



# MOSAICS IN SCIENCE

## Diversity Internship Program

### 2021 Project Descriptions

<b>NPS UNIT: CAPE LOOKOUT NATIONAL SEASHORE</b>		<b>PD #: 2021510</b>
<b>Project Title:</b> Sea Turtle Science and Management on Dynamic Barrier Island Ecosystem. <b>Position Type:</b> Mosaics PLC <b>Primary natural resource discipline:</b> Biological Sciences <b>Project keywords:</b> Sea Turtle, Beach, GIS, ArcGIS Online, All Terrain Vehicle (ATV) <b>Location:</b> Harkers Island, North Carolina		
<b>COVID-19 NOTICE</b>		
As the COVID-19 pandemic continues to change and evolve, project timelines and structure remain flexible and it may be necessary to postpone start dates, begin work remotely, or reformulate the project's description. Should any development in the COVID-19 outbreak impair a project's timeline or results, the SIP Team will work with the park and project mentors to assess the situation and determine the best course of action at that time.		
<b>PROJECT DESCRIPTION AND WORK PRODUCTS</b>		

**Position Description:** Cape Lookout National Seashore (CALO) preserves 56 miles of barrier island ecosystem in North Carolina's southern Outer Banks. The seashore is a significant loggerhead and green sea turtle nesting beach in the north west Atlantic Ocean nesting range. In September 2018 Hurricane Florence and then Hurricane Dorian in 2019 significantly impacted the sea turtle nesting beaches of Cape Lookout National Seashore. The primary dune line was flattened by storm surge, ocean overwash moved sand from the oceanside across to the soundside, and several new inlets were formed. The island profile is now flatter. Sea turtles typically prefer a steeper sloped beach with an established dune line. Additionally, without the dunes to block ambient light glow from the mainland there are light disorientation issues. Light disorientation of sea turtles is an important natural resource management issue at Cape Lookout National Seashore. In 2021 the specific project goals are to continue data collection to determine if the altered beach profiles change the sea turtle nesting density and to monitor for increased light disorientation.

The purpose of the Biological Assistant intern position is to perform routine and uncomplicated biological science tasks common to natural resource management for sea turtle monitoring at Cape Lookout National Seashore. The barrier islands of Cape Lookout National Seashore are undeveloped and semi-remote where natural processes such as ocean overwash and inlet formation are allowed to function. The intern perform primarily routine functions with monitoring sea turtle nesting, such as early morning patrols to locate nests and false crawl activities. The intern will collect and organize field data and ensures adequate quality control of data collected. The intern will perform collection of biological samples and records all data collected and provides preliminary assessment and classification of the information. The intern may install, operate, and maintain resource management equipment (e.g., tools, traps, fencing, and posts). The intern will use GPS units, ArcGIS Online, and manage a online database. The intern will learn barrier island ecology and barrier island geological processes. The desired outcome for the internship is to develop independent, self-motivated, task orientated, safety minded intern who significantly contribute to the natural resource program.

The coastal National Park units are facing increasing challenges due to climate change. Increased storm activity and rising sea levels have a direct impact on wildlife and habitat that the park is charged with preserving. Hurricane Florence (2018) and Dorian (2019) had direct and lasting impacts to the sea turtle nesting beaches of Cape Lookout National Seashore. Wider and flatter beaches appear to be changing sea turtle nesting patterns and increasing disorientation of sea turtle hatchlings. The loss of dunes in the seashore and the continued development of areas near the seashore increases the ambient light on nesting beaches. Cape Lookout National Seashore is studying the light on our sea turtle nesting beaches and is currently completing a Dark Sky Park Designation. The park's Resource Stewardship Strategy (RSS) identifies night skies, native species, and dynamic coastal barrier Island systems as priority resources with stewardship goals. The interns will collect/ record data and create maps to continue long term monitoring of the impacts of climate change and light pollution in the seashore. Data and maps created will be used by resource managers to make decisions on meeting RSS stewardship goals, wildlife management needs and to provide educational materials for the public.

This position is offered through the National Park Service's Mosaics in Science Internship Program in partnership with Environment for the Americas.

**Work Products:** The SIP intern will provide daily sea turtle patrols, complete datasheet records, enter data, use AGOL, and online database entry for up to 1,100 sea turtle nesting activities. The 12 week internships will be at the peak of sea turtle nesting in North Carolina and is full time work. The data collection and entry will contribute to the National Park Service Natural Resource Stewardship

## NATURAL & PHYSICAL WORK ENVIRONMENT

Cape Lookout National Seashore is part of the Outer Banks of North Carolina situated on the coast of the Atlantic Ocean. The elevation ranges from sea level to 70 feet and is typically low and flat. The park is in a rural area with typical amenities located in nearby towns, about a 30 minute drive to grocery stores and other facilities. Weather is typically hot and humid in the summer with plenty of water recreation opportunities. The work environment is predominately outside on a semi-remote barrier island on beaches, sand flats, and dunes. The interns must be able to ride in a motorboat across coastal waters. There will be routine exposure to weather, sun, and biting insects. Summer temperatures can be hot and heat index values can be extreme, but the barrier islands are generally cooler than the mainland.

## QUALIFICATIONS

The successful candidate should have some coursework in university level biology, ecology, GIS, geology, and/or other related wildlife science coursework preferable at the junior or senior level. Candidates should be able to meet physical demands of the job - position requires walking, digging, and ATV riding in soft sand. ATV safety and skills training will be provided. Ability to spend long hours in the field under hot, humid, shade-less, and windy conditions, patience, and ability to live amicably in semi-remote field housing with other staff is desired.

The applicant must be a U.S. citizen or U.S. permanent legal resident (“green-card-holder”) between the ages of 18 and 30 years old, inclusive, or veterans up to age 35. Prior to starting this position, a government security background clearance will be required.

## VEHICLE AND DRIVER LICENSE REQUIREMENTS

**Applicant must have a valid drivers license and a good driving record.**

**A personal vehicle is REQUIRED for this position.**

## HOUSING

Park housing is available and will be provided at no cost to the participant. Park housing may be a shared or private room depending on demand. Housing does include all the basics for kitchen needs and bathrooms. The SIP intern will need to bring personal items to include toiletries, laundry detergent, pillows, linens and towels. Mainland park housing is for off days and the work week housing/cabin may be utilized on the barrier island.

## INTERNSHIP START/END DATES

**Start Date:** 5/17/2021

**End Date:** 7/30/2021

Eleven weeks of the internship will be in the park. A mandatory Career and Leadership Workshop will be held in Washington, D.C. from August 1 – 5, 2020.

## PLEASE DIRECT ANY QUESTIONS TO ENVIRONMENT FOR THE AMERICAS

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