

Landowner



Residential lights as seen from the nesting beach on Archie Carr National Wildlife Refuge

Objectives:

- *Understand the landowner's role in the conservation of loggerheads.*
- *Consider private property rights of the landowner.*
- *Understand the effect of lighting and various shoreline alterations on nesting and hatching loggerheads.*

Several weeks ago, Ted and Sharon O'Connor moved from suburban Milwaukee to Melbourne Beach, Florida. "We were tired of the cold Wisconsin winters, and Ted had just retired from his management position at Harley Davidson. We had always vacationed at Daytona Beach for Bike Week – a huge Harley event - but wanted to retire in a quieter beach community. So we settled on Melbourne." The O'Connors purchased a beach house just south of the Archie Carr National Wildlife Refuge, a thirteen mile stretch of protected shoreline on the Atlantic coast of Florida. The land has been protected by the United States Fish and Wildlife Service since 1991 due to its importance as a nesting site for loggerhead, green and leatherback sea turtles, three of the five marine turtle species protected by the Endangered Species Act (ESA). 25% of all loggerhead and 35% of all green sea turtle nests in the United States occur along these thirteen miles of shoreline.

Soon after Ted and Sharon moved into their house, they hired an electrician to install floodlights on their oceanfront deck. The lights and labor weren't cheap, but they lit up the beach nicely and the O'Connors loved the view of the ocean at night. The evening after they installed the lights, Ted and Sharon saw a sea turtle crawl up on shore and

soon head back to the water. “It was beautiful – unlike anything we'd ever seen before. She came up out of the water, crawled around a bit, and headed back to sea. Ted and I were stunned!”

But the following night, there was a knock on their door. It was two college students, Matt and Christina, who volunteer their summer nights gathering nesting and hatching data at the Archie Carr Refuge. They had noticed the new lights on their night patrol and wanted to talk to the O'Connors about the effects of artificial light sources on nesting and hatching sea turtles. “Light discourages the females from emerging to lay their eggs,” said Christina. “But we just saw a turtle come up to nest last night while the lights were on,” replied Sharon. But after Sharon provided more details about of the emergence, Matt responded, “That was a false crawl. She came out of the water but didn't lay her eggs – probably because she was discouraged by the new lights. Light from street lamps, houses, vehicles, and hotels tends to disorient the nesting females and hatchlings. Nesting females exercise non-nesting emergences, or ‘false crawls,’ when they emerge from the ocean but do not lay eggs. After several failed attempts, the female might return to the sea and discharge her eggs in the water. Emergent hatchlings often mistake artificial light sources as moonlight over the ocean and head inland instead of out to sea. These hatchlings spend increased time on the beach and expend more energy in their attempt to get to sea. Under these circumstances, the probability of death from predation, dehydration, and starvation increases greatly. Every summer - from May 1 to August 30 - property owners along this stretch of beach are encouraged to keep their lights off. We're trying to foster better nesting and hatchling success. Because this is the most important nesting beach for loggerhead and green sea turtles in the U.S., we need help from all landowners along this stretch of beach, both residential and commercial, to keep it that way.”

Ted O'Connor responded, “I understand it's important to protect the nesting and hatching sea turtles, but how much do a couple of lights really affect them? Besides, isn't it my right to light my property if I want to? And, what about our next door neighbor? He's been renourishing the beach in front of his house and has just applied for a permit to construct a sea wall. I know that must have some detrimental effect on the turtles, but isn't it his right to take measures to protect his property?”

Transcript: Landowner Owens Renourishment Imprinting.wmv

“Beach renourishment on imprinting, ok: Well you can imagine if I'm right and if the sense of smell is an important component, then by changing the sand types and by changing the organic molecules within the sand, you could be throwing like a double-whammy on the turtle. Maybe it was incubated or maybe it grew up in the beach in a natural way and you put the artificial sand on there and the beach is going to smell different. I actually think if they're using the sense of smell in terms of migration then it could have an impact on their ability to relocate their imprint site.”

Transcript: Conclusion Owens Delisting.wmv

"Because I'm confident that turtles will recover. I'm confident there's a lot of good things happening in turtle conservation. But what will happen at some juncture? Do we take the green turtle off the endangered species list? Do we back off? You know there's endangered and there's threatened. Do we back off on some of these endangered and make them threatened? Do we take some of the threatened ones and put them down to not endangered? Because you see that removes some protection if you do that. So those are really key issues that the U.S. is going to have to deal with."

Questions:

1. The O'Connors have just spent over \$800 installing new lights on their oceanfront deck. They cherish the view of the ocean at night and were thrilled to see a turtle emerge from its waters. But Ted and Sharon now understand the negative effects their new lights have on the nesting females and hatchlings. What would you suggest they do? What rights do they have as property owners?

2. A new hotel is about to open just north of the O'Connor's residence. The light from the rooms and the pool pose a potentially serious threat to the nesting and hatching loggerheads. At the same time, tourists will want to swim in a well lit pool and turn on their room lights in the evening hours. How might the hotel management solve this dilemma? What risks are associated with unlit areas?