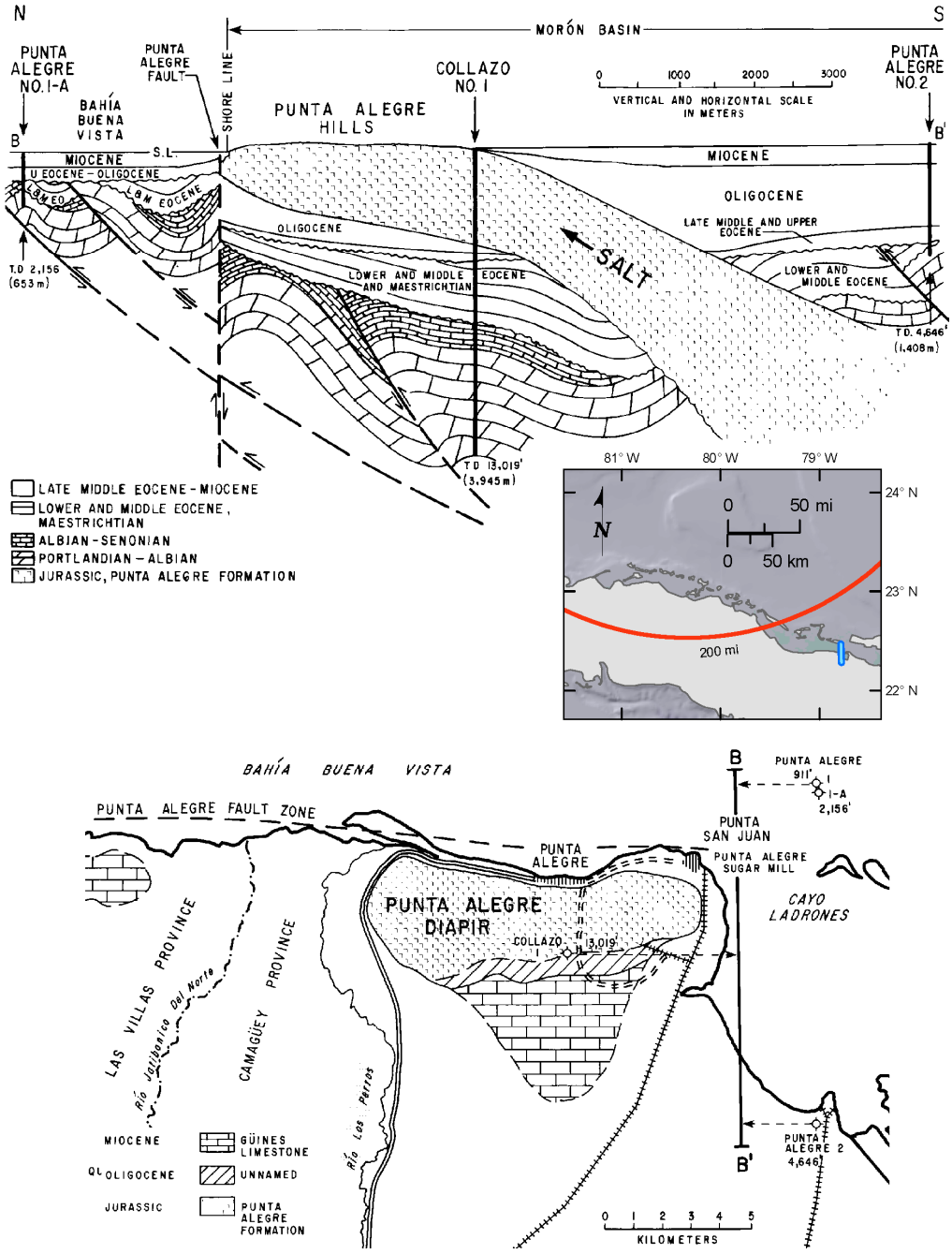
Modified from: Reference 2.5.1-484

Figure 2.5.1-289 Onshore Cross Section across the Pinar Fault, Western Cuba



Modified from: References 485

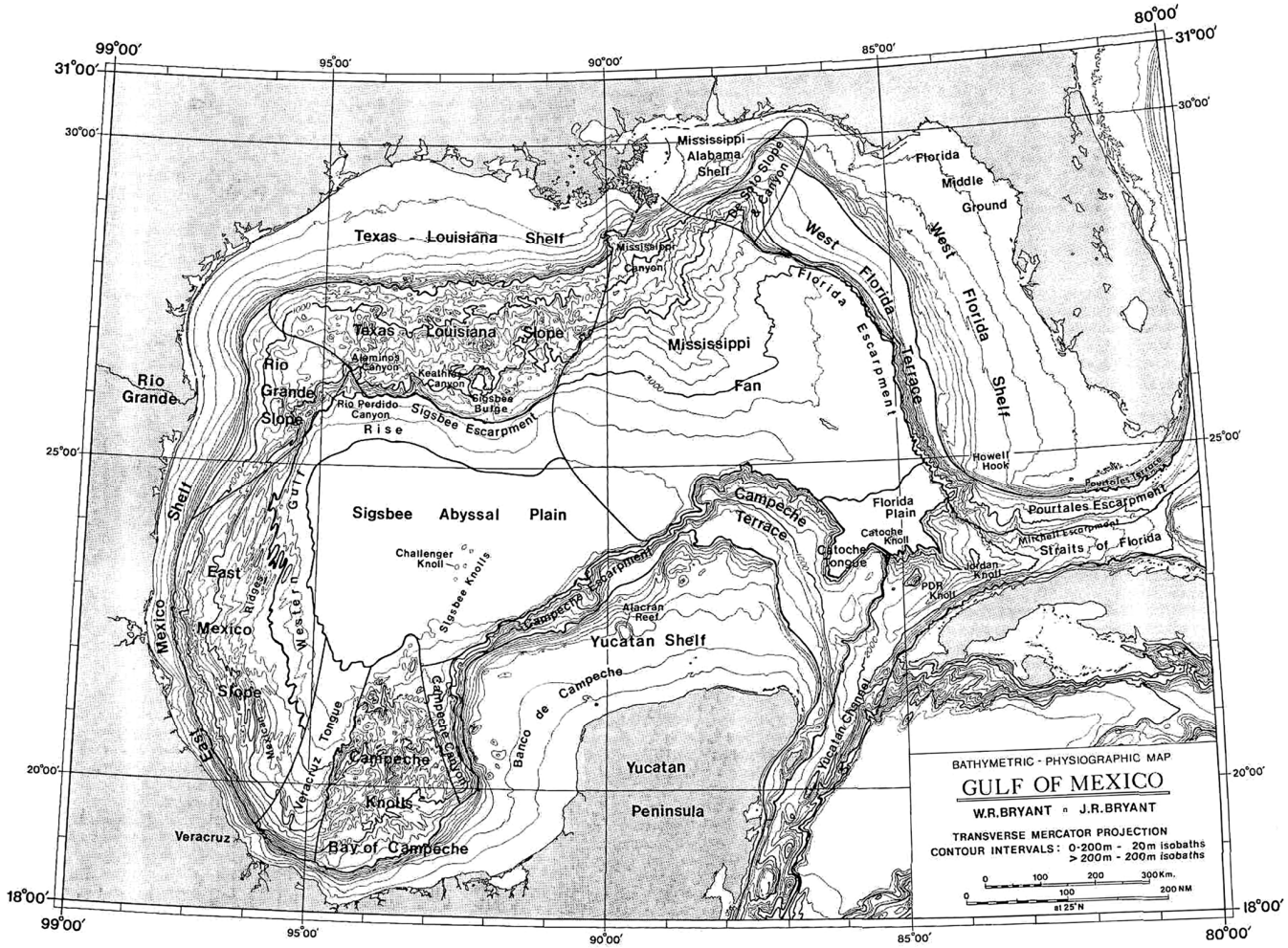
Figure 2.5.1-290 Cross Section and Map of the Punta Alegre Fault



Modified from: Reference 501

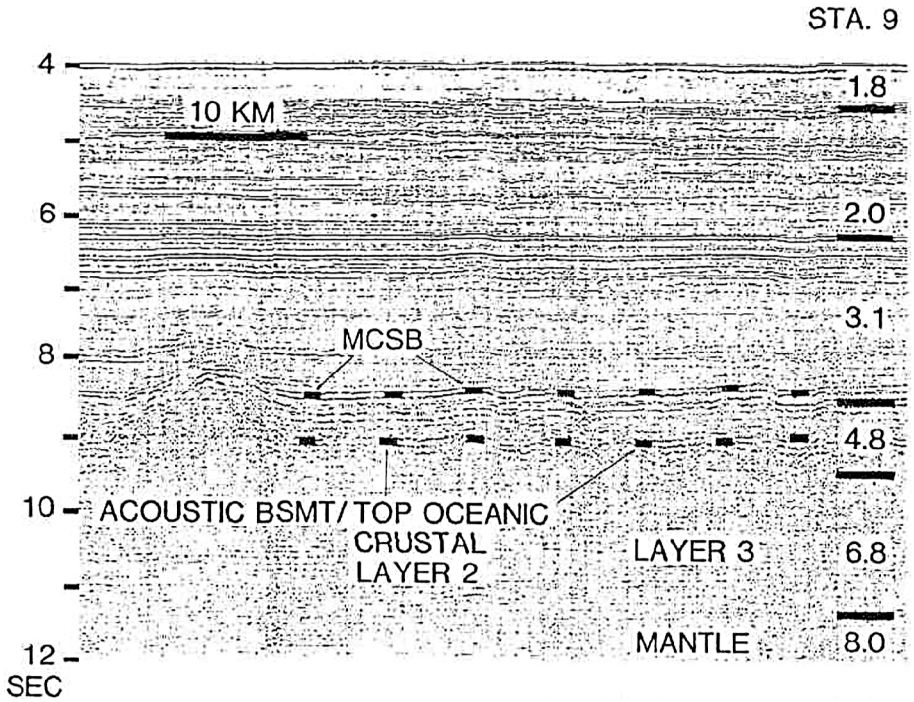
Figure 2.5.1-291 DELETED

Figure 2.5.1-292 Bathymetric and Physiographic Map of the Gulf of Mexico



Source: Reference 506

Figure 2.5.1-293 Portion of Seismic Reflection Line 462

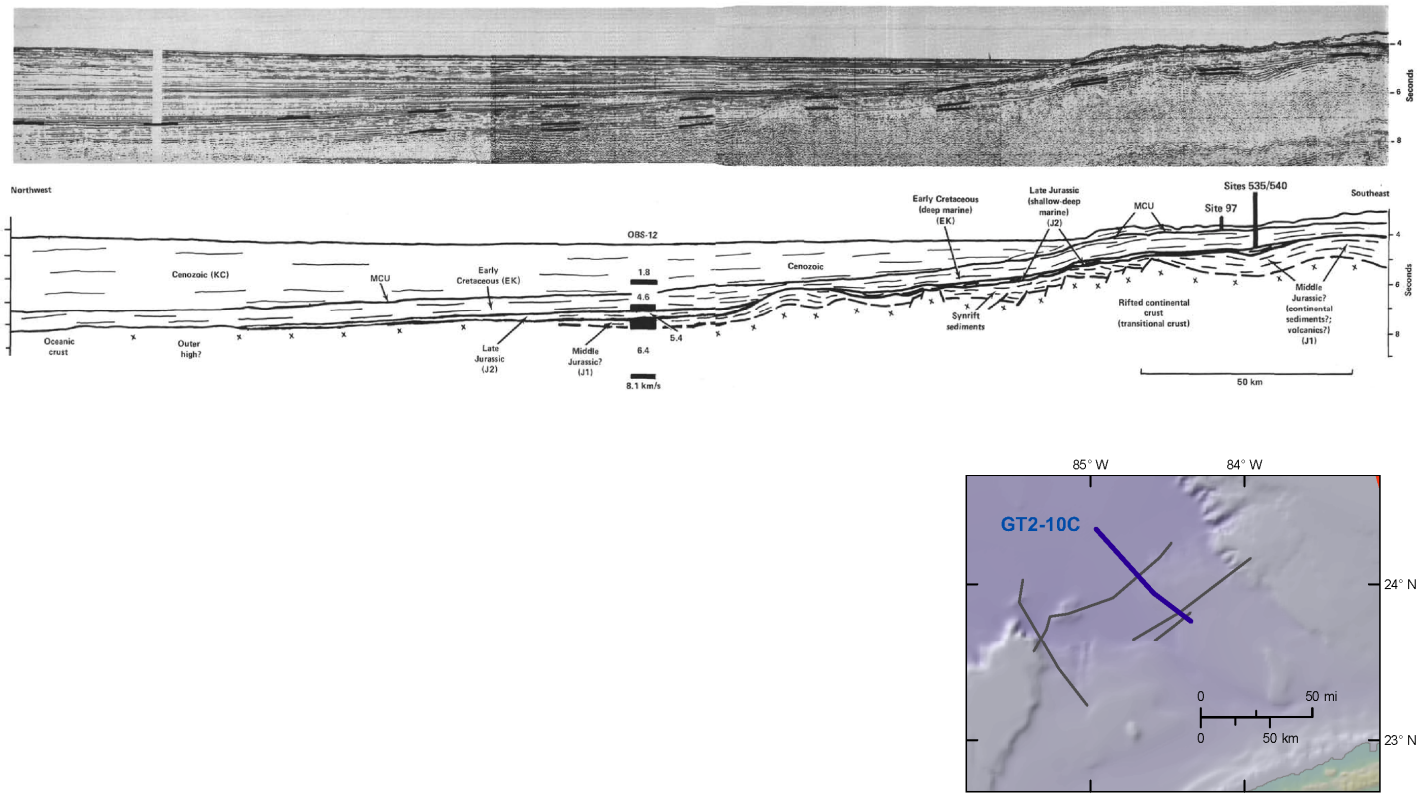


Note: Portion of the University of Texas Institute for Geophysics (UTIG) seismic reflection line 16-2 with refraction observations of oceanic crust in the south-central Gulf of Mexico basin. The refraction layer having velocity 4.8 kilometers/second corresponds to the reflection layers identified as mainly carbonates below the Mid-Cretaceous Sequence Boundary (MCSB) plus oceanic layer 2. There is no reflection from the boundary between oceanic layers 2 and 3. There is, however, a change in refraction velocity at the layer 2 to layer 3 interface of 4.8 to 6.8 kilometers/second. BSMT = basement.

