

**MARINE RESOURCES RESEARCH INSTITUTE  
RADIOCARBON DATES II\***

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Samples reported in this date list are primarily geologic specimens collected from coastal locations in South Carolina and Florida. Sample material was predominantly shells, with emphasis on single shell dates rather than multiple shell dates. Archaeologic samples from sites either directly above or adjacent to the geologic sampling location were collected whenever possible to provide an upper time limit on the shell deposits.

The main goal of the work was to illustrate the wide range of ages encountered in barrier island shell deposits due to the mixing and reworking of beach deposits in general. Apparently shells older than the barrier island are frequently incorporated into shell deposits at the time of island formation. As a result, many Holocene beach deposits contain shells ranging in age from 1000 yr to infinite with respect to  $^{14}\text{C}$ .

It is also possible that a portion of the observed range in ages, perhaps a few hundred years, may be attributable to species differences, *eg* isotopic fractionation. However, due to a relative lack of some species, *eg* *Doschina discus*, as compared to *Mercenaria* sp, it is not possible to determine the influence of isotopic fractionation at this point. If species-controlled fractionation is, in fact, significant in age variations, it may be possible to detect as more data are gathered.

Analytic procedures were as previously reported (R, 1976, v 18, p 202-204). Whenever feasible, large samples were divided into two aliquots for duplicate dating.

Age calculations were based on a  $^{14}\text{C}$  half-life of 5570 years, using 0.95 NBS oxalic acid as the modern standard. Each sample was counted at least 2000 min, with calculations based on sample, standard, and background statistics to  $\pm 1\sigma$ . All  $\delta^{13}\text{C}$  values were estimated, *ie*, 0‰ for carbonate and -25‰ for wood samples. Ages were calculated with the equation of Williams, Oeschger, and Kinney (1969).

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*A. South Carolina Coastal Samples*

**Crow's Island**

Samples coll from large shell midden on Crow's I. (32° 50' N, 79° 45' W). Subm by R L Stephenson, Inst Archaeol & Anthropol, Columbia, South Carolina.

\* Contribution No. 151 from the South Carolina Marine Resources Center.

|          |                               |                |
|----------|-------------------------------|----------------|
| MRRI-25. | Shell ( <i>Mercenaria</i> sp) | 3030 $\pm$ 380 |
| MRRI-26. | Shell ( <i>Mercenaria</i> sp) | 1780 $\pm$ 160 |

**Fripp Island**

Samples coll from a canal on Fripp I. (32° 19' N, 80° 29' W).

|          |   |                |
|----------|---|----------------|
| MRRI-33. | 3 shells ( <i>Anadara brasiliiana</i> ) | 1860 $\pm$ 190 |
| MRRI-35. | Shell ( <i>Mercenaria</i> sp)           | 1000 $\pm$ 90  |
| MRRI-36. | 4 shells ( <i>A brasiliiana</i> )       | 1040 $\pm$ 100 |
| MRRI-37. | 7 shells ( <i>Anadara</i> sp)           | 2360 $\pm$ 100 |
| MRRI-38. | 12 shells ( <i>Anadara</i> sp)          | 3050 $\pm$ 110 |

**Edisto Beach**

Samples coll at a series of sites on Edisto Beach, from shell bearing quartz sand, 1 to 2m below MSL.

**Series A. Edisto Beach**

(32° 29' 25" N, 80° 19' 30" W)

|          |                                 |                   |
|----------|---------------------------------|-------------------|
| MRRI-56. | Shell ( <i>Mercenaria</i> sp)   | 1610 $\pm$ 120    |
| MRRI-57. | Shell ( <i>Busycon carica</i> ) | 1620 $\pm$ 90     |
| MRRI-59. | Shell ( <i>Anadara</i> sp)      | 26,700 $\pm$ 1110 |
| MRRI-60. | Shell ( <i>Mercenaria</i> sp)   | 2450 $\pm$ 160    |

**Series B. Edisto Beach**

(32° 29' 20" N, 80° 19' 50" W)

|          |                               |                |
|----------|-------------------------------|----------------|
| MRRI-47. | Shell ( <i>Mercenaria</i> sp) | 3620 $\pm$ 100 |
| MRRI-48. | Replicate of MRRI-47          | 4460 $\pm$ 280 |
| MRRI-49. | Shell ( <i>Mercenaria</i> sp) | 3000 $\pm$ 210 |
| MRRI-50. | Replicate of MRRI-49          | 2310 $\pm$ 90  |
| MRRI-52. | Replicate of MRRI-47          | 3090 $\pm$ 80  |
| MRRI-54. | Replicate of MRRI-47          | 3810 $\pm$ 100 |

