Abstract:

Colonies of the Hawaiian gold coral *Gerardia* sp. (n = 48) were measured, marked and then revisited 1 to 9 yr later to look for evidence of linear growth. The video images showed no change in the proportional size of the coral colonies relative to the marker pots left on the bottom and no change in the pattern of distal branches. Few of the measured delta values exceeded the error of our measurement technique, and the detected change in the sample was statistically indistinguishable from zero. Even though the temperature cycle in the coral beds appears seasonal, these observations indicate that gold coral growth is much slower than growth estimates derived from basal stem ring counts treated as annuli. The period of study was too short to effectively evaluate the validity of life span estimates from radiocarbon studies. The variability in radiocarbon data was assessed with broad sampling (n = 23) across study sites to reveal a mean life span of 950 yr with an overall radial growth of ~41 μm yr–1. Based on the calculation of a gross radiocarbon linear growth rate of 2.2 ± 0.2 mm yr–1, the sample colonies marked in the field would have grown ~1.8 cm during the study period.