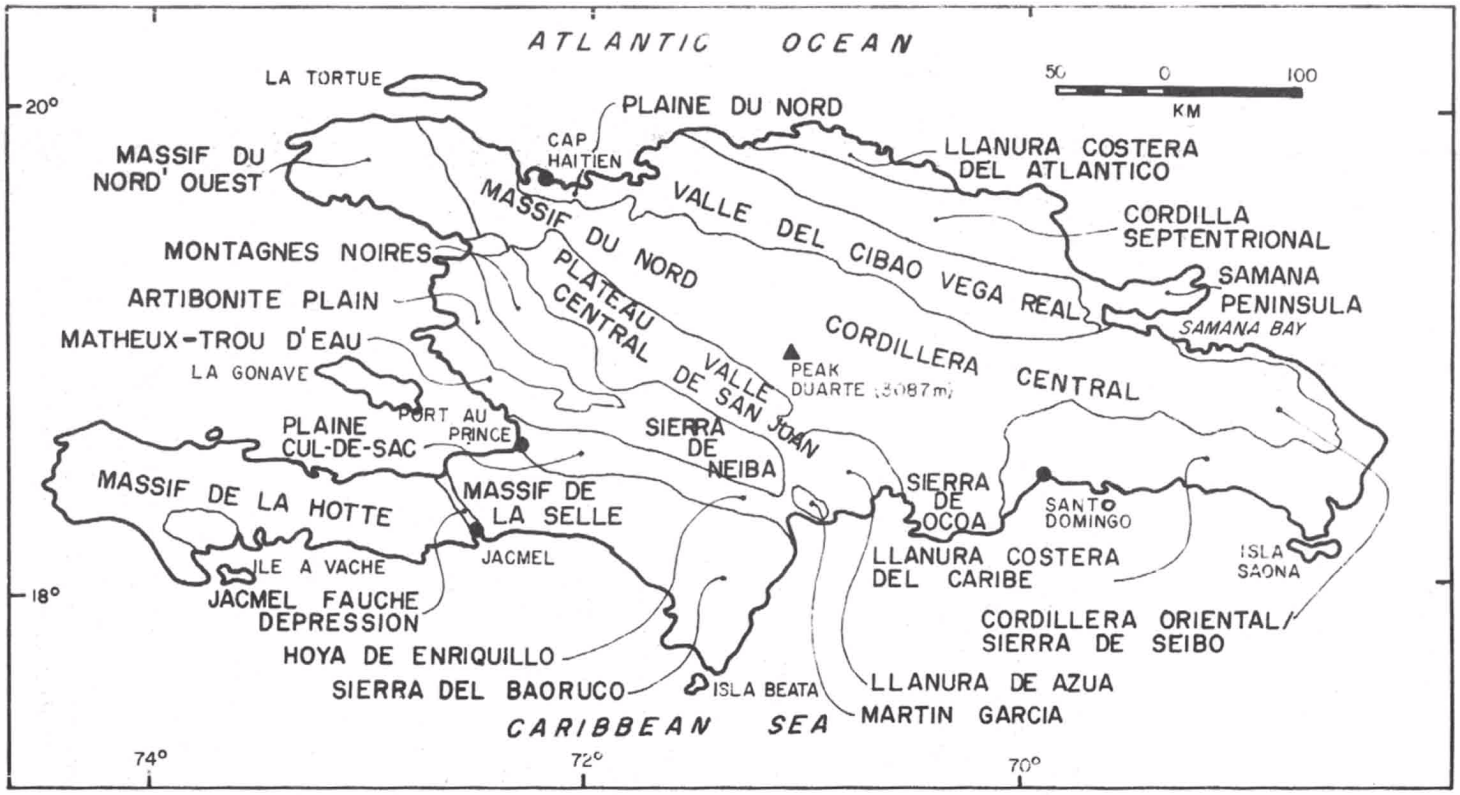
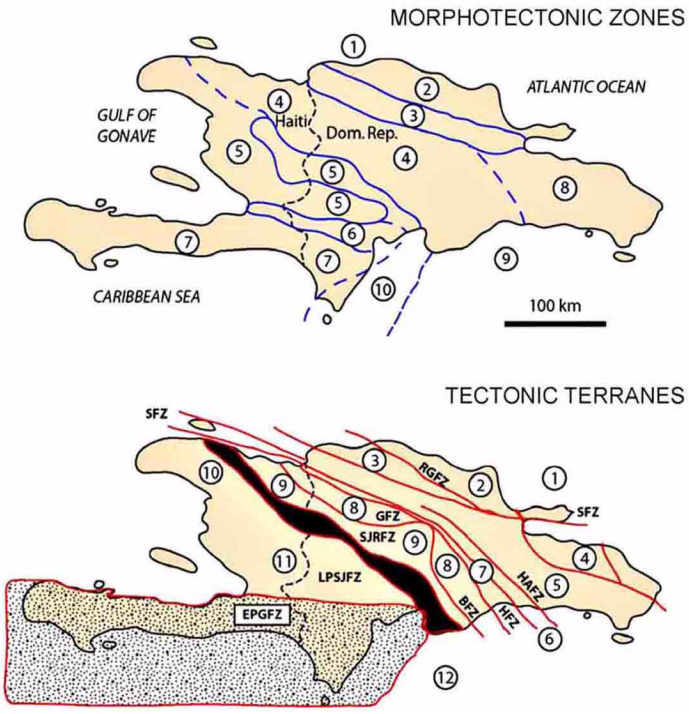
Figure 2.5.1-304 Physiographic Provinces of Hispaniola



