

**Table 6. Data and Assumptions Used to Infer Youngest Possible Age of Upper-Slope Terrace**

Material dated	Dates (ka)	Geologic age	Coral depths (m) <sup>†</sup>	Thickness in outlier reef (m)	Maximum highstand (m) <sup>‡</sup>	Authors
<i>A. palmata</i> , <i>C. natans</i>	8.9- 6.9	Holocene	-12.3 to -8.9	3.4	0	Toscano and Lundberg, 1998
1 <i>A. palmata</i> , 1 <i>C. natans</i> , 8 <i>M. annularis</i>	84.5- 80.9	5a <sup>‡</sup>	-24.0 to -12.3	11.7	-9	Ludwig et al., 1996; Toscano and Lundberg, 1999
3 <i>M. annularis</i> , 1 <i>A. palmata</i>	94.4- 90.6	5b <sup>‡</sup>	-19.8 to -15.5	4.3	-14 to -10	Toscano and Lundberg, 1999
<i>M. annularis</i>	106.5	5c <sup>‡</sup>	-21.7	?	-15	Toscano and Lundberg, 1999
<i>M. annularis</i>	128.1-112.4	5e <sup>‡</sup>	-36.6 to -15.9		~ +10.6	Multer et al., 2002
<i>M. annularis</i> , top of Q5 Unit	~125	5e <sup>‡</sup>	~ +5.5		~ +10.6	Hoffmeister and Multer, 1968; Perkins, 1977; Halley and Evans, 1983
(highstand)	140		not identified in Florida			Chappell, 1974
Marine Q4 Unit top	mid-Pleistocene		-5.0			Muhs, 2002; Muhs et al., 2004
(highstand)	185		not identified in Florida			Chappell, 1974
(highstand)	220		?			Chappell, 1974
Marine Q3 Unit top	~366.8		-8.0			Multer et al., 2002; Muhs et al., 2004
Marine Q2 Unit top	>324		-37.5			Perkins, 1977

Notes: Coral dates and depths of Toscano (1996) and Toscano and Lundberg (1998, 1999) are from the largest Sand Key outlier reef. Coral dates of other authors are from elsewhere in the Florida Keys.

<sup>†</sup>Depths relative to present sea level. Depths of Q2-Q4 unconformities from Big Pine Key core 56 of Perkins (1977). Elevation for top of Q5 Unit is the highest elevation in the keys (at Windley Key; Stanley, 1966; Lidz and Shinn, 1991).

<sup>‡</sup>Substages of marine oxygen-isotope Stage 5.

#### Data:

- Upper-slope terrace on which the outlier reefs grew is 30-40 m below present sea level.
- Largest Sand Key outlier reef is ~28 to 30 m (mean 29 m) in seismic relief.
- The oldest corals dated (106.5 ka) are also the deepest (21.7 m below sea level) cored from the outlier reef, which leaves ~7.3 m of corals of unknown age at the base of the reef.
- The nearest subsurface data to the Sand Key Reef area come from a long core (core 56 at ~58.5 m) recovered from Big Pine Key (Perkins, 1977). Unconformities on top of the Q1 and Q2 Units in core 56 are found at respective depths of ~48.0 and 37.5 m below sea level. These depths are below elevation of the terrace.
- Six stands of Pleistocene sea level during the past 350 ka were high enough to have flooded the terrace and shelf (Imbrie et al., 1984).

#### Assumptions:

- The terrace under the outlier reefs pre-dates the reefs.
- The terrace is erosional and was formed during a falling sea level.
- Age of the bottom 7.3 m of the outlier reef is older than 106.5 ka.
- The closest possible time to 106.5 ka for older coral growth on the terrace is during the marine-isotope substage-5e highstand or during a slightly older time at ~127 ka as a rising sea level flooded the terrace during the isotope Stage-6/5 transition.
- Prior to 127 ka, the apex of the last stand of sea level to flood the terrace and shelf occurred at ~190 ka (Imbrie et al., 1984). The marine regression from that highstand reached terrace depths at ~190 ka, the most recent time possible that the terrace could have been formed. If this assumption is true, then the terrace is a regressional erosional feature.