CITY OF SARASOTA
LIDO KEY BEACH RESTORATION: 2000 REPORT

SEA TURTLE PROTECTION MEASURES
AND NEST EVALUATIONS
1998 LIDO BEACH RESTORATION, YEAR II POST-CONSTRUCTION
and
SOUTH LIDO BEACH RESTORATION, PRE-CONSTRUCTION

SUBMITTED TO:
CITY OF SARASOTA
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MOTE MARINE LABORATORY TECHNICAL REPORT NUMBER 731

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**Mote Marine Laboratory**

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MOTE MARINE LABORATORY
Marine Turtle Nest Protection Measures Including Nest Success Evaluations For the City of Sarasota, 1998 Lido Beach Restoration & South Lido Beach Restoration Projects, 12/29/00
INTRODUCTION

The City of Sarasota, Sarasota County, was authorized under the Florida Department of Environmental Protection (FDEP) Coastal Construction Permit DBS910292 ST, Department of the Army Permit (US COE) 199141934 (IP-MN) and FDEP Water Resources Permit 582063449 to nourish the central segment of the Lido Key gulf shoreline using sand obtained from offshore borrow areas. The project construction area, including beach fill sites, construction and buffer areas, hereinafter referred to as the 1998 Lido Beach Restoration Project area, corresponds to approximately FDEP Coastal Construction Control Line Monument R-34 south to R-41, Lido Key, in Sarasota County.

In a second project, the City of Sarasota, Sarasota County, plans to nourish the central segment of the Lido Key gulf shoreline using sand obtained from offshore borrow areas. The project construction area, including beach fill sites, construction and buffer areas, hereinafter referred to as the South Lido Beach Restoration Project area, corresponds to approximately FDEP Coastal Construction Control Line Monument R-38 south to R-44, Lido Key, in Sarasota County.

The Lido Key shoreline is utilized as nesting habitat by marine turtles which are protected by the Endangered Species Act of 1973, Florida Law, Chapter 370 and the Sarasota County Sea Turtle Protection Ordinance No. 97-082. Because beach restoration can result in changes, such as in sand density, beach shear resistance, moisture content, beach slope, sand color, grain size and shape, that may affect the nesting activity of adult turtles and the hatch and subsequent emergence success of the nests, special conditions were included in the restoration permit. The special permit conditions for evaluating the effectiveness of the restored beach in conjunction with marine turtle nest/hatch activities are addressed in Section 5 through 9 of the FDEP Coastal Construction Permit (DBS910292 and Special Conditions 1 through 8 of the US COE permit 199141934[IP-MN]). The following briefly summarizes how these special conditions were met for the 2000 sea turtle nesting season.

- Daily early morning surveys of the nesting beach were begun May 1st, 2000 for both the Lido beach restoration project, second year post-project, and the South Lido beach restoration project, pre-construction. The surveys and monitoring activities continued through October 31st to assess the performance of the restored beach and to evaluate nest and hatch success (Permit condition 5.1 and 7). Surveys began shortly after sunrise at which time all sea turtle activity was documented and nests were marked for avoidance and endangered nests were relocated.

- All nesting surveys, nest relocations, nest caging activities, and nest success evaluations were conducted by persons with prior experience and training in these activities and were duly authorized to conduct said activities through FWCC permit #054 and/or #126 (Appendix A), both current and valid permits issued by FWCC, Division of Marine Resources, pursuant to Florida Administrative Code Rule 62R-1.
A report of all monitoring activity for the Lido Beach restoration project is to be submitted at the end of the 1998, 1999 and 2000 nesting seasons. A report of all monitoring activity for the South Lido Beach restoration project is submitted for 2000, the preconstruction year. This report represents the 2000 report for both projects. The report includes the location of individual nests, the date of deposition, documentation of relocation activities, and nest success evaluations for in situ and relocated nests.

This report documents monitoring and nest protection measures for 2000, including the 1998 Lido Beach Restoration, year two post-construction, and the South Lido Beach Restoration, pre-construction (Figure 1). The report is being submitted to City of Sarasota, Engineering Dept., Coastal Planning and Engineering, Inc., and the Florida Fish and Wildlife Conservation Commission (FWCC), Florida Marine Research Institute (formerly FDEP).

MARINE TURTLE MONITORING

Project Locations:

The Lido Key Beach Restoration Project extends shore parallel between FDEP Coastal Construction Control Line Monuments R-34 and R-41 on Lido Key in Sarasota County, Florida. The project area includes the construction area (R-35 to R-40) and buffer areas extending 1000 feet to the north and 1000 feet to the south as per request from the City of Sarasota.

For ease in visualizing, the FDEP coastal construction control monuments are numbered from R-30 in New Pass at the north end of Lido to R-44 in South Lido Park near Big Sarasota Pass. The north end of the project location, R-34, is found in North Lido Park, approximately 1200 feet north of the terminus of John Ringling Blvd. The southern end of the project location, R-41, is found at the south corner of the north building of the Helmsley Sandcastle Resort, 1540 Ben Franklin Drive, Lido Key.

The South Lido Beach Restoration Project extends shore parallel between FDEP Coastal Construction Control Line Monuments R-38 and R-44 on Lido Key. The north end of this project, R-38, is found at the north end of the Radisson Resort, 700 Ben Franklin Drive, Lido Key. The southern end of this project is located approximately 300 feet south of the southern end of Sarasota Sands, 2150 Ben Franklin Drive, Lido Key.
Figure 1. The 1998 Lido Beach Restoration, year two post-construction, and the South Lido Beach Restoration, pre-construction.
PROCEDURES

Monitoring for the City of Sarasota, 1998 Lido Beach Restoration and South Lido Beach Restoration began May 1', 2000. On this date monitoring personnel began daily surveys of the entire Lido Key Beach Restoration Project shoreline. The surveys were begun to fulfill FWCC (formerly FDEP) permit conditions and to fulfill the scope of work contracted by Mote Marine Laboratory (MML) personnel with the City of Sarasota. MML personnel are permitted through FWCC, under 2000 marine turtle permits #054 and #126.

Monitoring for adult marine turtle nesting activity was conducted by personnel walking the project shoreline above the mean high water line. Upon discovery of an emergence, permitted personnel visually determined whether the emergence was a nest or false crawl. A false crawl was defined as an emergence which did not result in egg deposition (Figure right). The following are examples of false crawls: 1) a turtle that moved onto the beach but did not excavate a nest cavity and returned to the water, or 2) a turtle that moved up the beach, excavated a nest cavity or numerous nest cavities but for unknown reasons did not deposit any eggs in the nest (often these aborted nest excavations are left uncovered by the turtle). A nest was defined as a turtle emergence which resulted in the turtle successfully depositing eggs. When an emergence resulted in what "appeared" to the experienced patrol personnel to be a successful nest but the eggs could not be verified, the site was identified as a "possible nest" and was monitored along with the nests to observe for hatching. These possible nests were reclassified as either nests or false crawls depending on the outcome.

During the pass down the beach, false crawls and nests were recorded on MML Nesting data forms (Appendix B). If the nest was determined to be endangered, it was carefully hand excavated, the eggs were placed in a bucket lined with sand. The eggs were then transported higher on the beach and were placed into an artificially produced nest cavity closely resembling the original cavity is shape, size and depth. All nests, whether relocated or left in situ, were marked and encircled by four wooden stakes connected with yellow surveyors flagging tape and signage (Figure 2) identifying the site as a protected sea turtle nest. Each nest was additionally marked with the date the nest was laid and the original location of the nest. Nest location was documented by two methods. In the field, monitoring personnel located nests by relative position to the nearest street address, building, or other landmark. These descriptions were checked in the Laboratory's offices against annotated aerial photographs to associate the locations to the nearest FDEP coastal construction control line monuments.

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Marine Turtle Nest Protection Measures Including Nest Success Evaluations For the City of Sarasota,
1998 Lido Beach Restoration & South Lido Beach Restoration Projects, 12/29/00
Hatching Surveys and Nest Evaluations:

After 45 days incubation, nests were monitored in the early morning and again in the evening. Observance of one or more of the following was used to determine the first day of hatch to calculate incubation periods:

1) A hatchling or hatchlings present at the surface,
2) A hatchling crawl or crawls in the sand leading out from the nest area, and/or
3) A depression or emergence hole in the sand directly over the nest.

To evaluate for hatch success each nest was excavated three days or 72 hours after the initial hatch. The delayed nest excavation allows the majority of hatchlings to emerge from the nest on their own. Hatchlings that have emerged on their own are more vigorous and are better equipped to handle the trek down the shoreline to the water. Once in the water these hatchlings also have a better chance at survival as their external yolk sacs have been completely utilized and/or absorbed allowing the hatching to dive more readily and to swim more vigorously.

Data from nest evaluations were recorded on the nesting data forms. Upon excavation the number hatched was calculated from the number of empty eggshells found in the nest. Pipped eggs referred to either live or dead hatchlings that had punctured the eggshell but had not fully emerged from the egg. The number of hatched shells minus the number of live and dead hatchlings found in the nest account for the number of hatchlings that emerged from the nest on their own prior to nest excavation. When live hatchlings were found in the nest they were either released immediately or were transferred to a bucket containing moist sand and kept for release that same evening. Nest excavations and hatchling releases were conducted according to FWCC Marine Turtle Permit guidelines for 2000.

Data Analysis:

Marine turtle emergence and hatching data were compiled using Paradox, a dBASE compatible software program by Borland and Associates. Figures and Tables were created using a combination of Paradox, Word Perfect (Corel 8) and Super Calc (Computer Assoc.).
DO NOT DISTURB
SEA TURTLE
NEST
VIOLATORS SUBJECT
TO FINES AND
IMPRISONMENT

FLORIDA LAW
CHAPTER 370
No person may take, possess, disturb, mutilate, destroy, cause to be destroyed, sell, offer for sale, transfer, molest, or harass any marine turtle nest or eggs at any time.

Upon conviction, a person may be imprisoned for a period of up to 60 days or fined up to $500, or both, plus an additional penalty of $100 for each sea turtle egg destroyed or taken.

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
MARINE TURTLE PROTECTION PROGRAM

U.S. ENDANGERED SPECIES ACT OF 1973
No person may take, harass, harm, pursue, hunt, shoot, wound, kill, trap, or capture any marine turtle, turtle nest, and/or eggs, or attempt to engage in any such conduct.

Any person who knowingly violates any provision of this act may be assessed a civil penalty up to $25,000 or a criminal penalty up to $50,000 and up to one year imprisonment.

SHOULD YOU WITNESS A VIOLATION, OBSERVE AN INJURED OR STRANDED TURTLE, OR MISORIENTED HATCHLINGS, PLEASE CONTACT FLORIDA MARINE PATROL AT 1-800-DIAL-FMP.

Figure 2. Sign marking protected sea turtle nest.

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Marine Turtle Nest Protection Measures Including Nest Success Evaluations For the City of Sarasota, 1998 Lido Beach Restoration & South Lido Beach Restoration Projects, 12/29/00
Tropical storm and hurricane tidal activity impacted the beaches during the summer of 2000. Fifty percent of the nests in the Lido Beach project area were inundated and two nests were relocated higher on the beach after they were found to be washing out or were in immediate danger of washing out. Fifty percent of the nests in the South Lido Beach project area were inundated and one nest was relocated higher on the beach.

None of the nests required protection from raccoon predation. In areas of heavy predation from raccoons and armadillos, protection is provided with a "self-release" box cage (Appendix C) made of 2" x 4" wire mesh. The 2" x 4" wire mesh is large enough to allow hatchlings to leave the cage after hatch but, small enough to prevent raccoons from accessing the nest. The cage also has flanges at the bottom to prevent raccoons from digging down and into the nests.

Although the City of Sarasota is cooperating with Sarasota County Resource Management Division to protect adult sea turtles and sea turtle hatchlings from disorientation events due to artificial lighting, eleven disorientation events were documented in the Lido Beach project area and nine disorientation events were documented in the South Lido Beach project area. To further protect emerging hatchlings in areas where artificial lighting has not been corrected staff installed "restraining cages" (also Appendix C) over two nests. Restraining cages are box cages made of 1/4" x 1/4" wire mesh which allow enough room inside for the hatchlings to emerge completely from the sand but entrap the hatchlings at the nest site to prevent hatchling deaths. Restraining cages must be checked for hatchlings at shortly after sunset and at least twice a night beginning at 45 days incubation and ending when the cage is removed three days after the initial hatch. The cages were checked once between 11 p.m. and 1 a.m., and once between 5 and 7 a.m. Hatchlings were removed from the restraining cages and safely released on a dark area of the beach.

1998 Lido Beach Restoration Project Final Report
RESULTS AND DISCUSSION

Turtle Emergences (Nests & False Crawls):

Beach monitoring procedures resulted in the documentation of a total of 26 nests and 23 false crawls (Table 1) for the City of Sarasota, 1998 Lido Key beach restoration project. All of the nests were completed by Caretta caretta (loggerhead), no Chelonia mydas (green turtle) nests were documented within the project area for the 2000 season. The false crawl to nest ratio was 0.88 false crawls to one nest. The 2000 data showed an increase in nesting activity when compared to the 1997 preconstruction, 1998 year of construction, and 1999 year one post-construction data (Table 2).
Table 2. Nest to false crawl ratio for marine turtles nesting in the Lido Key Beach Restoration project area (R-34 to R-41), 1997 through 2000.

<table>
<thead>
<tr>
<th>Year</th>
<th>Total # False Crawls (FC)</th>
<th>Total # Nests (N)</th>
<th>False Crawl/Nest Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>1997</td>
<td>24</td>
<td>19</td>
<td>1.26:1</td>
</tr>
<tr>
<td>1998</td>
<td>64</td>
<td>16</td>
<td>4.00:1</td>
</tr>
<tr>
<td>1999</td>
<td>27</td>
<td>22</td>
<td>1.23:1</td>
</tr>
<tr>
<td>2000</td>
<td>23</td>
<td>26</td>
<td>0.88:1</td>
</tr>
</tbody>
</table>

The seasonal pattern of marine turtle emergences within the project shoreline is shown in Figure 3. On April 30, a false crawl was recorded, representing the first emergence of the season for the Lido Key restoration project area. The false crawl was located on Lido Public Beach west of 257 Ben Franklin Drive, between monuments T-36 and R-37. The first nest of the season was also deposited on Lido Public Beach, west of 151 Ben Franklin Drive (approx. 200'S of T-36).

On August 3, two false crawls and one nest were documented representing the final nesting activity for the project. The nest was located at Lido Public Beach, approximately 800 feet south of monument T-36. Both false crawl were located at Lido Public Beach between monuments T-36 and R-37. The period of peak nesting occurred in the seven weeks between May 14th and July 2nd during which time 69 percent of the total nests occurred.

The seasonal pattern of nesting for the project shoreline was similar to the nesting activity for the entire Lido Key shoreline with the first nest documented on May 1, and the last nest documented on August 7 as reported in the Florida Department of Environmental Protection Marine Turtle Nesting Summary Questionnaire for 2000 and the Florida Department of Environmental Protection Nesting Survey Reporting form for 2000 (Appendix D). The nesting density was slightly greater outside of the project area with 33 nests and 29 false crawls documented in the approximate 8300 linear feet of shoreline to the north and to the south of the project area (Table 3, Figure 4).
### Table 1. Marine turtle nesting data for the Lido Key Beach Restoration Project: Sarasota County, Florida - 2000.

