

UNIVERSITY OF MIAMI RADIOCARBON DATES XI

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The following dates are a partial list of geologic samples dated since December 1976. The method used is described by (Stipp *et al.*, 1976). Ages were calculated using a half-life of 5568 years. Errors reported are one standard deviation and include only the counting errors on the unknown sample, background and modern standard. There have been no corrections made on these dates. Sample descriptions and comments were written, based on information supplied by the submitters.

SAMPLE DESCRIPTIONS

*A. United States***North Captiva Island Series**

Shell samples hand coll along E-W transect on North Captiva I., Florida (26° 32' to 36' N, 82° 10' to 15' W). Coll from ca 0.5m below island surface. Dated to establish method of barrier island formation. Coll and subm 1977 by T Missimer, Cape Coral, Florida and C Snively, Univ Miami.

UM-1069.	1a	104.0 ± 0.9% modern
UM-1070a.	1b	3825 ± 105
UM-1070b.	1b	2450 ± 80
Duplicate run of UM-1070a.		
UM-1071.	2	1400 ± 75
UM-1072.	3	1850 ± 75
UM-1073.	4	920 ± 85
UM-1074.	9	435 ± 65
UM-1075.	10	1730 ± 85

Everglades Tree Island series

Peat from piston core in Everglades tree-island, small *Persea* type, in Conservation Area I, Everglades, Florida (26° 26' 55" N, 80° 17' 10" W). Continuation of study on tree-island formation (R, 1976, v. 18, p 375; v 19, p 121-122). Coll and subm 1976 by D Piepgras.

General Comment (DP): this core was taken 9.6km N of Core 20 (R, 1976, v 19, p 121-122) on same island. Results support floating island theory and indicate that subsequent island growth is affected by Everglades drainage patterns (Davis, 1943). Core 20 showed no reversals.

UM-1106.	70cm	290 ± 80
Wood.		

UM-1107.	81 to 91cm	410 ± 70
UM-1108.	141 to 147cm	1300 ± 135
UM-1109.	150 to 156cm	1710 ± 110
UM-1110.	158 to 164cm	1260 ± 70
UM-1111.	175 to 181cm	1900 ± 85
UM-1112.	183 to 187cm	2620 ± 115
UM-1113.	189 to 195cm	1805 ± 60
UM-1114.	195 to 200cm	1850 ± 95
UM-1115.	200 to 206cm	2295 ± 60
UM-1116.	206 to 213cm	2330 ± 70
UM-1117.	213 to 219cm	2660 ± 80
UM-1118.	219 to 225cm	2420 ± 65
UM-1119.	225 to 231cm	2735 ± 75

Calcrete series

Calcrete, cryptocrystalline carbonate crusts, 2 to 2.5cm thick, resulting from soil-forming processes (Read, 1976), were sampled from Key Largo (25° 08' N, 80° 21' W) and Big Pine Key (24° 39' N, 81° 21' W), Florida. Crusts separated into laminae 1 to 4.5mm thick. Dated to show that crust forms by orderly deposition of CaCO₃ precipitate from overlying soil layer. Coll and subm 1977 by D Robbin, USGS, Fisher I. Sta, Miami Beach, Florida.

UM-1079.	Key Largo Crust Lamina 1 to 1.5mm.	400 ± 70
UM-1080.	Key Largo Crust Lamina 2 to 3mm.	1450 ± 65
UM-1081.	Key Largo Crust Lamina 2 to 4mm.	3100 ± 80
UM-1082.	Key Largo Crust Lamina 2 to 4mm.	4930 ± 115
UM-1083.	Key Largo Crust Grain stone underlying laminated crust.	18,190 ± 225
UM-1084.	Key Largo Crust Total thickness of laminae without grain stone.	1685 ± 80
UM-1076.	Big Pine Key Crust Lamina 2 to 4mm.	260 ± 70

UM-1077. Big Pine Key Crust **7890 ± 70**
Lamina 3 to 4mm.

UM-1078. Big Pine Key Crust **7900 ± 190**
Duplicate run of UM-1077.

South Florida coral reef series

Coral reef accumulation rates in S Florida were studied by dating coral samples (Shinn *et al.*, 1977) from cores taken from Bahia Honda Reef (24° 34' N, 81° 20' W), Carysfort Reef (25° 13' N, 80° 12' W), Long Reef (25° 27' N, 80° 07' W), and Pulaski Reef (24° 42' N, 82° 47' W). Samples were also obtained from dredge site near Bal Harbor (25° 54' N, 80° 06' W) and a sewer trench off Virginia Key (25° 44' N, 80° 07' W). Depths reported are from mean sea level. Coll and subm 1975 to 1976 by E Shinn, USGS, Fisher I. Sta, Miami Beach, Florida.

UM-998A. Bahia Honda #1 **6440 ± 100**
Montastrea, 12m.

UM-998. Bahia Honda **6170 ± 80**
Duplicate run of UM-998A.

UM-999. Bahia Honda #1 **7160 ± 85**
Montastrea, 13.4m.

UM-1000. Bahia Honda #1 **37,480**
+1300
-1500

Pleistocene coral, 17.1m.

UM-1001. Bahia Honda #2 **4735 ± 85**
Colpophyllia, 10.7m.

UM-1002. Carysfort Reef #1 **4570 ± 85**
Montastrea, 5.8m.

UM-1003. Carysfort Reef #1 **5250 ± 95**
Montastrea, 9.1m.

UM-1004. Long Reef **5630 ± 120**
Montastrea, 8.2m.

UM-1005. Bal Harbor **6300 ± 120**
Siderastrea, 16.1m.

UM-1006. Pulaski Reef **5865 ± 90**
Montastrea, 11.3m.

UM-1007. Pulaski Reef **6595 ± 115**
Montastrea, 13.4m.

UM-1008. Pulaski Reef	7165 ± 90
Diploria, 14.9m.	
UM-1014. Virginia Key	4930 ± 70
Montastrea Cavernosa, 9.8m.	

Aquifer Recharge series

Recharge source studies made for sandstone Tamiami Formation underlying Lee and Hendry Co, Florida. The sandstone aquifer is separated from water table aquifer of limestone Caloosahatchee Formation by impermeable green clay layer. Water samples coll from each aquifer encased wells over 42.6km extent. SrCO₃ was precipitated from water in field. Coll and subm 1977 by T O'Donnell, USGS, Ft Myers, Florida and D Gibbs, U Miami. *Comment* (TD): samples from sandstone aquifer coll in interval between casing depth and well depth. Water table aquifer samples coll at depths given.

UM-1057. He-529	14,500 ± 180
(26° 33' 10" N, 81° 25' 09" W). Casing depth: 41.15m. Well depth: 47.24m.	
UM-1058. He-554	108.3 ± 1.0% modern
(26° 33' 10" N, 81° 25' 09" W), 3.35m.	
UM-1059. L-2215	20,230 ± 280
(26° 31' 27" N, 81° 35' 16" W). Casing depth: 30.18m. Well depth: 40.54m.	
UM-1061. L-730	2200 ± 75
(26° 31' 27" N, 81° 35' 16" W), 5.79m.	
UM-1060. L-2184	18,840 ± 370
(26° 32' 51" N, 81° 50' 17" W). Casing depth: 22.86m. Well depth: 34.14m.	
UM-1062. L-1994	11,710 ± 125
(26° 32' 51" N, 81° 45' 28" W). Casing depth: 21.34m. Well depth: 38.10m.	

Blanco Trough series

Benthos gravity core (W7605B-9-GC) recovered from Blanco Trough (44° 17' N, 129° 39' W) in 3300m water. Dates sedimentation and metal accumulation rates. Coll 1976 by B W Selk, Oregon State Univ, Corvallis, Oregon; subm 1977 by B W Selk and K Rudolph, Univ Miami.

UM-1052. 1 to 9cm	14,495 ± 230
UM-1053. 12 to 18cm	17,200 ± 140
UM-1054. 24 to 32cm	18,415 ± 325
UM-1055. 38 to 46cm	24,245 ± 300

UM-1056.	51 to 59cm	33,725	+940
			-1060

*B. Black Sea***Black Sea series**

Piston core (P6507-12) from abyssal plain of Black Sea (43° 49' 48" N, 35° 31' 12" E). Dated to correlate with oxygen isotope record from core. Coll 1965 by RSMAS, Miami; subm 1977 by J Southam and M Boehm, RSMAS, Miami.

UM-1064.	53 to 69cm	15,815 ± 450
UM-1065.	145 to 153cm	12,190 ± 145
UM-1066.	163 to 172cm	16,600 ± 400
UM-1068.	645 to 655cm	>34,600

*C. Belize***Carrie Bow series**

Coral from core taken near Carrie Bow Cay, Belize (16° 50' N, 88° 05' W). Dated to study reef accumulation rates. Depth from top of core. Coll and subm by E Shinn.

UM-1009.	Carrie Bow #2	5625 ± 85
	Montastrea, depth 5.80m.	
UM-1010.	Carrie Bow #2	6165 ± 90
	Porites, depth 8.20m.	
UM-1011.	Carrie Bow #2	6140 ± 90
	Porites, depth 11.0m.	
UM-1012.	Carrie Bow #2	7175 ± 100
	Porites, depth 17.70m.	
UM-1013.	Carrie Bow #4	6960 ± 110
	Montastrea, depth 15.50m.	

REFERENCES

- Davis, J H, 1943, The natural features of southern Florida: Especially the vegetation, and the Everglades: State of Florida Dept of Conservation. Geol Bull 25, Tallahassee, Florida, 311 p.
- Piepgras, D and Stipp, J J, 1977, University of Miami radiocarbon dates VIII: Radiocarbon, v 19, p 118-126.
- Read, J F, 1976, Calcretes and their distinction from Stromatolites: Stromatolites, New York, Elsevier Pub Co, 438 p.
- Shinn, E A, Hudson, J H, Halley, R B, and Lidz, B, 1977, Topographic control and accumulation rate of some Holocene coral reefs: South Florida and Dry Tortugas, 3rd Internatl coral reef symposium, Proc, Miami, Florida, Geology, v 2, 628 p.
- Stipp, J J, Eldridge, K L, and Cadwell, R, 1976, University of Miami radiocarbon dates VI: Radiocarbon, v 18, p 210-220.
- Stipp, J J, Eldridge, K L, and Valenziano, K, 1976, University of Miami radiocarbon dates VII: Radiocarbon, v 18, p 371-375.