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 peninsula

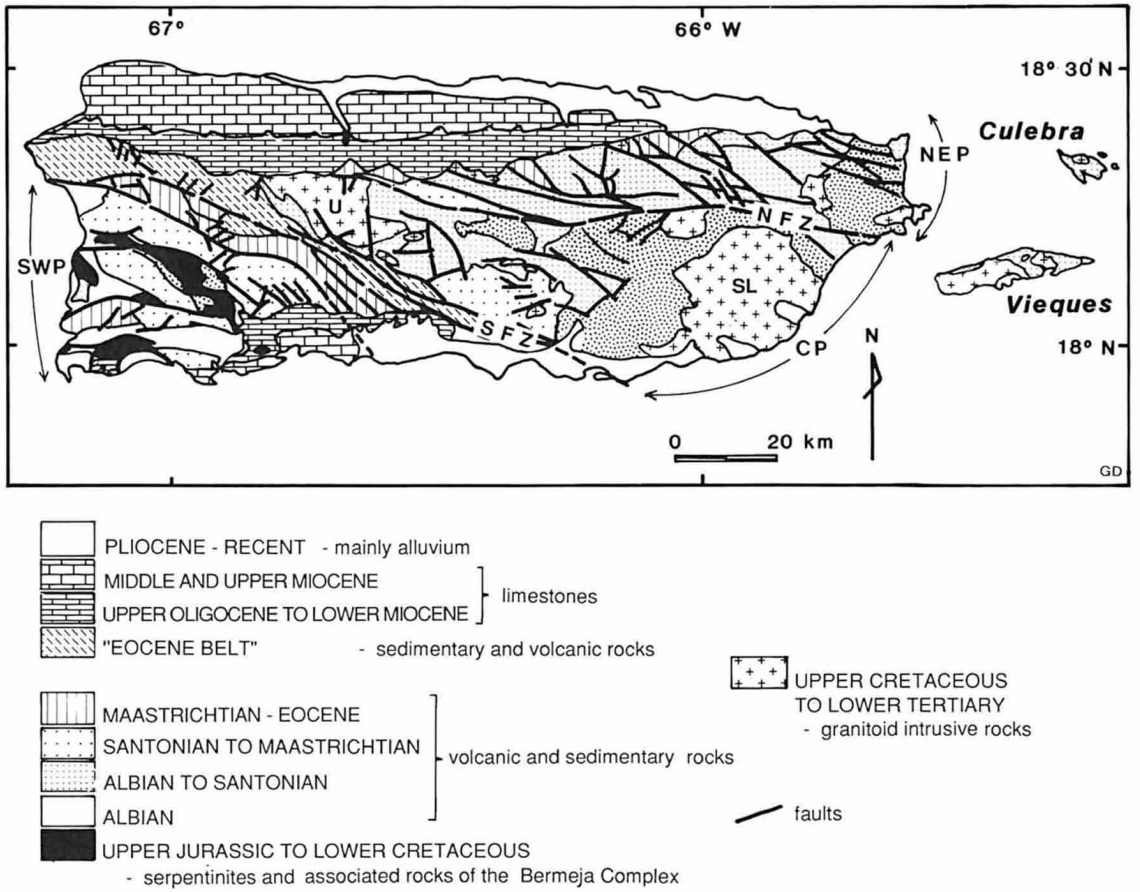
Tectonic terranes (zones) of Hispaniola

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

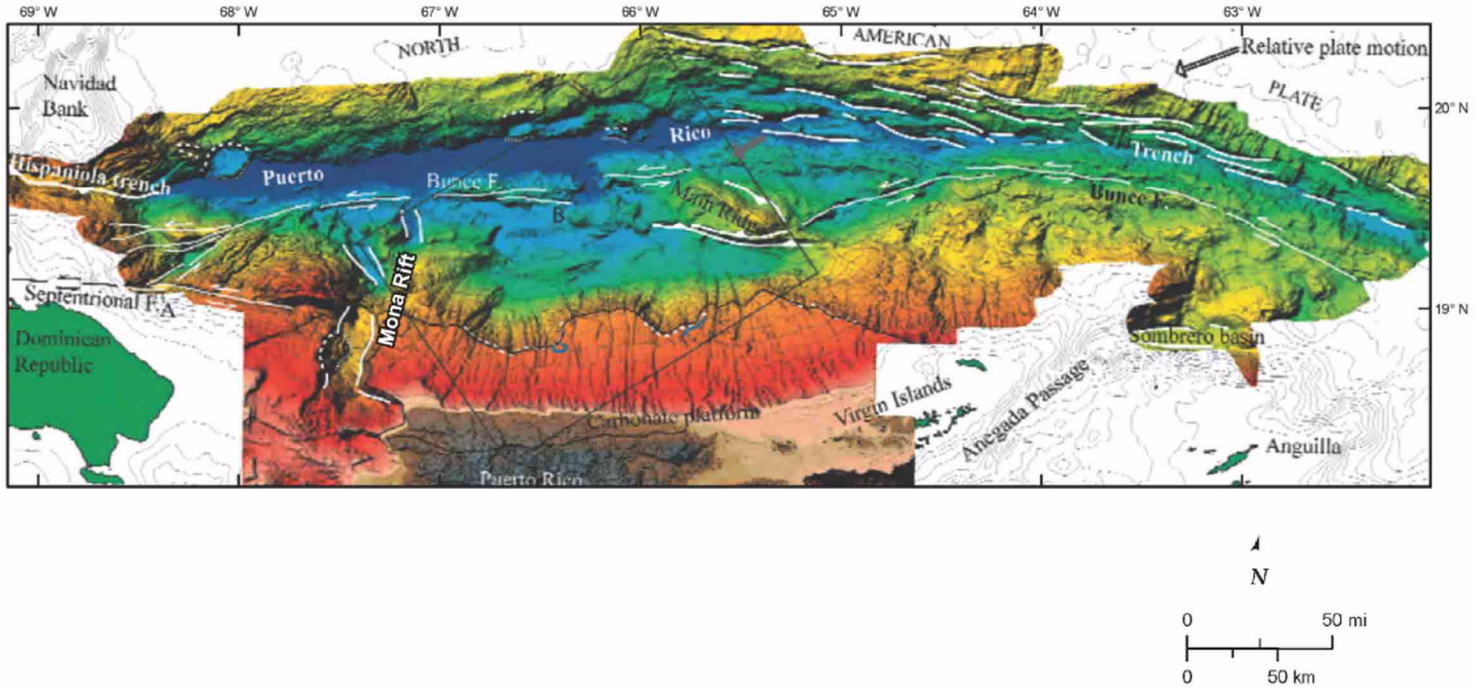
Figure 2.5.1-307 Simplified Geologic Map of Puerto Rico and the Islands of Vieques and Culebra



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.

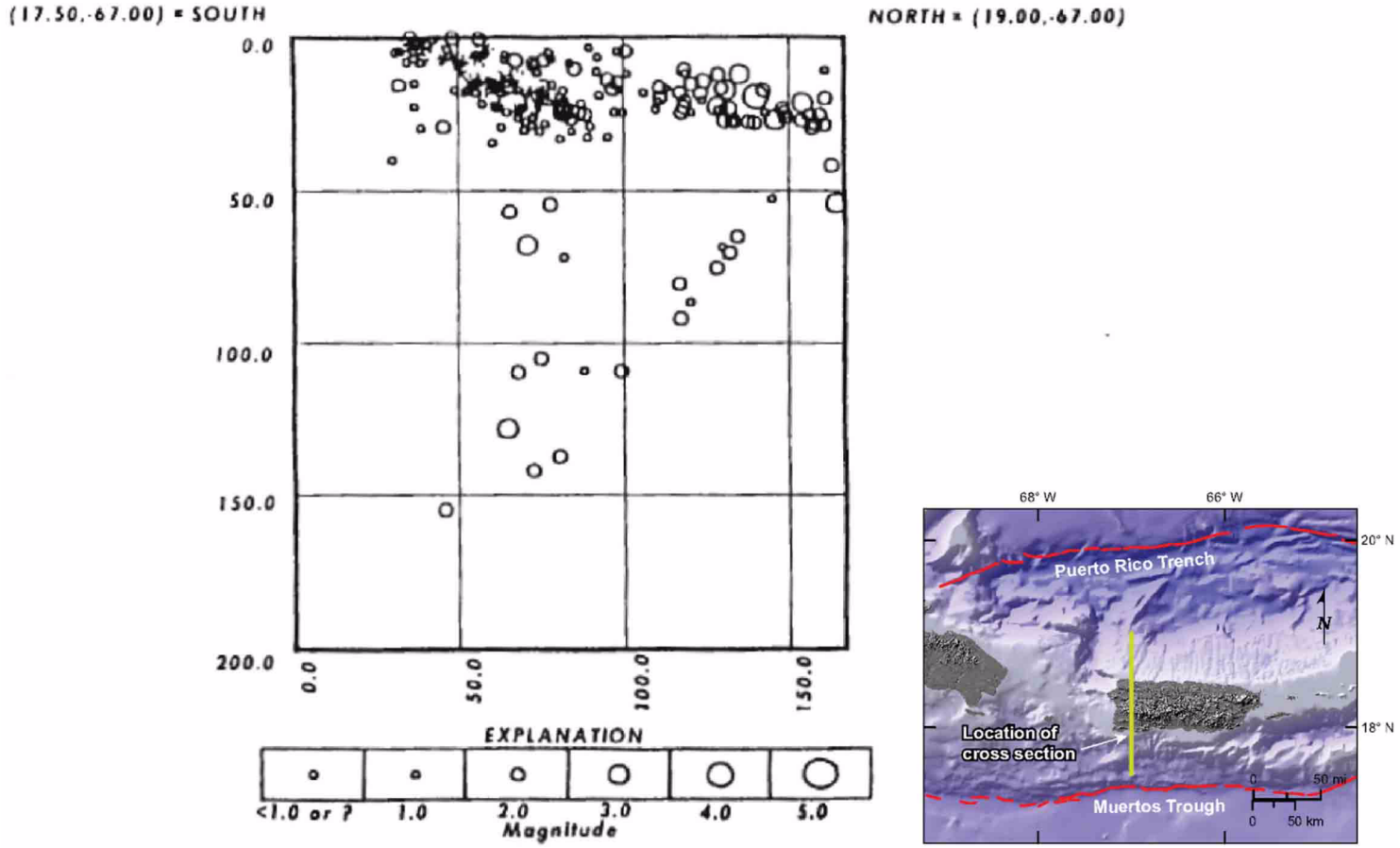
Source: Reference 217

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



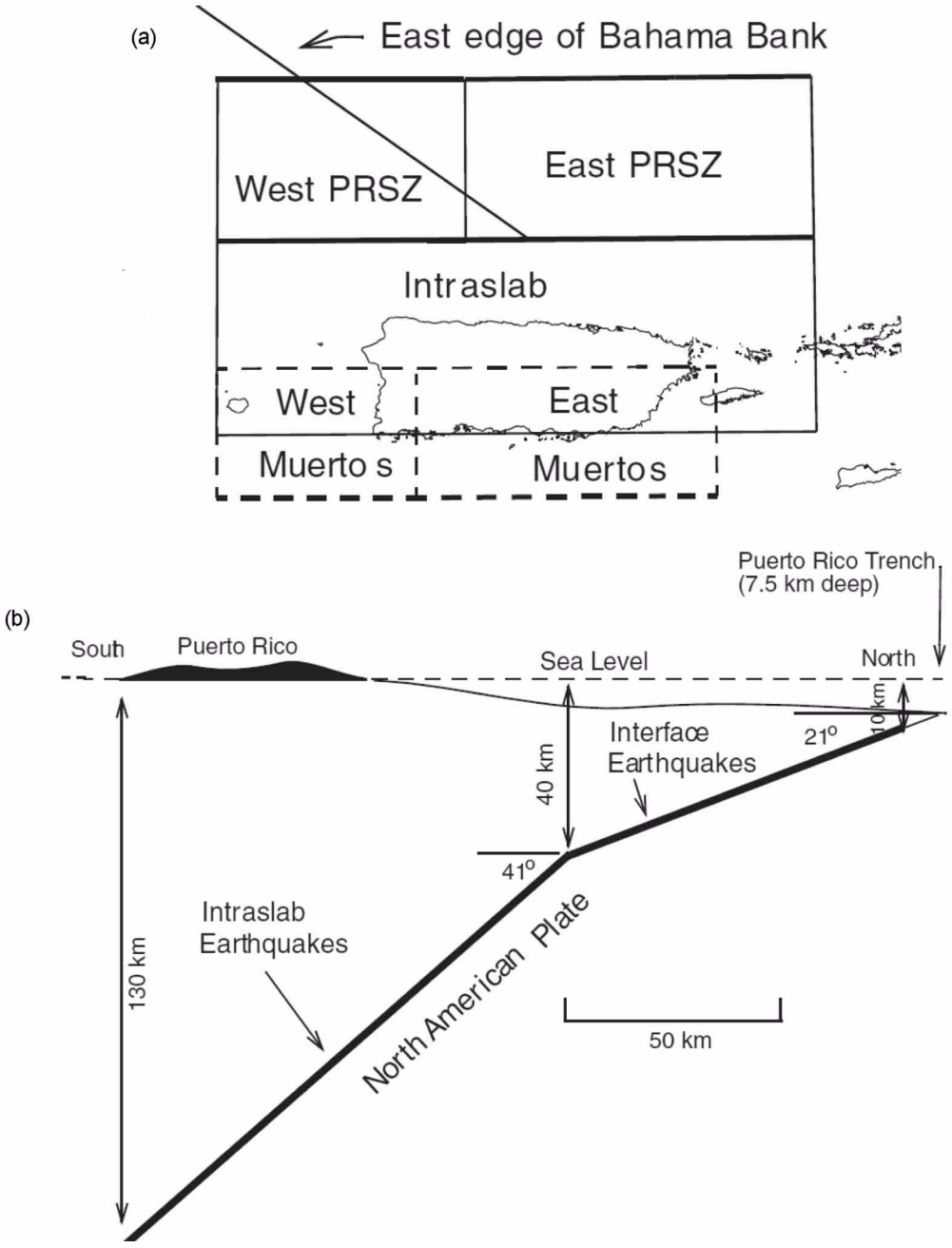
Note: Colors indicate shallow (red) to deep (blue) bathymetry.
Source: Reference 581