<table>
<thead>
<tr>
<th>Date</th>
<th>Address</th>
<th>Nest</th>
<th>Moved</th>
<th>Type</th>
<th>Date</th>
<th>Type of Disturbance</th>
<th>No.</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>30-Apr-00</td>
<td>257 BFD / LIDO PUBLIC BEACH</td>
<td>Nest</td>
<td></td>
<td>F/C</td>
<td>23-Jun-00</td>
<td>DIS 6/23</td>
<td>91</td>
<td>95</td>
</tr>
<tr>
<td>01-May-00</td>
<td>151 BFD / LIDO PUBLIC BEACH</td>
<td>Nest</td>
<td>R</td>
<td>F/C</td>
<td>12-Jul-00</td>
<td>DIS 7/12</td>
<td>98</td>
<td>103</td>
</tr>
<tr>
<td>16-May-00</td>
<td>617 BEN FRANKLIN DR</td>
<td>Nest</td>
<td></td>
<td>F/C</td>
<td>08-Jul-00</td>
<td>DIS 7/1-3</td>
<td>84</td>
<td>114</td>
</tr>
<tr>
<td>19-May-00</td>
<td>267 BFD / LIDO PUBLIC BEACH</td>
<td>Nest</td>
<td></td>
<td>F/C</td>
<td>11-Jul-00</td>
<td>DIS 7/1-3 WASHED OVER; DIS 7/12</td>
<td>125</td>
<td>138</td>
</tr>
<tr>
<td>19-May-00</td>
<td>155 BFD / LIDO TOWERS</td>
<td>Nest</td>
<td></td>
<td>F/C</td>
<td>20-Jul-00</td>
<td>DIS 7/1-3</td>
<td>52</td>
<td>126</td>
</tr>
<tr>
<td>19-May-00</td>
<td>1008 BFD / COQUINA MOTEL</td>
<td>Nest</td>
<td></td>
<td>F/C</td>
<td>21-Jul-00</td>
<td>UNDERWATER; 7/15-16 WASHED OVER</td>
<td>48</td>
<td>109</td>
</tr>
<tr>
<td>20-May-00</td>
<td>930 BFD / GULF BEACH MOTEL</td>
<td>Nest</td>
<td></td>
<td>F/C</td>
<td>19-Jul-00</td>
<td>DIS 7/1-3 WASHED OVER; DIS 7/19</td>
<td>52</td>
<td>118</td>
</tr>
<tr>
<td>24-May-00</td>
<td>N. OF LIFEGUARD TOWER #1 / NORTH LIDO</td>
<td>Nest</td>
<td></td>
<td>F/C</td>
<td>25-Jul-00</td>
<td>DIS 7/25</td>
<td>109</td>
<td>115</td>
</tr>
<tr>
<td>31-May-00</td>
<td>1212 BFD / LIDO BEACH CLUB</td>
<td>Nest</td>
<td></td>
<td>F/C</td>
<td>04-Aug-00</td>
<td>DIS 8/4</td>
<td>91</td>
<td>112</td>
</tr>
<tr>
<td>01-Jun-00</td>
<td>1050 BFD / LIMETREE</td>
<td>Nest</td>
<td></td>
<td>F/C</td>
<td>02-Aug-00</td>
<td>DIS 8/4</td>
<td>91</td>
<td>91</td>
</tr>
<tr>
<td>02-Jun-00</td>
<td>151 BFD / THOREAU DRIVE</td>
<td>Nest</td>
<td></td>
<td>F/C</td>
<td>11-Jul-00</td>
<td>DIS 7/29; DEP / CRAB 7/25</td>
<td>77</td>
<td>101</td>
</tr>
<tr>
<td>03-Jun-00</td>
<td>1050 BFD / LIMETREE</td>
<td>Nest</td>
<td></td>
<td>F/C</td>
<td>29-Jul-00</td>
<td>DIS 7/29; DEP / CRAB 7/25</td>
<td>77</td>
<td>101</td>
</tr>
<tr>
<td>05-Jun-00</td>
<td>390 FT S OF R-34 / NORTH LIDO</td>
<td>Nest</td>
<td></td>
<td>F/C</td>
<td>08-Aug-00</td>
<td>DIS 8/4</td>
<td>91</td>
<td>112</td>
</tr>
<tr>
<td>06-Jun-00</td>
<td>390 FT S OF R-34 / NORTH LIDO</td>
<td>Nest</td>
<td></td>
<td>F/C</td>
<td>19-Jul-00</td>
<td>DIS 7/1-3 WASHED OVER; DIS 7/19</td>
<td>52</td>
<td>118</td>
</tr>
<tr>
<td>07-Jun-00</td>
<td>363 BFD / LIDO AMBASSADOR</td>
<td>Nest</td>
<td></td>
<td>F/C</td>
<td>25-Jul-00</td>
<td>DIS 7/25</td>
<td>109</td>
<td>115</td>
</tr>
<tr>
<td>08-Jun-00</td>
<td>800 BFD / LIDO AMBASSADOR</td>
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<td></td>
<td>F/C</td>
<td>04-Aug-00</td>
<td>DIS 8/4</td>
<td>91</td>
<td>112</td>
</tr>
<tr>
<td>11-Jun-00</td>
<td>1050 BFD / SUN &amp; SURF COLONY</td>
<td>Nest</td>
<td></td>
<td>F/C</td>
<td>02-Aug-00</td>
<td>DIS 8/4</td>
<td>91</td>
<td>91</td>
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<tr>
<td>12-Jun-00</td>
<td>1148 BFD / SUN &amp; SURF COLONY</td>
<td>Nest</td>
<td></td>
<td>F/C</td>
<td>29-Jul-00</td>
<td>DIS 7/29; DEP / CRAB 7/25</td>
<td>77</td>
<td>101</td>
</tr>
<tr>
<td>13-Jun-00</td>
<td>850 BFD / SUN TIDE</td>
<td>Nest</td>
<td></td>
<td>F/C</td>
<td>08-Aug-00</td>
<td>DIS 8/4</td>
<td>91</td>
<td>112</td>
</tr>
<tr>
<td>14-Jun-00</td>
<td>400 BFD / PAVILLION CONCESSION AREA</td>
<td>Nest</td>
<td></td>
<td>F/C</td>
<td>19-Jul-00</td>
<td>DIS 7/1-3 WASHED OVER; DIS 7/19</td>
<td>52</td>
<td>118</td>
</tr>
<tr>
<td>15-Jun-00</td>
<td>373 BFD / LIDO AMBASSADOR</td>
<td>Nest</td>
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<td>F/C</td>
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<td>115</td>
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<tr>
<td>16-Jun-00</td>
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<td>F/C</td>
<td>08-Aug-00</td>
<td>DIS 8/4</td>
<td>91</td>
<td>112</td>
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<td>19-Jun-00</td>
<td>155 BFD / LIDO PUBLIC BEACH</td>
<td>Nest</td>
<td></td>
<td>F/C</td>
<td>08-Aug-00</td>
<td>DIS 8/4</td>
<td>91</td>
<td>112</td>
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<tr>
<td>20-Jun-00</td>
<td>155 BFD / LIDO TOWERS</td>
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<td></td>
<td>F/C</td>
<td>09-Aug-00</td>
<td>DIS 8/4</td>
<td>91</td>
<td>112</td>
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<tr>
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<td>475 BFD / LIDO DORSET CONDOS</td>
<td>Nest</td>
<td></td>
<td>F/C</td>
<td>08-Aug-00</td>
<td>DIS 8/4</td>
<td>91</td>
<td>112</td>
</tr>
<tr>
<td>25-Jun-00</td>
<td>1050 BFD / LIMETREE</td>
<td>Nest</td>
<td></td>
<td>F/C</td>
<td>08-Aug-00</td>
<td>DIS 8/4</td>
<td>91</td>
<td>112</td>
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<tr>
<td>25-Jun-00</td>
<td>1540 BFD / HELMSLEY SANDCASTLE</td>
<td>Nest</td>
<td></td>
<td>F/C</td>
<td>08-Aug-00</td>
<td>DIS 8/4</td>
<td>91</td>
<td>112</td>
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</tbody>
</table>

**Mote Marine Laboratory**

*Marine Turtle Nest Protection Measures Including Nest Success Evaluations For the City of Sarasota, 1998 Lido Beach Restoration & South Lido Beach Restoration Projects, 12/29/00*
<table>
<thead>
<tr>
<th>Date</th>
<th>Address</th>
<th>Nest</th>
<th>Moved</th>
<th>Type</th>
<th>Date</th>
<th>Type of Disturbance</th>
<th>No.</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>26-Jun-00</td>
<td>1330 BFD / AZURE TIDES</td>
<td>Nest</td>
<td>Yes</td>
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<td></td>
<td>IN - WASHED OVER 7/1-2</td>
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<td>F/C</td>
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<td>Nest</td>
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<td>F/C</td>
<td>18-Aug-00</td>
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<td>F/C</td>
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</tr>
<tr>
<td>10-Jul-00</td>
<td>475 BFD / LIDO PUBLIC BEACH</td>
<td>Nest</td>
<td></td>
<td>F/C</td>
<td>01-Sep-00</td>
<td>DIS - 9/1</td>
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<td>91</td>
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<td>12-Jul-00</td>
<td>1330 BFD / AZURE TIDES</td>
<td>F/C</td>
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<td>13-Jul-00</td>
<td>850 BFD / SUNTIDE ISLAND BEACH CLUB</td>
<td>Nest</td>
<td></td>
<td>F/C</td>
<td>02-Sep-00</td>
<td>DIS 9/2</td>
<td>89</td>
<td>101</td>
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<td>13-Jul-00</td>
<td>1330 BFD / AZURE TIDES</td>
<td>F/C</td>
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<td></td>
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<td>13-Jul-00</td>
<td>930 BFD / GULF BEACH MOTEL</td>
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<td>F/C</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>17-Jul-00</td>
<td>1330 BFD / AZURE TIDES (SOUTH END)</td>
<td>Nest</td>
<td>R</td>
<td></td>
<td>09-Sep-00</td>
<td></td>
<td>78</td>
<td>82</td>
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<td>18-Jul-00</td>
<td>1540 BFD / HARLEY SANDCASTLE</td>
<td>Nest</td>
<td>R</td>
<td></td>
<td>09-Sep-00</td>
<td>DIS 9/9</td>
<td>36</td>
<td>75</td>
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<tr>
<td>19-Jul-00</td>
<td>1050 BFD / LIMETREE</td>
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<td></td>
<td></td>
<td>06-Sep-00</td>
<td></td>
<td>96</td>
<td>102</td>
</tr>
<tr>
<td>02-Aug-00</td>
<td>363 BFD (SOUTH END)</td>
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<td></td>
<td></td>
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<td>IN - WASHED OUT - 9/17</td>
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<td></td>
</tr>
<tr>
<td>02-Aug-00</td>
<td>400 BFD / LIDO BEACH PAVILLION (S END)</td>
<td>F/C</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>02-Aug-00</td>
<td>1330 BFD / AZURE TIDES</td>
<td>F/C</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
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<td>311 BEN FRANKLIN DR</td>
<td>Nest</td>
<td>Yes</td>
<td></td>
<td></td>
<td>IN - 9/17-NEST WASHED OUT</td>
<td></td>
<td></td>
</tr>
<tr>
<td>03-Aug-00</td>
<td>373 BFD</td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>03-Aug-00</td>
<td>475 BFD / LIDO DORSET</td>
<td>F/C</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Table 1.** (Continued)

**MOTE MARINE LABORATORY**

*Marine Turtle Nest Protection Measures Including Nest Success Evaluations For the City of Sarasota, 1998 Lido Beach Restoration & South Lido Beach Restoration Projects, 12/29/00*
Figure 3. Seasonal pattern of marine turtle emergences within the Lido Beach restoration project
Table 3. Marine Turtle Nesting along the Lido Key shoreline, 2000

<table>
<thead>
<tr>
<th>Location</th>
<th>#False Crawls (FC)</th>
<th>#Nests (N)</th>
<th>FC/N ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>100'S R-31 (in New Pass) to R-34</td>
<td>17</td>
<td>18</td>
<td>0.94:1</td>
</tr>
<tr>
<td>R-34 to R-41 (Project)</td>
<td>23</td>
<td>26</td>
<td>0.88:1</td>
</tr>
<tr>
<td>R-41 to 2400' E R-44 (in Big Sarasota Pass)</td>
<td>12</td>
<td>15</td>
<td>0.80:1</td>
</tr>
</tbody>
</table>

Figure 4. Marine turtle nesting activity located by shore parallel position on the beach relative to location between FDEP/CCCL Reference Monuments, Lido Key, 2000.
Nest Site Selection:

Nesting habitat available in the project area varied from approximately 65 feet to approximately 250 feet. In order to determine the turtle's preference in nesting location, the beach width at nest sites was estimated in feet by monitoring personnel on the morning following egg deposition (Table 4). The beach width was divided into thirds, and nest locations were then classified as either upper beach (landward), middle beach, or lower beach (seaward) (Table 5). By looking at the nourished beach regardless of width, the seaward or lower third of the beach was the preferred location with 65% (n=17) of the nests. Eight percent (n=2) of the nests occurred in the upper or landward third of the beach, and 27% (n=7) occurred on the middle beach.

Table 4. Nest site selection by marine turtles.

<table>
<thead>
<tr>
<th>Date</th>
<th>FDEP Location</th>
<th>Location</th>
<th>Location</th>
<th>Approximate Feet from MHW</th>
<th>Approximate Feet from barrier</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-May-2000</td>
<td>200'S T-36</td>
<td>M</td>
<td>BCH</td>
<td>44</td>
<td>33</td>
</tr>
<tr>
<td>19-May-2000</td>
<td>675'S T-36</td>
<td>M</td>
<td>BCH</td>
<td>30</td>
<td>52</td>
</tr>
<tr>
<td>19-May-2000</td>
<td>0'S T-36</td>
<td>M</td>
<td>BCH</td>
<td>28</td>
<td>37</td>
</tr>
<tr>
<td>19-May-2000</td>
<td>300'S R-39</td>
<td>L</td>
<td>BCH</td>
<td>20</td>
<td>100</td>
</tr>
<tr>
<td>20-May-2000</td>
<td>150'S R-39</td>
<td>L</td>
<td>BCH</td>
<td>21</td>
<td>88</td>
</tr>
<tr>
<td>24-May-2000</td>
<td>400'S R-35</td>
<td>L</td>
<td>BCH</td>
<td>18</td>
<td>136</td>
</tr>
<tr>
<td>24-May-2000</td>
<td>700'S R-35</td>
<td>L</td>
<td>BCH</td>
<td>17</td>
<td>104</td>
</tr>
<tr>
<td>30-May-2000</td>
<td>850'S R-40</td>
<td>L</td>
<td>BCH</td>
<td>14</td>
<td>90</td>
</tr>
<tr>
<td>31-May-2000</td>
<td>100'S R-40</td>
<td>L</td>
<td>BCH</td>
<td>37</td>
<td>130</td>
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<tr>
<td>1-June-2000</td>
<td>450'S R-39</td>
<td>L</td>
<td>BCH</td>
<td>21</td>
<td>105</td>
</tr>
<tr>
<td>6-June-2000</td>
<td>290'S R-34</td>
<td>L</td>
<td>BCH</td>
<td>44</td>
<td>120</td>
</tr>
<tr>
<td>8-June-2000</td>
<td>800'S R-38</td>
<td>L</td>
<td>BCH</td>
<td>33</td>
<td>133</td>
</tr>
<tr>
<td>11-June-2000</td>
<td>800'S R-39</td>
<td>L</td>
<td>BCH</td>
<td>19</td>
<td>70</td>
</tr>
<tr>
<td>11-June-2000</td>
<td>900'S R-39</td>
<td>L</td>
<td>BCH</td>
<td>20</td>
<td>60</td>
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<tr>
<td>19-June-2000</td>
<td>0'S T-36</td>
<td>L</td>
<td>BCH</td>
<td>49</td>
<td>106</td>
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<tr>
<td>20-June-2000</td>
<td>0'S T-36</td>
<td>M</td>
<td>BCH</td>
<td>41</td>
<td>58</td>
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<td>25-June-2000</td>
<td>450'S R-39</td>
<td>L</td>
<td>BCH</td>
<td>20</td>
<td>102</td>
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<td>26-June-2000</td>
<td>400'S R-40</td>
<td>L</td>
<td>BCH</td>
<td>10</td>
<td>210</td>
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<td>350'S T-36</td>
<td>M</td>
<td>BCH</td>
<td>44</td>
<td>50</td>
</tr>
<tr>
<td>10-July-2000</td>
<td>500'S R-37</td>
<td>U</td>
<td>BCH</td>
<td>99</td>
<td>47</td>
</tr>
<tr>
<td>13-July-2000</td>
<td>0'S R-39</td>
<td>L</td>
<td>BCH</td>
<td>29</td>
<td>112</td>
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<td>17-July-2000</td>
<td>400'S R-40</td>
<td>U</td>
<td>BCH</td>
<td>212</td>
<td>32</td>
</tr>
<tr>
<td>18-July-2000</td>
<td>900'S R-40</td>
<td>M</td>
<td>BCH</td>
<td>88</td>
<td>86</td>
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<tr>
<td>19-July-2000</td>
<td>450's R-39</td>
<td>L</td>
<td>BCH</td>
<td>32</td>
<td>144</td>
</tr>
<tr>
<td>2-Aug-2000</td>
<td>100'S R-37</td>
<td>M</td>
<td>BCH</td>
<td>60</td>
<td>56</td>
</tr>
<tr>
<td>3-Aug-2000</td>
<td>800'S T-36</td>
<td>L</td>
<td>BCH</td>
<td>38</td>
<td>127</td>
</tr>
</tbody>
</table>

Location n1
---
L = Lower 1/3 beach
M = Mid 1/3 Beach
U = Upper 1/3 beach

Location n2
---
BCH = open beach
ESC = at escarpment
VEG = in vegetation

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Marine Turtle Nest Protection Measures Including Nest Success Evaluations For the City of Sarasota,
1998 Lido Beach Restoration & South Lido Beach Restoration Projects, 12/29/00
Table 5. Nest locations by relative beach width (n=26).

<table>
<thead>
<tr>
<th>Location</th>
<th>Number of Nests</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upper/Landward</td>
<td>2</td>
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<tr>
<td>Mid-Beach</td>
<td>7</td>
</tr>
<tr>
<td>Lower/Seaward</td>
<td>17</td>
</tr>
</tbody>
</table>

Nest Damage:

The summer of 2000 was marked by tropical storm and hurricane events which impacted Gulf Coast beaches. Many nests both within and outside of the project area were inundated by tidal activity. Thus, both nest and hatch success for all nests (both in situ and relocated) were affected. Fifty percent of the nests (13 of 26) in the project area were inundated and two of these were subsequently washed out by storm tides. Two nests were relocated higher on the beach after they were found to be washing out or were in immediate danger of washing out. Nine of the inundated nests (69%) experienced some hatch, with a hatch success of 62.1 percent (Table 6).

