Shelf morphology and geology are also affected by local faulting, folding, and uplift. The shelf in the Offshore of Aptos map area is very gently dipping (about 0.1° to 0.4°) continental shelf, extending from the most seaward extent of the Monterey Bay Fault Zone and the Onshore of Aptos map area to the west and north. The shelf in this area is underlain by Tertiary rocks and basement rock exposures, with a prominent sandy succession of Pleistocene age. The Pleistocene succession has been uplifted deforming the Monterey Sandstone. The Santa Cruz Island Fault Zone is located on the seaward side of the map area and exhibits evidence of late Pleistocene to Recent vertical and rotational movement and possibly reactivation during the Holocene. Landslide deposits (Holocene and Pleistocene) are distributed on the western side of the offshore map area, north of the Monterey Bay Fault Zone. The offshore map area is located between the Monterey Bay Fault Zone and the diffuse zone of faults in the Offshore of Aptos map area, and deformation in both areas is inferred to be controlled by these faults. The Monterey Bay Fault Zone is segmented by local faults and is shown on the map with a stippled pattern. These local faults could be responsible for deformation of the offshore map area and could link the Monterey Bay Fault Zone with the Offshore of Aptos map area.

Of most concern in the offshore map area are submarine landslides, which range in age from late Quaternary to Holocene. The late Pleistocene submarine landslides have the potential to act as sources for debris flows. The Holocene submarine landslides have the potential to generate debris flows. At least 13 submarine landslides of Quaternary age can be inferred on the shelf in this offshore map area.

Inferred to be coarse sand and gravel in low-relief scours—Semiconsolidated, moderately- to poorly-sorted materials deposited by fluvial lithofacies of Aromas Sand (Pleistocene) are shown in Figure 1. Alluvial fan deposits (Holocene) are shown in Figure 1 and 2. Submerged wave-cut platform risers, base about 120 to 125 m deep (late Pleistocene) show a section of the submarine topography of the offshore map area. Approximate modern shoreline is shown in Figure 3. Dashed where location is approximate or inferred, dotted where location is concealed. Approximate mid-shelf mud belt (Holocene to late Pleistocene). Local occurrence of mid-shelf mud belt in this offshore map area has been attributed to deposition by local rivers, possibly the San Lorenzo River, Pajaro River, and smaller coastal watersheds.

Landslide deposits (Holocene and Pleistocene) are shown in Figure 3. Inferred to be sand and gravel; may be locally calcareous and bituminous; base of section has local pebble conglomerate. Other possible units are inferred to be sand and gravel, but have not been mapped with any degree of certainty. The shelf in the Offshore of Aptos map area is underlain by Tertiary rocks and basement rock exposures, with a prominent sandy succession of Pleistocene age. The Pleistocene succession has been uplifted deforming the Monterey Sandstone. The Santa Cruz Island Fault Zone is located on the seaward side of the map area and exhibits evidence of late Pleistocene to Recent vertical and rotational movement and possibly reactivation during the Holocene. The offshore map area is located between the Monterey Bay Fault Zone and the diffuse zone of faults in the Offshore of Aptos map area, and deformation in both areas is inferred to be controlled by these faults. The Monterey Bay Fault Zone is segmented by local faults and is shown on the map with a stippled pattern. These local faults could be responsible for deformation of the offshore map area and could link the Monterey Bay Fault Zone with the Offshore of Aptos map area. Of most concern in the offshore map area are submarine landslides, which range in age from late Pleistocene to Holocene. The late Pleistocene submarine landslides have the potential to act as sources for debris flows. The Holocene submarine landslides have the potential to generate debris flows. At least 13 submarine landslides of Quaternary age can be inferred on the shelf in this offshore map area.