**Series C. Edisto Beach**

(32° 29' 15" N, 80° 20' 05" W)

|          |                               |                |
|----------|-------------------------------|----------------|
| MRRI-53. | Shell ( <i>Mercenaria</i> sp) | 2220 $\pm$ 80  |
| MRRI-55. | Shell ( <i>Mercenaria</i> sp) | 2300 $\pm$ 80  |
| MRRI-58. | Shell ( <i>Mercenaria</i> sp) | 2320 $\pm$ 90  |
| MRRI-61. | Shell ( <i>Mercenaria</i> sp) | 4600 $\pm$ 190 |
| MRRI-62. | Replicate of MRRI-61          | 4130 $\pm$ 160 |

**Series D. Edisto Beach**

(32° 29' 23" N, 80° 20' 30" W)

|          |                                 |               |
|----------|---------------------------------|---------------|
| MRRI-41. | Shell ( <i>A. brasiliiana</i> ) | 24,140 ± 1670 |
| MRRI-42. | Shell ( <i>A. brasiliiana</i> ) | 1490 ± 150    |
| MRRI-43. | Shell ( <i>A. brasiliiana</i> ) | 22,780 ± 1410 |
| MRRI-44. | Shell ( <i>A. brasiliiana</i> ) | 1170 ± 140    |
| MRRI-45. | Shell ( <i>A. brasiliiana</i> ) | 1590 ± 140    |
| MRRI-46. | Shell ( <i>A. brasiliiana</i> ) | >45,000       |

**Eddingsville Beach**

Samples coll at Eddingsville Beach (32° 31' N, 80° 16' W). Samples washed ashore from submarine exposure ca 400m offshore, 4 to 5m below MSL.

|          |   |            |
|----------|---|------------|
| MRRI-63. | Reef ( <i>Dodecaceria</i> sp)                         | 2080 ± 100 |
| MRRI-64. | Replicate of MRRI-63                                  | 2060 ± 100 |
| MRRI-77. | Reef ( <i>Dodecaceria</i> sp)<br>2cm above substrate  | 2640 ± 110 |
| MRRI-76. | Reef ( <i>Dodecaceria</i> sp)<br>3cm above substrate  | 2550 ± 170 |
| MRRI-78. | Reef ( <i>Dodecaceria</i> sp)<br>7cm above substrate  | 2130 ± 170 |
| MRRI-79. | Replicate of MRRI-78                                  | 1900 ± 80  |
| MRRI-75. | Reef ( <i>Dodecaceria</i> sp)<br>9cm above substrate  | 2360 ± 100 |
| MRRI-65. | Reef ( <i>Dodecaceria</i> sp)<br>10cm above substrate | 2740 ± 140 |
| MRRI-66. | Replicate of MRRI-65                                  | 2450 ± 90  |
| MRRI-69. | Reef ( <i>Dodecaceria</i> sp)<br>20cm above substrate | 2260 ± 100 |
| MRRI-70. | Replicate of MRRI-69                                  | 1860 ± 80  |
| MRRI-67. | Reef ( <i>Dodecaceria</i> sp)<br>40cm above substrate | 1370 ± 80  |
| MRRI-68. | Replicate of MRRI-67                                  | 1310 ± 90  |

**Kiawah Island**

Samples coll at 2 construction sites on Kiawah I. from shell bearing quartz sand, 1 to 2m below MSL.

**Series I. Kiawah I.**

(32° 35' 28" N, 80° 07' 38" W)

|          |                                       |            |
|----------|---------------------------------------|------------|
| MRRI-82. | Shell ( <i>Polinices duplicatus</i> ) | 1080 ± 90  |
| MRRI-84. | Shell ( <i>A brasiliana</i> )         | 3150 ± 320 |
| MRRI-85. | Shell ( <i>B carica</i> )             | 940 ± 80   |
| MRRI-87. | Shell ( <i>B carica</i> )             | 1070 ± 80  |
| MRRI-90. | Shell ( <i>A brasiliana</i> )         | 1510 ± 230 |
| MRRI-91. | Shell ( <i>B carica</i> )             | 1810 ± 160 |
| MRRI-92. | Shell ( <i>B carica</i> )             | 1200 ± 120 |
| MRRI-93. | Shell ( <i>B carica</i> )             | 990 ± 70   |
| MRRI-94. | Shell ( <i>B carica</i> )             | 970 ± 90   |
| MRRI-95. | Shell ( <i>B carica</i> )             | 1230 ± 120 |