Table 6. Hatch success of nests experiencing inundation (n=13).

<table>
<thead>
<tr>
<th>Nest Location</th>
<th>Distance From MHW</th>
<th>How damaged</th>
<th>#Hatched</th>
<th>#Total Eggs</th>
<th>Reloc.</th>
<th>Hatch Success</th>
</tr>
</thead>
<tbody>
<tr>
<td>400'S R-35</td>
<td>18'</td>
<td>Inundated,</td>
<td>Unknown</td>
<td>Unknown</td>
<td>No</td>
<td>Unknown</td>
</tr>
<tr>
<td>290'S R-34</td>
<td>44'</td>
<td>Washed over 7/15-7/17</td>
<td>1</td>
<td>96</td>
<td>No1.0%</td>
<td></td>
</tr>
<tr>
<td>700'S R-35</td>
<td>17'</td>
<td>Inundated,</td>
<td>52</td>
<td>126</td>
<td>No</td>
<td>41.3%</td>
</tr>
<tr>
<td>0'S T-36</td>
<td>49'</td>
<td>Washed over 7/1-7/3</td>
<td>108</td>
<td>124</td>
<td>No87.1%</td>
<td></td>
</tr>
<tr>
<td>0'S T-36</td>
<td>41'</td>
<td>Inundated,</td>
<td>86</td>
<td>107</td>
<td>No</td>
<td>80.4%</td>
</tr>
<tr>
<td>100'S R-37</td>
<td>60'</td>
<td>Washed over 7/17</td>
<td>0</td>
<td>Unknown</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>800'S T-36</td>
<td>38'</td>
<td>Inundated,</td>
<td>0</td>
<td>Unknown</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>300'S R-39</td>
<td>20'</td>
<td>Washed out 9/17</td>
<td>84</td>
<td>114</td>
<td>No</td>
<td>73.7%</td>
</tr>
<tr>
<td>150'S R-39</td>
<td>21'</td>
<td>Inundated,</td>
<td>125</td>
<td>138</td>
<td>No</td>
<td>90.6%</td>
</tr>
<tr>
<td>850'S R-40</td>
<td>14'</td>
<td>Washed over 7/1-7/3</td>
<td>48</td>
<td>109</td>
<td>No</td>
<td>44.0%</td>
</tr>
<tr>
<td>100'S R-40</td>
<td>37'</td>
<td>Inundated,</td>
<td>52</td>
<td>118</td>
<td>No</td>
<td>44.1%</td>
</tr>
<tr>
<td>450'S R-39</td>
<td>20'</td>
<td>Washed over 7/1-7/3</td>
<td>89</td>
<td>105</td>
<td>No</td>
<td>84.8%</td>
</tr>
<tr>
<td>400'S R-40</td>
<td>10'</td>
<td>Inundated,</td>
<td>0</td>
<td>116</td>
<td>Yes</td>
<td>0%</td>
</tr>
</tbody>
</table>

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Marine Turtle Nest Protection Measures Including Nest Success Evaluations For the City of Sarasota,
1998 Lido Beach Restoration & South Lido Beach Restoration Projects, 12/29/00
Incubation:

The average incubation was calculated for *in situ* and relocated nests. Nests left *in situ* (n=24) on the beach, or not relocated, which also had a hatch date (n=20) had an average incubation rate of 52 days (range 48-57 days). None of the relocated nests (n=2) exhibited evidence of hatch. The average incubation rate of in situ nests for the year 2000 (52 days) showed a slight increase from 1999 (50 days), but decreased from 1997 and 1998 (60 days and 58 days, respectively). The range of incubation for in situ nests (48 to 57 days) fell within the range seen during the 1997 to 1999 seasons (48 to 67 days). (Table 7).

<table>
<thead>
<tr>
<th>Year</th>
<th>Relocated</th>
<th>Average Incubation Rate</th>
<th>Range of Incubation</th>
<th>Hatch Success</th>
</tr>
</thead>
<tbody>
<tr>
<td>1997</td>
<td>Relocated</td>
<td>59 days</td>
<td>55-67 days</td>
<td>88%</td>
</tr>
<tr>
<td></td>
<td><em>In situ</em></td>
<td>60 days</td>
<td>56-67 days</td>
<td>84%</td>
</tr>
<tr>
<td>1998</td>
<td>Relocated</td>
<td>55 days</td>
<td>49-60 days</td>
<td>47.6%</td>
</tr>
<tr>
<td></td>
<td><em>In situ</em></td>
<td>58 days</td>
<td>51-64 days</td>
<td>56.6%</td>
</tr>
<tr>
<td>1999</td>
<td>Relocated</td>
<td>55 days</td>
<td>51-59 days</td>
<td>56.1%</td>
</tr>
<tr>
<td></td>
<td><em>In situ</em></td>
<td>50 days</td>
<td>48-52 days</td>
<td>79.7%</td>
</tr>
<tr>
<td>2000</td>
<td>Relocated</td>
<td>N/A</td>
<td>N/A</td>
<td>0%</td>
</tr>
<tr>
<td></td>
<td><em>In situ</em></td>
<td>52 days</td>
<td>48-57 days</td>
<td>75.1%</td>
</tr>
</tbody>
</table>

Hatch and Emergence Success:

Twenty-three out of a total of 26 nests were excavated for nest success evaluation. Hatch success ranged from 75.1% for *in situ* nests to 0% for the relocated nest (Table 7). The overall hatch success rate was 71.5% for both relocated and *in situ* nests (Table 8).

Each evaluated nest was excavated three days or 72 hours after the initial hatch. The delayed nest excavation allowed the majority of hatchlings time to emerge from the nest on their own. Hatchlings that have emerged on their own are more vigorous and better equipped to handle the trek down the shoreline to the water. Once in the water these hatchlings also have a better chance at survival as their external yolk sacs have been completely utilized and/or absorbed allowing the hatchling to dive more readily and swim more vigorously.
Table 8. Hatch success for relocated and in situ (not relocated) nests.

<table>
<thead>
<tr>
<th></th>
<th>Relocated n=1</th>
<th>in situ n=22</th>
<th>Total n=23</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eggs Depredated</td>
<td>0</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Eggs Hatched</td>
<td>0</td>
<td>1742</td>
<td>1742</td>
</tr>
<tr>
<td>Eggs Unhatched</td>
<td>116</td>
<td>445</td>
<td>561</td>
</tr>
<tr>
<td>Live Pipped</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Dead Pipped</td>
<td>0</td>
<td>128</td>
<td>128</td>
</tr>
<tr>
<td>Total # of Eggs</td>
<td>116</td>
<td>2321</td>
<td>2437</td>
</tr>
<tr>
<td>Percent Hatch Success</td>
<td>0%</td>
<td>75.1%</td>
<td>71.5%</td>
</tr>
</tbody>
</table>

Excavations of the 23 nests revealed that out of 1,742 hatched eggs, 152 live hatchlings and 65 dead hatchlings remained in the nests while 1,525 emerged on their own within the 72 hour time frame (Table 9). A 88% emergence success was recorded for in situ nests, and there was no emergence from the one relocated nest which was evaluated.

Table 9. Hatchling emergence success for relocated and in situ (not relocated) nests.

<table>
<thead>
<tr>
<th></th>
<th>Relocated</th>
<th>in situ</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eggs Hatched</td>
<td>0</td>
<td>1742</td>
<td>1742</td>
</tr>
<tr>
<td>- Live in Nest</td>
<td>(0)</td>
<td>(152)</td>
<td>(152)</td>
</tr>
<tr>
<td>- Dead in Nest</td>
<td>(0)</td>
<td>(65)</td>
<td>(65)</td>
</tr>
<tr>
<td>Total # Emerged</td>
<td>0</td>
<td>1525</td>
<td>1525</td>
</tr>
<tr>
<td>Percent Emerged</td>
<td>0%</td>
<td>88%</td>
<td>88%</td>
</tr>
</tbody>
</table>

Hatchling Disorientation Events:

A total of eleven hatchling disorientation events (Appendix E and Table 10) were documented in the project area. After emerging from the nest hatchlings typically move away from shadows (e.g., dune vegetation, tree silhouettes, and unlighted structures) and move toward the lighter, open horizon of the water (Salmon et al., 1992). Hatchlings are attracted to artificial lighting (Witherington, 1991; 1992; 1996) and instead of heading toward the water will travel great distances to artificially lighted areas. This activity of looping around or traveling in a direction other than to the water is termed a disorientation. Disorientation events often lead to death of the hatchlings from dehydration, predation, or being run over by automobiles when they are attracted into streets by street lights. Disorientation events may involve from one hatchling to an entire nest.
Table 10. Summary of marine turtle hatchling disorientation events (n= 11).

<table>
<thead>
<tr>
<th>Incident Date</th>
<th>Nest Location</th>
<th>#Hatchlings Disorienting</th>
<th>% of Hatch Disorienting</th>
<th>Traveled Direction</th>
</tr>
</thead>
<tbody>
<tr>
<td>23-June-2000</td>
<td>200'S T-36</td>
<td>45</td>
<td>49%</td>
<td>E,S - street light, sign</td>
</tr>
<tr>
<td>11-July-2000</td>
<td>150'S R-39</td>
<td>12</td>
<td>96%</td>
<td>E - fireworks</td>
</tr>
<tr>
<td>12-July-2000</td>
<td>675'S T-36</td>
<td>unknown</td>
<td>unknown</td>
<td>E,N,S - street</td>
</tr>
<tr>
<td>19-July-2000</td>
<td>100'S R-40</td>
<td>18</td>
<td>35%</td>
<td>E,N,S - exterior/interior condo</td>
</tr>
<tr>
<td>25-July-2000</td>
<td>450'S R-39</td>
<td>unknown</td>
<td>unknown</td>
<td>E-motel</td>
</tr>
<tr>
<td>29-July-2000</td>
<td>900'S R-39</td>
<td>9</td>
<td>12%</td>
<td>N,E,S - unknown source</td>
</tr>
<tr>
<td>4-August-2000</td>
<td>800'S R-38</td>
<td>79</td>
<td>87%</td>
<td>N,S - unknown source</td>
</tr>
<tr>
<td>8-August-2000</td>
<td>0'S T-36</td>
<td>98</td>
<td>91%</td>
<td>E - automobile, interior condo</td>
</tr>
<tr>
<td>1-Sept-2000</td>
<td>500'S R-37</td>
<td>2</td>
<td>4%</td>
<td>E,S - walkover</td>
</tr>
<tr>
<td>2-Sept-2000</td>
<td>0'S R-39</td>
<td>89</td>
<td>100%</td>
<td>E,S - exterior condominium</td>
</tr>
<tr>
<td>9-Sept-2000</td>
<td>900'S R-40</td>
<td>25</td>
<td>69%</td>
<td>E,N - exterior condominium, possibly restaurant</td>
</tr>
</tbody>
</table>

All eleven disorientation events involved nests that were laid on the open beach. Restraining cages were placed over two nests that had disoriented during initial hatch and one additional nest which was located in an area in which disorientation events had previously occurred.

CONCLUSIONS

1998 Lido Beach Restoration Project Final Report

This report has presented the results of marine turtle monitoring for the City of Sarasota, Lido Key beach restoration project, year two post-project. A total of 26 nests and 23 false crawls of the loggerhead sea turtle (Caretta caretta) were documented between May 1st and October 31st, 2000 within the project area (R-34 to R-41). No emergences were documented for the green turtle (Chelonia mydas) for the 2000 season. The total number of nests was greater for 2000 than in the three previous seasons. The total number of nests documented in 1997 was 19 (preconstruction), 16 for 1998 (year of construction), and 22 for 1999 (year one post-construction). Hatch success for in situ nests averaged 75.1% while relocated nests was 0%. The hatch success for all nests was affected by tropical storm and hurricane tidal activity and associated heavy rains that caused the inundation of 50% of the nests. Emergence success for in situ nests was 88% and for relocated nests was 0%, the overall emergence success was 88%.

Monitoring for the City of Sarasota, Lido Key Beach Restoration Project was completed on 10/31/00, coinciding with the regulatory end of sea turtle nesting/hatching season.
RESULTS AND DISCUSSION

Turtle Emergences (Nests & False Crawls):

Beach monitoring procedures resulted in the documentation of a total of 22 nests and 21 false crawls (Table 11) for the City of Sarasota, Lido Key beach restoration project. All of the nests were completed by *Caretta caretta* (loggerhead), no *Chelonia mydas* (green turtle) nests were documented within the project area for the 2000 season. The false crawl to nest ratio was 0.95 false crawls to one nest. A comparison of the 2000 data to the 1997 data (previous to the Lido Beach Restoration Project) showed a decrease in nesting activity, while a comparison to the 1999 data showed an increase in activity. Nesting activity during the years 1998 and 2000 was identical (Table 12).

Table 12. Nest to false crawl ratio for marine turtles nesting in the South Lido Key Beach Restoration project area (R-38 to R-44), 1997 through 2000.

<table>
<thead>
<tr>
<th>Year</th>
<th>Total # False Crawls (FC)</th>
<th>Total # Nests (N)</th>
<th>False Crawl/Nest Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>1997</td>
<td>22</td>
<td>25</td>
<td>0.88:1</td>
</tr>
<tr>
<td>1998</td>
<td>44</td>
<td>22</td>
<td>2.00:1</td>
</tr>
<tr>
<td>1999</td>
<td>22</td>
<td>13</td>
<td>1.69:1</td>
</tr>
<tr>
<td>2000</td>
<td>21</td>
<td>22</td>
<td>0.95:1</td>
</tr>
</tbody>
</table>

The seasonal pattern of marine turtle emergences within the project shoreline is shown in Figure 5. On May 19, a nest was recorded, representing the first nesting activity of the season for the South Lido Beach project area. The nest was located west of Coquina Beach Motel at 1008 Ben Franklin Drive, approximately 300 feet south of monument R-39.

On August 6, one nest was documented, representing the final nesting activity for the project. The nest was located west of Lido Regency at 1700 Ben Franklin Drive, approximately 500 feet south of monument R-41. The period of peak nesting occurred in the eight weeks between May 28th and July 23rd during which time 86 percent of the total nests occurred.
### Table 11. Marine turtle nesting data for the Lido Key Beach Restoration Project: Sarasota County, Florida - 1999.

<table>
<thead>
<tr>
<th>Date</th>
<th>Address</th>
<th>Nest</th>
<th>Type</th>
<th>No.</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>19-May-00</td>
<td>1008 BFD / COQUINA MOTEL</td>
<td>Nest</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20-May-00</td>
<td>930 BFD / GULF BEACH MOTEL</td>
<td>Nest</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23-May-00</td>
<td>1800 BFD / L'ELEGANCE</td>
<td>F/C</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24-May-00</td>
<td>2050 BFD / HALF MOON BEACH CLUB</td>
<td>F/C</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30-May-00</td>
<td>1540 BFD / HELMSLEY SANDCASTLE (NORTH END)</td>
<td>Nest</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>31-May-00</td>
<td>1212 BFD / LIDO BEACH CLUB</td>
<td>Nest</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01-Jun-00</td>
<td>1050 BFD / LIMETREE</td>
<td>Nest</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>03-Jun-00</td>
<td>1050 BFD / LIMETREE (W OF POOL AREA)</td>
<td>Nest</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>08-Jun-00</td>
<td>800 BFD / LIDO AMBASSADOR</td>
<td>Nest</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11-Jun-00</td>
<td>1100-1104 BFD / LIDO SURF &amp; SAND</td>
<td>Nest</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11-Jun-00</td>
<td>1148 BFD / SUN &amp; SURF COLONY</td>
<td>Nest</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11-Jun-00</td>
<td>1750 BFD / KEY TOWERS SOUTH</td>
<td>Nest</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11-Jun-00</td>
<td>850 BFD / SUN TIDE</td>
<td>Nest</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14-Jun-00</td>
<td>1770 BFD / LIDO HARBOR TOWERS (SOUTH END)</td>
<td>Nest</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14-Jun-00</td>
<td>2050 BFD / HALF MOON BEACH CLUB</td>
<td>F/C</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16-Jun-00</td>
<td>1700 BFD / LIDO REGENCY</td>
<td>Nest</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17-Jun-00</td>
<td>1700 BFD / LIDO REGENCY</td>
<td>Nest</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17-Jun-00</td>
<td>1750 BFD / KEY TOWERS SOUTH</td>
<td>Nest</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19-Jun-00</td>
<td>1540 BFD / HELMSLEY SANDCASTLE</td>
<td>F/C</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22-Jun-00</td>
<td>2050 BFD / HALF MOON BEACH CLUB</td>
<td>F/C</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25-Jun-00</td>
<td>1050 BFD / LIMETREE BEACH RESORT</td>
<td>Nest</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25-Jun-00</td>
<td>1540 BFD / HELMSLEY SANDCASTLE</td>
<td>F/C</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>26-Jun-00</td>
<td>1330 BFD / AZURE TIDES</td>
<td>Nest</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>27-Jun-00</td>
<td>1050 BFD / LIMETREE BEACH RESORT</td>
<td>F/C</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>27-Jun-00</td>
<td>1900 BFD / FIRST LIDO CONDO</td>
<td>Nest</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28-Jun-00</td>
<td>1800 BFD / L'ELEGANCE</td>
<td>Nest</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>29-Jun-00</td>
<td>1800 BFD / L'ELEGANCE</td>
<td>Nest</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>29-Jun-00</td>
<td>800 BFD / LIDO AMBASSADOR</td>
<td>Nest</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>08-Jul-00</td>
<td>1750 BFD / KEY TOWERS SOUTH</td>
<td>Nest</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Mote Marine Laboratory**

