

## Sea turtle lighting

The proposed project falls within the range of the endangered hawksbill sea turtle (*Eretmochelys imbricata*) and the endangered leatherback sea turtle (*Dermochelys coriacea*). Based on the information provided we have the following comments and recommendations:

- 1) The nearby sand beach supports nesting habitat for the above mentioned sea turtles. The project should be designed to assure that no lights are visible from the beach.
- 2) The project should also comply with Puerto Rico Law 218 of 2008, Control and Prevention of the Lighting Pollution of Puerto Rico and the PR EQB 2014 Regulation to Control and Prevent Light Contamination. These laws and regulations clearly establish public policy that acceptable illumination fixtures are those that shield the light source to minimize glare impact on habitats. This applies to existing and new construction and for private lighting systems and will be used to develop new strategies to eliminate excessive lighting in all areas but in particular in beach zones.
- 3) Given the advances in technology, we recommend LED lighting for the luminaries. We recommend that all lights facing the beach and parking area also have LED lighting. The LED lighting and luminaries should be sea turtle friendly.
- 4) The concept of sea turtle friendly lighting is to use specific types of light sources that emit a wavelength of 450 nanometers or longer. This wavelength is virtually invisible to sea turtles if viewed indirectly. If the lights can be directly view from the beach, then the light source is paired with a lighting fixture that directly controls the direction and beam spread of the lighting. This means that light is effectively and accurately directed at the areas of concern without wasteful light.
- 5) LEDs should be of the proper wavelength (true red, orange or amber colored diode) and should not consist of white or blue LEDs with filter material. The following websites have information regarding the latest in sea turtle friendly lighting:

<http://seaturtlelighting.net>

[http://www.superiorlighting.com/Turtle\\_Friendly\\_Lights\\_s/864.htm](http://www.superiorlighting.com/Turtle_Friendly_Lights_s/864.htm)

<http://www.ledsource.com/blog/leds-provide-turtle-friendly-lighting>

- 6) The project should be landscaped with plants such as sea grape, button wood, and other coastal salt tolerant vegetation that can also be used to screen the night time lighting from the beach.
- 7) The project construction plans should include a lighting plan indicating the placement of lights, type of bulb and light orientation. The planting of vegetation, can also be included as part of the lighting plan. This plan should be submitted to our office.

For more information please contact us at (787)851-7297 or by email at [caribbean\\_es@fws.gov](mailto:caribbean_es@fws.gov)