

Turtle Nest Cam

The Turtle Nest Cam project is a partnership between the National Park Service's Canaveral National Seashore and the University of Central Florida's School of Visual Art and Design. UCF professor, Phil Peters tasked his Design for Media graduate class with creating an interactive project to aid in the park's reach and expand its effectiveness in sharing its treasures. The class decided to create an interactive, fully immersive portal that gives an authentic experience of the park to anyone in the world with an internet connection. One of the components of that project that was expanded upon, was the idea of capitalizing on the most popular program at the park; sea turtle nest conservation.

The graduate students worked to create a mobile, remote, wireless, solar powered, infrared camera system that could be placed on a sea turtle nest that was due to hatch. This video feed would be streamed live to the Canaveral National Seashore website for anyone in the world with access to the internet to see. The graduate students designed the system, built the camera array, installed the hardware, installed the transmitter-relay-receiver system, and set up the software for video streaming. Due to the large number of sea turtle nests inside the park every year (approximately 5000 +), this camera will film the hatching of dozens of nests.

The funds to produce this project came from a generous grant from the National Park Foundation, the philanthropic counterpart to the NPS. A portion of these funds were allocated for the production of an educational film that is posted on the Canaveral National Seashore website. This replaces the antiquated VHS tapes that the Park Rangers distributed to educators throughout central Florida who requested pre-visit materials for their students. These tapes were seldom returned, stretching the already thin promotional budget. (click here to view video)

The UCF Project Team would like to thank Greg Johnson of Aluminum Supply Inc. in Orlando, Ben Lake of Superior Metal Fabricators in Orlando for his assistance in constructing our mobile array, and Advanced Security & Comms in New Smyrna Beach. In addition, this project would not have been possible without the continuous support and encouragement of Ranger Laura Henning, Scott Anderson, and all the staff at Canaveral National Seashore.

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The camera array is a light-weight, mobile platform constructed out of aluminum to hold the camera, battery box, solar panel, and transmitter. The array had to be sturdy enough to withstand exposure to the elements on the beach for months at a time and easy enough to be repositioned from nest to nest by one ranger.

The equipment installed on the array includes; a daylight/infrared camera, radio frequency (RF) transmitter, solar panel, and a deep cycle marine grade battery. The system is wired with on/off switches and daylight sensors so that the array would conserve power during the daytime.

An RF signal relay is mounted on the top of a 20' pole at the edge of the sand dunes. It captures the video transmission sent from the camera array on the beach and relays it on to the RF receiver at the Park Visitors' Center. A computer digitizes the incoming video transmission, and uploads it to a streaming server where anyone with an internet connection can watch the sea turtle nest LIVE on the park's website. (nps.gov/cana)

The Turtle Nest Cam Array is shown at its first test location, the nest of a loggerhead sea turtle. The height and angle of the camera on the array, and the placement approximately 12" uphill behind the nest marker, allows the viewer to observe the baby sea turtles emerging from their nest and scurrying toward the surf.

UCF and NPS personnel worked closely at every stage of the testing and implementation of this project to ensure its success.