Marine Turtle Nest Protection Measures Including Nest Success Evaluations For the City of Sarasota, 1998 Lido Beach Restoration & South Lido Beach Restoration Projects, 12/29/00
### Table 11. (Continued)

<table>
<thead>
<tr>
<th>Date</th>
<th>Address</th>
<th>Nest</th>
<th>Moved</th>
<th>Type</th>
<th>Date Hatched</th>
<th>Type of Disturbance</th>
</tr>
</thead>
<tbody>
<tr>
<td>10-Jul-00</td>
<td>2150 BFD / SARASOTA SANDS (SOUTH BLDG)</td>
<td></td>
<td>F/C</td>
<td></td>
<td>02-Sep-00</td>
<td>DIS 9/2</td>
</tr>
<tr>
<td>10-Jul-00</td>
<td>1800 BFD / L'ELEGANCE</td>
<td></td>
<td>F/C</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10-Jul-00</td>
<td>1770 BFD-1750 BFD / LIDO HARBOR &amp; KEY TOWERS</td>
<td></td>
<td>F/C</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12-Jul-00</td>
<td>1330 BFD / AZURE TIDES</td>
<td></td>
<td>F/C</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13-Jul-00</td>
<td>850 BFD / SUNTIDE ISLAND BEACH CLUB</td>
<td>Nest</td>
<td>R</td>
<td></td>
<td>09-Sep-00</td>
<td></td>
</tr>
<tr>
<td>13-Jul-00</td>
<td>1330 BFD / AZURE TIDES</td>
<td></td>
<td>F/C</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13-Jul-00</td>
<td>930 BFD / GULF BEACH MOTEL</td>
<td></td>
<td>F/C</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17-Jul-00</td>
<td>1330 BFD / AZURE TIDES (SOUTH END)</td>
<td>Nest</td>
<td>R</td>
<td></td>
<td>09-Sep-00</td>
<td>DIS 9/9</td>
</tr>
<tr>
<td>18-Jul-00</td>
<td>1540 BFD / HARLEY SANDCASTLE</td>
<td>Nest</td>
<td>R</td>
<td></td>
<td>09-Sep-00</td>
<td>DIS 9/9</td>
</tr>
<tr>
<td>18-Jul-00</td>
<td>2150 BFD / SARASOTA SANDS</td>
<td></td>
<td>F/C</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19-Jul-00</td>
<td>1050 BFD / LIMETREE</td>
<td></td>
<td>F/C</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>02-Aug-00</td>
<td>1330 BFD / AZURE TIDES</td>
<td>Nest</td>
<td>F/C</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>06-Aug-00</td>
<td>1700 BFD / LIDO REGENCY</td>
<td></td>
<td>F/C</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>No. Hatched</th>
<th>Total Eggs</th>
</tr>
</thead>
<tbody>
<tr>
<td>89</td>
<td>101</td>
</tr>
<tr>
<td>78</td>
<td>82</td>
</tr>
<tr>
<td>36</td>
<td>75</td>
</tr>
<tr>
<td>96</td>
<td>102</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Mote Marine Laboratory**

Marine Turtle Nest Protection Measures Including Nest Success Evaluations For the City of Sarasota.

1998 Lido Beach Restoration & South Lido Beach Restoration Projects, 12/29/00

Page 20
Figure 5. Seasonal pattern of marine turtle emergences within the Lido Beach restoration project.

The seasonal pattern of nesting for the project shoreline was similar to the nesting activity for the entire Lido Key shoreline with the first nest documented on May 1, and the last nest documented on August 7 as reported in the Florida Department of Environmental Protection Marine Turtle Nesting Summary Questionnaire for 1999 and the Florida Department of Environmental Protection Nesting Survey Reporting form for 2000 (Appendix D). The nesting density was slightly greater outside of the project area with 37 nests and 31 false crawls documented in the approximate 9300 linear feet of shoreline to the north and to the south of the project area (Table 13, Figure 6).
Figure 6. Marine turtle nesting activity located by shore parallel position on the beach relative to location between FDEP/CCCL Reference Monuments, Lido Key, 2000.

Table 13. Marine Turtle Nesting along the Lido Key shoreline, 2000

<table>
<thead>
<tr>
<th>Location</th>
<th>#False Crawls (FC)</th>
<th>#Nests (N)</th>
<th>FC/N ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>100'S R-31 (in New Pass) to R-38</td>
<td>31</td>
<td>30</td>
<td>1.03:1</td>
</tr>
<tr>
<td>R-38 to R-44 (Project)</td>
<td>21</td>
<td>22</td>
<td>0.95:1</td>
</tr>
<tr>
<td>R-44 to 2400' E R-44 (in Big Sarasota Pass)</td>
<td>0</td>
<td>7</td>
<td>0:7</td>
</tr>
</tbody>
</table>
Nest Site Selection:

Nesting habitat available in the project area varied from approximately 48 feet to approximately 245 feet. In order to determine the turtle's preference in nesting location, the beach width at nest sites was estimated in feet by monitoring personnel on the morning following egg deposition (Table 14). The beach width was divided into thirds, and nest locations were then classified as either upper beach (landward), middle beach, or lower beach (seaward) (Table 15). By looking at the nourished beach regardless of width, the seaward or lower third of the beach was the preferred location with 55% (n=12) of the nests. Eighteen percent (n=4) of the nests occurred in the upper or landward third of the beach, and 27% (n=6) occurred on the middle beach.

Table 14. Nest site selection by marine turtles, South Lido Beach Restoration area.

<table>
<thead>
<tr>
<th>Date</th>
<th>DEP Monument</th>
<th>Location n1</th>
<th>Location n2</th>
<th>Approximate Feet from MHW</th>
<th>Approximate Feet from barrier</th>
</tr>
</thead>
<tbody>
<tr>
<td>19-May-2000</td>
<td>300'S R-39</td>
<td>L</td>
<td>BCH</td>
<td>20</td>
<td>100</td>
</tr>
<tr>
<td>20-May-2000</td>
<td>150'S R-39</td>
<td>L</td>
<td>BCH</td>
<td>21</td>
<td>88</td>
</tr>
<tr>
<td>30-May-2000</td>
<td>850'S R-40</td>
<td>L</td>
<td>BCH</td>
<td>14</td>
<td>90</td>
</tr>
<tr>
<td>31-May-2000</td>
<td>100'S R-40</td>
<td>L</td>
<td>BCH</td>
<td>37</td>
<td>130</td>
</tr>
<tr>
<td>1-June-2000</td>
<td>450'S R-39</td>
<td>L</td>
<td>BCH</td>
<td>21</td>
<td>105</td>
</tr>
<tr>
<td>8-June-2000</td>
<td>800'S R-38</td>
<td>L</td>
<td>BCH</td>
<td>33</td>
<td>133</td>
</tr>
<tr>
<td>11-June-2000</td>
<td>800'S R-39</td>
<td>L</td>
<td>BCH</td>
<td>19</td>
<td>70</td>
</tr>
<tr>
<td>11-June-2000</td>
<td>900'S R-39</td>
<td>L</td>
<td>BCH</td>
<td>20</td>
<td>60</td>
</tr>
<tr>
<td>11-June-2000</td>
<td>600'S R-41</td>
<td>M</td>
<td>BCH</td>
<td>32</td>
<td>16</td>
</tr>
<tr>
<td>14-June-2000</td>
<td>800'S R-41</td>
<td>M</td>
<td>BCH</td>
<td>63</td>
<td>41</td>
</tr>
<tr>
<td>16-June-2000</td>
<td>500'S R-41</td>
<td>M</td>
<td>BCH</td>
<td>33</td>
<td>60</td>
</tr>
<tr>
<td>17-June-2000</td>
<td>500'S R-41</td>
<td>U</td>
<td>BCH</td>
<td>100</td>
<td>47</td>
</tr>
<tr>
<td>25-June-2000</td>
<td>450'S R-39</td>
<td>L</td>
<td>BCH</td>
<td>20</td>
<td>102</td>
</tr>
<tr>
<td>26-June-2000</td>
<td>400'S R-40</td>
<td>L</td>
<td>BCH</td>
<td>10</td>
<td>210</td>
</tr>
<tr>
<td>28-June-2000</td>
<td>100'S R-42</td>
<td>U</td>
<td>BCH</td>
<td>90</td>
<td>0</td>
</tr>
<tr>
<td>29-June-2000</td>
<td>100'S R-42</td>
<td>U</td>
<td>VEG</td>
<td>92</td>
<td>0</td>
</tr>
<tr>
<td>8-July-2000</td>
<td>600'S R-41</td>
<td>M</td>
<td>BCH</td>
<td>30</td>
<td>23</td>
</tr>
<tr>
<td>13-July-2000</td>
<td>0'S R-39</td>
<td>L</td>
<td>BCH</td>
<td>29</td>
<td>112</td>
</tr>
<tr>
<td>17-July-2000</td>
<td>400'S R-40</td>
<td>U</td>
<td>BCH</td>
<td>212</td>
<td>32</td>
</tr>
<tr>
<td>18-July-2000</td>
<td>900'S R-40</td>
<td>M</td>
<td>BCH</td>
<td>88</td>
<td>86</td>
</tr>
<tr>
<td>19-July-2000</td>
<td>450'S R-39</td>
<td>L</td>
<td>BCH</td>
<td>32</td>
<td>144</td>
</tr>
<tr>
<td>6-August-2000</td>
<td>500'S R-41</td>
<td>M</td>
<td>BCH</td>
<td>42</td>
<td>59</td>
</tr>
</tbody>
</table>

Location n1

- L = Lower 1/3 beach
- M = Mid 1/3 Beach
- U = Upper 1/3 beach

Location n2

- BCH = open beach
- ESC = escarpment
- VEG = in vegetation

MOTE MARINE LABORATORY

Marine Turtle Nest Protection Measures Including Nest Success Evaluations For The City of Sarasota,
1998 Lido Beach Restoration & South Lido Beach Restoration Projects, 12/29/00
Table 15. Nest locations by relative beach width, South Lido Beach Restoration area (n=22).

<table>
<thead>
<tr>
<th>Location</th>
<th>Number of Nests</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upper/Landward</td>
<td>4</td>
</tr>
<tr>
<td>Mid-Beach</td>
<td>6</td>
</tr>
<tr>
<td>Lower/Seaward</td>
<td>12</td>
</tr>
</tbody>
</table>

Nest Damage:

The summer of 2000 was marked by tropical storm and hurricane events which impacted Gulf Coast beaches. Many nests both within and outside of the project area were inundated by tidal activity. Thus, both nest and hatch success for all nests (both in situ and relocated) were affected. Fifty percent of the nests (11 of 22) in the project area were inundated and one of these, located 500 feet south of monument R-41, was subsequently washed out by storm tides. One nest was relocated higher on the beach because it was in immediate danger of washing out. Eight of the inundated nests (73%) experienced some hatch, with a hatch success of 50.9 percent (Table 16).

Table 16. Hatch success of nests experiencing inundation, South Lido Beach Restoration area (n=11).

<table>
<thead>
<tr>
<th>Nest Location</th>
<th>Distance From MHW</th>
<th>How damaged</th>
<th>#Hatched</th>
<th>#Total Eggs</th>
<th>Reloc.</th>
<th>Hatch Success</th>
</tr>
</thead>
<tbody>
<tr>
<td>300'S R-39</td>
<td>20'</td>
<td>Inundated,</td>
<td>84</td>
<td>114</td>
<td>No</td>
<td>73.7%</td>
</tr>
<tr>
<td>150'S R-39</td>
<td>21'</td>
<td>Washed Over 7/1-3</td>
<td>125</td>
<td>138</td>
<td>No</td>
<td>90.6%</td>
</tr>
<tr>
<td>850'S R-40</td>
<td>14'</td>
<td>Inundated,</td>
<td>48</td>
<td>109</td>
<td>No</td>
<td>44.0%</td>
</tr>
<tr>
<td>100'S R-40</td>
<td>37'</td>
<td>Washed Over 7/1-3, Underwater 7/15-16</td>
<td>52</td>
<td>118</td>
<td>No</td>
<td>44.1%</td>
</tr>
<tr>
<td>800'S R-41</td>
<td>63'</td>
<td>Inundated,</td>
<td>9</td>
<td>133</td>
<td>No</td>
<td>6.8%</td>
</tr>
<tr>
<td>500'S R-41</td>
<td>33'</td>
<td>Inundated,</td>
<td>0</td>
<td>60</td>
<td>No</td>
<td>0%</td>
</tr>
<tr>
<td>500'S R-41</td>
<td>100'</td>
<td>Underwater 7/1-3</td>
<td>29</td>
<td>122</td>
<td>No</td>
<td>23.8%</td>
</tr>
<tr>
<td>450'S R-39</td>
<td>20'</td>
<td>Inundated,</td>
<td>89</td>
<td>105</td>
<td>No</td>
<td>84.8%</td>
</tr>
<tr>
<td>400'S R-40</td>
<td>10'</td>
<td>Washed Over 7/13</td>
<td>0</td>
<td>116</td>
<td>Yes</td>
<td>0%</td>
</tr>
<tr>
<td>600'S R-41</td>
<td>30'</td>
<td>Inundated,</td>
<td>53</td>
<td>121</td>
<td>No</td>
<td>43.8%</td>
</tr>
<tr>
<td>500'S R-41</td>
<td>42'</td>
<td>Inundated,</td>
<td>0</td>
<td>Unknown</td>
<td>No</td>
<td>Washed Out 9/17</td>
</tr>
</tbody>
</table>

MOTe Marine Laboratory

Marine Turtle Nest Protection Measures Including Nest Success Evaluations For the City of Sarasota, 1998 Lido Beach Restoration & South Lido Beach Restoration Projects, 12/29/00
Incubation:

The average incubation was calculated for *in situ* and relocated nests. Nests left *in situ* (n=21) on the beach, or not relocated, which also had a hatch date (n=18) had an average incubation rate of 52 days (range 48-57 days). None of the relocated nests (n=1) exhibited evidence of hatch. The average incubation rate of *in situ* nests for the year 2000 (52 days) showed a slight increase from 1999 (51 days), but decreased from 1997 and 1998 (60 days). The range of incubation for *in situ* nests (48 to 57 days) fell within the range seen during the 1997 to 1999 seasons (48 to 67 days). (Table 17).

<table>
<thead>
<tr>
<th>Year</th>
<th>Relocated</th>
<th>In situ</th>
</tr>
</thead>
<tbody>
<tr>
<td>1997</td>
<td>60 days</td>
<td>60 days</td>
</tr>
<tr>
<td>1998</td>
<td>56 days</td>
<td>51 days</td>
</tr>
<tr>
<td>1999</td>
<td>56 days</td>
<td>52 days</td>
</tr>
<tr>
<td>2000</td>
<td>N/A</td>
<td>52 days</td>
</tr>
</tbody>
</table>

Table 17. Incubation and hatch success of relocated and *in situ* nests, South Lido Beach Restoration area, 1997 through 2000.

Hatch and Emergence Success:

Twenty-one out of a total of 22 nests were excavated for nest success evaluation. Hatch success ranged from 62.5% for *in situ* nests to 0% for the relocated nest (Table 7). The overall hatch success rate was 59.2% for both relocated and *in situ* nests (Table 18).

<table>
<thead>
<tr>
<th>Relocated</th>
<th>in situ</th>
</tr>
</thead>
<tbody>
<tr>
<td>n=1</td>
<td>n=20</td>
</tr>
<tr>
<td>Eggs Depredated</td>
<td>0</td>
</tr>
<tr>
<td>Eggs Hatched</td>
<td>0</td>
</tr>
<tr>
<td>Eggs Unhatched</td>
<td>116</td>
</tr>
<tr>
<td>Live Pipped</td>
<td>0</td>
</tr>
<tr>
<td>Dead Pipped</td>
<td>0</td>
</tr>
<tr>
<td>Total # of Eggs</td>
<td>116</td>
</tr>
</tbody>
</table>

| Percent Hatch Success | 0% | 62.5% | 59.2% |

Table 18. Hatch success for relocated and *in situ* (not relocated) nests, South Lido Beach Restoration area.
Each evaluated nest was excavated three days or 72 hours after the initial hatch. The delayed nest excavation allowed the majority of hatchlings time to emerge from the nest on their own. Hatchlings that have emerged on their own are more vigorous and better equipped to handle the trek down the shoreline to the water. Once in the water these hatchlings also have a better chance at survival as their external yolk sacs have been completely utilized and/or absorbed allowing the hatchling to dive more readily and swim more vigorously.