Source: Reference 410

Figure 2.5.1-294 Seismic Line of Southeastern Gulf of Mexico

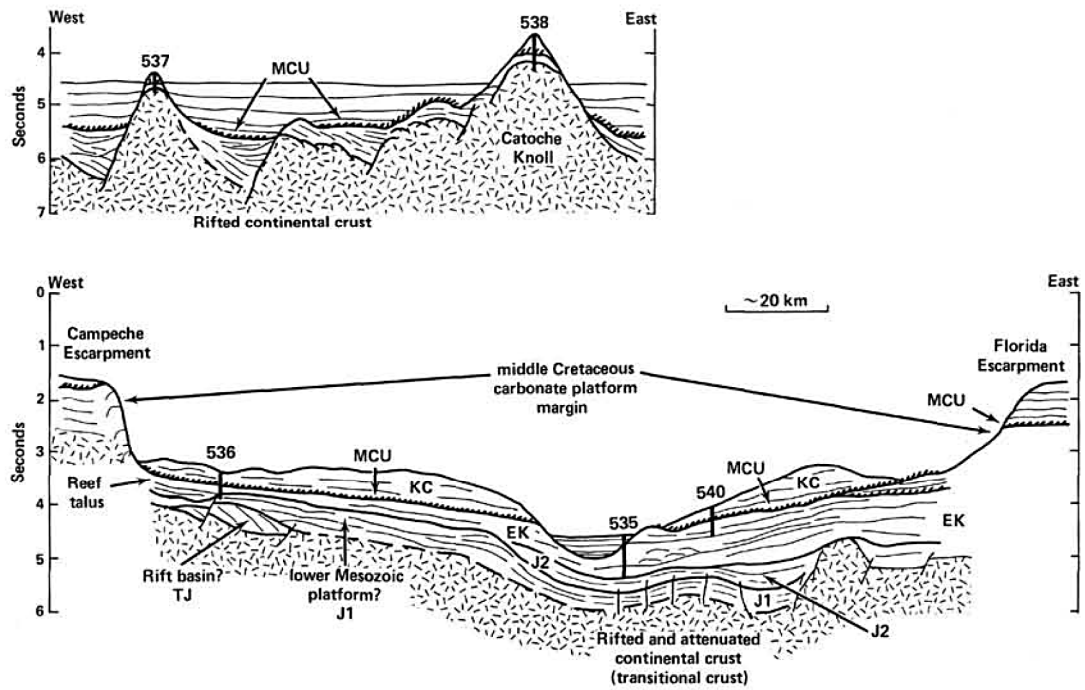
Northwest Southeast



Note: Line GT2-10C crosses the southeastern Gulf from northwest to southeast. Note high-standing basement complex to the south and deeper grabens to the north. Basement is overlain by Late Jurassic and Early Cretaceous sediments (drilled in DSDP Holes 535 and 540), indicating that this region of the southeastern Gulf was a deep seaway during Late Jurassic-Early Cretaceous. The line also shows the regional change from ocean crust in the northwest to more faulted and higher-standing transitional crust in the southeast. Northward stratigraphic pinchouts of the inferred Middle and Late Jurassic sequences onto the "outer high" (or ocean crust/transitional crust boundary) suggest a relatively young age (possibly latest Jurassic to earliest Cretaceous) for the ocean crust in the southeastern Gulf. OBS-12 is an ocean-bottom seismometer refraction station.

Modified from: Reference 793

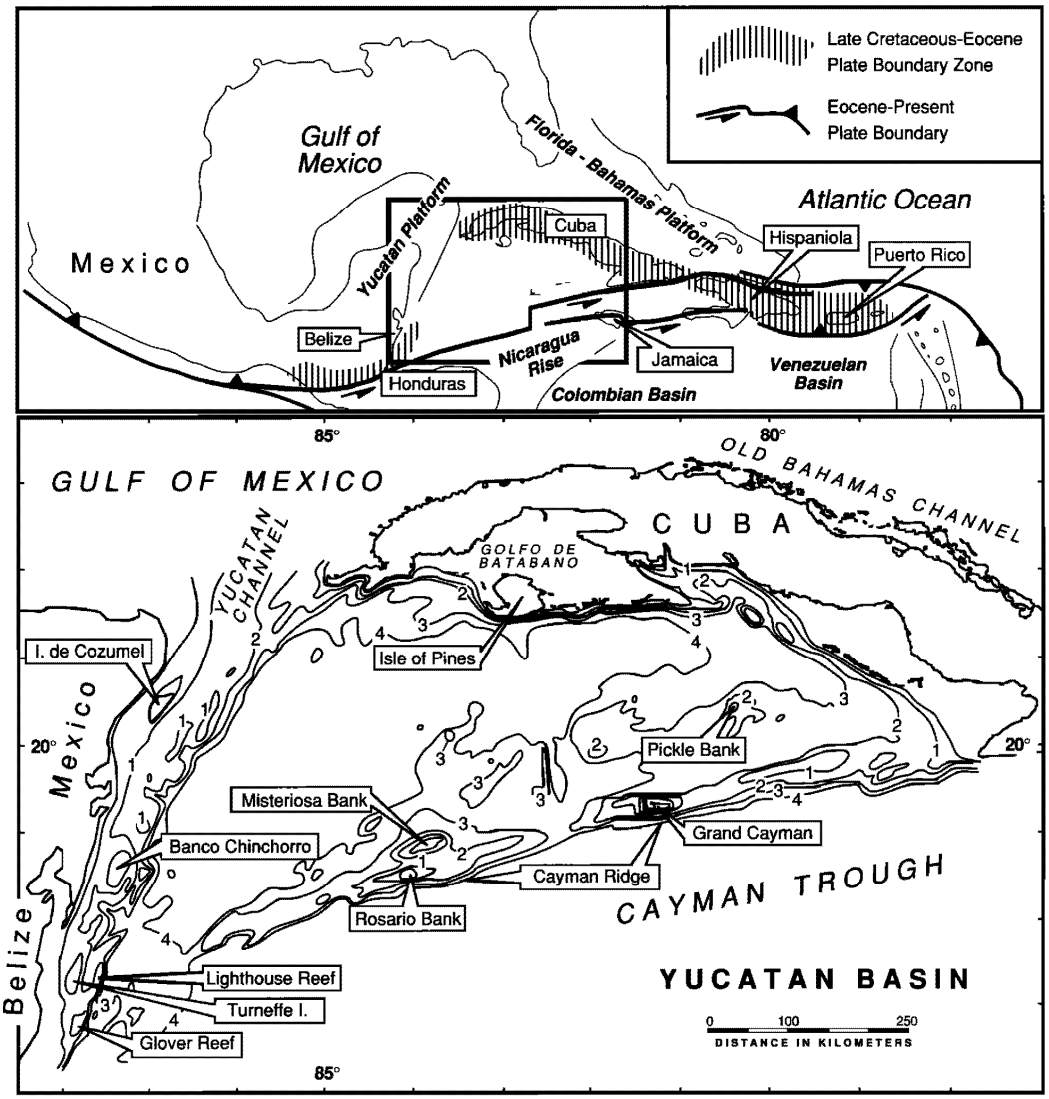
Figure 2.5.1-295 Mesozoic to Cenozoic Sediments, Rift Basins, and Rifted Continental Crust from the Yucatan Platform to the Florida Escarpment



Notes: Schematic cross section for DSDP Leg 77 drill sites (Sites 535-538 and 540). MCU is the mid-Cretaceous unconformity. TJ, J1, J2, EK, and KC are seismic units described in Subsection 2.5.1.1.2.1.1.

Source: Reference 794

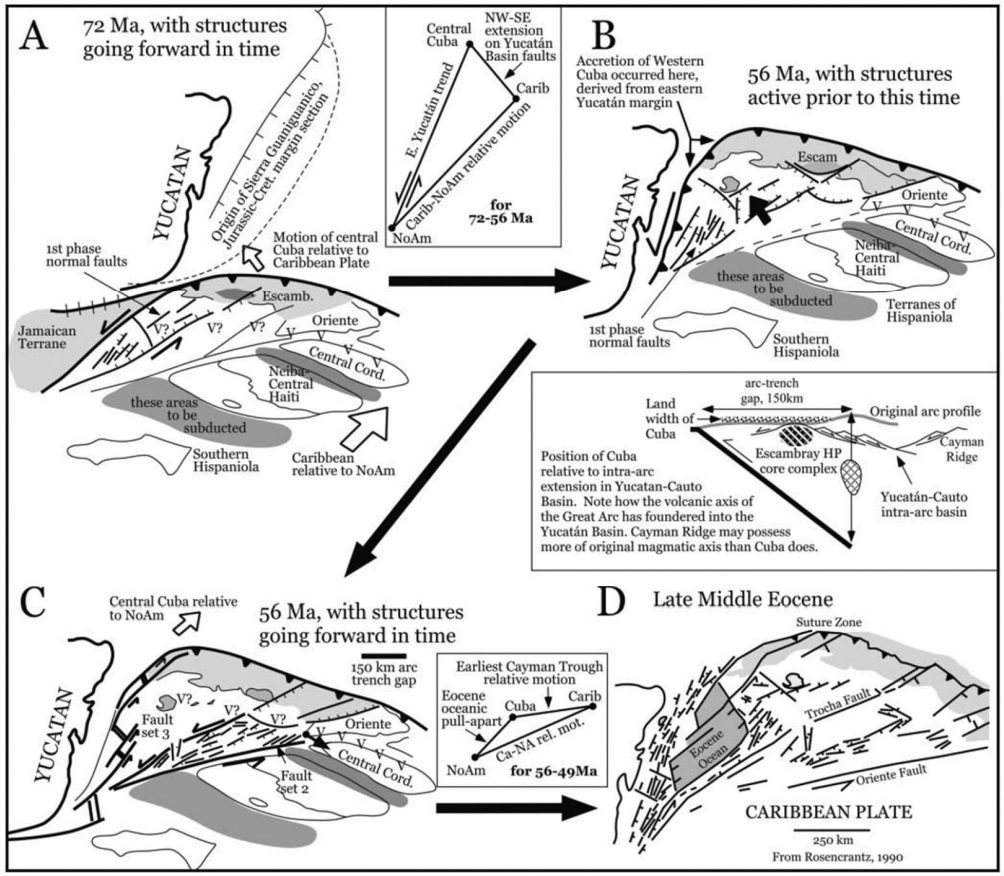
Figure 2.5.1-296 Physiography and Bathymetry of the Yucatan Basin



Notes: Tectonic sketch map of the northern Caribbean (upper panel) and a simplified bathymetric map of the Yucatan Basin (lower panel). The location of the bathymetric map is shown by the rectangle outlined on the tectonic map. Isobaths are in kilometers.

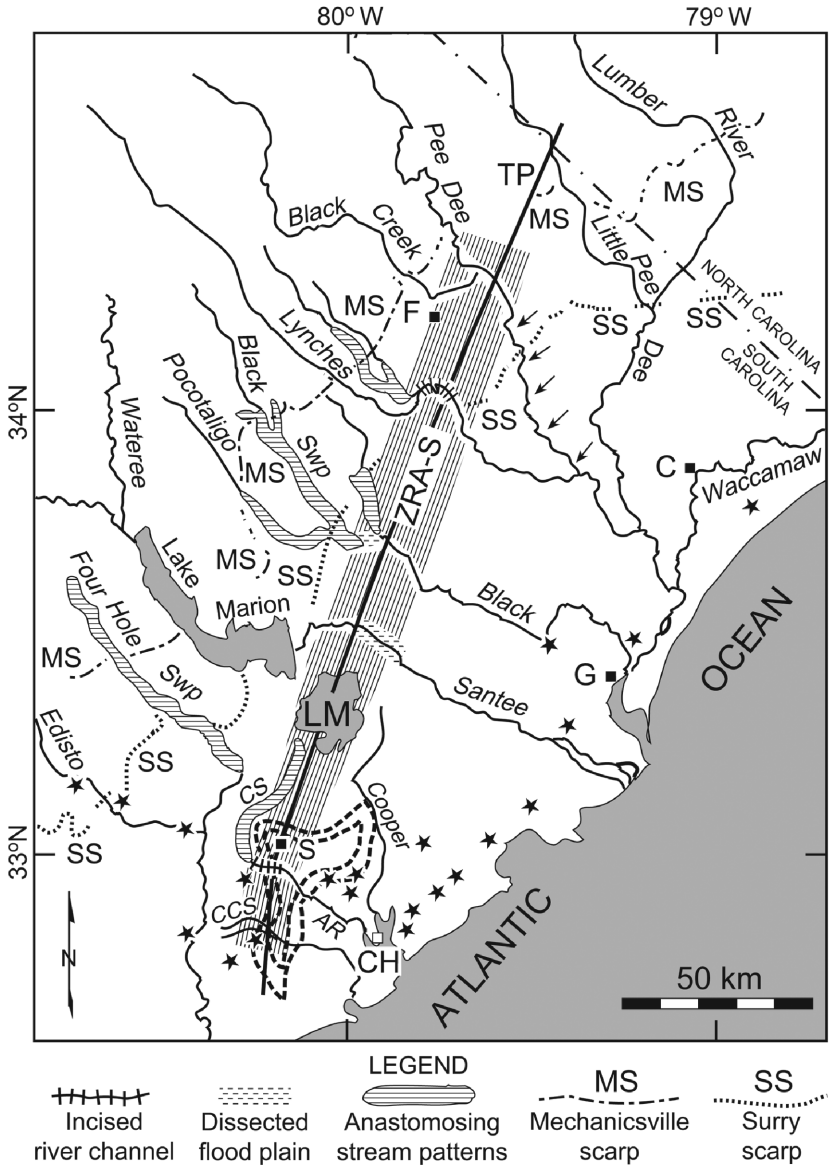
Source: Reference 529

Figure 2.5.1-297 Three Stage Model for Opening of the Yucatan Basin



Source: Reference 525

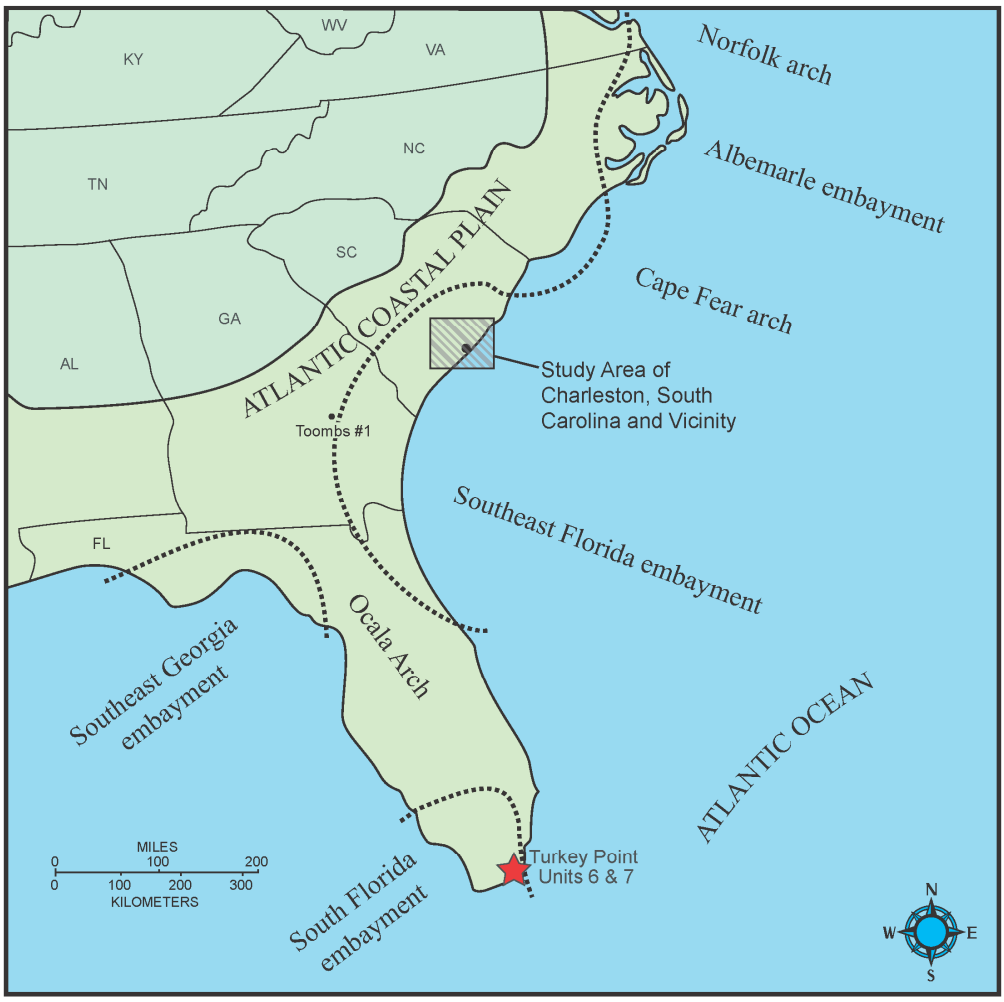
Figure 2.5.1-298 Southern Zone of River Anomalies



Notes: Map showing southern zone of river anomalies (ZRA-S; striped area), anastomosing stream patterns, pre-1886 sandblow sites (stars), and topographic profile (TP, bold line) approximately along the ZRA-S axis. Arrows along Pee Dee River denote reach flowing against southwest valley wall. Closed dashed contours near Summerville are highest-intensity isoseismals of the 1886 Charleston, South Carolina, earthquake. Mechanicsville (MS) and Surry (SS) are relict littoral scarps. AR—Ashley River; C—Conway; CCS—Caw Caw Swamp; CH—Charleston; CS—Cypress Swamp; F—Florence; G—Georgetown; LM—Lake Moultrie; S—Summerville.

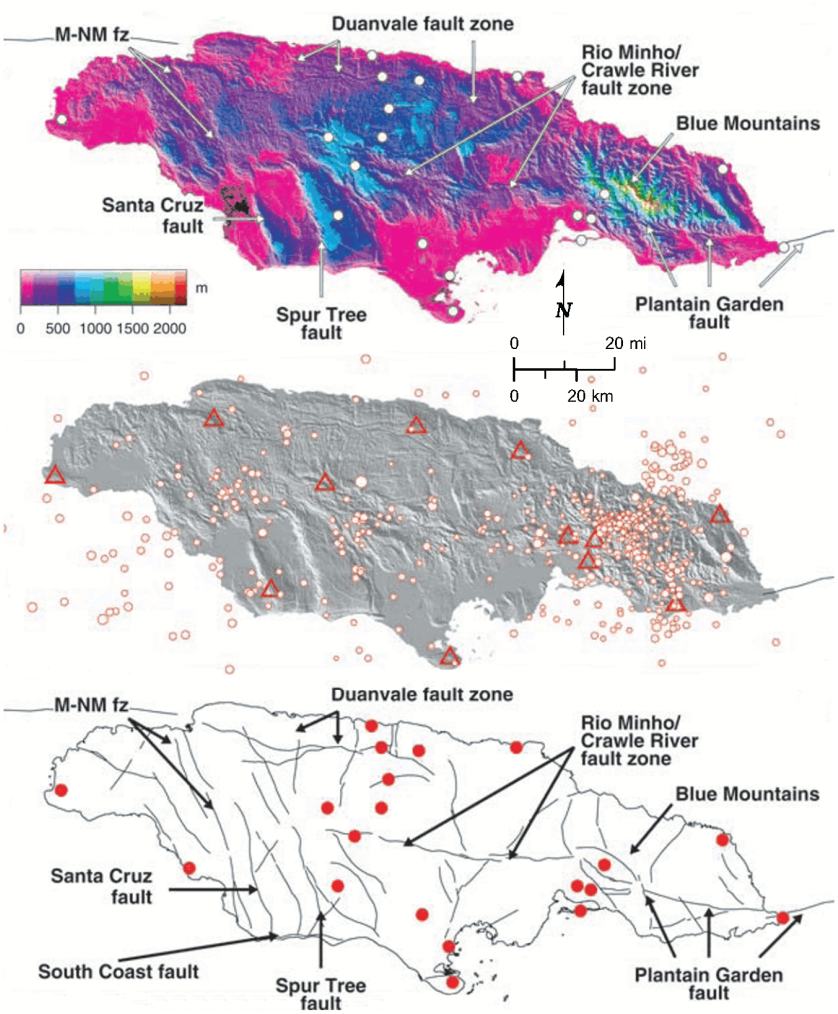
Source: Reference 534

Figure 2.5.1-299 Arches and Embayments Underlying the Atlantic Coastal Plain



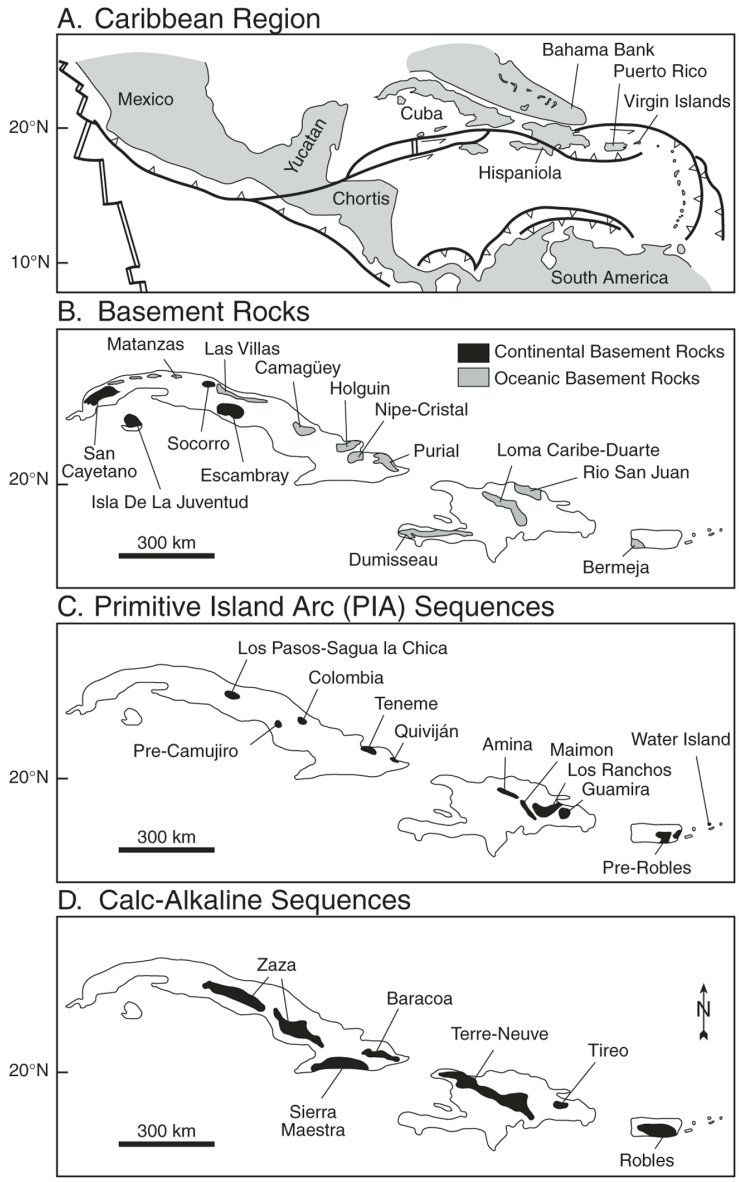
Modified from: Reference 775

Figure 2.5.1-300 Simplified Fault Maps of Jamaica



Source: Reference 503

Figure 2.5.1-301 Volcanic Evolution of the Greater Antilles Volcanic Arc

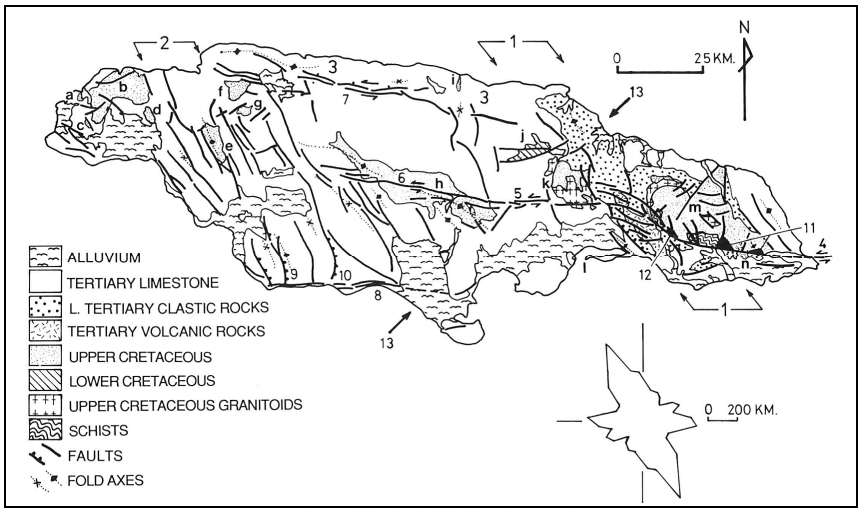


Notes:
(A) Location of the Greater Antilles and present tectonic elements within the Caribbean region.
(B) Distribution of pre-Cretaceous continental and oceanic basement rocks.
(C) Volcanic rocks of the primitive island arc (PIA) sequence.
(D) Volcanic rocks of the calc-alkaline sequence