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



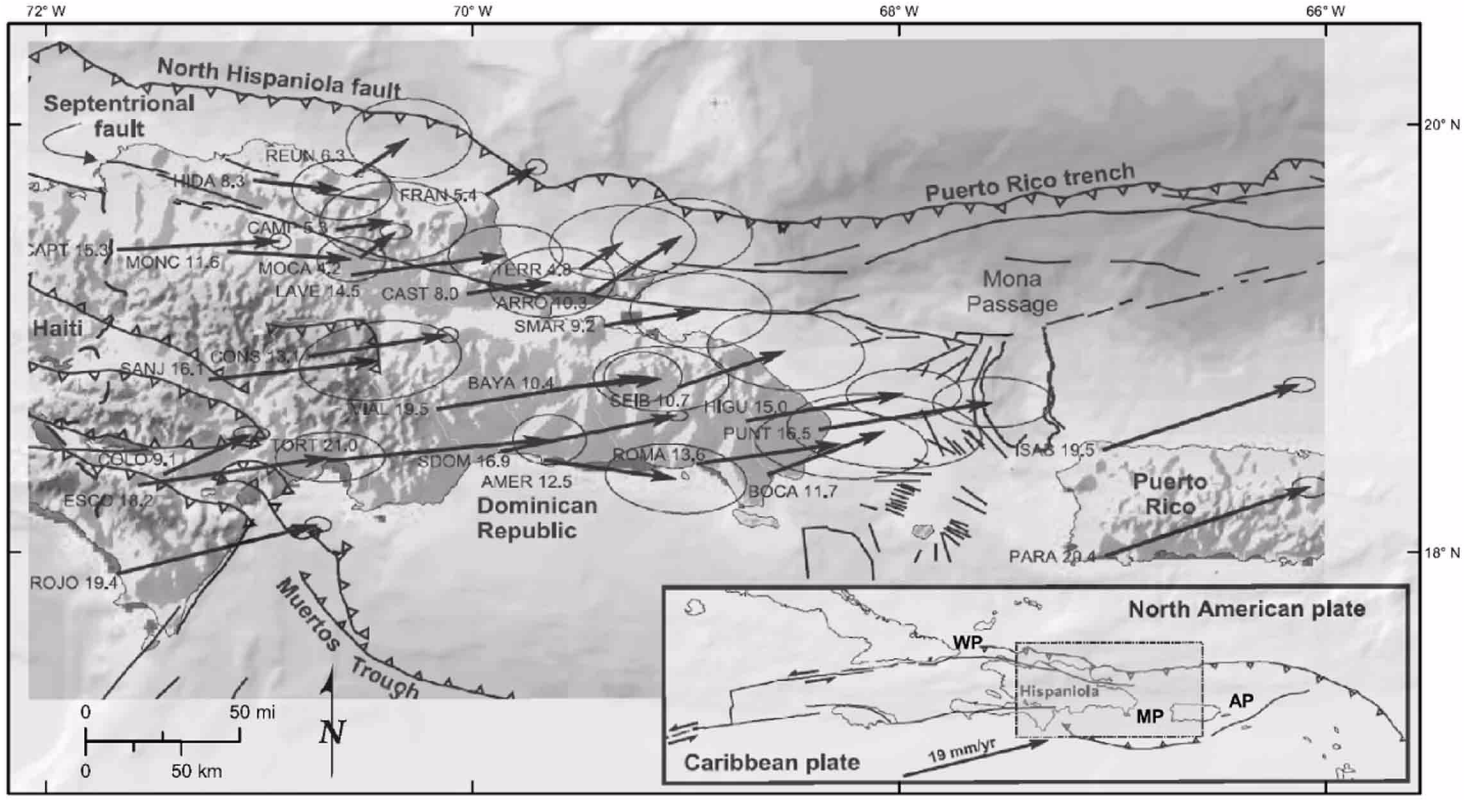
Source: Reference 777

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



Source: Reference 577

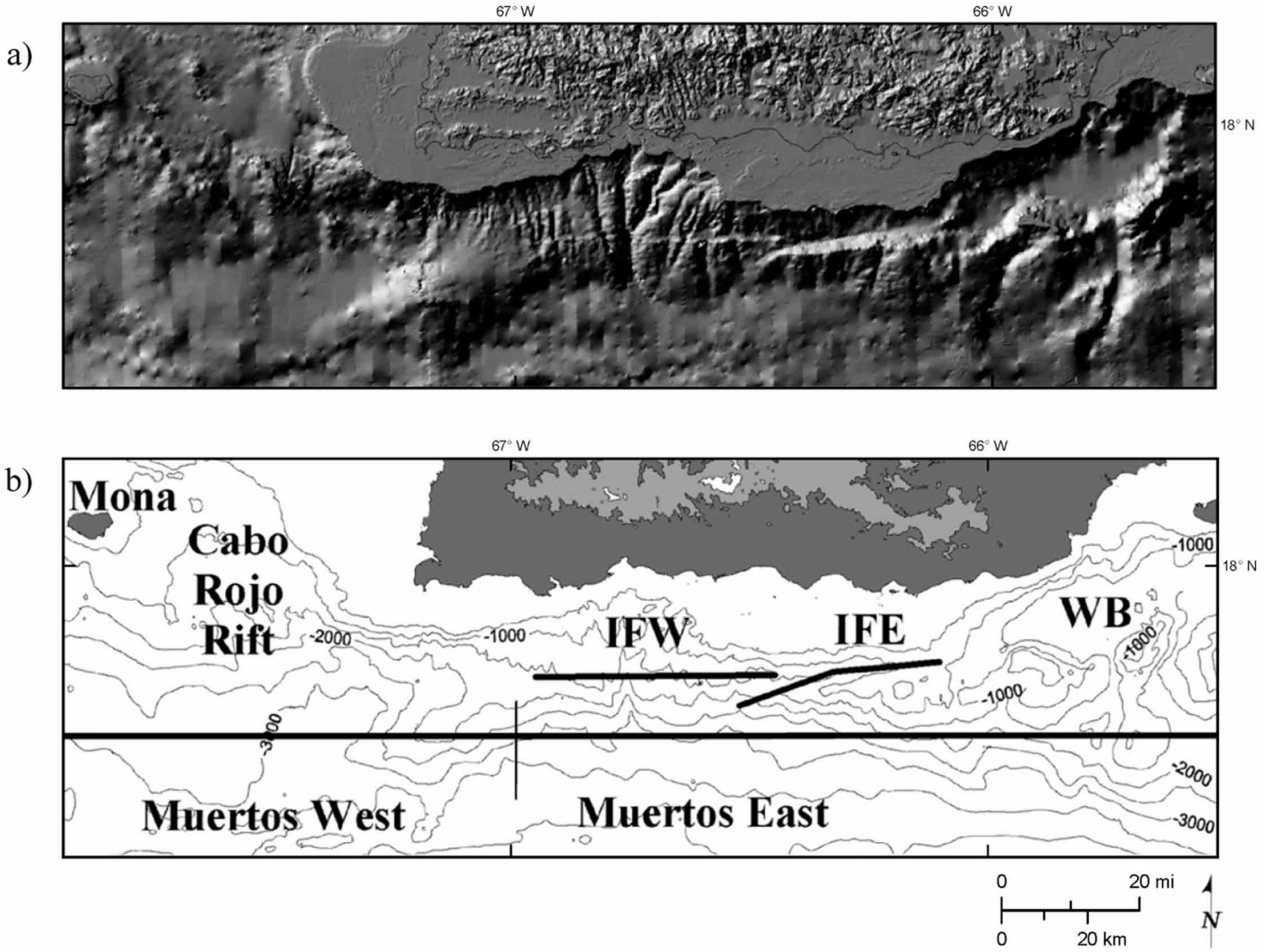
Figure 2.5.1-311 GPS-Derived Velocities in the Dominican Republic and Western Puerto Rico with Respect to the North American Plate



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

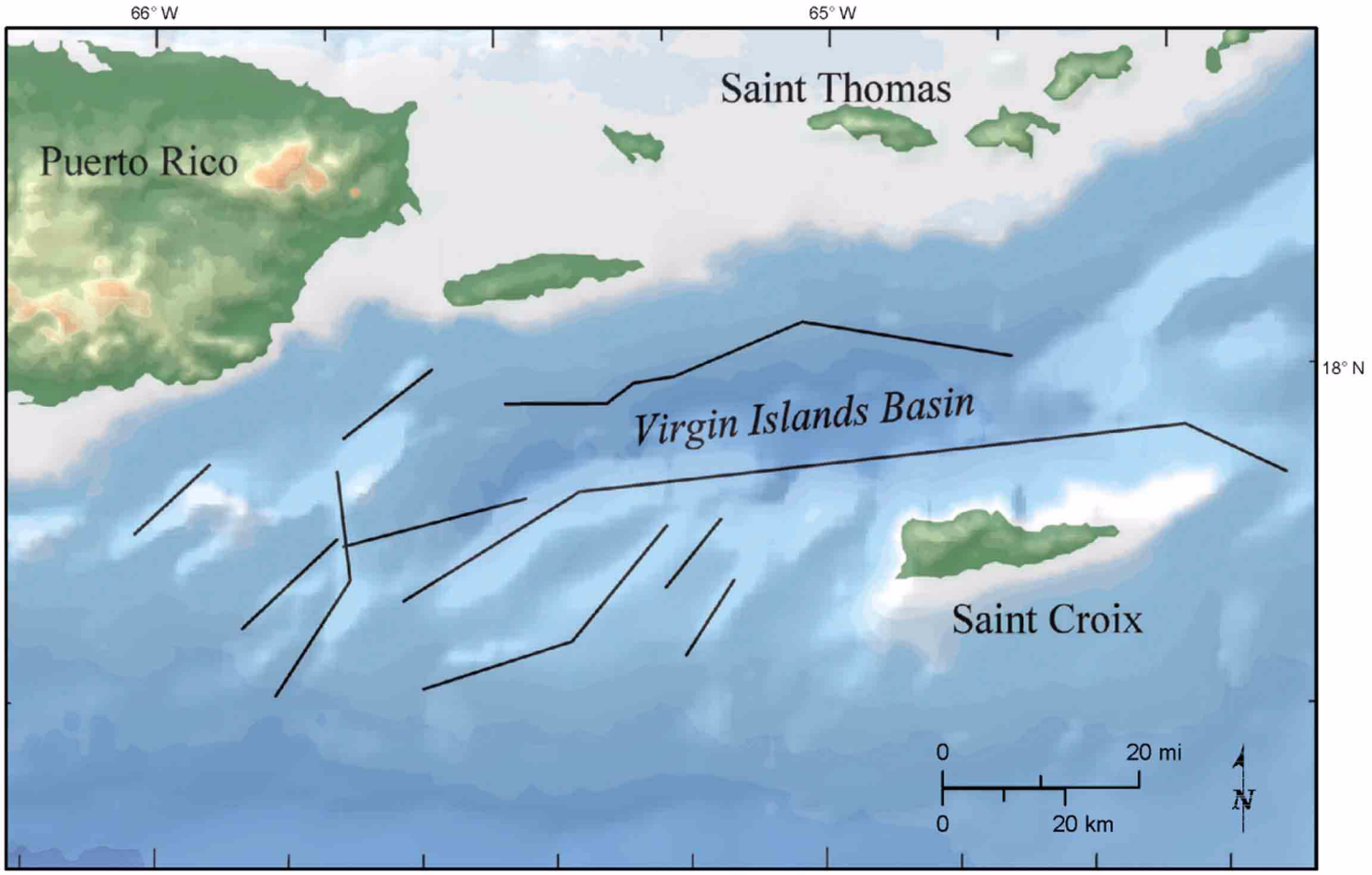
Source: Reference 358

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



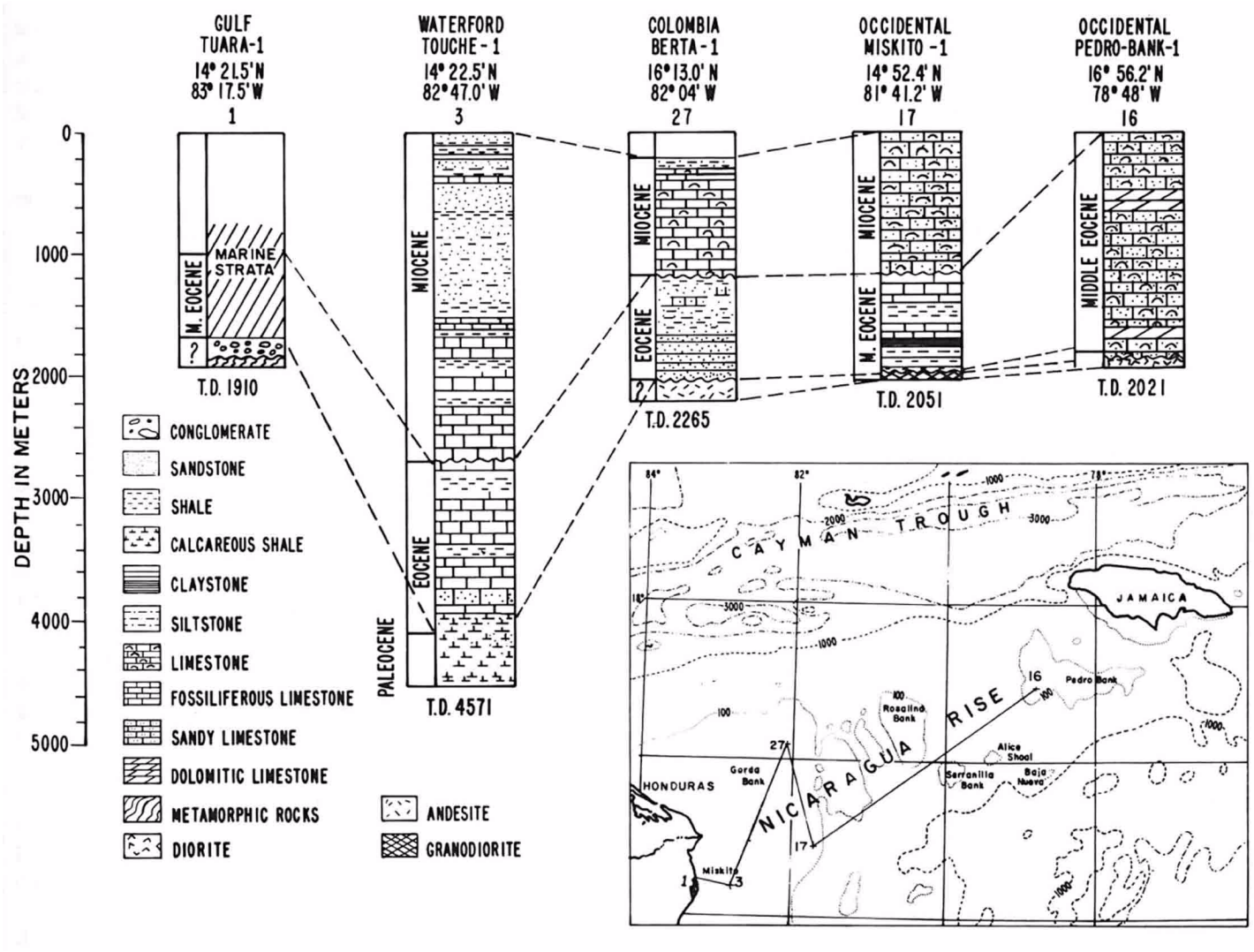
Notes:
(a) Topographic and bathymetric relief
(b) IFW = Investigator fault, west; IFE = Investigator fault, east; WB = Whiting Basin; Muertos West and East correlate with Figure 2.5.2-310
Source: Reference 577

Figure 2.5.1-313 Faults in the Anegada Passage



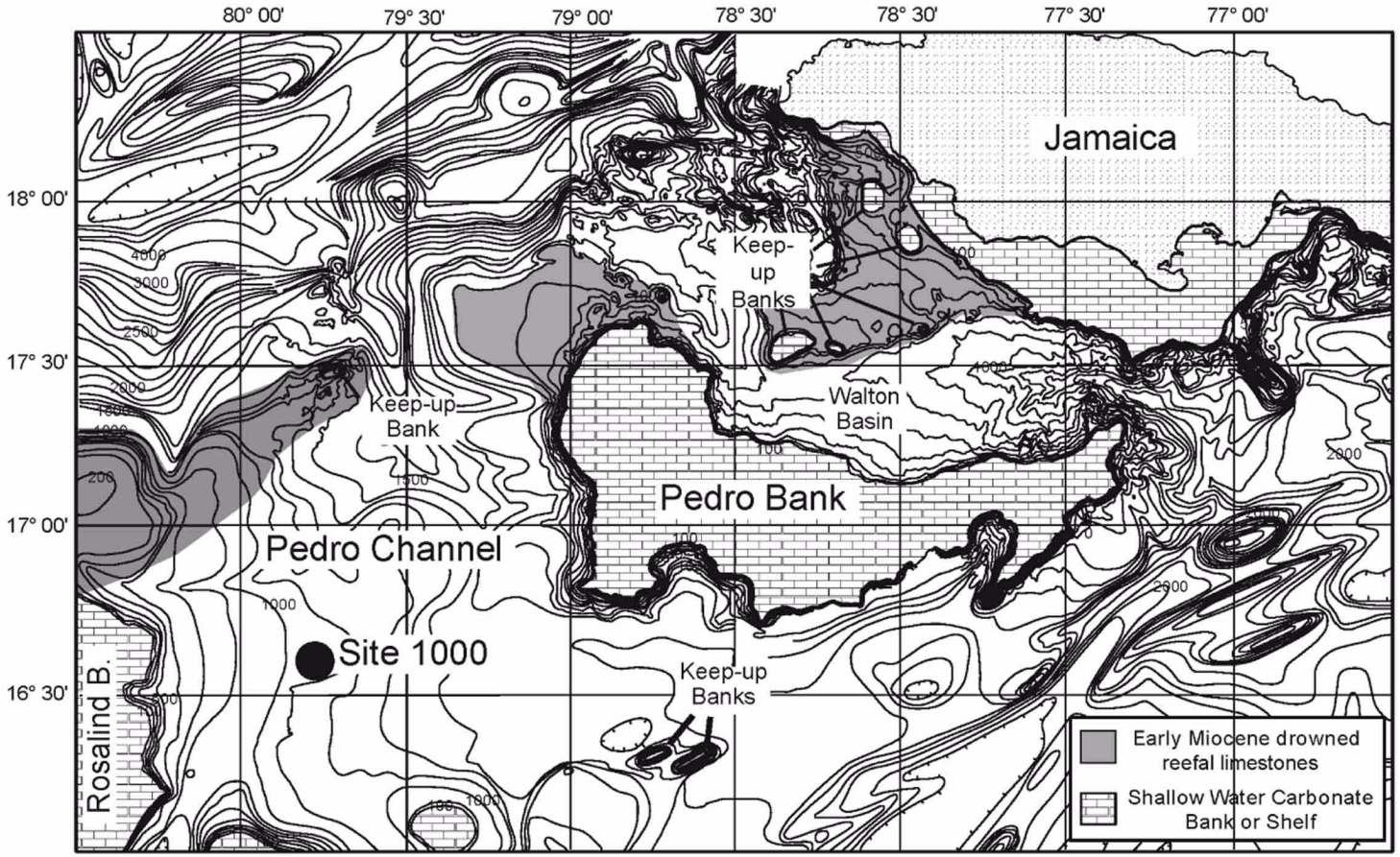
Source: Reference 577

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



Source: Reference 526

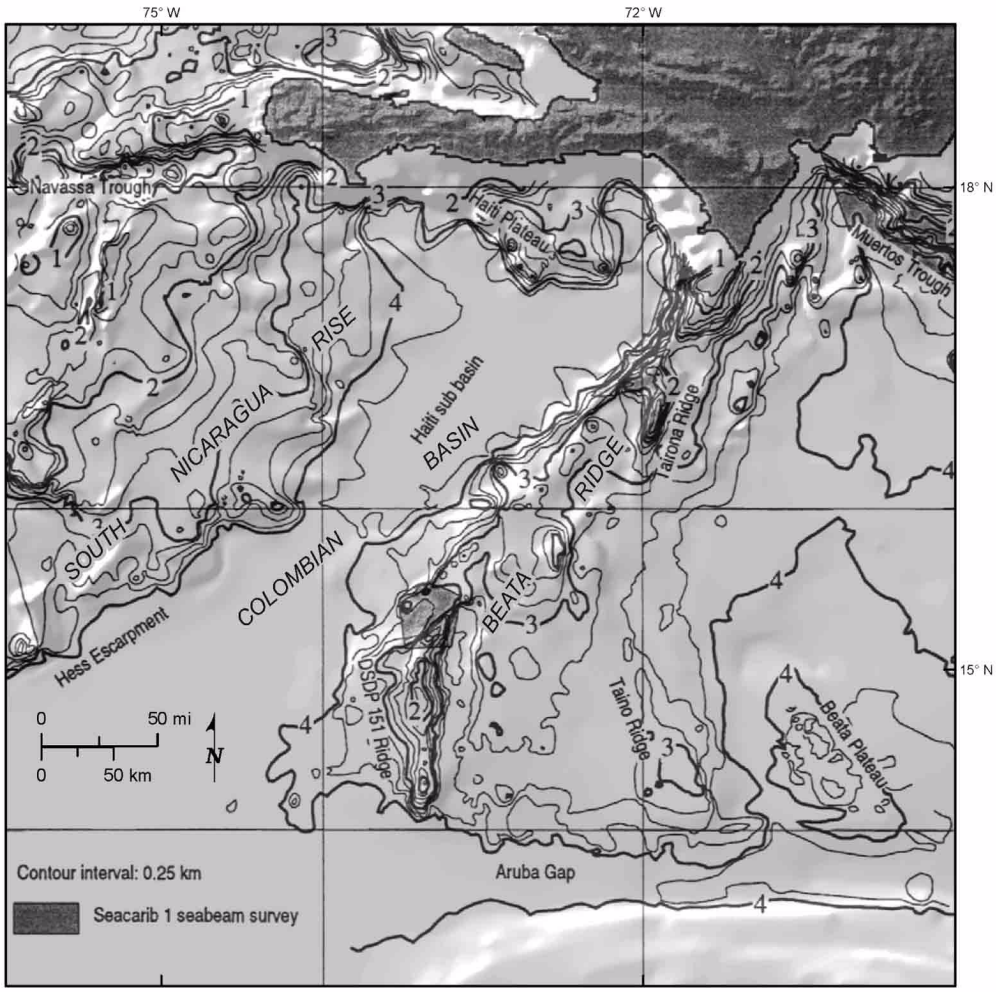
Figure 2.5.1-315 Modern Physiography of the Northern Nicaraguan Rise



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.

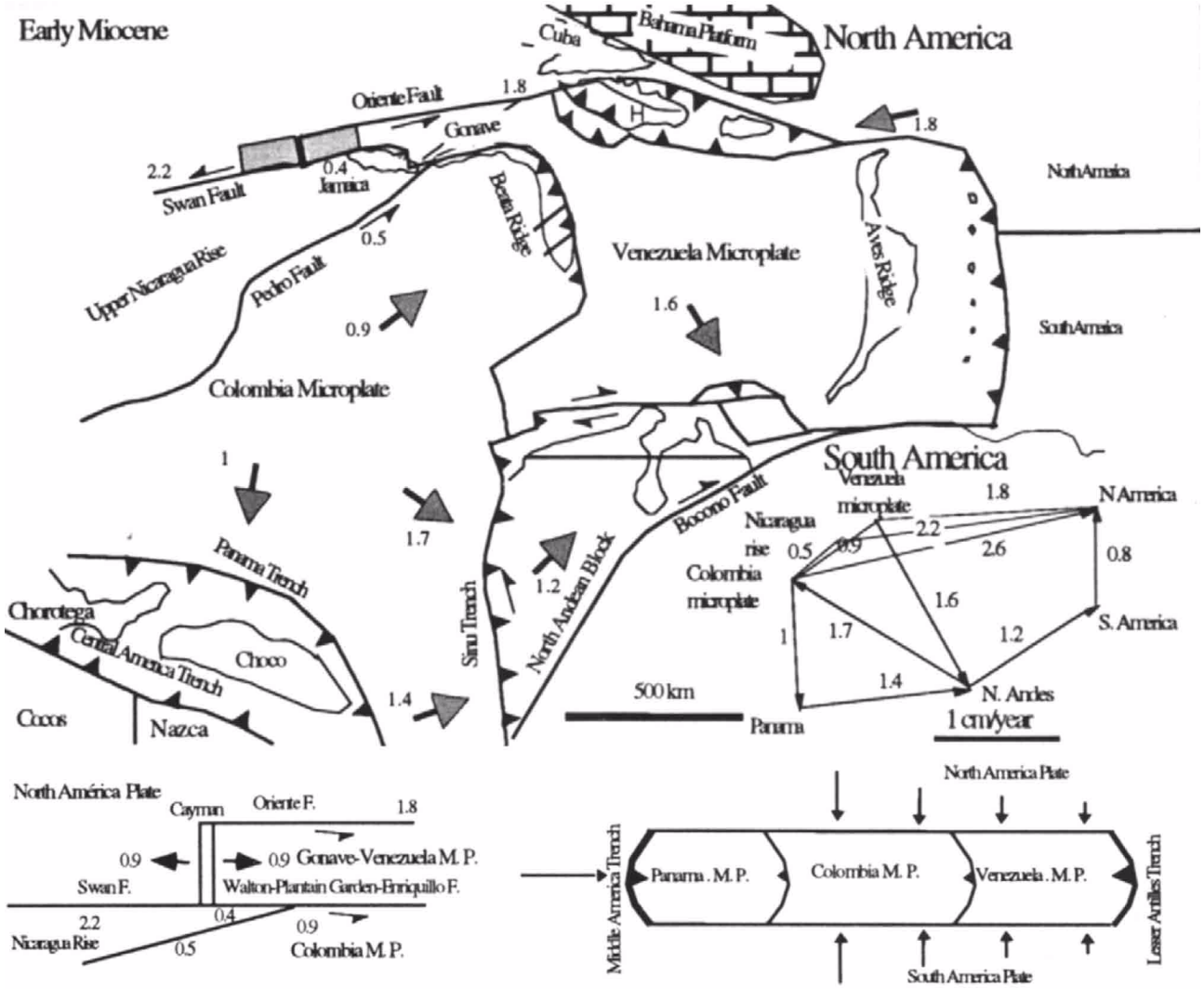
Source: Reference 302

Figure 2.5.1-316 Beata Ridge Bathymetry



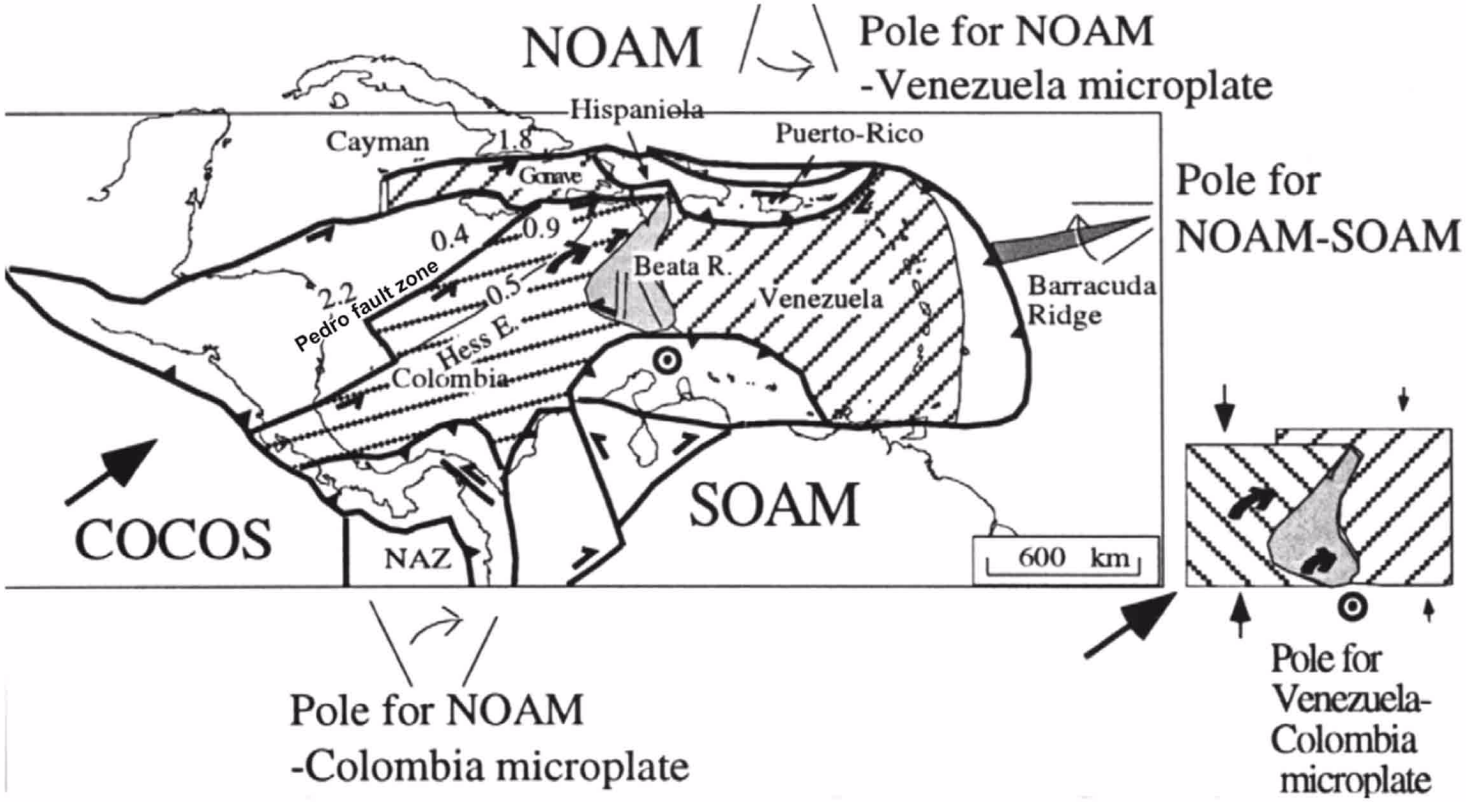
Source: Reference 778

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



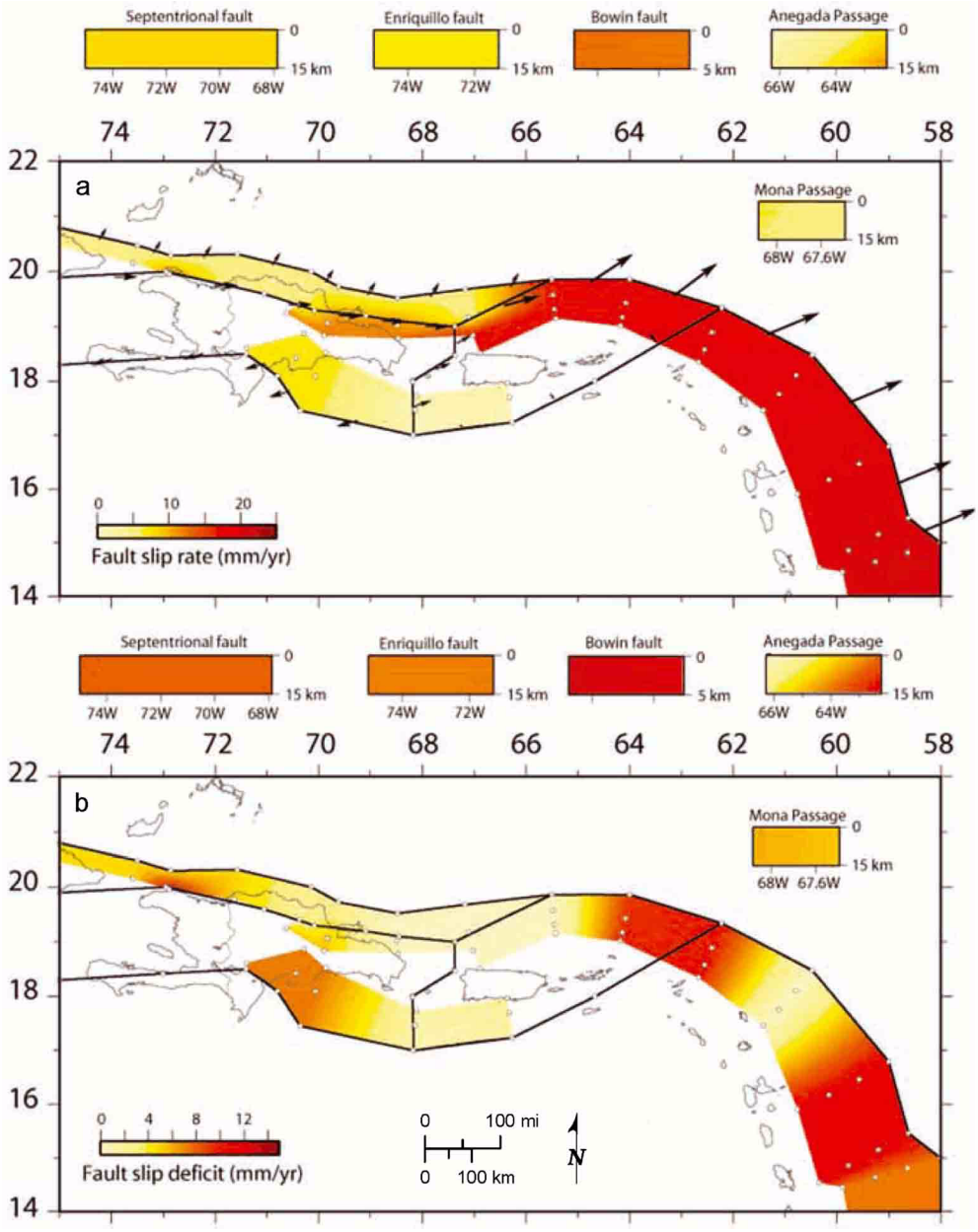
Notes: M.P. = Microplate, F. = Fault
Source: Reference 778

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



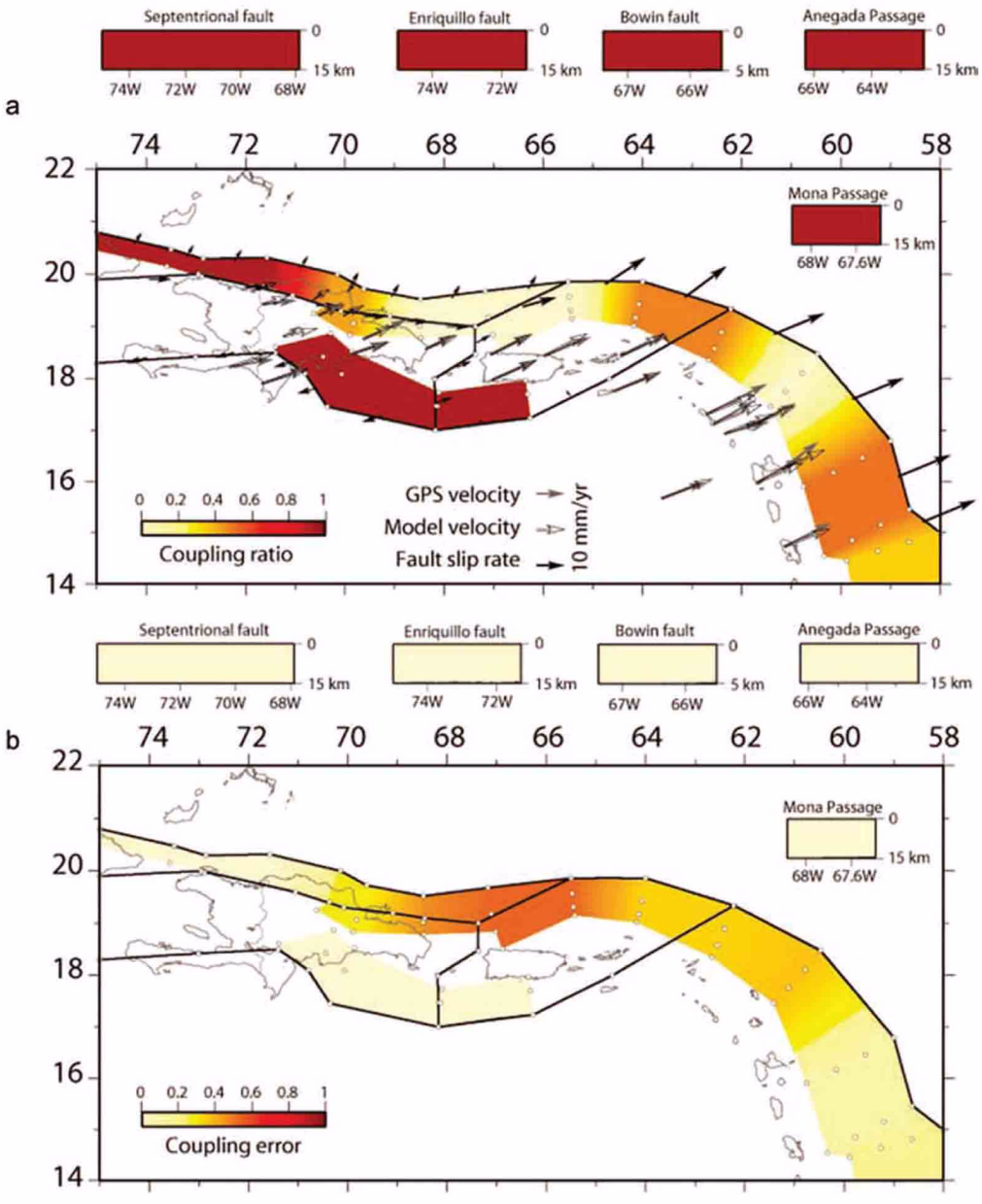
Notes: NOAM = North America, SOAM = South America
Source: Reference 778

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

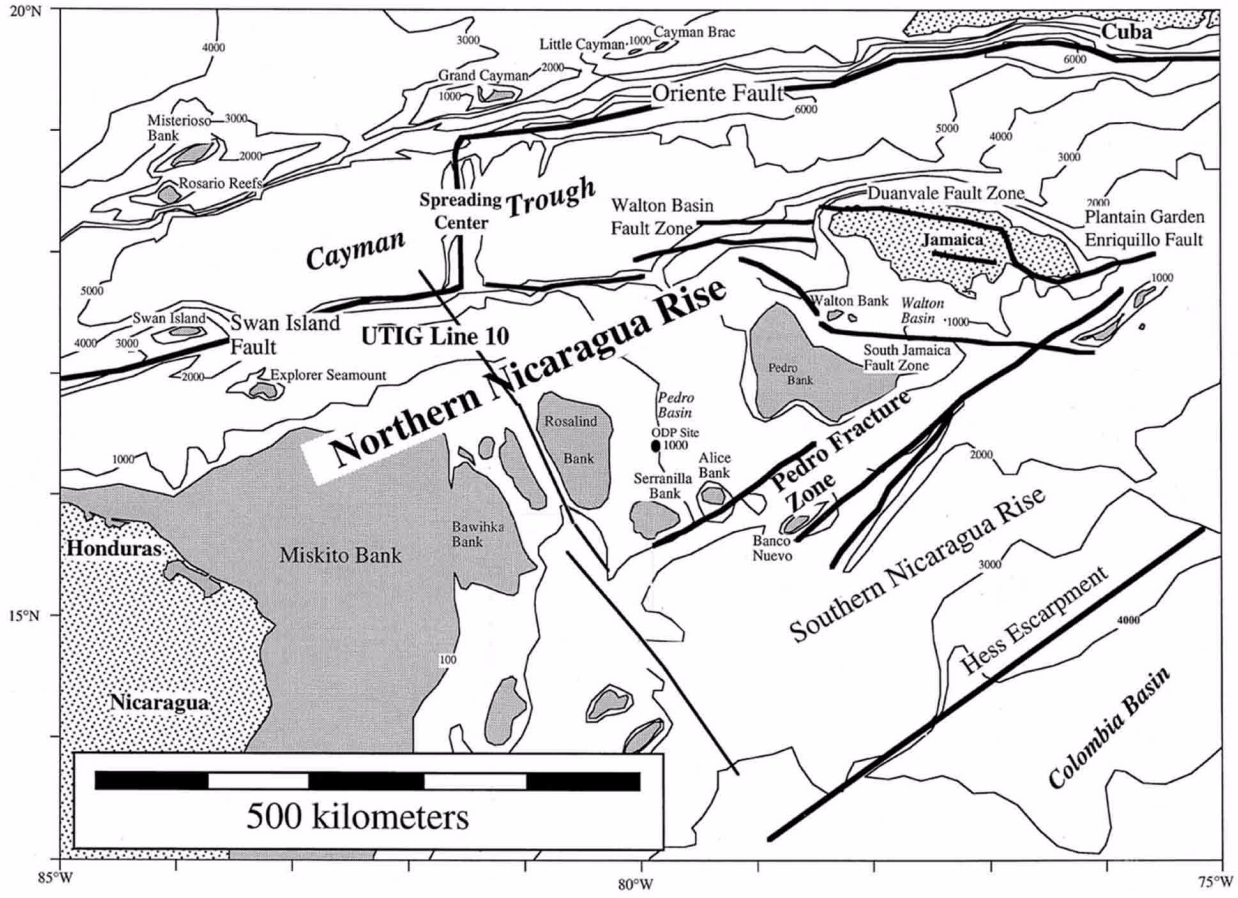
Figure 2.5.1-318 Results of GPS-based Plate Coupling Studies (Sheet 2 of 2)



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

Source: Reference 643

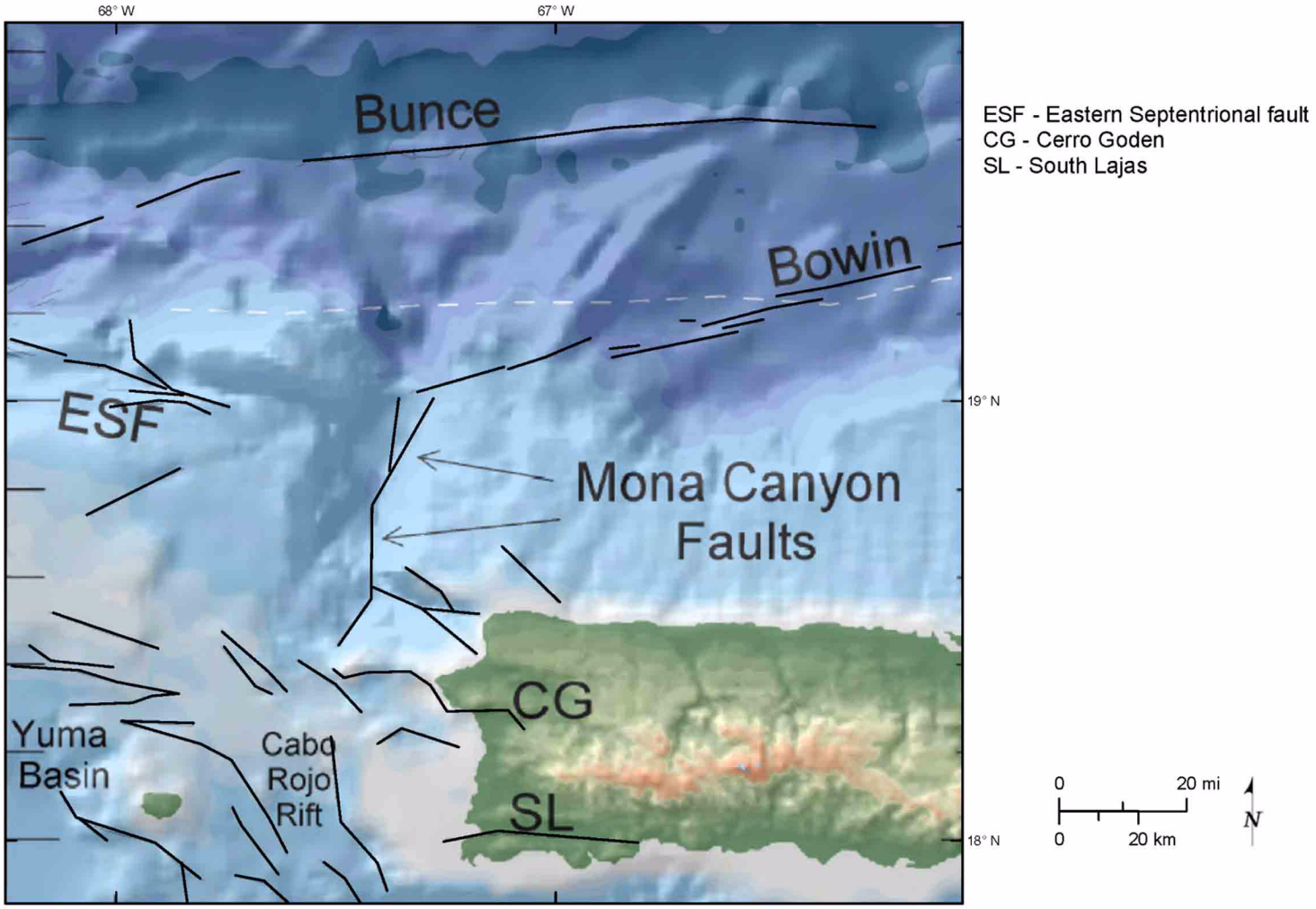
Figure 2.5.1-319 Northern and Southern Nicaragua Rise in the Caribbean Sea



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.

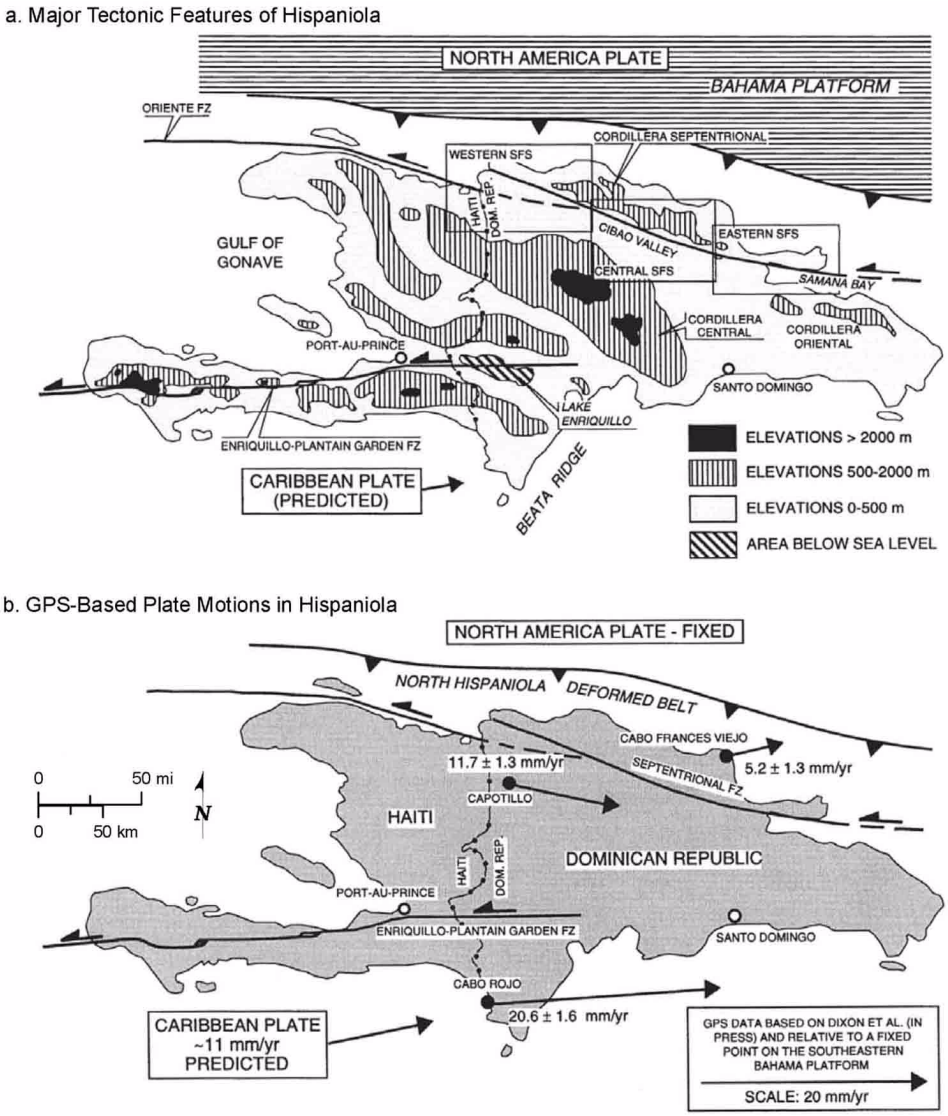
Modified from: Reference 602

Figure 2.5.1-320 Modeled Seismogenic Faults near Western Puerto Rico



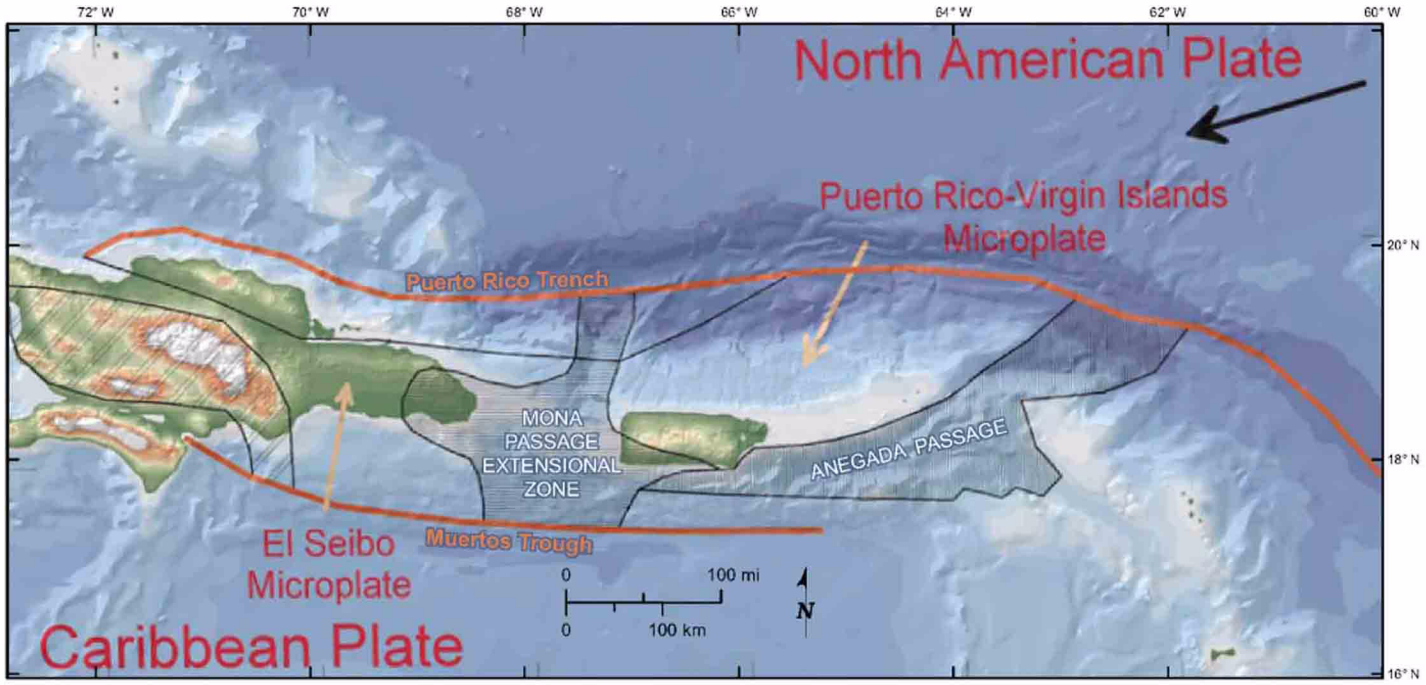
Source: Reference 577

Figure 2.5.1-321 Maps showing Major Tectonic Features and GPS-based Plate Motions of Hispaniola



Source: Reference 779

Figure 2.5.1-322 Regional Tectonic Map of Hispaniola and Puerto Rico



Note: Stippled regions are extensional zones. Black arrow in upper right shows relative North America-Caribbean Plate motion.

Source: Reference 577