Excavations of the 21 nests revealed that out of 1,314 hatched eggs, 149 live hatchlings and 25 dead hatchlings remained in the nests while 1,140 emerged on their own within the 72 hour time frame (Table 19). A 87% emergence success was recorded for in situ nests, and there was no emergence from the one relocated nest which was evaluated.

<table>
<thead>
<tr>
<th>Eggs Hatched</th>
<th>Relocated</th>
<th>in situ</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Live in Nest</td>
<td>(0)</td>
<td>(149)</td>
<td>(149)</td>
</tr>
<tr>
<td>- Dead in Nest</td>
<td>(0)</td>
<td>(25)</td>
<td>(25)</td>
</tr>
<tr>
<td>Total # Emerged</td>
<td>0</td>
<td>1140</td>
<td>1140</td>
</tr>
<tr>
<td>Percent Emerged</td>
<td>0%</td>
<td>87%</td>
<td>87%</td>
</tr>
</tbody>
</table>

**Hatchling Disorientation Events:**

A total of nine hatchling disorientation events (Appendix F and Table 20) were documented in the project area. After emerging from the nest hatchlings typically move away from shadows (e.g., dune vegetation, tree silhouettes, and unlighted structures) and move toward the lighter, open horizon of the water (Salmon et al., 1992). Hatchlings are attracted to artificial lighting (Witherington, 1991; 1992; 1996) and instead of heading toward the water will travel great distances to artificially lighted areas. This activity of looping around or traveling in a direction other than to the water is termed a disorientation. Disorientation events often lead to death of the hatchlings from dehydration, predation, or being run over by automobiles when they are attracted into streets by street lights. Disorientation events may involve from one hatchling to an entire nest.
Table 20. Summary of marine turtle hatchling disorientation events, South Lido Beach Restoration area (n= 9).

<table>
<thead>
<tr>
<th>Incident Date</th>
<th>Nest Location</th>
<th>#Hatchlings Disorienting</th>
<th>% of Hatch Disorienting</th>
<th>Traveled Direction</th>
</tr>
</thead>
<tbody>
<tr>
<td>11-July-2000</td>
<td>150'S R-39</td>
<td>12</td>
<td>96%</td>
<td>E- fireworks</td>
</tr>
<tr>
<td>19-July-2000</td>
<td>100'S R-40</td>
<td>18</td>
<td>35%</td>
<td>E,N,S - exterior/interior condo</td>
</tr>
<tr>
<td>25-July-2000</td>
<td>450'S R-39</td>
<td>unknown</td>
<td>unknown</td>
<td>E-motel</td>
</tr>
<tr>
<td>29-July-2000</td>
<td>900'S R-39</td>
<td>9</td>
<td>12%</td>
<td>N,E,S - unknown source</td>
</tr>
<tr>
<td>4-August-2000</td>
<td>800'S R-38</td>
<td>79</td>
<td>87%</td>
<td>N,S - unknown source</td>
</tr>
<tr>
<td>23-August-2000</td>
<td>100'S R-42</td>
<td>16-18</td>
<td>28-31%</td>
<td>S - condo</td>
</tr>
<tr>
<td>28-August-2000</td>
<td>600'S R-41</td>
<td>38</td>
<td>72%</td>
<td>E,S - interior condominium</td>
</tr>
<tr>
<td>2-Sept-2000</td>
<td>0'S R-39</td>
<td>89</td>
<td>100%</td>
<td>E,S - exterior condominium</td>
</tr>
<tr>
<td>9-Sept-2000</td>
<td>900'S R-40</td>
<td>25</td>
<td>69%</td>
<td>E,N - exterior condominium, possibly restaurant</td>
</tr>
</tbody>
</table>

All nine disorientation events involved nests that were laid on the open beach. Restraining cages were placed over one nest that had disoriented during the initial hatch and one additional nest which was located in an area in which disorientation events had previously occurred.

CONCLUSIONS

South Lido Beach Restoration, Year 2000, Pre-Construction Report

This report has presented the results of marine turtle monitoring for the City of Sarasota, South Lido Key beach restoration project, pre-construction. A total of 22 nests and 21 false crawls of the loggerhead sea turtle (*Caretta caretta*) were documented between May 1st and October 31st, 2000 within the project area (R-38 to R-44). No emergences were documented for the green turtle (*Chelonia mydas*) for the 2000 season. Hatch success for *in situ* nests averaged 62.5% while relocated nests was 0%. The hatch success for all nests was affected by tropical storm and hurricane tidal activity and associated heavy rains that caused the inundation of 50% of the nests. Emergence success for *in situ* nests was 87% and for relocated nests was 0%, the overall emergence success was 87%.

Monitoring for the South Lido Key Beach Restoration Project was completed on 10/31/00, coinciding with the regulatory end of sea turtle nesting/hatching season.

MOTE MARINE LABORATORY

Marine Turtle Nest Protection Measures Including Nest Success Evaluations For the City of Sarasota, 1998 Lido Beach Restoration & South Lido Beach Restoration Projects, 12/29/00
REFERENCES


APPENDIX A

FWCC MARINE TURTLE PERMITS
#054 AND/OR #126
2000
MARINE TURTLE PERMIT

Jerris J. Foote
Mote Marine Laboratory
1600 Ken Thompson Parkway
Sarasota, Florida 34236

TP #126 Permit Expires: 31 January 2001

New.

Authorized To: (1) hold turtles for rehabilitation, (2) hold loggerheads for educational display, (3) conduct necropsies, (4) maintain and display preserved specimens, (5) conduct public turtle watches, (6) tag turtles using external flipper tags, (7) tag turtles using PIT tags, (8) collect blood samples.

Authorized Nesting Survey Area: None.


General Conditions: Permitted individuals must adhere to the FWC marine turtle permit guidelines developed under a Section 6 Cooperative Agreement between FWC and the U.S. Fish and Wildlife Service.

Special Conditions: See attachment of special conditions.

David W. Arnold, Chief
Bureau of Protected Species Management
Office of Environmental Services

cc: Sandy MacPherson, Southeast Regional Sea Turtle Coordinator, USFWS
FMP, District(s) 4
FWC, Tequesta Office
AUTHORIZED PERSONNEL AMENDMENT

Jerris J. Foote
Mote Marine Laboratory
1600 Ken Thompson Parkway
Sarasota, Florida 34236

TP #126 Permit Expires: 31 January 2001

As of the date below, the following personnel are authorized to perform the activities listed on Marine Turtle Permit #126.


This personnel authorization supersedes all others and must be attached to the turtle permit of most recent issue. This is not a permit and cannot be used as such.

Bureau of Protected Species Management
Office of Environmental Services

cc: BPSM, Tallahassee
Vicki Wiese  
Mote Marine Laboratory  
1600 Ken Thompson Parkway  
Sarasota, Florida 34236

Permit Expires: 31 January 2001

Renewal, permitted activities amended.

Authorized To: (1) conduct stranding/salvage activities, (2) conduct nesting surveys, (3) screen nests with self-releasing screen/cage, (4) relocate nests, (5) screen nests with restraining cage.

Authorized Nesting Survey Area: Longboat Key South (Sarasota County section), Lido Key and Siesta Key (Sarasota/Manatee County Line south to Midnight Pass).

Authorized Research Projects: None.


General Conditions: Permitted individuals must adhere to the FWC marine turtle permit guidelines developed under a Section 6 Cooperative Agreement between FWC and the U.S. Fish and Wildlife Service.

Special Conditions: None.

David W. Arnold, Chief  
Bureau of Protected Species Management  
Office of Environmental Services

cc: Sandy MacPherson, Southeast Regional Sea Turtle Coordinator, USFWS  
FMP, District(s) 4  
FWC, Tequesta Office
AUTHORIZED PERSONNEL AMENDMENT

Vicki Wiese
Mote Marine Laboratory
1600 Ken Thompson Parkway
Sarasota, Florida 34236

TP #054 Permit Expires: 31 January 2001

As of the date below, the following personnel are authorized to perform the activities listed on Marine Turtle Permit #054.


This personnel authorization supersedes all others and must be attached to the turtle permit of most recent issue. This is not a permit and cannot be used as such.

August 28, 2000

Bureau of Protected Species Management
Office of Environmental Services

cc: BPSM, Tallahassee
AUTHORIZED PERSONNEL AMENDMENT

Vicki Wiese
Mote Marine Laboratory
1600 Ken Thompson Parkway
Sarasota, Florida 34236

TP #054

Permit Expires: 31 January 2001

As of the date below, the following personnel are authorized to perform the activities listed on Marine Turtle Permit #054.


This personnel authorization supersedes all others and must be attached to the turtle permit of most recent issue. This is not a permit and cannot be used as such.

Date: May 16, 2000

Bureau of Protected Species Management
Office of Environmental Services

cc: BPSM, Tallahassee
# 2000 NEST DATA FORM

**DATE NEST FOUND**

**LOCATION OF CRAWL (nearest address; house #)**

**RELOCATED?** YES NO

**NEW LOCATION (nearest address):**

**WHY WAS NEST RELOCATED?**

**LOCATION NOTES**

- Circle one: Upper Middle Lower
- Circle one: In Vegetation At Escarpment Open Beach
- Other ______
- Distance from MHW (in feet) ______
- Distance from Barrier (in feet) ______

**SCREENED:** NO / YES DATE SCREENED ______

**SELF-RELEASING BOX**

**SELF-RELEASING FLAT**

**RESTRAINING**

**BEFORE PREDATION**

**AFTER PREDATION**

**COMMENTS**

**CRAWL DIAGRAM**

---

**HATCHING DATA**

- Graduate Nest: 70 days after date laid if no evidence of hatchling emergence or 72 hrs after the first hatchling emergence.

**DATE NEST HATCHED**

**INCUBATION DAYS (OPTIONAL)**

**DATE EXCAVATED**

**EXCAVATED BY**

**WAS NEST DAMAGED?** YES NO

**WHAT CAUSED THE NEST TO BE DAMAGED?**

- DEPREDATION ______ DATE(S) ______
- RACCOON ______, ANTS ______, ARMADILLO ______,
- OTHER ______, UNKNOWN ______
- WASHED OVER BY TIDE ______ DATE(S) ______
- UNDER STANDING WATER ______ DATE(S) ______
- WASHED OUT ______ DATE(S) ______
- DISORIENTATION ______ DATE(S) ______

**HATCHED EGGS COUNTED**

- (+) ______ Live Hatchlings in Nest
- (+) ______ Dead Hatchlings in Nest
- (=) ______ Total of Hatchlings in Nest
- (=) ______ Total of Hatchlings Found in Nest
- (=) ______ Hatchlings emerged on Their Own
- (=) ______ Hatched Eggs Counted
- (+) ______ Live Pipped
- (+) ______ Dead Pipped
- (+) ______ Eggs Destroyed
- (+) ______ Eggs Unhatched
- (=) ______ Total # of Eggs in Nest

**IF APPLICABLE:** ______ # DEAD HATCHLINGS FOUND ON SURFACE WITHIN ~ 2' OF NEST

**COMMENTS:**

---

* IF THE HATCHLINGS WERE DISORIENTED, ATTACH A COPY OF THE DISORIENTATION REPORT.
2000 False Crawl Form

Emergence #: ________________________
Cc loggerhead __________ Cm green __________

Zone ________________
Observer ____________________________
False Crawl # ______________________
Date ________________________
Location of crawl (nearest address; house #)
__________________________________________________________________________

Location
Circle one: Upper  Middle  Lower
Circle one: In vegetation  At Escarpment  Open Beach
Other ___________________________________________

Distance from MHW (in feet) _______________________
Distance from Barrier (in feet) ___________________
Escarpment: yes no Straight  Sloped
Height of escarpment: ____________________________
Body Pitting: yes no
Egg Cavity: yes no (# of cavities __________)
Describe obvious reasons for false crawl: ____________________________

Crawl Diagram:
APPENDIX C

FWCC GUIDELINES FOR NEST CAGING, RESTRAINING AND SELF RELEASE
GUIDELINES FOR NESTING BEACH ACTIVITIES

make sure that anchoring stakes placed along the edge of the screen will not enter the egg chamber.

To find the location of the egg chamber cavity within the body pit, gently and systematically dig by hand, and probe with fingers only. Do not use shovels or any other tools for either digging or probing. Once the top eggs are located, use moist sand from a similar depth to re-cover the eggs. Dry sand should not be allowed to fall into the egg chamber. Once the egg chamber is re-covered to the upper level of the surrounding moist sand, gently pat the sand surface above the eggs with your hand. Temporarily mark the location of the egg chamber by carefully placing a marker (must be thin enough to pass through the mesh of the screen) a very short distance into the sand above the egg chamber. Be sure that this marker is not inserted into the egg chamber. Replace the dry sand over this area to the depth present before you began excavation. Your temporary marker should be tall enough to extend above the sand level.

Level the surface of the sand in a 4' x 4' square centered on your temporary marker. If the screen is to be buried, remove 2" of surface sand from the 4' x 4' square. Place the screen on the smoothed sand. Remove the temporary marker. Using hooked stakes, secure the four corners of the screen. You may use tent stakes or make your own stakes of re-bar or some other durable material. Even though the corners of the screen should be well away from the egg chamber, do not drive the stakes at an angle in the direction of the egg chamber. If the screen was placed 2" below the normal sand surface, place that sand on top of the screen after anchoring so that the egg chamber is at its original depth. In some areas, predators are very persistent and may dislodge screens with only four stakes. In this case, try using eight stakes and place the four additional stakes midway between the corners. If stakes are easily dislodged, longer stakes may be used.

Depending on the local situation, you may or may not want to mark screened nests. In some situations, if screened nests are not marked with an appropriate sign, a beach user is likely to discover the screen, think that it should not be on the beach, and pull it up. Marking screened nests may also be necessary to prevent people from inadvertently injuring themselves on the screen or on any stakes. Signs for marking screened nests are available from the Florida Marine Research Institute in St. Petersburg. In other situations, marking nests may attract unwanted attention while providing no benefits.

Because stakes and/or screens may become partially or completely dislodged, they should be checked regularly. During the period of anticipated hatching, screens should be checked each morning just in case hatchlings become trapped by them. Please remove all screens from the beach after hatchling emergence is completed.

REPORTING REQUIREMENTS
The principal permit holder is to report the total number of nests that are screened and the reasons for screening on the annual nesting summary forms.
MARINE TURTLE CONSERVATION GUIDELINES

PERMIT ACTIVITY: NEST CAGING

AUTHORIZATION SUMMARY
This section is specifically intended for those persons whose permit authorizes them to protect nests with self-releasing screen/cage or protect nests with restraining cage. These personnel are also authorized to:

• mark nests

Personnel are not authorized to conduct the following activities unless specifically stated on their permit:

• conduct nesting surveys
• relocate nests
• use self releasing hatchery
• use restraining hatchery

Personnel are not authorized to conduct the following activities without explicit permission from FDEP:

• use any caging material with a mesh size that is smaller than 2" x 4" unless authorized to protect nests with restraining cage or unless there is an area maintained along the seaward face of the cage from which hatchlings can readily escape
• use probes (other than fingers) to locate clutches

ACTIVITY DESCRIPTION
When a nest is at high risk of predation (by raccoons, foxes, pigs, coyotes, etc.), the eggs and pre-emergent hatchlings may be protected by placing a self-releasing cage over the nest. When hatchlings at a nest site are certain to be misoriented by lighting, and the lighting cannot be resolved before the hatchlings are due to emerge, then the nest may be covered by a restraining cage to keep hatchlings from crawling toward lighting. While the exact construction of cages may vary (see examples of two cages in Figure 12 and Figure 13), all restraining cages are to provide enough room for all hatchlings to completely emerge from the sand. In all self-releasing cages, the 2" X 4" mesh of the cage must be oriented so that the 4" opening is parallel to the surface of the sand. If self-releasing cages are not constructed of a material with a mesh size that is 2" X 4" or greater, than they are to have, on the seaward face of the cage, a regularly maintained area from which hatchlings can readily escape. If hatchlings are to escape through an opening in the cage, the bottom edge of the opening may not extend above the sand’s surface, the top edge of the opening is to be at least 2" above the sand’s surface, and the opening is to extend along the entire seaward side of the cage. Cages are to be centered exactly over the egg chamber to make it less likely that mammalian predators will burrow to the eggs from the side
of the cage, and to make sure that any anchoring stakes placed along the edges of the cage will not enter the egg chamber.

The first step in caging a nest is to find the location of the egg chamber within the body pit. Do this by gently and systematically digging by hand, and probing with fingers only. Do not use shovels or any other tools for either digging or probing. Once the top eggs are located, use moist sand from a similar depth to re-cover the eggs. Dry sand should not be allowed to fall into the egg chamber. Once the egg chamber is re-covered to the upper level of the surrounding moist sand, gently pat the sand surface above the eggs with your hand. Temporarily mark the location of the egg chamber by carefully placing a marker a very short distance into the sand above the egg chamber. Be sure that this marker is not inserted into the egg chamber. Replace the dry sand over this area to the depth present before you began excavation. Your temporary marker should be tall enough to extend above the sand level.

Most cages are anchored by burying the outward pointing flanges (Figure 13) about one foot under the sand’s surface. Center the cage over the egg chamber and trace the edges of the cage in the sand. The cage should be oriented so that the opposing sides of the cage are either parallel or perpendicular to the shoreline. Remove the cage and the temporary egg chamber marker, and carefully dig a one foot deep trench along the tracing of the edges of the cage. Place the cage into the trench and fill the trench with sand. When completed, the sand around the cage and over the egg chamber should be at the original level. If stakes are used to secure a cage, drive the stakes at an angle away from the egg chamber. Signs for marking caged nests are available from FDEP.

Because cages may become partially or completely dislodged, they should be checked regularly. If a restraining cage is used, each cage must be checked for hatchlings at least twice a night beginning 45 days after the clutch was deposited and ending when the cage is removed. Restraining cages must be checked for hatchlings once between 11 p.m. and 1 a.m., and once between 5 a.m. and 7 a.m. After checking the nest during the latter period, restraining cages should be opened (see Figure 12) to allow hatchlings that may emerge during the day to escape the cage. These cages may then be closed again at sunset. All hatchlings that are discovered within restraining cages are immediately released at an appropriate beach site and allowed to crawl to the water. Remember, there must be a way to get hatchlings out of a restraining cage without pulling the cage off the nest. Self-releasing cages should be checked each morning during the period of anticipated hatching, just in case some hatchlings have become trapped. Please remove all cages from the beach after hatchling emergence is completed.

Figure 12. Example of a self-releasing cage. The cage is constructed of 2" x 4" welded utility wire. Hatchlings are able to escape through the mesh of the wire. Cage design courtesy of The Conservancy.
Figure 13. Example of a cage that can be either self-releasing or restraining. The cage is constructed of 1/2" galvanized hardware cloth. It becomes self-releasing if a 3" flap is cut along the entire bottom edge of the seaward side of the cage. This flap is folded outward and downward into a trench dug in front of the cage. The flap is then buried under no more than one inch of sand, leaving a 2" tall space through which hatchlings can escape. Restrained hatchlings are collected through a 6" x 6" flap cut in the top of the screened and secured by wire ties. Cage design courtesy of Ecological Associates, Inc.

REPORTING REQUIREMENTS
The principal permit holder is to report the total number of nests that are caged as well as the type of caging used and the reasons for caging on the annual nesting summary forms.

PERMIT ACTIVITY: NEST RELOCATION

AUTHORIZATION SUMMARY
This section is specifically intended for those persons whose permit authorizes them to relocate nests. These personnel are also authorized to:

• mark nests

Personnel are not authorized to conduct the following activities unless specifically stated on their permit:

• conduct nesting surveys
• protect nests with self-releasing screen/cage
• protect nests with restraining cage
APPENDIX D

FWCC Marine Turtle Nesting Summary Questionnaire for 2000
and
FWCC Nesting Survey Reporting form for 2000
**1. PRINCIPAL PERMIT HOLDER INFORMATION**

<table>
<thead>
<tr>
<th>Principal Permit Holder:</th>
<th>Vicki Wiese</th>
<th>Permit #:</th>
<th>054</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organization:</td>
<td>NOTE MARINE LABORATORY</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Address:</td>
<td>1600 KEN THOMSON PARKWAY SARASOTA, FL 34236</td>
<td></td>
<td></td>
</tr>
<tr>
<td>County:</td>
<td>Sarasota</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Day Telephone (include area code): | 941-388-4331 | Night Telephone (include area code): |   |
| Beach Name: | Lido Key | Point of Contact: | TERCIS FOOTE |

| Beach Length: | 5.3 mi (circle unit) | Is beach length (ESTIMATED) or MEASURED? (circle one): |   |

| North Survey Boundary: | New Pass (500' S of E-30) | South Survey Boundary: | Big Sarasota Pass (500' S of E-44) |

**2. GENERAL SURVEY INFORMATION**

Survey Boundary Information: Please describe survey boundaries geographically. Be specific and use known landmarks that can be found on a map (or include a marked map). For example - North Boundary: 1.5 miles south of the Martin/St. Lucie County Line; South Boundary: St. Lucie Inlet.

| Start Date of Survey (include month AND day): | 5/1/00 | End Date of Survey (include month AND day): | 10/31/00 |
| Time of Day Surveyed: | START 6:00 AM/PM (circle one); FINISH 10:00 AM/PM (circle one) |

Number of Days Per Week Surveyed: 7: If you did not survey seven (7) days per week, describe how nests are counted on the day(s) surveys are resumed:

| Was there any variation in the number of days surveyed per week or was the entire beach surveyed the same number of times every week of the nesting season? (circle one): | SAME VARIABLE |

If VARIABLE, please explain the specific variation and give the total number of days surveyed during the nesting season:

| Were all non-nesting crawls (false crawls) counted during your survey? (circle one): | YES NO |

How many people were involved in surveying the nesting beach during 2000?: 14
### 3. Nesting Beach Management Information

Please respond to all of the following questions regarding management techniques (see attached Nest Success Reporting Form for specific definitions of In Situ Nests, Relocated Nests, etc.):

<table>
<thead>
<tr>
<th>Question</th>
<th>Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>Did you leave nests in situ? (circle one):</td>
<td>YES NO</td>
</tr>
<tr>
<td>Did you cover in situ nests with flat screen? (circle one):</td>
<td>YES NO N/A</td>
</tr>
<tr>
<td>Did you cover in situ nests with an above-ground cage (not a hatchery)? (circle one):</td>
<td>YES NO N/A</td>
</tr>
<tr>
<td>If YES, was the cage SELF-RELEASING or RESTRAINING? (circle one)</td>
<td></td>
</tr>
<tr>
<td>Did you relocate nests (not to a hatchery)? (circle one):</td>
<td>YES NO</td>
</tr>
<tr>
<td>If YES, did you relocate nests INDIVIDUALLY (e.g., simply moving the nest directly landward of the in situ location or otherwise maintaining natural nest spacing) or rebury them in a GROUP with other beach relocated nests? (circle one):</td>
<td>YES NO N/A</td>
</tr>
<tr>
<td>If you did relocate nests, please give reasons:</td>
<td></td>
</tr>
<tr>
<td>Did you cover relocated nests with flat screen? (circle one):</td>
<td>YES NO N/A</td>
</tr>
<tr>
<td>Did you cover relocated nests with an above-ground cage (not a hatchery)? (circle one):</td>
<td>YES NO N/A</td>
</tr>
<tr>
<td>If YES, was the cage SELF-RELEASING or RESTRAINING? (circle one)</td>
<td></td>
</tr>
<tr>
<td>Did you use a hatchery? (circle one):</td>
<td>YES NO</td>
</tr>
<tr>
<td>If YES, was the hatchery SELF-RELEASING or RESTRAINING? (circle one)</td>
<td></td>
</tr>
<tr>
<td>If a hatchery was used, please give reasons AND specific location:</td>
<td></td>
</tr>
</tbody>
</table>

If predator control methods other than the screening/caging described above were employed, please describe:

**An Insect Control was placed around nest (circle one)**: FIRE ANTS

How many MARKED nests were lost to predators other than humans during the course of the season? 3

List all non-human predators documented depredating nests in 2000: **Raccoons & Ghost Crabs**

How many MARKED nests were lost during the course of the season for reasons other than predators (i.e., to erosion, other weather-related events)? 17

How many MARKED nests were taken or disturbed by humans? Please give details: **None**

Were hatchling disorientation events documented during 2000? (circle one): YES NO

If YES, have all disorientation reports been submitted to FWC? (circle one): YES NO

I certify the above information to be true and accurate to the best of my knowledge.

Signature of Principal Permit Holder: [Signature]

Date: 11-28-00
FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION
NESTING SURVEY REPORTING FORM FOR 2000

<table>
<thead>
<tr>
<th>Principal Permit Holder: Vicki Wiese</th>
<th>Permit Number: 054</th>
</tr>
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<tbody>
<tr>
<td>Beach Name: Lido Key</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>C. caretta (Loggerhead)</th>
<th>C. mydas (Green Turtle)</th>
<th>D. coriacea (Leatherback)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total # of Nests</td>
<td>60</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total # of Non-Nesting Emergences (False Crawls)</td>
<td>52</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Date (month and day) of First Documented Nest</td>
<td>5/11/00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Date (month and day) of Last Documented Nest</td>
<td>8/12/00</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**In situ Nest Data:** *In situ* nests are those left where the turtle deposited the clutch. *In situ* nests may be left without additional protection, screened with a self-releasing flat screen, or covered with self-releasing or restraining above-ground cages. Record the number of nests by category and species. For each species, rows a + b + c + d should equal the total # of nests left *in situ*. Please check to make sure this is the case.

- Total # of Nests Left *in situ* (a + b + c + d): 56
  - (a) # of *in situ* Nests without Additional Protection: 50
  - (b) # of *in situ* Nests with Self-Releasing Flat Screen: 0
  - (c) # of *in situ* Nests with Self-Releasing Cage: 3
  - (d) # of *in situ* Nests with Restraining Cage: 3

**Relocated Nest Data:** Relocated nests are those where the clutch is removed from its original site of deposition and reburied at another site. These nests may be relocated to individual sites or as a group to a hatchery (permanent or semi-permanent fenced or caged area where many nests are re-buried as a group). As with *in situ* nests, relocated nests may be left without additional protection, covered with a self-releasing flat screen, or covered with self-releasing or restraining above-ground cages. Hatcheries may be self-releasing (hatchlings escape unaided) or restraining (hatchlings cannot escape unaided). Record the number of nests by category and species. For each species, rows a + b + c + d + e + f should equal the total # of relocated nests. Please check to make sure this is the case.

- Total # of Relocated Nests (a + b + c + d + e + f): 4
  - (a) # of Relocated Nests without Additional Protection: 2
  - (b) # of Relocated Nests with Self-Releasing Flat Screen: 0
  - (c) # of Relocated Nests with Self-Releasing Cage: 1
  - (d) # of Relocated Nests with Restraining Cage: 0
  - (e) # of Relocated to Self-Releasing Hatchery: 0
  - (f) # of Relocated to Restraining Hatchery: 0
**FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION - NEST SUCCESS REPORTING FORM FOR 2001**

**SPECIES: Caretta caretta (Loggerhead)**

**DO NOT INCLUDE DEPREDATED NESTS**

<table>
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<tr>
<th>PERMIT NUMBER: 05</th>
<th><strong>BEACH NAME:</strong> Lido Key</th>
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<tr>
<td><strong>PRINCIPAL PERMIT HOLDER:</strong> Wiest</td>
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<table>
<thead>
<tr>
<th>IN SITU: ADDITIONAL PROTECTION</th>
<th>TOTAL # OF NESTS</th>
<th># OF NESTS MARKED TO EVALUATE</th>
<th># OF NESTS ACTUALLY EVALUATED</th>
<th># OF EGGS IN EVALUATED NESTS</th>
<th># OF HATCHLINGS EMERGED</th>
<th># OF LIVE HATCHLINGS IN NEST</th>
<th># OF DEAD HATCHLINGS IN NEST</th>
<th># OF PIPPED LIVE</th>
<th># OF PIPPED DEAD</th>
<th># OF UNHATCHED EGGS</th>
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<tbody>
<tr>
<td>IN SITU/FLAT SCREEN</td>
<td>50</td>
<td>48</td>
<td>32</td>
<td>36/14</td>
<td>236</td>
<td>162</td>
<td>67</td>
<td>0</td>
<td>131</td>
<td>1012</td>
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<td>IN SITU/RESTRAINING CAGE</td>
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<td>3</td>
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</table>

**DEFINITION OF TERMS:**

**IN SITU:** CLUTCH WAS NOT RELOCATED FROM THE ORIGINAL SITE OF DEPOSITION

**RELOCATED:** CLUTCH WAS RELOCATED FROM THE ORIGINAL SITE OF DEPOSITION

**SELF-RELEASING:** A SCREEN, CAGE, OR HATCHERY THROUGH WHICH HATCHLINGS ESCAPE UNAIDED

**RESTRAINING:** A SCREEN, CAGE, OR HATCHERY THAT DOES NOT ALLOW HATCHLINGS TO ESCAPE UNAIDED

**HATCHERY:** A FENCED OR CAGED AREA WHERE MANY NESTS ARE REBURIED

**PIPPED:** HATCHLING BROKEN THROUGH EGGSHELL BUT NOT COMPLETELY FREE OF EGGSHELL, NOT A HATCHED EGG

**ADDITIONAL INFORMATION FOR SOME COLUMN HEADINGS:**

# OF EGGS IN EVALUATED NESTS: DIRECT COUNT IN RELOCATED NESTS, COUNT EGGSHELLS IN SITU NESTS

# OF HATCHLINGS EMERGED: COUNT ONLY THOSE EMERGED UNAIDED (PRIOR TO NEST EVALUATION)

# OF UNHATCHED EGGS: COUNT ONLY WHOLE, UNPIPPED EGGS

**IMPORTANT:** THE # OF HATCHLINGS EMERGED + # OF LIVE HATCHLINGS IN NEST + # OF DEAD HATCHLINGS IN NEST + # OF PIPPED LIVE + # OF PIPPED DEAD + # OF UNHATCHED EGGS SHOULD EQUAL THE # OF EGGS IN EVALUATED NESTS. PLEASE CHECK TO MAKE SURE THIS IS THE CASE.

*NESTS HAD BEEN WASHED OVER BY TIDES OR WIND OR WATER AT TIMES*
APPENDIX E

Marine Turtle Hatchling Disorientation Incident Reporting Forms
for the 1998 Lido Beach Restoration Project
MARINE TURTLE HATCHLING
DISORIENTATION INCIDENT REPORT FORM

If you have any questions please contact the Florida Marine Research Institute at the
Tequesta Field Laboratory (561) 575-5455 or the St. Petersburg Laboratory (813) 896-8626

Turtle Permit No.: 054 Observer's Name: DAV LECHER
Affiliation: Mote Marine Laboratory Telephone (inc. area code): (941) 388-4441 or (941) 388-4331

Date of Incident: 7/12/00 County: SARASOTA
Nearest City/Island: ST PETERS ISLAND
Name of Beach: LIDO BEACH Nest Location (inc. street address & nest #): 480 AVE GULF GATSBY HOtel

Disoriented To (inc. street address): SUN TIDE ISLAND BEACk CLUB

Was a probable lighting source identified? YES NO
Have there been other disorientation events observed this season at this site? YES NO

TYPE OF LIGHT(S) IDENTIFIED:
- street light
- parking lot
- dune crossover
- single family home
- pier
- restaurant/bar
- interior condominium
- exterior condominium
- other:

Describe lighting source, include number of lights if identified: FIREWORKS REMNANTS

PLEASE CIRCLE A RESPONSE:

When was the incident documented? (A.M. survey) P.M. survey
- The incident photographed? YES NO
- Was the nest located? YES NO
- Was the next excavated? YES NO

If yes How Many?

- Did any hatchlings appear to have reached the water? YES NO

<table>
<thead>
<tr>
<th>Loggerhead</th>
<th>Green</th>
<th>Unidentified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Hatchlings Disoriented</td>
<td>12 AT LEAST</td>
<td></td>
</tr>
<tr>
<td>Number of Hatchlings Found Dead</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Number of Hatchlings Found Alive</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

SKETCH (Use back if necessary)

Additional comments please elaborate and use back if necessary:

Signature of Observer Date

DAV LECHER 7-12-00
MARINE TURTLE HATCHLING
DISORIENTATION INCIDENT REPORT FORM

If you have any questions please contact the Florida Marine Research Institute at the
Tequesta Field Laboratory (561) 575-5455 or the St. Petersburg Laboratory (813) 896-8626

Turtle Permit No.: 0254  Observer's Name:
Affiliation: Mote Marine Laboratory Telephone (inc. area code): (941) 388-4441 or (941) 388-4331

Date of Incident: 6/23/00 County: SARASOTA
Nearest City/Island: LONG KEY
Name of Beach: LIDO BEACH
Nest Location (inc. street address & nest #): LIDO PUBLIC BEACH SHORELINE

Disoriented To (inc. street address):

Was a probable lighting source identified? YES NO
Have there been other disorientation events observed this season at this site? YES NO

TYPE OF LIGHT(S) IDENTIFIED: parking lot street light interior condominium
street light single family home exterior condominium
dune crossover pier other: LIGHTED SIGNS
pier restaurant/bar

Describe lighting source, include number of lights if identified:

PLEASE CIRCLE A RESPONSE:

When was the incident documented? A.M. survey P.M. survey
Was the incident photographed? YES NO
Was the nest located? YES NO
Was the nest excavated? YES NO
Did any hatchlings appear to have reached the water? YES NO
If yes How Many? 23

<table>
<thead>
<tr>
<th>Number of Hatchlings Disoriented</th>
<th>Loggerhead</th>
<th>Green</th>
<th>Unidentified</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>45+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Hatchlings Found Dead</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Hatchlings Found Alive</td>
<td>1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SKETCH (Use back if necessary)

Additional comments please elaborate and use back if necessary: Hatchling tracks from main size of nest down to water. 10 cm away, 3 tracks found through 3x4s salt water track. 3 tracks found through 3x4s. Tracks were old, hard to see. Signed 6/23/00.

Signature of Observer

Date 6/23/00
Turtle Permit No.: 054  Observer's Name:  
Affiliation: Mote Marine Laboratory  Telephone (inc. area code): (941) 388-4441 or (941) 388-4331  

Date of Incident: 7/12  County:  
Nearest City/Island:  
Name of Beach:  
Nest Location (inc. street address & nest #):  

Disoriented To (inc. street address):  Randomly Towards Street. Many original hatchlings did find the way to the beach  

Was a probable lighting source identified?  YES  NO  

Have there been other disorientation events observed this season at this site?  YES  NO  

TYPE OF LIGHT(S) IDENTIFIED:  
- parking lot  
- street light  
- dune crossover  
- single family home  
- pier  
- restaurant/bar  
- interior condominium  
- exterior condominium  
- other:  

Describe lighting source, include number of lights if identified:  Street light. 3/3 5/1/10. Most street light areas are blocked on beach.  

PLEASE CIRCLE A RESPONSE:  
- When was the incident documented?  A.M. survey  P.M. survey  
- Was the incident photographed?  YES  NO  
- Was the nest located?  YES  NO  
- Was the next excavated?  YES  NO  
- Did any hatchlings appear to have reached the water?  YES  NO  

If yes How Many?  

<table>
<thead>
<tr>
<th>Number of Hatchlings Disoriented</th>
<th>Loggerhead</th>
<th>Green</th>
<th>Unidentified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Hatchlings Found Dead</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Hatchlings Found Alive</td>
<td>10</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SKETCH (Use back if necessary)  

Additional comments please elaborate and use back if necessary:  Many hatchlings first went north east (towards ocean) then induced to go south.  

Signature of Observer 7/12/00
About 92 hatchling tracks total.

At least 37 made the water.

98 eggs broken / hatched.

5 unhatched eggs (two look good).

18 live hatchlings taken for night release.

Nest cavity

50.5 cm deep.

28.1 : A
27.2 : B
28.9 : C
MARINE TURTLE HATCHLING
DISORIENTATION INCIDENT REPORT FORM
If you have any questions please contact the Florida Marine Research Institute at the
Tequesta Field Laboratory (561) 575-5435 or the St. Petersburg Laboratory (813) 896-8626

Turtle Permit No.: 054-128  Observer's Name: 
Affiliation: Mote Marine Laboratory  Telephone (inc. area code): (941) 388-4441 or (941) 388-4331

Date of Incident: 2/20 County: FL
Nearest City/Island: 1100 Key
Name of Beach: 1100 BEACH
Nest Location (inc. street address & nest #): 1212 RED

Disoriented To (inc. street address): 1212 1100-1212 RED

Was a probable lighting source identified? YES NO
Have there been other disorientation events observed this season at this site? YES NO

TYPE OF LIGHT(S) IDENTIFIED:  
parking lot  street light  interior condominium
dune crossover  single family home  exterior condominium
pier  restaurant/bar  other:

Describe lighting source, include number of lights if identified:

PLEASE CIRCLE A RESPONSE:

When was the incident documented? A.M. survey P.M. survey
Was the incident photographed? YES NO
Was the nest located? YES NO
Was the nest excavated? YES NO
Did any hatchlings appear to have reached the water? YES NO
If yes How Many?

<table>
<thead>
<tr>
<th>Hatchlings Disoriented</th>
<th>Loggerhead</th>
<th>Green</th>
<th>Unidentified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Hatchlings</td>
<td>18+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Hatchlings Found Dead</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Hatchlings Found Alive</td>
<td>0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SKETCH (Use back if necessary)

Additional comments please elaborate and use back if necessary:

Signed by Observer: 
Date: 2/20/00
MARINE TURTLE HATCHLING
DISORIENTATION INCIDENT REPORT FORM
If you have any questions please contact the Florida Marine Research Institute at the
Tampa Field Laboratory (813) 573-3455 or the St. Petersburg Laboratory (813) 896-8536.

Turtle Permit No. ____________________ Observer's Name: ____________________
Affiliation: Mote Marine Laboratory Telephone (inc. area code): (941) 388-4441 or (941) 388-4373

Date of Incident: 7/29/00 County: Sarasota
Nearest City/Island: Nokomis Beach
Name of Beach: __________
Nest Location (inc. street address & nest #): 7148 BCD - Sun-n-Surf Colony

Disoriented To (inc. street address): no, East, Sor, E. Toward Water

Was a probable lighting source identified? YES NO
Have there been other disorientation events observed this season at this site? YES NO

These turtles appear to have been picked up by: Birds Ghost Crabs

TYPE OF LIGHT(S) IDENTIFIED:
- parking lot
- street light
- single family home
- interior condominium
- dune crossover
- exterior condominium
- pier
- restaurant/bar
- other: ____________________

Describe lighting source, include number of lights if identified:
A ghost crab was hammered down in the middle of the nest in A.m. on 7/29/00.

PLEASE CIRCLE A RESPONSE:

When was the incident documented? A.M. survey P.M. survey
Was the incident photographed? YES NO
Was the nest located? YES NO
Was the nest excavated? YES NO
Did any hatchlings appear to have reached the water? YES NO
If yes, how many? __________________

<table>
<thead>
<tr>
<th>Loggerhead</th>
<th>Green</th>
<th>Unidentified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Hatchlings Disoriented</td>
<td>9+</td>
<td></td>
</tr>
<tr>
<td>Number of Hatchlings Found Dead</td>
<td>1-2</td>
<td></td>
</tr>
<tr>
<td>Number of Hatchlings Found Alive</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

SKETCH (Use back if necessary)

Additional comments please elaborate and use back if necessary:

______________________________
Signature of Observer

______________________________ Date

7/29/00
MARINE TURTLE HATCHLING
DISORIENTATION INCIDENT REPORT FORM

If you have any questions please contact the Florida Marine Research Institute or the
St. Petersburg Laboratory (813) 892-8625 or the St. Petersburg Laboratory (813) 892-8625

Turtle Permit No.: 054 Observer’s Name: David Liebler
Affiliation: Marine Turtle Laboratory Telephone (inc. area code): (941) 388-4441 or (941) 388-4431
Date of Incident: 8/4/00 County: Sarasota
Nearest City/Island: Sarasota - Lido Key
Name of Nest: Lido Nest
Nest Location (inc. street address & nest #): 800 Bed - Lido Ambassador - 6/100 West

Disoriented To (inc. street address): The North & South of Nest Aperture

Was a probable lighting source identified? Yes (No)
Have there been other disorientation events observed this season at this site? Yes (No)

TYPE OF LIGHT(S) IDENTIFIED:
- parking lot
- street light
- interior condominium
- dune crossover
- single family home
- exterior condominium
- pier
- restaurant/bar
- other:

Describe lighting source, include number of lights if identified:

PLEASE CIRCLE A RESPONSE:

When was the incident documented? A.M. survey
- 10:30 A.M.
Was the incident photographed? Yes (No)
- YES
Was the nest located? Yes (No)
- YES
Was the nest excavated? Yes (No)
- YES
Did any hatchlings appear to have reached the water? Yes (No)
- YES

If yes, How Many? 79

Number of Hatchlings Disoriented 79
Number of Hatchlings Found Dead 0
Number of Hatchlings Found Alive 79

SKETCH (Use back if necessary)

Additional comments please elaborate and use back if necessary:

Signature of Observer: David Liebler
Date: 8/4/00
MARINE TURTLE HATCHLING
DISORIENTATION INCIDENT REPORT FORM

If you have any questions please contact the Florida Marine Research Institute at the
Tequesta Field Laboratory (361) 575-5455 or the St. Petersburg Laboratory (813) 896-8626

Turtle Permit No.: 06-054 Observer's Name: Jeannie Foot
Affiliation: Mote Marine Laboratory Telephone (inc. area code): (941) 388-4441 or (941) 388-4331

Date of Incident: 8/9/90 County: Sarasota
Nearest City/Island: 100 Beach
Name of Beach: 100 Beach
Nest Location (inc. street address & nest #): 101 Beach Boulevard Drive - 100 Tower

Disoriented To (inc. street address): 100 Towers/Street 100-155

Was a probable lighting source identified? YES NO
Have there been other disorientation events observed this season at this site? YES NO

TYPE OF LIGHT(S) IDENTIFIED:
parking lot street light
Dune cross over single family home
Pier restaurant/bar

Describe lighting source, include number of lights if identified:

PLEASE CIRCLE A RESPONSE:

When was the incident documented? AM survey PM survey
Was the incident photographed? YES NO
Was the nest located? YES NO
Was the nest excavated? YES NO
Did any hatchlings appear to have reached the water? YES NO
If yes How Many? 46

Loggerhead Green Unidentified

<table>
<thead>
<tr>
<th>Number of Hatchlings Disoriented</th>
<th>Number of Hatchlings Found Dead</th>
<th>Number of Hatchlings Found Alive</th>
</tr>
</thead>
<tbody>
<tr>
<td>98</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

SKETCH (Use back if necessary)

Additional comments please elaborate and use back if necessary: Hatchlings Circled

A lot at the hatch location and on the beach away from

The nest

Signature of Observer

8/9/00 Date
HATCHING TRACKS WERE COUNTED GOING TO H30
THE FISH MOST AFTER HAVING BEEN UP-LAND.
THE FISH WERE FED FROM WEST TO THE CURE. ONE HATCHLING FOUND

S. TOWER

N. TOWER

BEN FRANKLIN DRIVE
SIDEWALK
NORTH WATERFRONT
BANK IN BRIDGE
CONNECTED MOORING
STORAGE
MARINE TURTLE HATCHLING
DISORIENTATION INCIDENT REPORT FORM

If you have any questions please contact the Florida Marine Research Institute at the
Tequesta Field Laboratory (561) 575-5455 or the St. Petersburg Laboratory (813) 896-8626

Turtle Permit No.: 054 Observer’s Name: Trudy Muller
Affiliation: Mote Marine Laboratory Telephone (inc. area code): (941) 388-4441 or (941) 388-4331

Date of Incident: 7/26/00 County: 
Nearest City/Island: 
Name of Beach: 
Nest Location (inc. street address & nest #): 

Disoriented To (inc. street address):

Was a probable lighting source identified? YES NO
Have there been other disorientation events observed this season at this site? YES NO

TYPE OF LIGHT(S) IDENTIFIED:
parking lot street light interior condominium
dune crossover single family home exterior condominium
pier restaurant/bar other:

Describe lighting source, include number of lights if identified:

PLEASE CIRCLE A RESPONSE:
When was the incident documented? A.M. survey P.M. survey
Was the incident photographed? YES NO
Was the nest located? YES NO
Was the nest excavated? YES NO
Did any hatchlings appear to have reached the water? YES NO
If yes How Many?

<table>
<thead>
<tr>
<th>Number of Hatchlings Disoriented</th>
<th>Loggerhead</th>
<th>Green</th>
<th>Unidentified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Hatchlings Found Dead</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Hatchlings Found Alive</td>
<td>4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SKETCH (Use back if necessary)

Additional comments please elaborate and use back if necessary:

Signature of Observer: 
Date: 7/26/00
MARINE TURTLE HATCHLING
DISORIENTATION INCIDENT REPORT FORM
If you have any questions please contact the Florida Marine Research Institute at the
Tequesta Field Laboratory (561) 575-3455 or the St. Petersburg Laboratory (813) 896-8626

Turtle Permit No.: Observer's Name: JEFFREY COOZE
Affiliation: Mote Marine Laboratory Telephone (inc. area code): (941) 388-4441 or (941) 388-4331

Date of Incident: County: SABASIA
Nearest City/Island: Name of Beach: LIDO BEACH
Name of Beach: LIDO PUBLIC BEACH, N. OF

Disoriented To (inc. street address): 
AT NORTH END OF PAVILION

Was a probable lighting source identified? YES NO
Have there been other disorientation events observed this season at this site? YES NO

TYPE OF LIGHT(S) IDENTIFIED:
parking lot street light interior condominium

Describe lighting source, include number of lights if identified: LOW PRESSURE SODIUM LIgHTS AT PAVILION THERE IS NO CRISIS PROBLEM IN LIGHTING

PLEASE CIRCLE A RESPONSE:

When was the incident documented? A.M. survey P.M. survey
Was the incident photographed? YES NO
Was the nest located? YES NO
Was the nest excavated? YES NO
Did any hatchlings appear to have reached the water? YES NO

<table>
<thead>
<tr>
<th>Number of Hatchlings Disoriented</th>
<th>Loggerhead</th>
<th>Green</th>
<th>Unidentified</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Number of Hatchlings Found Dead | 0          |
| Number of Hatchlings Found Alive | 1         |

SKETCH (Use back if necessary)

Additional comments please elaborate and use back if necessary: THERE WERE NO TRACKS

Signature of Observer Date 9/1/06
MARINE TURTLE HATCHLING
DISORIENTATION INCIDENT REPORT FORM
If you have any questions please contact the Florida Marine Research Institute at the
Tequesta Field Laboratory (561) 575-5453 or the St. Petersburg Laboratory (813) 896-8626

Turtle Permit No.: 054 Observer's Name: JESSIE FOOTE
Affiliation: Mote Marine Laboratory Telephone (inc. area code): (941) 388-4441 or (941) 388-4331

Date of Incident: 9/1/2000 County: SARASOTA
Nearest City/Island: 100
Name of Beach: 1100 BEACH
Nest Location (inc. street address & nest #): 850 BEN FAXILN DRIVE - SUITE 702
(ISLAND BEACH CLUB)

Disoriented To (inc. street address): 850 BEN FAXILN DRIVE.

Was a probable lighting source identified? YES NO
Have there been other disorientation events observed this season at this site? YES NO

TYPE OF LIGHT(S) IDENTIFIED:
- parking lot
- street light
- interior condominium
- dune crossover
- single family home
- exterior condominium
- pier
- restaurant/bar
- other: LIGHT AT PAGODA

Describe lighting source, include number of lights if identified: AMBER LIGHTING COMING OFF OF STREET LIGHTS AT PAGODA - THIS LIGHT SEEMED TO BE AT THE END OF THE PIER.

PLEASE CIRCLE A RESPONSE:

When was the incident documented? AM survey P.M. survey
Was the incident photographed? YES NO
Was the nest located? YES NO
Was the next excavated? YES NO
Did any hatchlings appear to have reached the water? YES NO
If yes How Many?

<table>
<thead>
<tr>
<th>Hatchling Color</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loggerhead</td>
<td>84</td>
</tr>
<tr>
<td>Green</td>
<td>1</td>
</tr>
<tr>
<td>Unidentified</td>
<td>4</td>
</tr>
</tbody>
</table>

SKETCH (Use back if necessary)

Additional comments please elaborate and use back if necessary:

Signature of Observer Date
MARINE TURTLE HATCHLING
DISORIENTATION INCIDENT REPORT FORM

If you have any questions please contact the Florida Marine Research Institute at the Tequesta Field Laboratory (561) 575-5455 or the St. Petersburg Laboratory (813) 896-8626

Turtle Permit No.: 054 Observer’s Name: JEFFREY JOHNSON
Affiliation: Mote Marine Laboratory Telephone (inc. area code): (941) 388-4441 or (941) 388-4331

Date of Incident: 9/8/9 County: SABASCTA
Nearest City/Island: JUPITER Name of Beach: JUPITER BEACH
Name of Nest Location (inc. street address & nest #): 123 3/4 ST JUP 3025

Disoriented To (inc. street address): ____________________________________________________________________________

Was a probable lighting source identified? YES NO
Have there been other disorientation events observed this season at this site? YES NO

TYPE OF LIGHT(S) IDENTIFIED:

parking lot street light interior condominium

dune crossover single family home other:
pier restaurant/bar exterior condominium

Describe lighting source, include number of lights if identified:

PLEASE CIRCLE A RESPONSE:

When was the incident documented? A.M. survey P.M. survey
Was the incident photographed? YES NO
Was the nest located? YES NO CESSA
Was the nest excavated? YES NO CABE P
Did any hatchlings appear to have reached the water? YES NO

If yes How Many? __________

SKETCH (Use back if necessary)

Additional comments please elaborate and use back if necessary:

Signature of Observer

Date 9/9/00

Loggerhead Green Unidentified

Number of Hatchlings Disoriented 25
Number of Hatchlings Found Dead 8
Number of Hatchlings Found Alive 3

This form was originally filled out by hand. Please verify the information provided.
central passage at 1540 L.F.D. and 12 were scattered generally outside the beach. Of the 12 turned heads toward the water, 2 headed up to vegetation near pool area, the remaining 8 moved directly at shallows like a raccoon's tracking. From hatching tracks left most vicinity to the Gulf of Mexico.

Vehicle II tracked leading North toward 1330 L.F.D. Head began upland to 1330 L.F.D. All I were found dead. C had been partially eaten by raccoons on land. C had been stopped by (by 0015). Hatching had gotten up around the tallest clump at 1330 then headed West toward the Gulf but was found in a shallows beside cypress grove of the woods. In hatching area lived following named.
APPENDIX F
Marine Turtle Hatchling Disorientation Incident Reporting Forms
for the South Lido Beach Restoration Project, Year 2000
MARINE TURTLE HATCHLING
DISORIENTATION INCIDENT REPORT FORM

If you have any questions please contact the Florida Marine Research Institute at the Tequesta Field Laboratory (561) 575-5455 or the St. Petersburg Laboratory (813) 896-8626

Turtle Permit No.: 054 Observer’s Name: Dru Kiehler
Affiliation: Mote Marine Laboratory Telephone (inc. area code): (941) 388-4441 or (941) 388-4331

Date of Incident: 7/12/00 County: Sarasota
Nearest City/Island: Lido Key Name of Beach: Lido Beach
Nest Location (inc. street address & nest #): 830 BFD - Gulf Beach Hotel

Disoriented To (inc. street address): Sun Tide Island Beach Club

Was a probable lighting source identified? YES NO
Have there been other disorientation events observed this season at this site? YES NO

TYPE OF LIGHT(S) IDENTIFIED:
- parking lot
- dune crossover
- pier
- street light
- single family home
- restaurant/bar
- interior condominium
- exterior condominium
- other: Fireworks Remnants

Describe lighting source, include number of lights if identified: Seen on sand by beach chairs

PLEASE CIRCLE A RESPONSE:

When was the incident documented? AM survey PM survey
Was the incident photographed? YES NO
Was the nest located? YES NO
Was the nest excavated? YES NO
Did any hatchlings appear to have reached the water? YES NO

If yes How Many? 12 or more

<table>
<thead>
<tr>
<th>Loggerhead</th>
<th>Green</th>
<th>Unidentified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Hatchlings Disoriented</td>
<td>12</td>
<td>13</td>
</tr>
<tr>
<td>Number of Hatchlings Found Dead</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Number of Hatchlings Found Alive</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

SKETCH (Use back if necessary)

Additional comments please elaborate and use back if necessary:

Signature of Observer: Dru Kiehler Date: 7-12-00
MARINE TURTLE HATCHLING
DISORIENTATION INCIDENT REPORT FORM

If you have any questions please contact the Florida Marine Research Institute at the Tequesta Field Laboratory (561) 575-5455 or the St. Petersburg Laboratory (813) 896-8526

Turtle Permit No.: 054-128
Affiliation: Mote Marine Laboratory
Observer’s Name: TEBIS NOZ
Telephone (incl. area code): (941) 388-4441 or (941) 388-4331

Date of Incident: 2/20
Nearest City/Island: MCO KEY
Name of Beach: MCO BEACH
Nest Location (incl. street address & nest #): 1212 RED

Disoriented To (incl. street address): 1212 MCO - 1212 RED

Was a probable lighting source identified? YES NO
Have there been other disorientation events observed this season at this site? YES NO

TYPE OF LIGHT(S) IDENTIFIED:
- parking lot
- street light
- dune crossover
- single family home
- pier
- restaurant/bar
- other: [Blank]

Describe lighting source, include number of lights if identified: [Sketch: Tracking light source]

PLEASE CIRCLE A RESPONSE:

When was the incident documented? A.M. survey P.M. survey
- When was the incident documented? YES NO
- Was the incident photographed? YES NO
- Was the nest located? YES NO
- Was the nest excavated? YES NO
- Did any hatchlings appear to have reached the water? YES NO
- If yes How Many? [Blank]

<table>
<thead>
<tr>
<th>Loggerhead</th>
<th>Green</th>
<th>Unidentified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Hatchlings Disoriented</td>
<td>18+</td>
<td></td>
</tr>
<tr>
<td>Number of Hatchlings Found Dead</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Number of Hatchlings Found Alive</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

SKETCH (Use back if necessary)

Additional comments please elaborate and use back if necessary: [Handwritten notes: Majority of hatchlings emerged from sand prior to being counted.]

Signature of Observer: [Signature: TEBIS NOZ]
Date: 2/20/00
MARINE TURTLE HATCHLING
DISORIENTATION INCIDENT REPORT FORM

If you have any questions please contact the Florida Marine Research Institute at the Tequesta Field Laboratory (561) 575-5455 or the St. Petersburg Laboratory (813) 896-8626

Turtle Permit No.: 054 Observer's Name: Trudy Mueller
Affiliation: Mote Marine Laboratory Telephone (inc. area code): (941) 388-4441 or (941) 388-4331

Date of Incident: 7/25/00 County: Sarasota
Nearest City/Island: Lido Key
Name of Beach:
Nest Location (inc. street address & nest #):
1050 Ben Franklin Drive - Cimtree 611 1050 XD

Disoriented To (inc. street address):
1050 Ben Franklin Drive - Cimtree?

Was a probable lighting source identified? YES NO
Have there been other disorientation events observed this season at this site? YES NO

TYPE OF LIGHT(S) IDENTIFIED:
parking lot street light interior condominium
dune crossover single family home exterior condominium
pier restaurant/bar other:

Describe lighting source, include number of lights if identified:

PLEASE CIRCLE A RESPONSE:
When was the incident documented? A.M. survey P.M. survey
Was the incident photographed? YES NO
Was the nest located? YES NO
Was the nest excavated? YES NO
Did any hatchlings appear to have reached the water? YES NO
If yes How Many?

<table>
<thead>
<tr>
<th>Loggerhead</th>
<th>Green</th>
<th>Unidentified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Hatchlings Disoriented</td>
<td>?</td>
<td></td>
</tr>
<tr>
<td>Number of Hatchlings Found Dead</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Number of Hatchlings Found Alive</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

SKETCH (Use back if necessary)

Additional comments please elaborate and use back if necessary:

Unsure to see tracks during morning survey due to rain. Six hatchlings found on beach. One live hatchling found near Cimtree building, remainder found wandering on beach in front of the Cimtree.

Signature of Observer: Trudy Mueller
Date: 7/25/00
MARINE TURTLE HATCHLING
DISORIENTATION INCIDENT REPORT FORM

If you have any questions please contact the Florida Marine Research Institute at the
Tropical Field Laboratory (861) 573-5435 or the St. Petersburg Laboratory (613) 686-4626

Turtle Permit No. 004 Observer's Name: DRU BIEBER
Affiliation: Mote Marine Laboratory Telephone (inc. area code): (941) 388-4441 or (941) 388-4440

Date of Incident: 7/30/00 County: Sarasota
Nearest City/Island: FISHER ISLAND
Name of Beach: 1145 8TH SU-N-SURF COLONY

Disoriented To (inc. street address): NO, East, So, or Dir Towards Water

Was a probable lighting source identified? YES NO This was a daylight event

Have there been other disorientation events observed this season at this site? YES NO Nest at 4 p.m.

These turtles appear to have been picked up by BY RESIDENT OF 1100 8TH

TYPE OF LIGHT(S) IDENTIFIED:

parking lot
street light
single family home
restaurant/bar

Describe lighting source, include number of lights if identified:

A ghost crab was encompassed Down in The Middle OF

the Nest in A.M. 16:34, on 7/30/00.

PLEASE CIRCLE A RESPONSE:

When was the incident documented? A.M. survey

Was the incident photographed? YES NO

Was the nest located? YES NO STILL

Was the nest excavated? YES NO

Did any hatchlings appear to have reached the water? MAYBE YES NO

If yes, How Many?

<table>
<thead>
<tr>
<th>Number of Hatchlings Disoriented</th>
<th>Loggerhead</th>
<th>Green</th>
<th>Unidentified</th>
</tr>
</thead>
<tbody>
<tr>
<td>9 +</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Number of Hatchlings Found Dead | 1 | |
| Number of Hatchlings Found Alive |

SKETCH (Use back if necessary)

Additional comments please elaborate and use back if necessary:

Signature of Observer: DRU BIEBER

Date: 7/30/00
MARINE TURTLE HATCHLING
DISORIENTATION INCIDENT REPORT FORM

If you have any questions please contact the Florida Marine Research Institute at the Tequesta Field Laboratory (561) 575-5455 or the St. Petersburg Laboratory (813) 896-8626

Turtle Permit No.: 654 Observer’s Name: Drew Dreher, Ann Mitchell
Affiliation: Mote Marine Laboratory Telephone (inc. area code): (941) 388-4441 or (941) 388-4331

Date of Incident: 8/14/00 County: Sarasota
Nearest City/Island: Lido
Name of Beach: Lido
Nest Location (inc. street address & nest #): 1800 B.F.M. Franklin Drive, Lido, FL 33707

Disoriented To (inc. street address): No To 11700 A.D. Dr. To Sea

Was a probable lighting source identified? YES NO
Have there been other disorientation events observed this season at this site? YES NO

TYPE OF LIGHT(S) IDENTIFIED:
- parking lot
- dune crossover
- pier
- street light
- single family home
- restaurant/bar
- interior condominium
- exterior condominium
- other:

Describe lighting source, include number of lights if identified:

15 HATCHLING

When was the incident documented? A.M. survey: NO P.M. survey: YES

Was the incident photographed? YES
Was the nest located? YES
Was the nest excavated? YES
Did any hatchlings appear to have reached the water? YES

If yes How Many? 16-18

Loggerhead Green Unidentified

<table>
<thead>
<tr>
<th>Number of Hatchlings Disoriented</th>
<th>Loggerhead</th>
<th>Green</th>
<th>Unidentified</th>
</tr>
</thead>
<tbody>
<tr>
<td>16-18</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number of Hatchlings Found Dead</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number of Hatchlings Found Alive</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
</tr>
</tbody>
</table>

SKETCH (Use back if necessary)

Additional comments please elaborate and use back if necessary:

________________________

Signature of Observer: Drew Dreher Date: 8/24/00
MARINE TURTLE HATCHLING
DISORIENTATION INCIDENT REPORT FORM

If you have any questions please contact the Florida Marine Research Institute at the
Tequesta Field Laboratory (561) 375-3455 or the St. Petersburg Laboratory (813) 896-8626

Turtle Permit No.: 054
Observer’s Name: Lido Key
Affiliation: Mote Marine Laboratory
Telephone (include area code): (941) 388-4441 or (941) 388-4331

Date of Incident: 8/28/00
County: Sarasota
Nearest City/Island: Sarasota/Lido Key
Name of Beach: Lido Key
Nest Location (include Street Address): 750 Ben Franklin Drive -

Disoriented To (include Street Address): Toured - 770 AED - Seawall between Turtle & Light Source

Was a probable lighting source identified? YES NO
Have there been other disorientation events observed this season at this site? YES NO

Type of light(s) identified:
- parking lot
- dune crossover
- pier
- street light
- single family home
- restaurant/bar
-
-
- interior condominium
- exterior condominium
- globe light
- other: Hatch end bids

Describe lighting source, include number of lights if identified:
- 2nd Globe Light
- 1st of building - Bright Light
- Unshielded Area

PLEASE CIRCLE A RESPONSE
When was the incident documented? Morning survey
Was the incident photographed? YES NO
Was the nest located? YES NO
Was the next excavated? YES NO
Did any hatchlings appear to have reached the water? YES NO

| Number of Hatchlings Disoriented | 36 |
| Number of Hatchlings Found Dead | 5 |
| Number of Hatchlings Found Alive | 36 |

Additional comments please elaborate and use back if necessary:

Signature of Observer: Lido Key
Date: 8-28-00
MARINE TURTLE HATCHLING
DISORIENTATION INCIDENT REPORT FORM

If you have any questions please contact the Florida Marine Research Institute at the
Tequesta Field Laboratory (561) 575-5455 or the St. Petersburg Laboratory (813) 896-8626

Turtle Permit No.: 054
Observer's Name: JESS IS FOOTE
Affiliation: Mote Marine Laboratory
Telephone (inc. area code): (941) 388-4441 or (941) 388-4331

Date of Incident: 9/8/9
County: SARASOTA
Nearest City/Island: NAPLES
Name of Beach: NICE BEACH
Nest Location (inc. street address & nest #):

Disoriented To (inc. street address):

Was a probable lighting source identified? YES NO
Have there been other disorientation events observed this season at this site? YES NO

TYPE OF LIGHT(S) IDENTIFIED:
parking lot
single family home
street light
exterior condominium
interior condominium
pier
dune crossover
restaurant/bar
exterior condominium

Describe lighting source, include number of lights if identified:

PLEASE CIRCLE A RESPONSE:
When was the incident documented? A.M. survey P.M. survey
Was the incident photographed? YES NO
Was the nest located? YES NO
Was the nest excavated? YES NO
Did any hatchlings appear to have reached the water? YES NO
If yes How Many? 12

<table>
<thead>
<tr>
<th>Loggerhead</th>
<th>Green</th>
<th>Unidentified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Hatchlings Disoriented</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>Number of Hatchlings Found Dead</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Number of Hatchlings Found Alive</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SKETCH (Use back if necessary)

Additional comments please elaborate and use back if necessary:

Signature of Observer

Date 9/9/00

Marine Turtle Hatchling Disorientation Incident Report Form

If you have any questions please contact the Florida Marine Research Institute at the
Tequesta Field Laboratory (561) 575-5455 or the St. Petersburg Laboratory (813) 896-8626

Turtle Permit No.: 054
Observer's Name: JESS IS FOOTE
Affiliation: Mote Marine Laboratory
Telephone (inc. area code): (941) 388-4441 or (941) 388-4331

Date of Incident: 9/8/9
County: SARASOTA
Nearest City/Island: NAPLES
Name of Beach: NICE BEACH
Nest Location (inc. street address & nest #):

Disoriented To (inc. street address):

Was a probable lighting source identified? YES NO
Have there been other disorientation events observed this season at this site? YES NO

TYPE OF LIGHT(S) IDENTIFIED:
parking lot
single family home
street light
exterior condominium
interior condominium
pier
dune crossover
restaurant/bar
exterior condominium

Describe lighting source, include number of lights if identified:

PLEASE CIRCLE A RESPONSE:
When was the incident documented? A.M. survey P.M. survey
Was the incident photographed? YES NO
Was the nest located? YES NO
Was the nest excavated? YES NO
Did any hatchlings appear to have reached the water? YES NO
If yes How Many? 12

<table>
<thead>
<tr>
<th>Loggerhead</th>
<th>Green</th>
<th>Unidentified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Hatchlings Disoriented</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>Number of Hatchlings Found Dead</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Number of Hatchlings Found Alive</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SKETCH (Use back if necessary)

Additional comments please elaborate and use back if necessary:

Signature of Observer

Date 9/9/00
central passage was at 1540 L.F.C. beach.

General area is the beach. At the 1300 L.F.C. leading toward the center, I headed up to vegetation near
pool area, the remaining 8 ended directly at
fatted tracks to 1334 L.F.C. tracks. 11 fatting
tracks left meat directly to the Gulf of Mexico.

Fished 11 tracks leading north toward 1330 L.F.C.

Leaved upland to 1330 L.F.C. All 7 were found
dead, 0 had been partially eaten by raccoons; they
had been stepped on by a 0615. 1 fatting had gotten
up around the taller of 1336 L.F.C. then headed
west toward the Gulf, but was found in a shot area
like approach of 1336 L.F.C. tracks. The fatting acts
and following tracks.

31 1330 L.F.C.
1330 L.F.C. 1540 L.F.C.
MARINE TURTLE HATCHLING
DISORIENTATION INCIDENT REPORT FORM

Turtle Permit No.: 054
Observer's Name: JACOB FOOTE
Affiliation: Mote Marine Laboratory
Telephone (inc. area code): (941) 388-4441 or (941) 388-4331

Date of Incident: 9/1/2016
County: SARASOTA
Nearest City/Island: Nokomis
Name of Beach: NOKOMIS BEACH
Nest Location (inc. street address & nest #): 850 NOKOMIS DRIVE

Disoriented To (inc. street address): 850 NOKOMIS DRIVE
ROUTE HEADED SOUTH TO 7300/8000 B.F.P.

Was a probable lighting source identified? YES  NO

Have there been other disorientation events observed this season at this site? YES  NO

TYPE OF LIGHT(S) IDENTIFIED:
- parking lot
- dune crossover
- pier
- street light
- single family home
- restaurant/bar
- interior condominium
- exterior condominium
- other:

Describe lighting source, include number of lights if identified:

PLEASE CIRCLE A RESPONSE:

When was the incident documented?  M. survey  P. M. survey
Was the incident photographed?  YES  NO
Was the nest located?  YES  NO
Was the nest excavated?  YES  NO
Did any hatchlings appear to have reached the water? YES  NO
If yes How Many?

<table>
<thead>
<tr>
<th>Hatchling Group</th>
<th>Loggerhead</th>
<th>Green</th>
<th>Unidentified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Hatchlings Disoriented</td>
<td>89</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Hatchlings Found Dead</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Hatchlings Found Alive</td>
<td>4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SKETCH (Use back if necessary)

Additional comments please elaborate and use back if necessary:

Signature of Observer

Date