**Series J. Kiawah I.**

(32° 36' 33" N, 80° 03' 20" W)

|          |                                       |            |
|----------|---------------------------------------|------------|
| MRRI-80. | Shell ( <i>A brasiliana</i> )         | 1830 ± 140 |
| MRRI-81. | Shell ( <i>A brasiliana</i> )         | 1700 ± 100 |
| MRRI-83. | Shell ( <i>P duplicatus</i> )         | 1780 ± 180 |
| MRRI-86. | Shell ( <i>B carica</i> )             | 830 ± 90   |
| MRRI-96. | Shell ( <i>Doscina discus</i> )       | 1210 ± 120 |
| MRRI-97. | Shell ( <i>Dinocardium robustum</i> ) | 820 ± 70   |
| MRRI-98. | Shell ( <i>Oliva sayana</i> )         | 1420 ± 100 |

**Ft Johnson**

Samples coll from archaeol site (32° 45' N, 79° 54' W) at Fort Johnson. Subm by R L Stephenson.

|          |  |            |
|----------|--|------------|
| MRRI-88. | Shell ( <i>Crassostrea virginica</i> ) | 2130 ± 100 |
| MRRI-89. | Shell ( <i>C virginica</i> )           | 2100 ± 60  |

*B. Florida Coastal Samples*

Samples coll at Northwest Cape Sable (25° 14' N, 81° 10' W), from shell bearing carbonate sand, 0 to 1m below MSL.

|          |                                      |           |
|----------|--------------------------------------|-----------|
| MRRI-27. | Wood ( <i>Avicennia germinans</i> ). | 350 ± 180 |
|----------|--------------------------------------|-----------|

*Comment:* id 1975 by P B Tomlinson, Harvard Univ.

|          |                      |           |
|----------|----------------------|-----------|
| MRRI-28. | Replicate of MRRI-27 | 260 ± 150 |
|----------|----------------------|-----------|

MRRI-128. Replicate of MRRI-27  $280 \pm 120$

MRRI-129. Replicate of MRRI-27  $240 \pm 70$

MRRI-34. Shell (*Mercenaria* sp)  $1800 \pm 80$

*Comment:* 2 aliquots of this shell were dated by Univ Miami, UM-457 and -458 at  $1915 \pm 85$  and  $1790 \pm 70$ , respectively (J J Stipp, written commun).

MRRI-39. Replicate of MRRI-34  $1790 \pm 100$

Samples coll at East Cape Sable ( $25^{\circ} 07' N$ ,  $81^{\circ} 05' W$ ).

1. *Archaeologic samples coll from shell midden, 0 to 1m below MSL.*

MRRI-71. Shell (*Mercenaria* sp)  $1880 \pm 100$

MRRI-72. Shell (*Mercenaria* sp)  $2480 \pm 90$

MRRI-107. Shell (*Mercenaria* sp)  $1810 \pm 100$

MRRI-109. Shell (*Mercenaria* sp)  $1200 \pm 70$

MRRI-110. Shell (*Mercenaria* sp)  $1890 \pm 70$

MRRI-111. Shell (*Noetia ponderosa*)  $2280 \pm 80$

MRRI-112. Shell (*N ponderosa*)  $2300 \pm 100$

MRRI-113. Shell (*Mercenaria* sp)  $1880 \pm 70$

MRRI-114. Shell (*N ponderosa*)  $2000 \pm 80$

MRRI-116. Shell (*N ponderosa*)  $2740 \pm 120$

MRRI-117. Shell (*Mercenaria* sp)  $2380 \pm 70$

MRRI-118. Shell (*N ponderosa*)  $2910 \pm 170$

2. *Geologic samples coll from shell bearing carbonate sand, approx MSL.*

MRRI-73. Shell (*Anadara* sp)  $2250 \pm 110$

MRRI-74. Shell (*Anadara* sp)  $2180 \pm 70$

MRRI-99. Shell (*N ponderosa*)  $1820 \pm 110$

MRRI-105. Shell (*N ponderosa*)  $2620 \pm 110$

MRRI-108. Shell (*N ponderosa*)  $3030 \pm 130$

MRRI-115. Shell (*N ponderosa*)  $3450 \pm 200$

REFERENCES

- Mathews, T D, 1976, Marine Resources Research Institute radiocarbon dates I: Radiocarbon, v 18, p 202-204.  
 Williams, P M, Oeschger, H, and Kinney, P, 1969, Natural radiocarbon activity of the dissolved organic carbon in the North-east Pacific Ocean: Nature, v 224, p 256-258.