Modified from: References 219, 443, 568, and 689

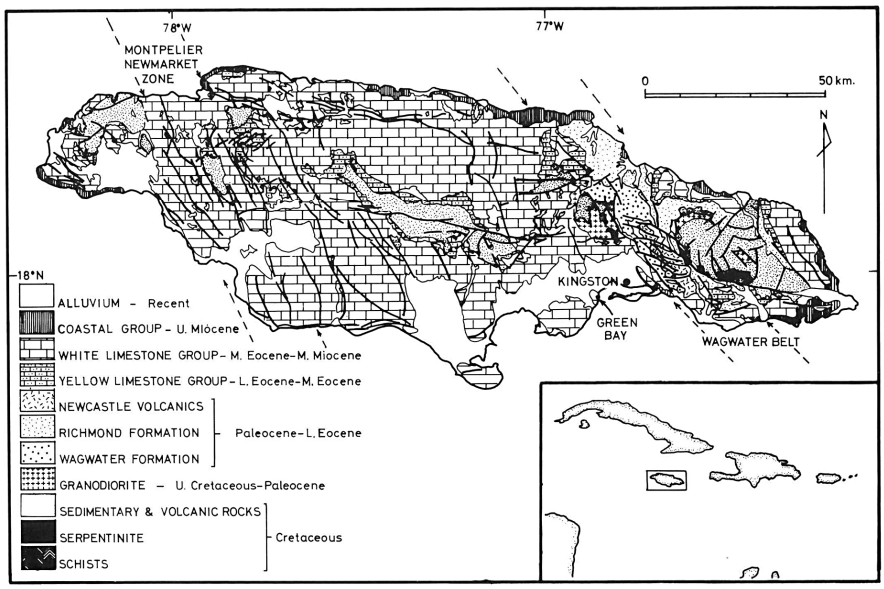
Figure 2.5.1-302 Geology of Jamaica

Stratigraphic Map



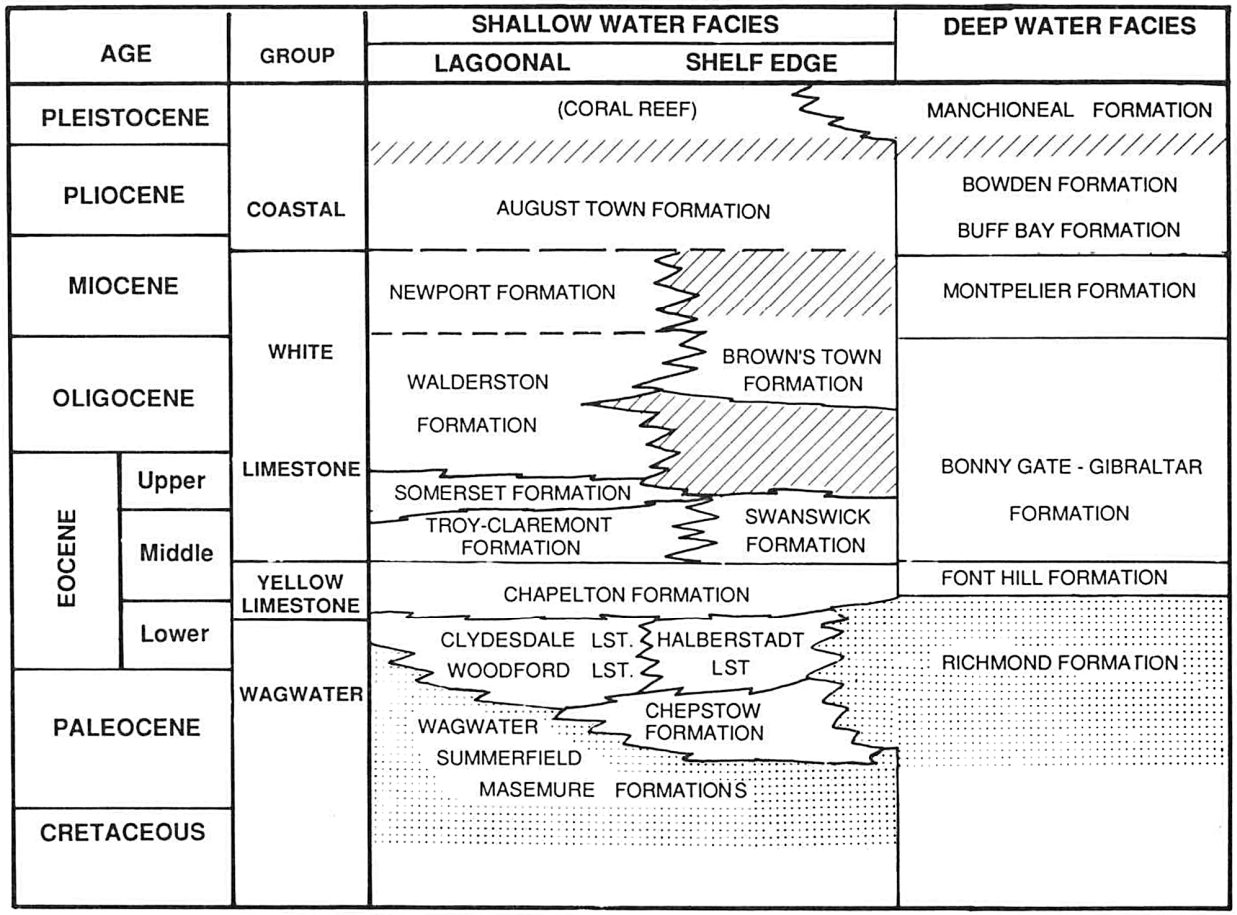
Source: Reference 217

Geologic Map



Source: Reference 217

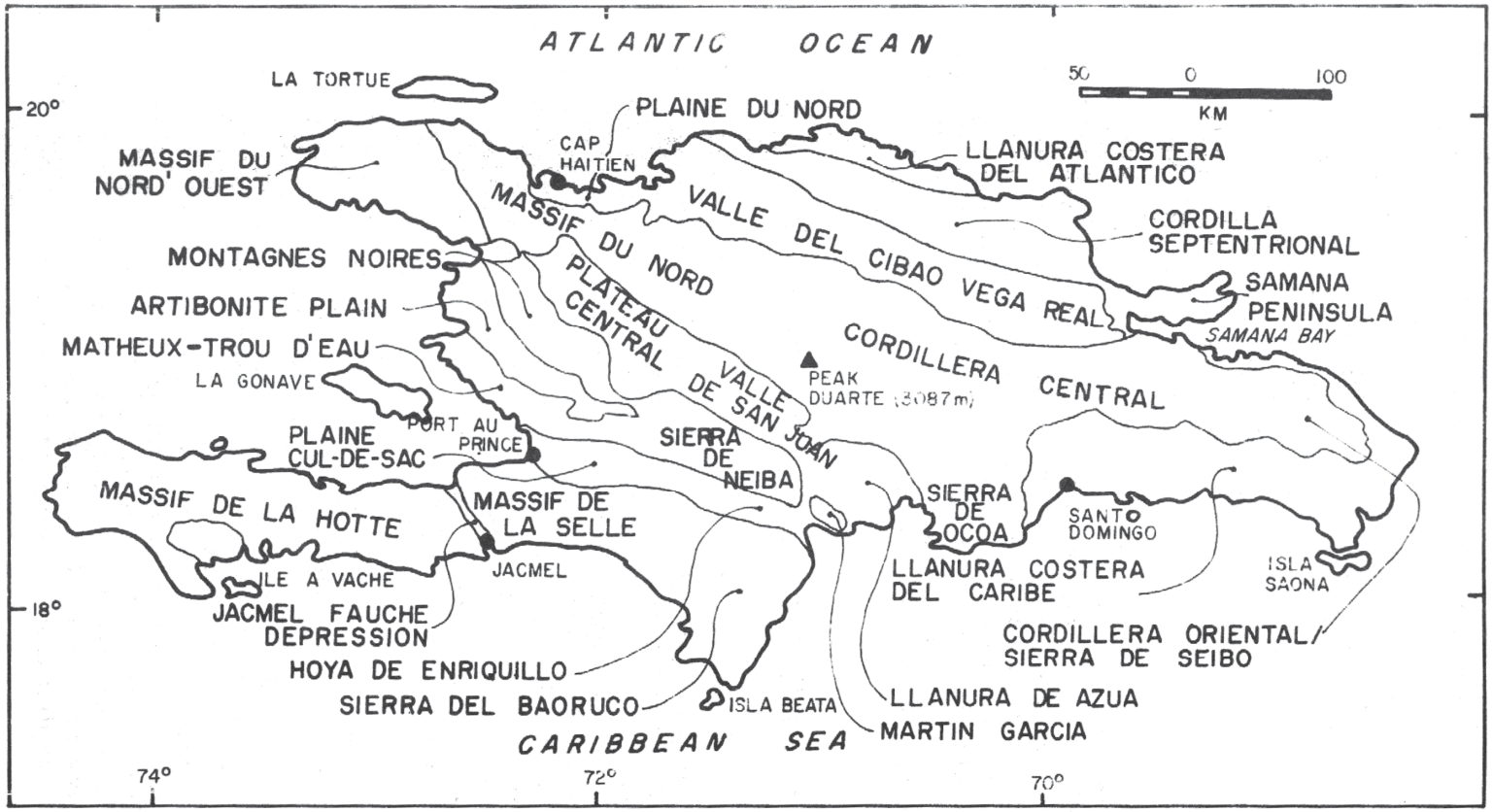
Figure 2.5.1-303 Simplified Tertiary Stratigraphy of Jamaica



Note: Stippled portions indicate noncarbonate clastic rocks, and diagonally shaded portions indicate periods of nondeposition, or where the rock record has been obliterated.

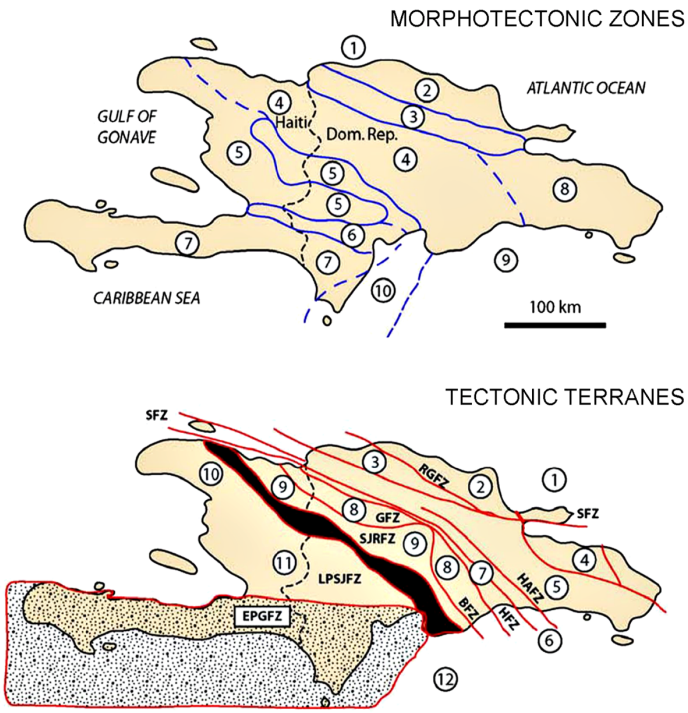
Source: Reference 217

Figure 2.5.1-304 Physiographic Provinces of Hispaniola



Source: Reference 565

Figure 2.5.1-305 Correlation between Morphtectonic Zones and Tectonic Terranes in Hispaniola



Notes:
Morphotectonic zones of Hispaniola

1. Zone 1, Old Bahama Trench (offshore)
2. Zone 2, Cordillera Septentrional-Samaná Peninsula
3. Zone 3, Cibao Valley
4. Zone 4, Massif du Nord-Cordillera Central
5. Zone 5, Northwestern-south-central zone (includes Plateau Central, San Juan Valley, Azua Plain, Sierra de Ocoa, Presqu'île du Nord-Ouest)
6. Zone 6, Cul-de-Sac Plain; Enriquillo Valley
7. Zone 7, Southern or Bahoruco Peninsula; Massif de la Selle; Massif de la Hotte; Sierra de Bahoruco
8. Zone 8, Eastern Peninsula; Cordillera Oriental; Seibo coastal plain
9. Zone 9, San Pedro Basin and north slope of the Muertos Trough
10. Zone 10, Beta Ridge and southern peninusla

Tectonic terranes (zones) of Hispniola

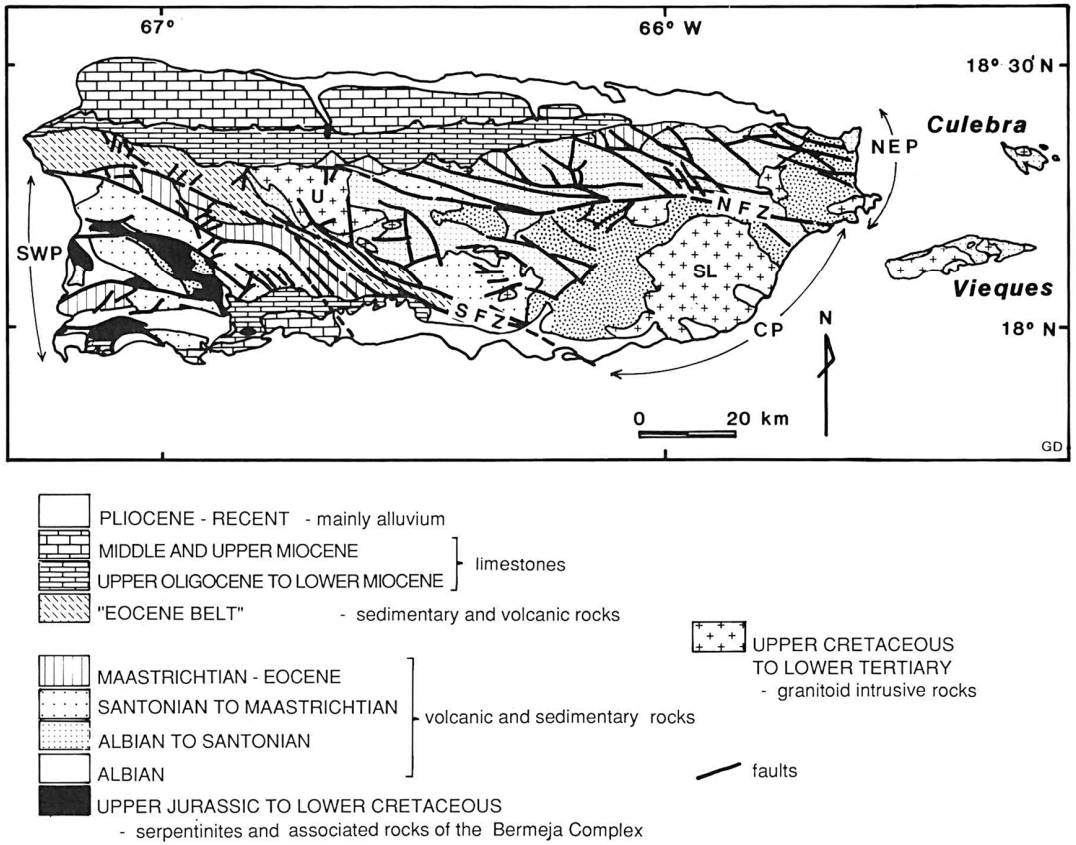
1. Samaná
2. Puerto Plata-Pedro Garicía-Río San Juan
3. Altamira
4. Oro
5. Seibo
6. Tortue-Amina-Maimon
7. Loma Caribe-Tavera
8. Duarte
9. Tireo
10. (gray area) Triois Rivières-Peralta
11. Presqu'île du North-Ouest-Neiba
12. (ruled area) Selle-Hotte-Bahoruco

Fault abbreviations: RGFZ = Río Grande fault zone, SFZ = Septentrional fault zone, GFZ = Guacara fault zone, HAFZ = Hatillo fault zone, HFZ = Hispaniola fault zone, BFZ = Bonao fault zone, SJRFZ = San José Restauración fault zone, LPSJFZ = Los Pozos-San Juan fault zone, EPGFZ = Enriquillo-Plantain Garden fault zone

