

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) program as a pathway for exemplary students in higher education (advanced undergraduate students, graduate students, and recent graduates) to apply their skills and ideas to park-based challenges and solutions. The Initiative 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.

ASSESSING THE EFFECTS OF GLOBAL STRESSORS ON REEF FISH ASSEMBLAGES WITHIN BISCAYNE NATIONAL PARK

Biscayne National Park
Homestead, FL

INTERNSHIP BLURB

Explore the connection between the condition of the habitat and condition of the fish assemblage on Biscayne's reefs. Conduct underwater surveys to collect data and analyze relationships between coral reef health (e.g. diversity, presence of disease) and reef fish assemblage condition (e.g. diversity, size structure, abundance).

INTERNSHIP PROJECT BACKGROUND

Coral reefs worldwide are being threatened by a myriad of global stressors, including climate change and an ever-growing human population with continuously improving technological capabilities. As a result of these stressors, reefs worldwide have been in decline. Live coral cover on reefs is declining, the frequency and severity of bleaching and disease outbreaks among corals and other reef organisms are on the rise, many species of reef fish are considered overfished or undergoing overfishing, and staggering levels of marine debris accumulate on reefs.

Reefs within Biscayne National Park have, unfortunately, followed the global trend. For example, the threatened pillar coral, which once existed as a unique park-specific genotype across numerous populations throughout the park succumbed to disease outbreaks in 2015 and 2016 and is now extinct within the park. Similarly, the threatened elkhorn coral (*Acropora palmata*) which once existed in vibrant stands across the park has now, after 2 years of intense bleaching, 2 years of disease outbreak, and a severe hurricane, been reduced to only a couple of known living populations that are in very poor condition. The goal of this internship is to elucidate how reef health affects the assemblage of coral reef fish.

INTERNSHIP PROJECT DESCRIPTION

The intern will participate in field surveys to collect data on the condition of both coral reefs and the reef fish assemblages. Fish data will be collected as part of a multi-agency Reef-fish Visual Census. The intern will be part of a four-person dive team collecting reef fish data (species occurrences, sizes, and abundances) at randomly selected sites throughout the park.

After the fish surveys are complete, the intern will also collect data on the coral reef condition, including presence and extent of coral disease, presence and extent of coral bleaching, and abundance, type, and impacts of marine debris. The intern will work closely with his/her supervisor to develop the most appropriate and feasible methods for collecting data related to coral reef health. The intern will be responsible for entering data into the appropriate database. Lastly, the intern will design and execute statistical analyses to assess how reef health influences reef fish assemblages.

Internship Tasks and Products

- Documentation of data entry (and QA/QC) into the appropriate database
- Statistical analyses
- Internship report which includes an Introduction, Methods, Results, and Discussion. The discussion section must include management recommendations based on the findings.
- Powerpoint presentation to park staff to summarize the findings of the project

QUALIFICATIONS

Required:

- MOCC boat operator
- AAUS or NPS blue-carded diver
- B.S or M.S in biology, ecology, marine science, or a related field
- a minimum of 3 undergraduate or graduate credits in statistics, biostatistics, biometrics or a related class.

Desired:

- Ability to identify common reef fish of the Tropical Western Atlantic
- Ability to identify Atlantic stony corals and other reef organisms

LEADERSHIP DEVELOPMENT

The intern will gain experience in project design and development. The intern will be responsible for researching methods of monitoring coral reef condition and determining a method that is appropriate for the proposed work and which can be completed with the resources available. This will require critical thinking and real-world problem solving. The intern's supervisor will guide the intern's statistical analyses and, to the extent needed and possible, seek out training/mentoring opportunities to improve the student's statistical analysis capabilities. The intern will be working as part of a team, thereby gaining experience in team dynamics; he/she will also have opportunities to serve in leadership roles and make judgement calls related to safety and logistics. The intern will also be asked to present his/her findings at a public meeting or scientific meeting to get experience in presenting findings and interacting with stakeholders.

DATES OF POSITION

Precise start date is flexible, however intern should be prepared to work July, Aug, and Sept.

COMPENSATION

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

HOUSING

A shared (up to 4 people) apartment at park headquarters may be available, however it cannot be reserved until the intern is selected, since gender plays a role in determination of an available bed. If park housing is not available, there are many rental condos and townhouses within a reasonable driving distance from the park. A housing subsidy may be available to the intern for rental housing.

The park is located approximately 5 miles from the eastern edge of the developed Homestead area. Homestead and the surrounding South Florida area offer access to restaurants, grocery stores, a movie theater, retail shops, a hospital, and various medical offices.

WORK ENVIRONMENT

This project will involve both field and office duties. