Seismic Stratigraphy of the Morant Basin, Jamaica Passage

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On January 12th, 2010, a massive earthquake with a magnitude of 7.0 devastated Haiti, killing hundreds of thousands of people. On August 14th, 2021, a slightly larger earthquake with a magnitude of 7.2 hit the country, causing thousands of injuries and destroying countless homes. The fact that two large earthquakes could occur only eleven years apart from each other is proof of the Caribbean plate's active tectonics and high seismic potential. The northern part of the plate has multiple faults (most of which are strike slip), basins, and other features. Between Jamaica and Haiti lies the Jamaica Passage's cut by the Enriquillo-Plantain Garden Fault (EPGF), the source of the Haiti earthquakes. A seismic cruise in 2022 collected multichannel seismic lines and cores. Using the software *Kingdom Suite*, I mapped the seismic stratigraphy within the Morant Basin. We observed prominent fault scarps consistent with large earthquakes on the submerged EPGF. While the EPGF is primarily strike-slip, the existence of the Morant Basin showed it also had an earlier period of extension. In addition to the regional tectonics, additional localized deformation is associated with minor bends in the fault.