Modified from Reference 566

Figure 2.5.1-306 DELETED

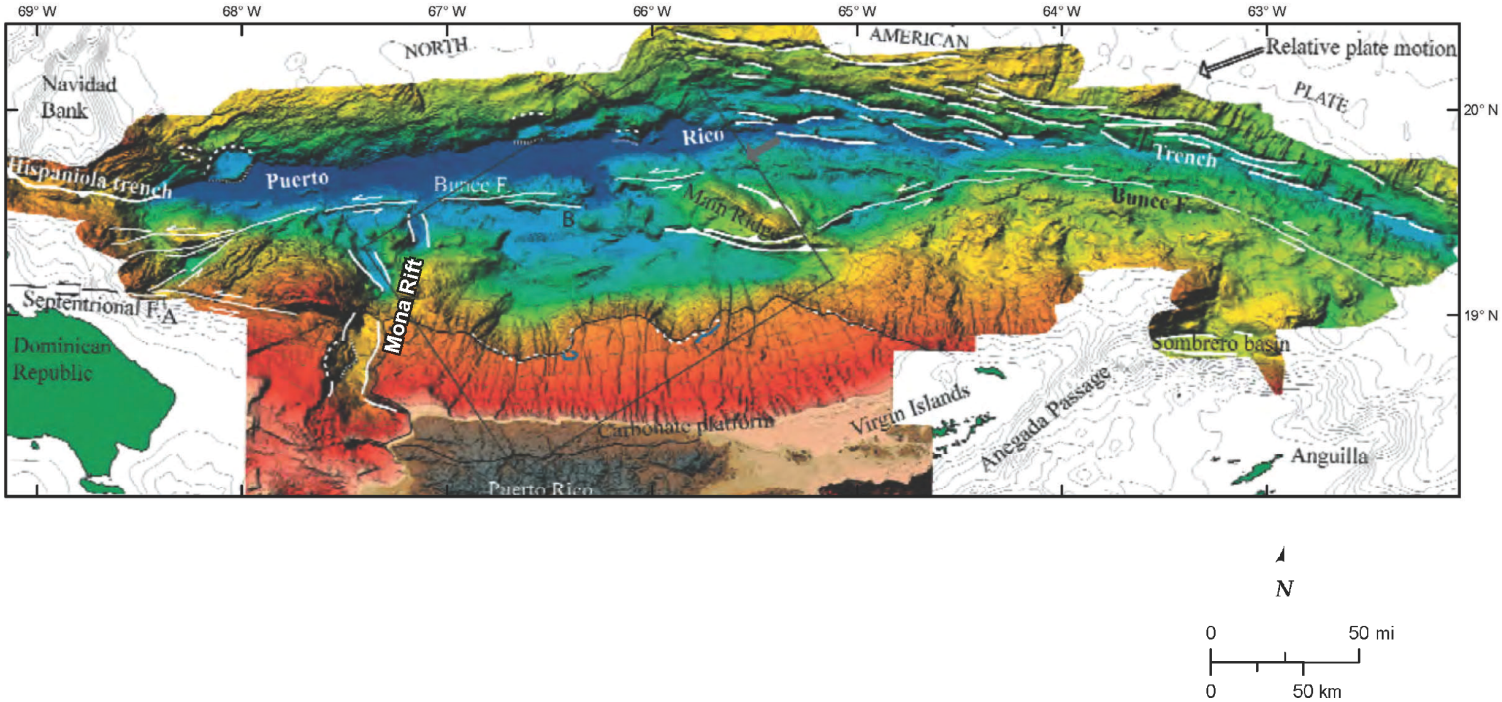
Figure 2.5.1-307 Simplified Geologic Map of Puerto Rico and the Islands of Vieques and Culebra



Note: SWP = Southwestern Igneous province southwest of South Fault Zone (SFZ) and the Eocene belt, CP = Central Igneous province (includes Vieques) between the South and North fault zones, NEP = Northeastern Igneous province (includes Culebra) north of the North fault zone (NFZ), U = Utuado pluton, SL = San Lorenzo pluton.

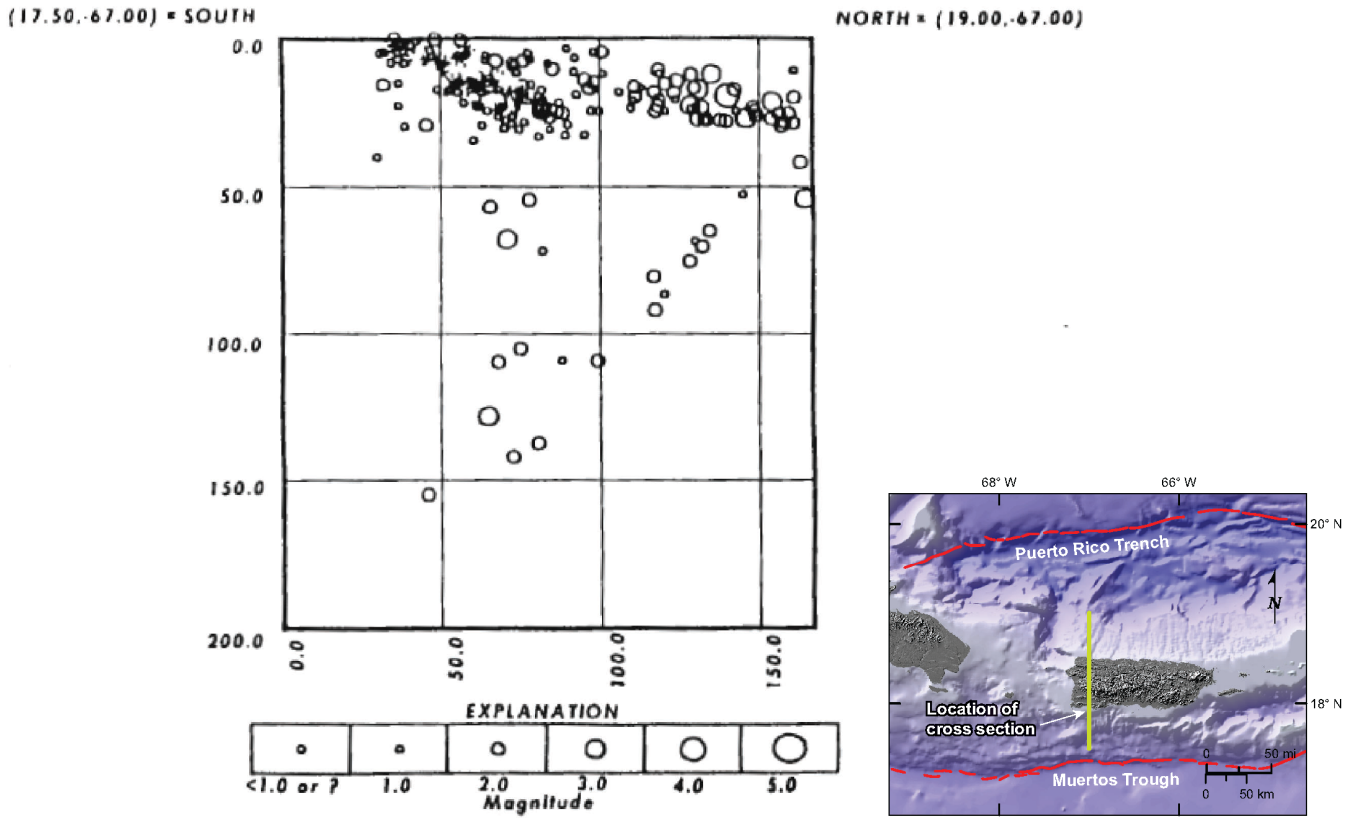
Source: Reference 217

Figure 2.5.1-308 Shaded Relief Map of Puerto Rico Trench, Showing Locations of Major Faults and Structural Features



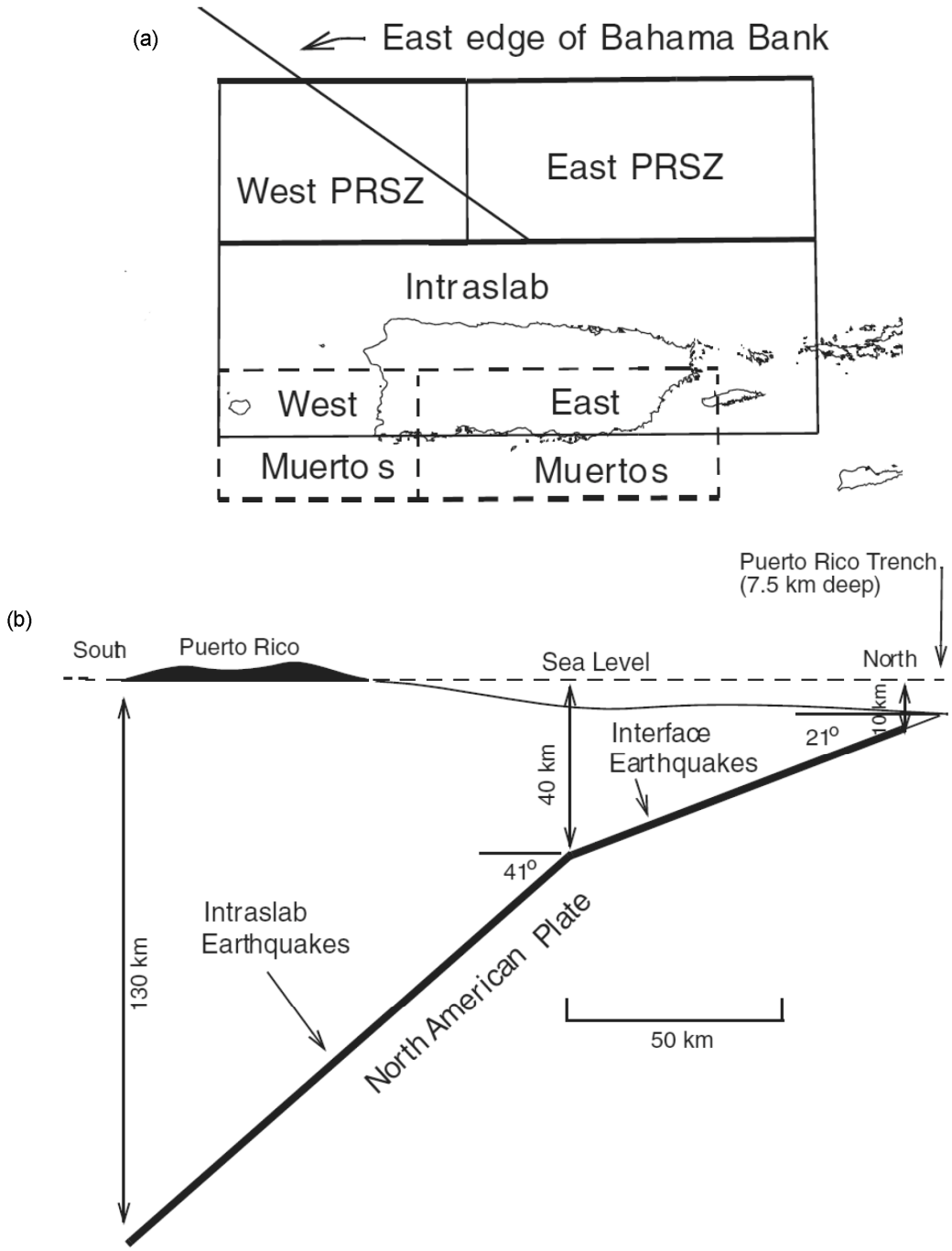
Note: Colors indicate shallow (red) to deep (blue) bathymetry.
Source: Reference 581

