

POSITION ANNOUNCEMENT:

FUTURE PARK LEADERS of EMERGING CHANGE

The National Park Service (NPS) is pleased to support the *Future Park Leaders of Emerging Change* (FPL) internship program as a pathway for exemplary students in higher education (advanced undergraduate students and graduate students) to apply their skills and ideas to park-based challenges and solutions. The program offers 12-week paid internships which allow students to gain valuable work experience, explore career options, and develop leadership skills through mentorship and guidance while helping to advance NPS efforts on emerging management issues. Successful students may be eligible for non-competitive hire into federal positions for which they qualify following completion of all academic requirements.

Quantifying the Emerging Threat of Marine Debris on Sea Turtles

Padre Island National Seashore/ Division of Sea Turtle Science and Recovery
Corpus Christi, Texas

PROJECT SUMMARY

Help sea turtle conservation by researching the historical and present-day impact of marine debris ingestion by sea turtles at Padre Island National Seashore.

INTERNSHIP PROJECT BACKGROUND

Marine debris, especially plastics, affects marine megafauna throughout the world through entanglement or ingestion. Due to the currents in the Gulf of Mexico, Texas sees higher accumulation rates of plastic pollution in its waters and beaches. During recent years, Texas beaches have been accumulating higher levels of small plastic pellets, nurdles, used in the manufacturing process creating an emerging environmental threat. Although small in size, nurdles are a hazard to wildlife due to their resemblance to food items and their ability to absorb and transport toxic chemicals and pathogens. Beachgoers and scientists observed a surge of nurdles on Texas beaches in 2018 and 2019, linked to large nurdle spills along the Gulf coast where several companies manufacture nurdles. NurdlePatrol, a local citizen-scientist group, has been surveying and collecting nurdle samples along the Texas coast since 2018, amassing more than 700 samples at Padre Island National Seashore alone.

Historical data demonstrate that marine debris has been found in the digestive tract of four out of five species of sea turtles in the Gulf of Mexico. New research examining the ingestion of nurdles is needed to determine the effects these plastic pellets have on sea turtles and assess the severity of the problem in the Gulf of Mexico.

INTERNSHIP PROJECT DESCRIPTION

The Future Park Leader will examine historical samples, collected at Padre Island National Seashore (PAIS), from 1986–1998 and participate in necropsies examining gastrointestinal tracts to quantify the nurdles and marine debris each turtle has ingested. If found, nurdle samples will be collected for additional off-site analysis to determine plastic type and contaminant presence. The intern will use morphological data to determine size and/or species-specific ingestion rates of nurdles. A comparison between the historical and current samples will provide insight on whether the incidence of nurdle and marine debris ingestion by sea turtles in the western Gulf of Mexico has changed over the last two decades.

The intern will use analytical techniques and laboratory work to write and present findings with the Division of Sea Turtle Science and Recovery at PAIS. Additionally, they will create communication materials aimed at park visitors informing them of marine debris impacts on wildlife and suggestions for more sustainable solutions. Understanding the scope and severity of marine debris and nurdle ingestion will allow PAIS to quantify the threat they pose to sea turtle recovery.

QUALIFICATIONS

The Future Park Leader must be working towards a thesis-based degree in marine biology, natural resources or related discipline. Previous coursework in statistics and general lab. Competitive applicants will have experience in technical writing, developing a thesis towards a Master's Degree or authored/co-authored a peer-reviewed publication. Interest in biology or marine sciences, particularly related to wildlife management.

Intern should be comfortable providing knowledge to park visitors and delivering presentations on current research. Intern should have an ability to work well independently and as a team, in office and field settings, with little supervision; and comfortable spending long hours in front of a computer and in a lab completing analyses and writing. Prior field experience with sea turtles is not required, but is advantageous. Previous lab work processing biological samples and necropsy experience preferred. Participation in necropsy is required. Ability to lift/carry 50 lbs. A valid driver's license and personal vehicle are required.

The applicant should possess the following qualifications.

- Must be working towards thesis-based graduate degree in biology or related discipline
- Strong analytical and statistical skills
- Strong communication skills, specifically in technical writing and public speaking
- Ability to perform necropsies and collect samples from deceased sea turtles
- Prior field experience in harsh weather conditions

- A valid driver's license and clean driving record

LEADERSHIP DEVELOPMENT

- **Natural resource management:** The intern will work with permanent and seasonal park staff and volunteers to help protect endangered and threatened sea turtles.
- **Collaboration:** The intern will participate in a variety of stakeholder meetings for project management, including PAIS, U.S. Fish and Wildlife Service, and Gulf State Stranding Restoration. They may engage with partners at the University of Texas Marine Science Institute and Mission-Aransas National Estuarine Research Reserve (NERR). They may also participate in the NERR citizen science project, NurdlePatrol, or other similar projects. Network opportunities will be provided during these regular interactions.
- **Communication skills:** The intern will interact with park visitors through informal and formal interactions at the park and through public presentations. They will also have the opportunity to present to partners in the community. The intern will be evaluated on their ability to engage and interact with park management and stakeholders to disseminate the information from their project.
- **Safety:** The intern will participate in safety briefings and receive training in all aspects of the Division of Sea Turtle Science and Recovery program.

DATES OF POSITION

This position is a 12-week internship starting on May 11, 2020 and ending on July 31, 2020. The start date is flexible.

COMPENSATION

This initiative supports one student at \$16/hour for 12 weeks, or 480 hours.

HOUSING & TRAVEL

Padre Island National Seashore is located just outside of Corpus Christi, Texas on the Gulf Coast. Corpus Christi has a number of popular attractions including the Texas State Aquarium, the USS Lexington Museum, the Texas Surf Museum and Mustang Island State Park. The park will be responsible for renting a furnished condominium locally for the duration of the internship. The intern will have their own room but will share the condominium with other park interns. The city, where the intern will live and have access to local grocery stores, pharmacy and recreational activities outside the park, is approximately 18 miles from the Park Headquarters. There is no public transportation to the park, so a car is strongly recommended.

The FPL provides a travel stipend to all interns to supplement the cost of student travel to the park site.

WORK ENVIRONMENT

Padre Island National Seashore consists of 70 miles of undeveloped beach, the longest stretch of undeveloped barrier island in the world. The park protects dunes, coastal prairies, tidal flats and the Laguna Madre, one of the few hypersaline lagoons in the world. It hosts over 380 bird species and the largest nesting beach for Kemp's ridley sea turtles in the United States.

Work will primarily be in the office with occasional field work. A desk and computer will be provided for office work. Fieldwork will be physically rigorous, involving travel down remote stretches of beach via park vehicle or UTV, in hot, humid, and windy weather, conducted in the early morning, daytime or overnight hours. Fieldwork related to stranding events may involve the transportation of live or dead sea turtles, necropsy or the collection of biological samples, and thorough completion of data sheets. Fieldwork will require the use of personal protective equipment (PPE), safety equipment, and radio equipment. All required safety PPE will be provided by the Park. Potential job-site hazards include weather, riding UTVs and beach driving, marine debris, and exposure to live and dead animals. Work schedule will be flexible to accommodate weather, long days or night shifts of fieldwork.

CONTACT INFORMATION

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