Findings, Challenges, and Solutions: Restoring the Night Sky Gulf Coast Sea Turtle Restoration Project

W. Scott Kardel, Matt Root
International Dark-Sky Association
Improving Habitat Injured by Spill Response:
Restoring the Night Sky

General Project Description
This project would improve the quality of nesting beach habitat by addressing artificial lighting, a pervasive negative impact to nesting loggerhead sea turtle females and hatchlings on Gulf beaches. Sites in Baldwin County, Alabama, and along public conservation lands and nesting beaches in Escambia, Santa Rosa, Okaloosa, Walton, Bay, Gulf, and Franklin counties in Florida are included in this project proposal (map on reverse side).

The project involves multiple components:
• For each conservation site identified, assessments would be conducted of existing lights visible from the beaches on project areas as well as adjacent properties prior to lighting retrofits;
• Coordination with site managers on development of plans to eliminate, retrofit, or replace existing light fixtures on the property or to otherwise decrease the amount of light reaching the loggerhead sea turtle nesting beach;
• Retrofitting streetlights and parking lot lights;
• Increased efforts by local governments to ensure compliance with local lighting ordinances; and
• A public awareness campaign including educational materials and revision of the FWC Lighting Technical Manual to include Best Available Technology.

Resource Benefits and Relationship to Injury
Response activities to the Deepwater Horizon oil spill, such as heavy equipment operation and lighting the beaches at night, caused significant disturbance to nesting habitat for loggerhead sea turtles. Artificial lights along beaches deter sea turtles from using the area and modify essential behaviors, including migration to and from the beach and successful nesting. In order to compensate for the disturbance caused by response, the goal of this project is to restore beach nesting habitat for sea turtles by replacing harmful artificial lighting.

Methods and Results of Offsets Elimination
For the purposes of negations of Offsets with BP in accordance with the Framework Agreement, the Trustees used Habitat Equivalency Analysis (HEA) to estimate Offsets provided by this project. Offsets reflect units of discounted service year acres (DSAYs) of nesting habitat for nesting loggerhead sea turtles, and will be applied against response injury to nesting habitat for loggerhead sea turtles along the Florida and Alabama coast injured by the Spill response as determined by the Trustees’ injury assessment.

In determining DSAYs for this project, the Trustees considered a number of factors, including, but not limited to, the relative habitat benefits provided by reducing artificial lighting on loggerhead nesting beaches, the anticipated performance of the lights over time, and the potential number of acres of loggerhead nesting habitat that would be improved by the project.

Total estimated offsets is 1084 DSAYs:
• 1063 DSAYs of sea turtle nesting habitat in Florida; and
• 21 DSAYs of sea turtle nesting habitat in Alabama.

Estimated Cost
The total estimated cost of this four-year project is $4,321,165.
The Florida Department of Environmental Protection and the Florida Fish & Wildlife Conservation Commission contracted with IDA in 2013 for beach lighting surveys.
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<tr>
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<tbody>
<tr>
<td><strong>Time</strong></td>
<td>10:37 pm</td>
</tr>
<tr>
<td><strong>Team Member Name</strong></td>
<td>Scott</td>
</tr>
<tr>
<td><strong>Address (if known)</strong></td>
<td>617 Bald Point Rd Panacea 32346 US</td>
</tr>
<tr>
<td><strong>Fixture Type</strong></td>
<td>Roadway</td>
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<tr>
<td><strong>Lamp Type</strong></td>
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<tr>
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<td><strong>Lumens</strong></td>
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<td><strong>Safety Concerns (If Any)</strong></td>
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<tr>
<td><strong>Mounting Height est</strong></td>
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<td><strong>Location on Structure</strong></td>
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<tr>
<td><strong>Light Visible From Beach?</strong></td>
<td>Yes</td>
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<tr>
<td><strong>Was light on at night?</strong></td>
<td>Yes</td>
</tr>
<tr>
<td><strong>On Conservation Lands</strong></td>
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Lights Out!
Sea Turtles Nesting

To report disoriented hatchlings or activities endangering a sea turtle
Please call 1-888-404-FWCC

Sign Courtesy of APTA Sea Turtle Donations
Keep All Beachfront Lights Off
For Sea Turtles - May 1 - Oct 31

To report disoriented hatchlings, please call
the Central Panhandle Aquatic Preserve Office 850-670-4783 x104
or the FWC 24hr hotline at 888-404-3922

Courtesy of
Friends of St. Joseph Bay Preserves
PARK HOURS
OPEN: 1 HOUR BEFORE SUNRISE
CLOSE: 1 HOUR AFTER SUNSET
RES. 04–05
All in all, the 25 pre-retrofit survey reports submitted for the project included nearly 3,700 photographs and amassed nearly 16 and a half gigabytes of data.
Shielding Type
Unshielded

Light Barriers from Beach
Vegetation

GPS coordinates

Recommendation Notes
Consider removal or replace with fully shield amber LED: Beacon Amber Viper - Small: VPS/30E-40/AMB/T3/360/UNV - (360 degree shield) mount at 15ft

Photos
**LED Bulbs**

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<td>- Suggested installation for new construction</td>
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