Figure 2.5.1-309 Depth Cross Section Showing Seismicity beneath Puerto Rico



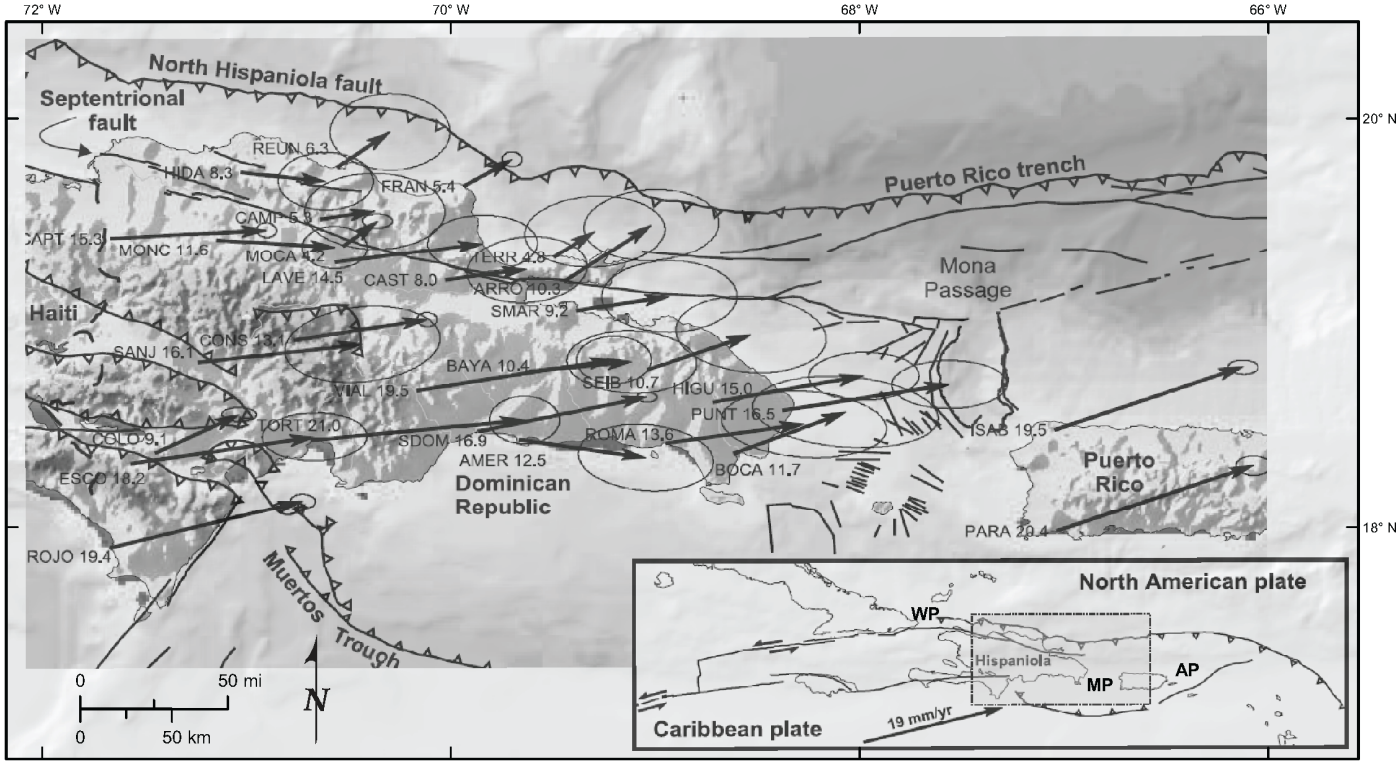
Source: Reference 777

Figure 2.5.1-310 Schematic Cross Section of the Puerto Rico Subduction Zone



Source: Reference 577

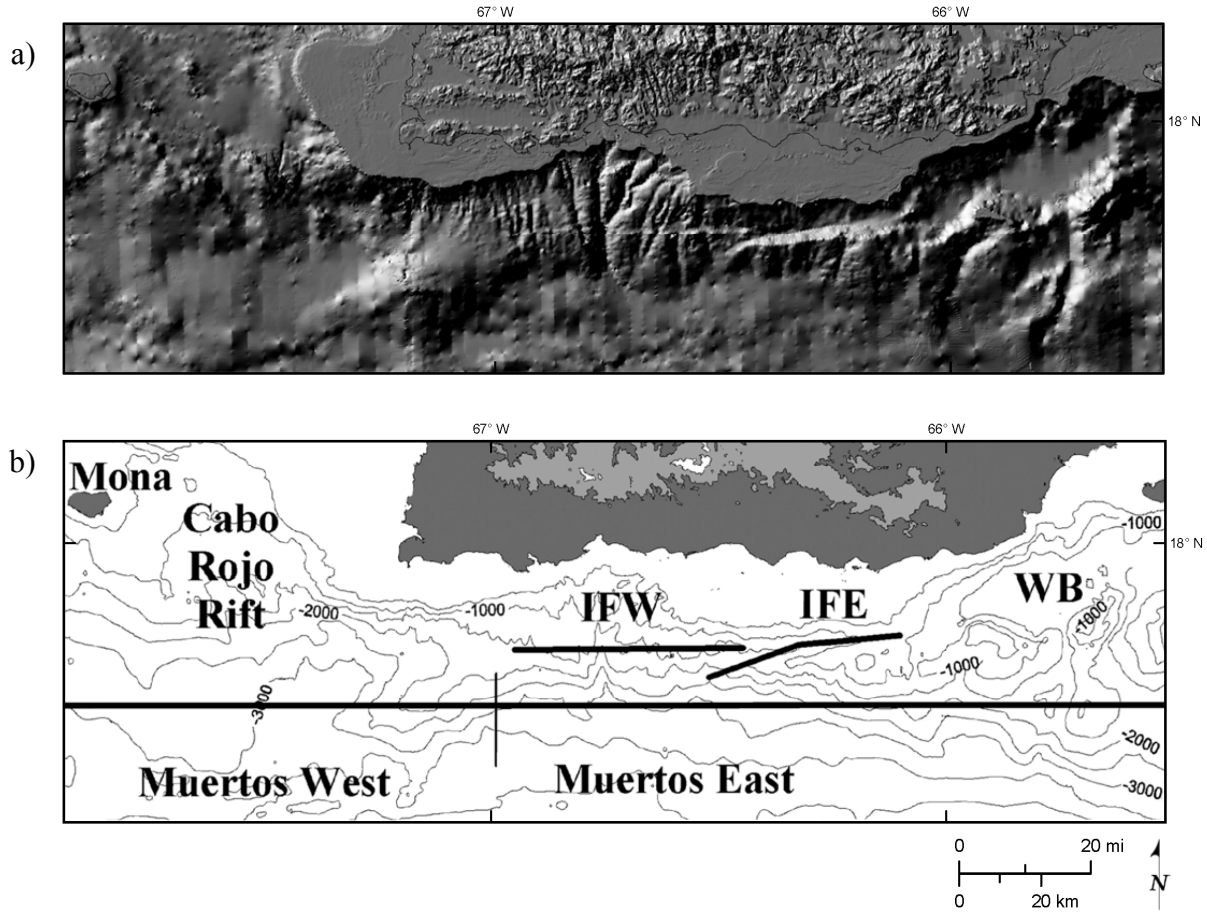
Figure 2.5.1-311 GPS-Derived Velocities in the Dominican Republic and Western Puerto Rico with Respect to the North America Plate



Notes: WP = Windward Passage, MP = Mona Passage, AP = Anegada Passage.

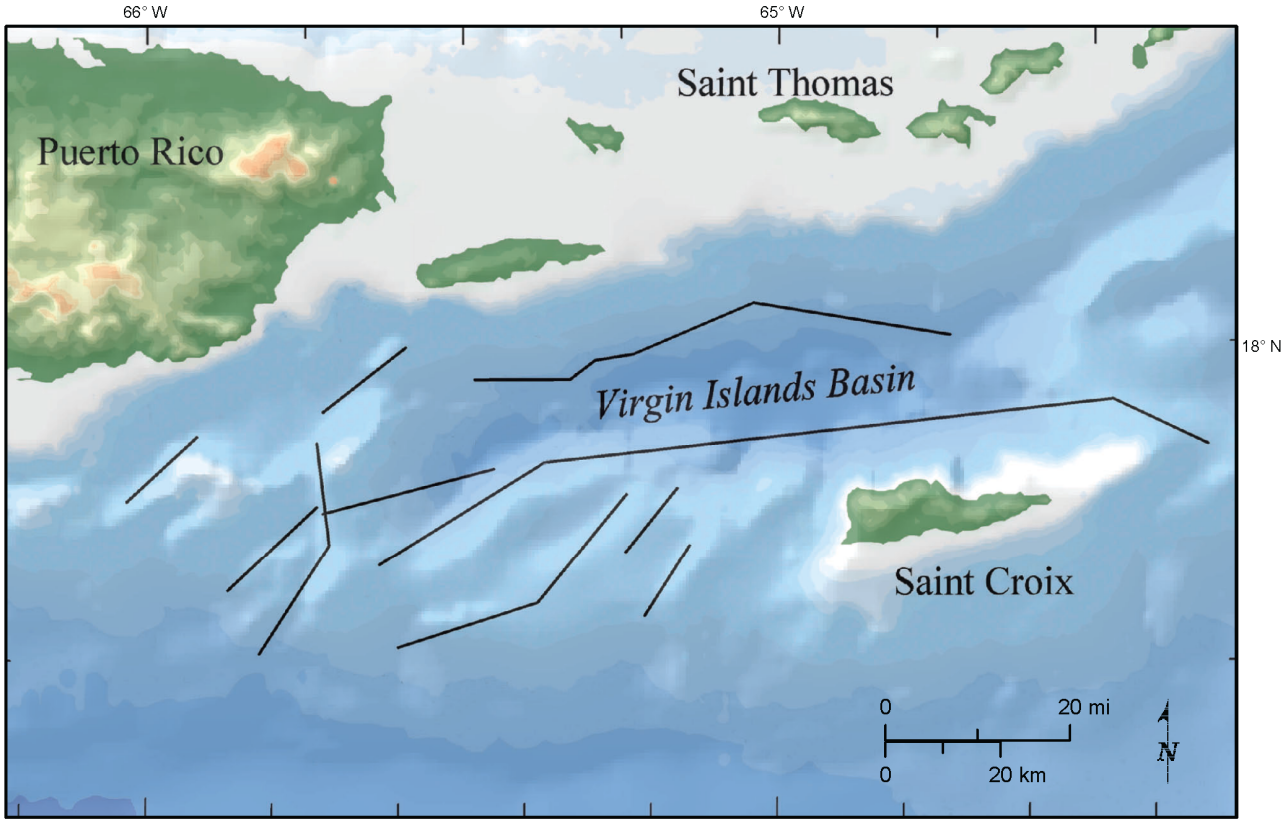
Source: Reference 358

Figure 2.5.1-312 Topography and Bathymetry Offshore of Southern Puerto Rico



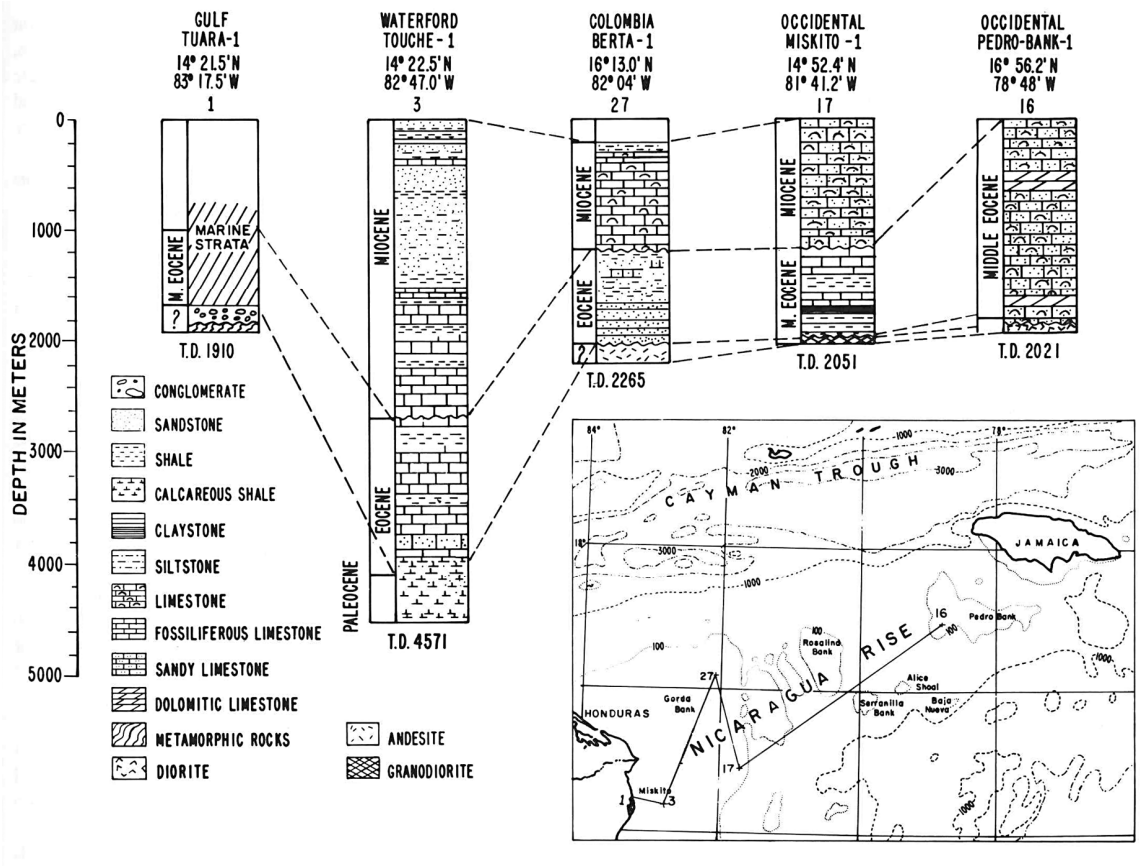
Notes:
(a) Topographic and bathymetric relief
(b) IFW = Investigator fault, west; IFE = Investigator fault, east; WB = Whiting Basin; Muertos West and East correlate with Figure 2.5.2-310a
Source: Reference 577

Figure 2.5.1-313 Faults in the Anegada Passage



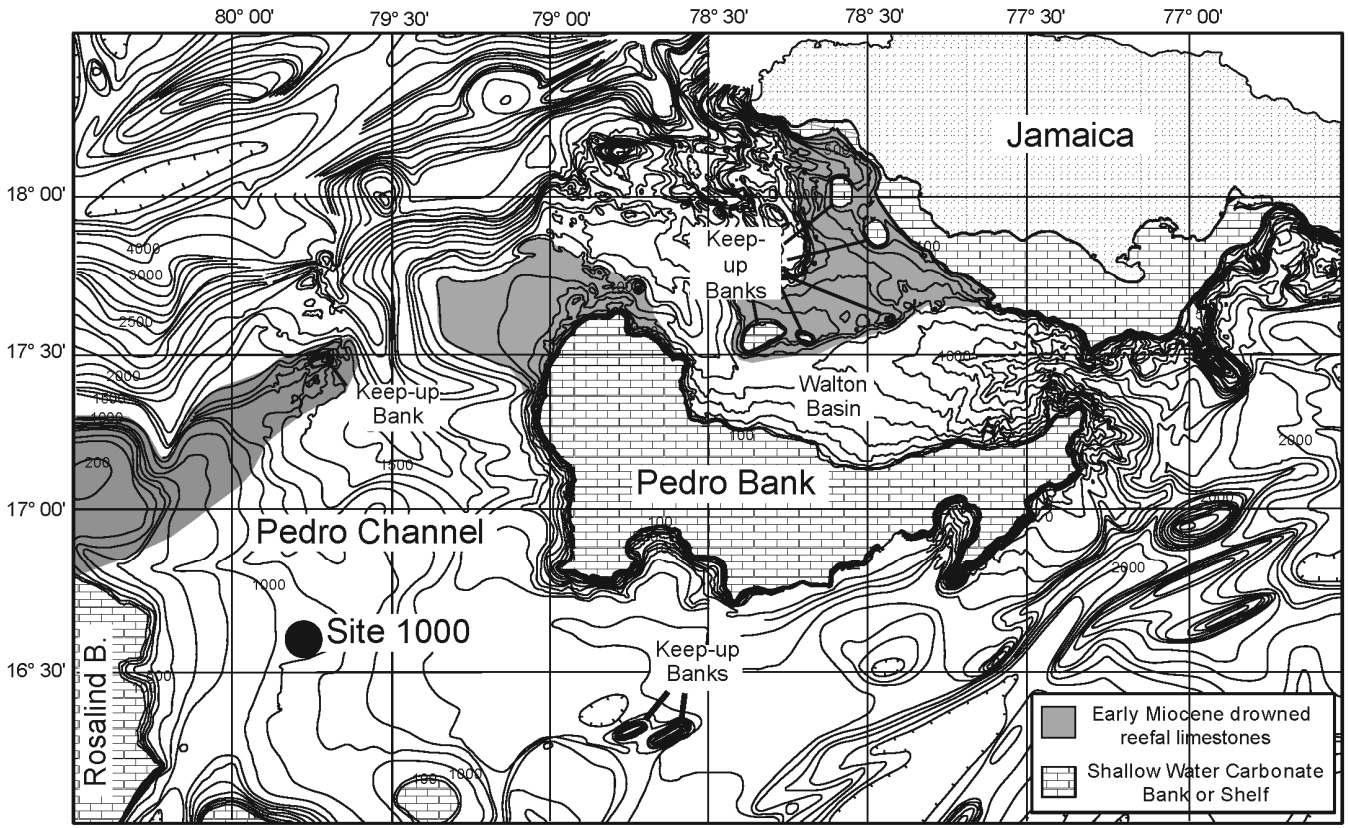
Source: Reference 577

Figure 2.5.1-314 Stratigraphic Columns from Five Wells Drilled on the Northern Nicaraguan Rise



Source: Reference 526

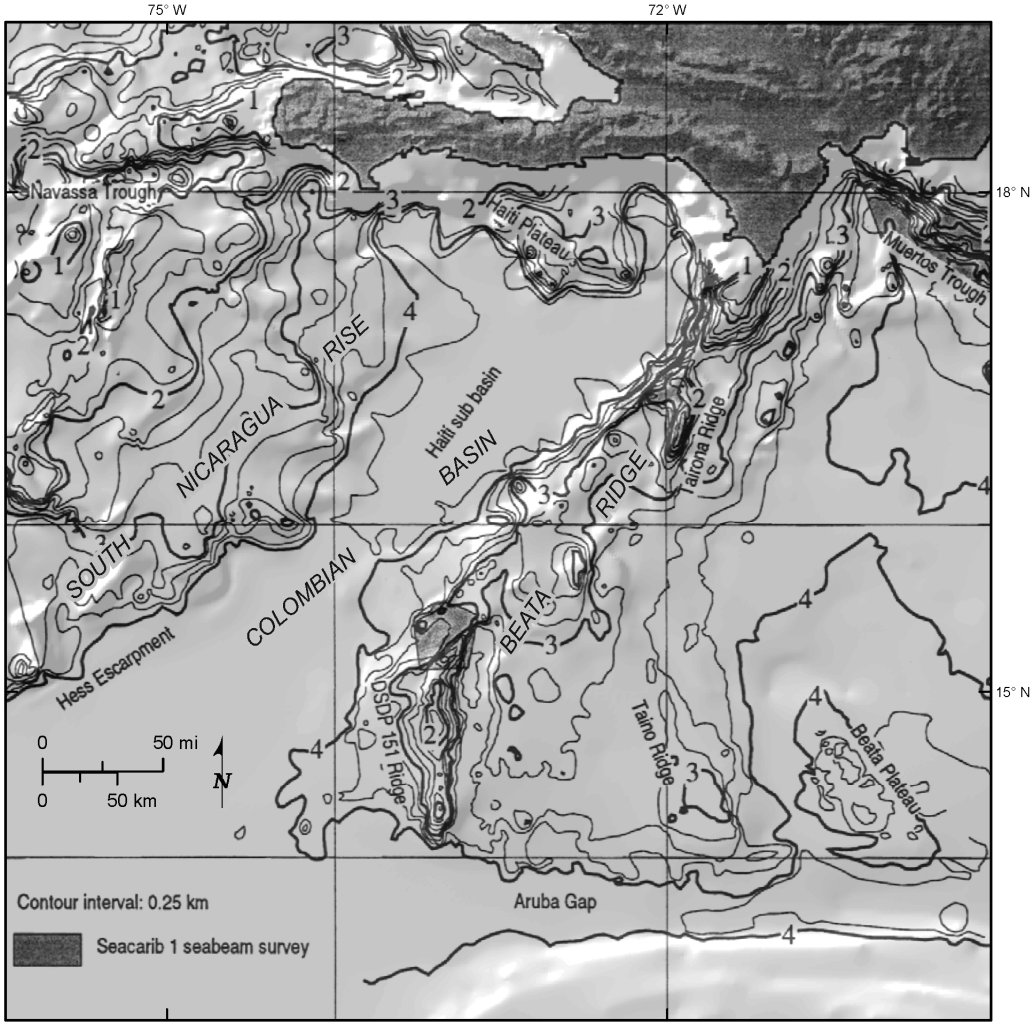
Figure 2.5.1-315 Modern Physiography of the Northern Nicaraguan Rise



Note: Detailed bathymetry shows the complexity and segmented character of the northern Nicaraguan Rise seafloor. Present-day carbonate banks (brick pattern) have remained areas of neritic carbonate production since the Late Eocene. Drowned banks and reefs observed in Pedro Channel and Walton Basin formed an east-west barrier along the northern Nicaraguan Rise, where continuous shallow-water environments prevailed from the Late Eocene to Early Miocene. Some of the carbonate banks and barriers (light gray pattern) subsided and drowned as late as the late Middle Miocene. ODP Site 1000 is located in the Pedro Channel.

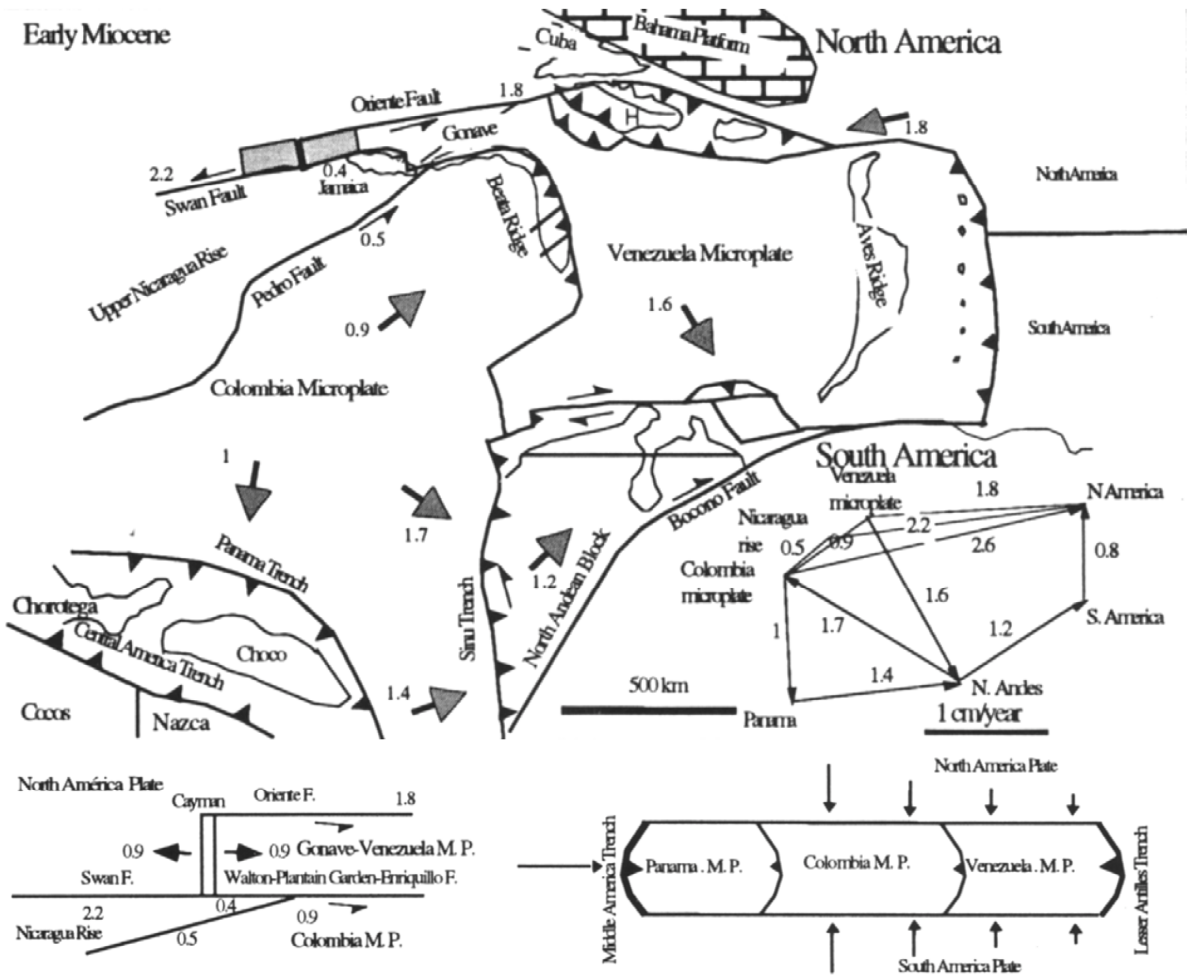
Source: Reference 302

Figure 2.5.1-316 Beata Ridge Bathymetry



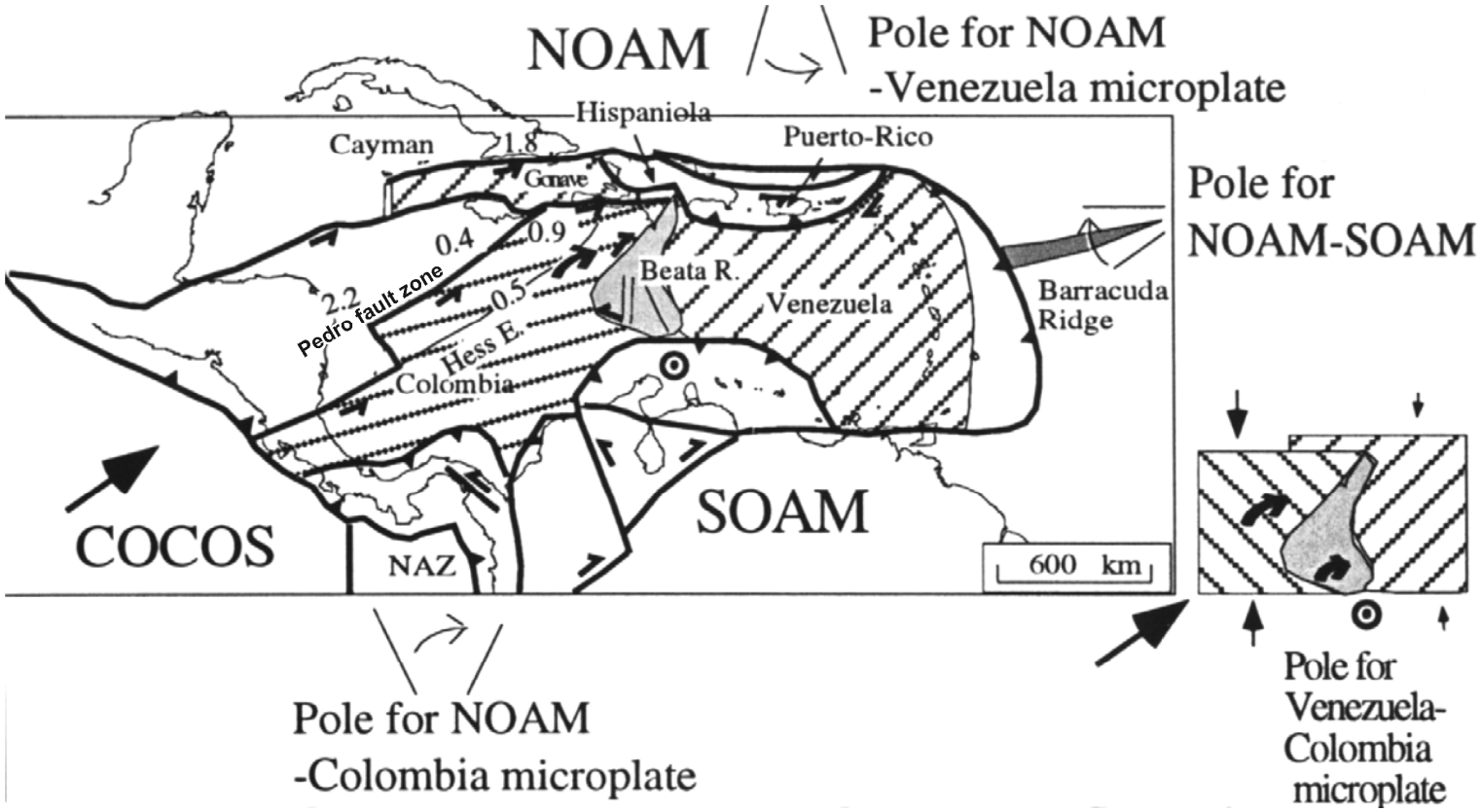
Source: Reference 778

Figure 2.5.1-317 Beata Ridge Tectonic Model (Sheet 1 of 2)



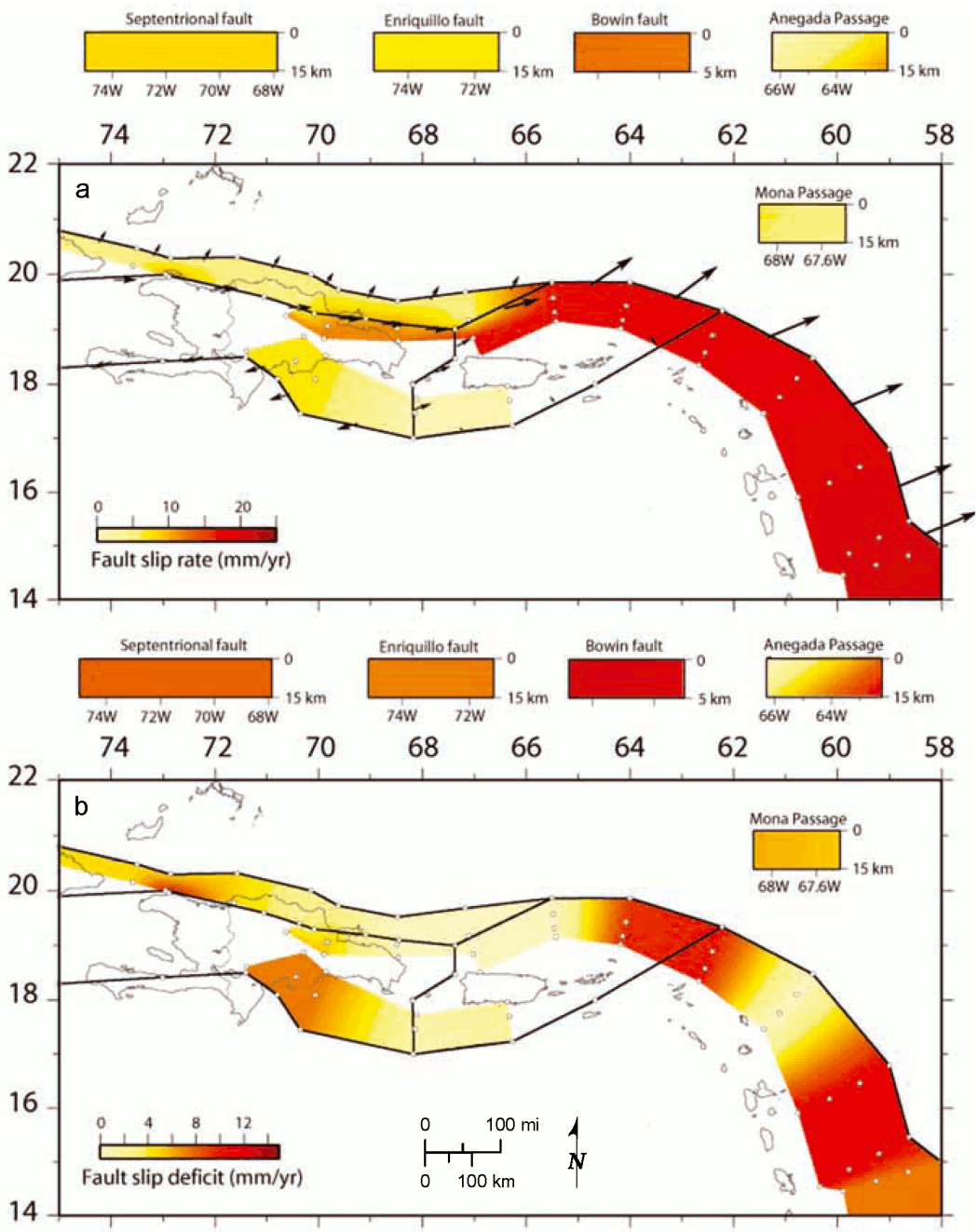
Notes: M.P. = Microplate, F. = Fault
Source: Reference 778

