

## The Solution Is Simple

Reducing the amount of light that is visible from nesting beaches is the first step to reducing light pollution that affects sea turtles. Many of Florida's coastal communities have passed lighting ordinances that require residents to turn off beachfront lights during sea turtle nesting season. Understanding the requirements of these ordinances is vital to the survival of sea turtles. There are a few simple things people living along the coast can do to protect sea turtles:

- Go out to the beach at night and identify what lights on your property are visible from the beach. If the lights are not needed for safety, simply turn them off. If the lights cannot be turned off, shield, redirect, or lower the height of the lights so they are no longer visible from the beach;
- Replace problematic lights with turtle friendly fixtures designed to direct light where you need it and away from the beach;
- Use red or amber LED bulbs (which are less disruptive to nesting sea turtles and hatchlings), in shielded, downward directed turtle friendly fixtures;
- Replace high pressure sodium vapor (HPS) lights with low pressure sodium lights (LPS);
- Apply window tint at a 15% light transmittance level or close opaque curtains or blinds after dark to reduce the amount of visible light reaching the beach;

- Only light for safety, do not use decorative or uplights during the nesting & hatchling season;
- Place security lighting on motion-sensors. Having a light suddenly turn on can be effective security.

## Questions?

Coastal counties and municipalities are responsible for developing and enforcing local lighting ordinances. The guidelines in these ordinances varies from place to place. Make sure to check with your local municipality/county to see what regulations may apply to the lights on your property. If you live in an area without an ordinance, it is still your responsibility to make sure your lights are not disturbing sea turtle.

You can call the Florida Fish & Wildlife Conservation Commission (561) 575-5407 if you have any additional questions regarding lighting. Or visit [www.myfwc.com/seaturtle](http://www.myfwc.com/seaturtle).



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Sea turtle artwork © Dawn Witherington.

# Sea Turtles & Lighting



Lights that shine onto the beach can draw hatchlings away from the ocean and off the beach, where they have a lower chance of survival. Beach lights can also scare away females crawling ashore to nest.



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## The Problem

Nesting turtles once had no trouble finding a quiet, dark beach on which to nest; now they must compete with tourists, businesses and coastal residents for sandy beaches. U.S. beaches, popular with humans and turtles alike, are now lined with seaside condominiums, private residences and hotels. Lights from these developments are problematic for both nesting females and hatchlings. They can discourage females from coming ashore to nest. If a female fails to nest after multiple false crawls, she will resort to less-than-optimal nesting spots resulting in few, if any, hatchlings surviving from the nest.

Beachfront lighting can also cause sea turtle hatchlings to become disoriented and wander away from the ocean and inland towards the brightest lights. Hatchlings that head towards landward artificial light often die from dehydration, exhaustion, terrestrial predation and passing cars.

Beachfront lighting can be properly managed to benefit humans and sea turtles. It is estimated that one third of all lighting in the U.S. is wasted in the form of light trespass and sky glow. With an annual expense of approximately 30 million barrels of oil and 2 million tons of coal on unnecessary lights, the cost of wasted lighting is about \$2 billion each year!



## Shielding Lights

Existing problematic lights can be retrofitted while waiting to be replaced with a new sea turtle friendly fixture.

To improve a light that is problematic for sea turtles, shield the fixture so the light source (i.e. bulb) is no longer visible, make sure all light is being directed down and lamp the shielded fixture with a red or amber LED.

Shielding a fixture that shines in all directions will actually increase the amount of light reaching the ground where you want it. You can purchase a shield for most fixtures or you can make a shield with materials such as heat dispersing aluminum flashing (available at most hardware stores).



Ceiling Mounted Fixture

Shielded Wall Fixture



Wall Mounted Fixtures



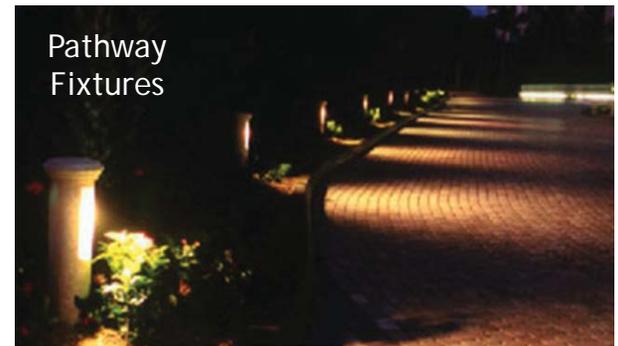
## Choosing Turtle Friendly Fixtures & Lights

In general, a good sea turtle friendly fixture directs light down to the ground where it is needed for safety, shields the light source from being visible from the beach, and is lamped with a long wavelength light source such as a red or amber LED. When choosing lighting for your coastal property, please remember these three simple rules:

1. KEEP IT LOW - Low mounting height and low bulb wattage. Flood/spot and pole lighting are highly discouraged.

2. KEEP IT SHIELDED - Use full cut off fixtures that direct the light down to the ground. Shield fixtures so you cannot see the bulb, lamp or glowing lens.

3. KEEP IT LONG - Sea turtles are less disturbed by the long wavelengths of light (570 nanometers or longer), such as lights that are yellow, amber, or red in color.



Pathway Fixtures



Coated Light



Red & Amber LED