Figure 2.5.1-317 Beata Ridge Tectonic Model (Sheet 2 of 2)



Notes: NOAM = North America, SOAM = South America
Source: Reference 778

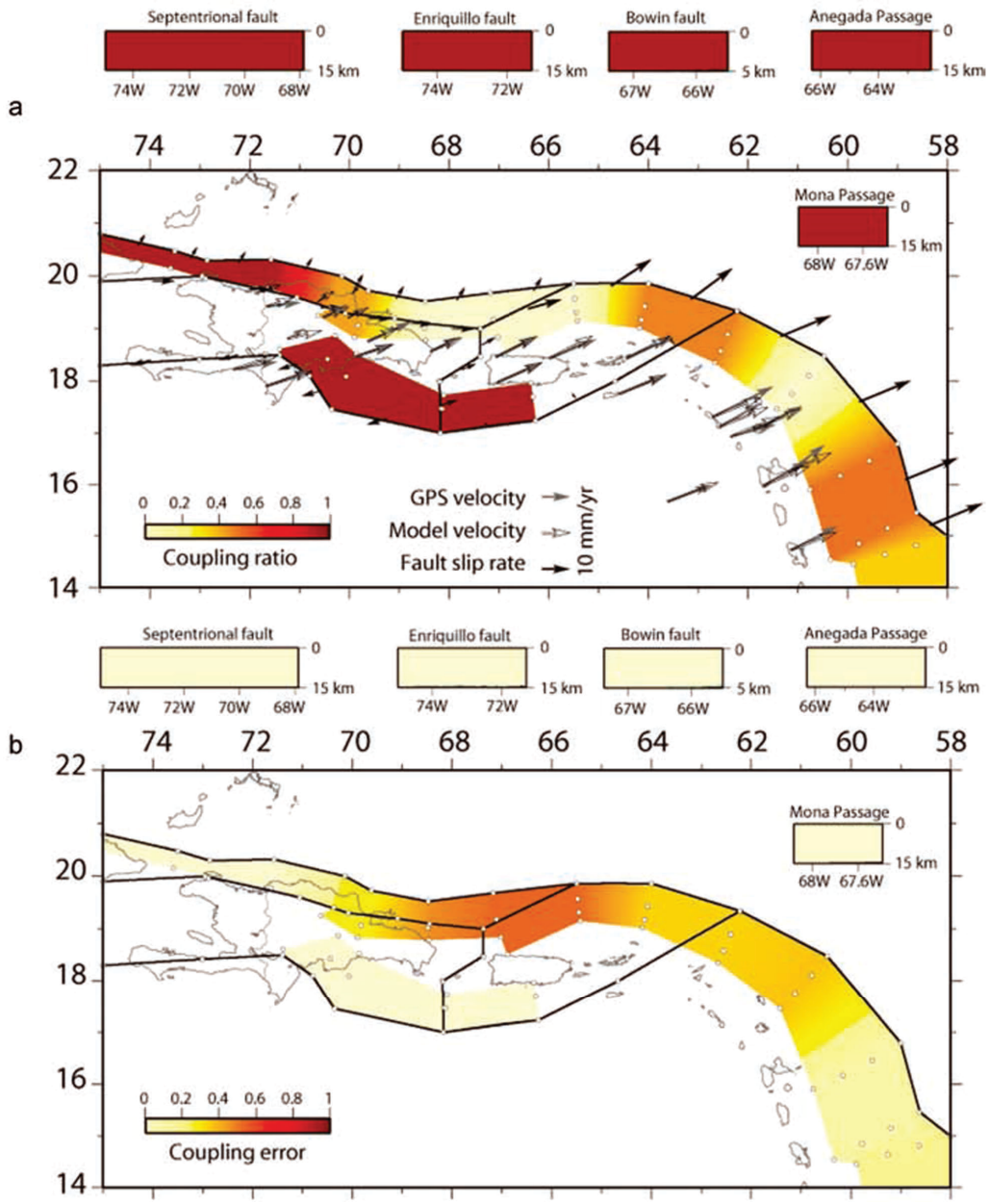
Figure 2.5.1-318 Results of GPS-based Plate Coupling Studies (Sheet 1 of 2)



Notes:
(a) Fault slip rates
(b) Fault slip deficits

Source: Reference 643

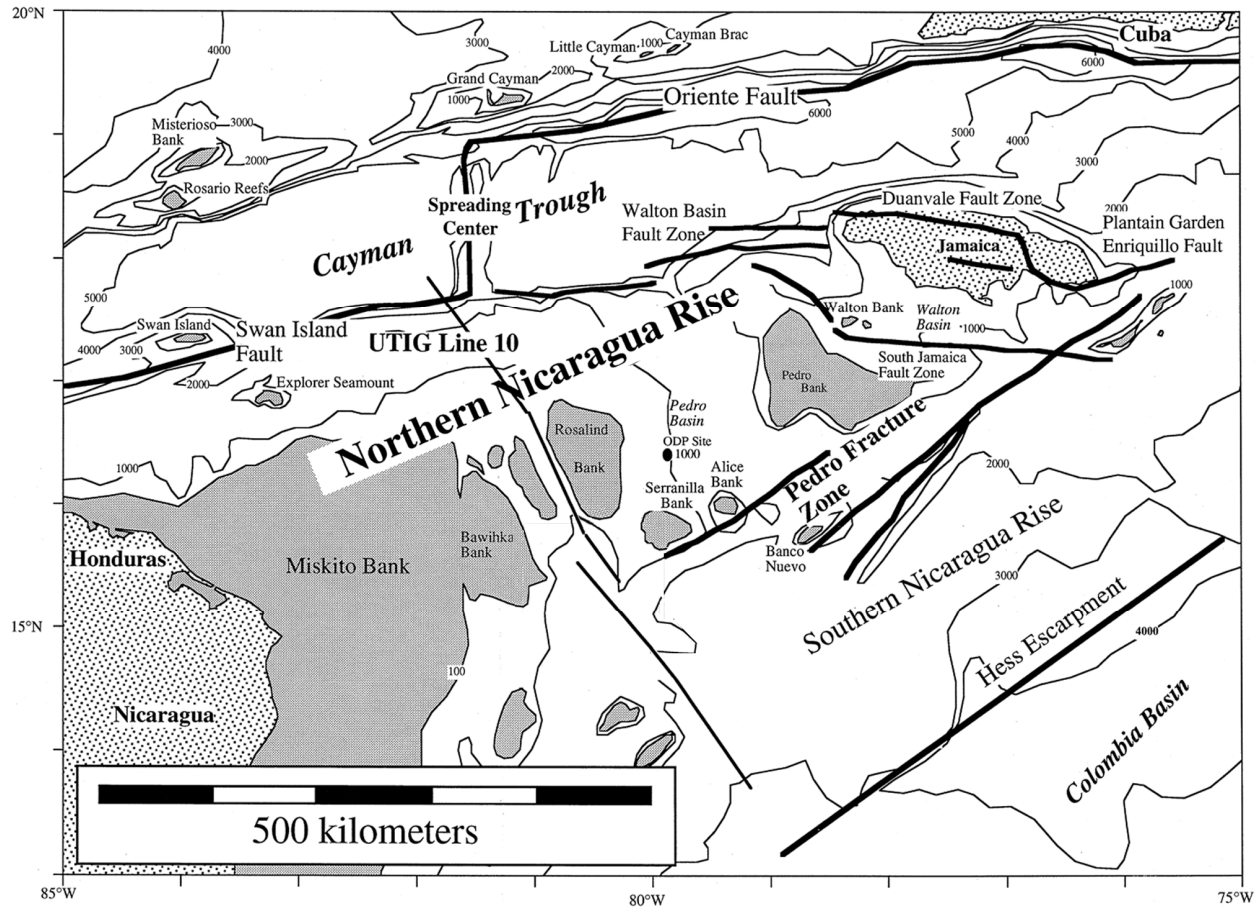
Figure 2.5.1-318 Results of GPS-based Plate Coupling Studies (Sheet 2 of 2)



Notes:
(a) Fault coupling ratios, and comparisons between GPS velocities, model velocities, and fault slip rates.
(b) Errors on coupling ratios

Source: Reference 643

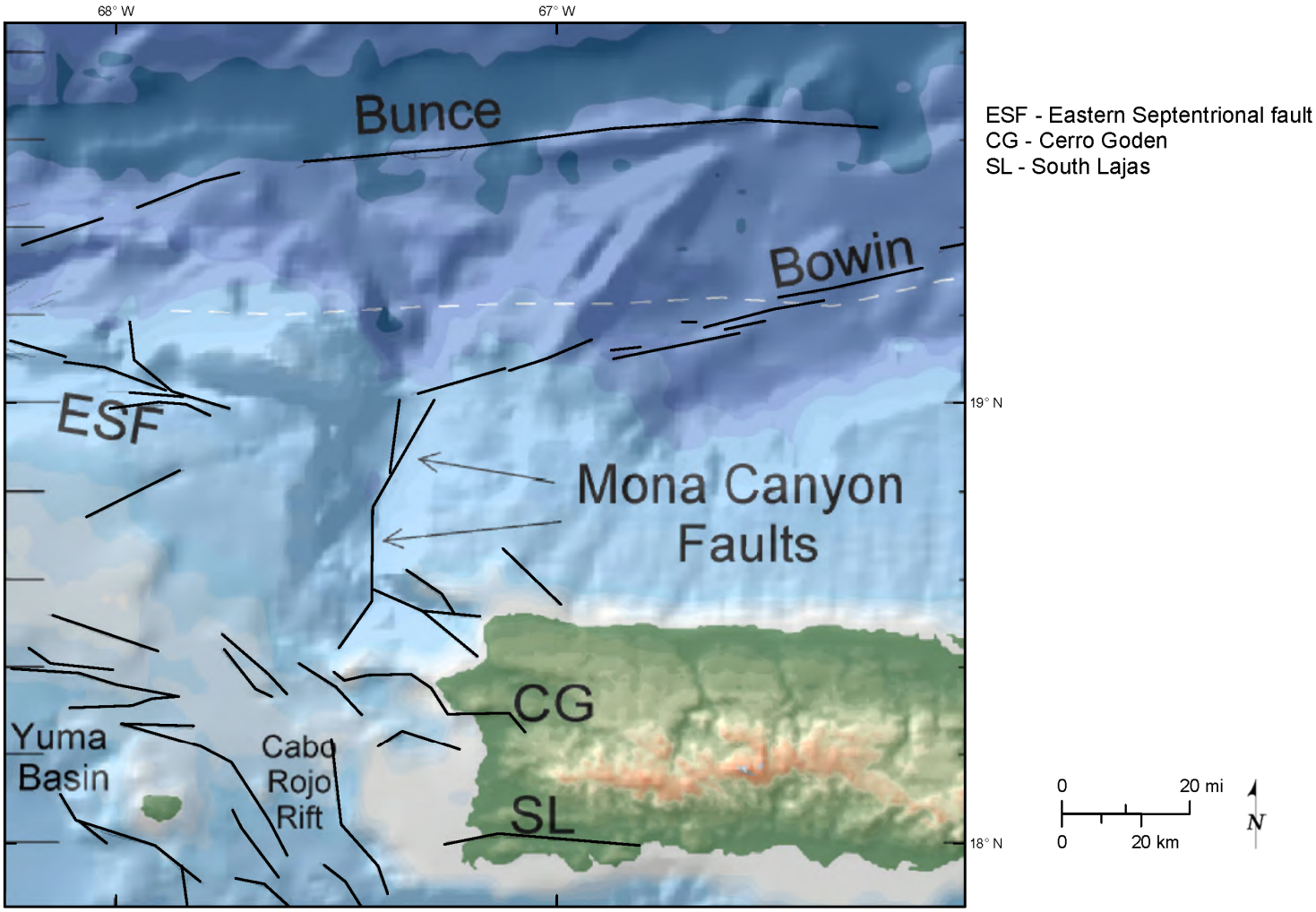
Figure 2.5.1-319 Northern and Southern Nicaragua Rise in the Caribbean Sea



The northern Nicaragua Rise is bounded on the north by the Cayman Trough and to the south by the Pedro Fracture Zone. The southern Nicaraguan Rise is bounded on the north by the Pedro Fracture Zone and to the south by the Hess Escarpment. Industry wells are indicated by open circles while ODP Site 1000 is identified with a closed circle. Contour interval is 1000 meters with the exception of the 100-meter isobath showing the carbonate banks (shaded) along the northern Nicaragua Rise.

Modified from: Reference 602

Figure 2.5.1-320 Modeled Seismogenic Faults near Western Puerto Rico



Source: Reference 577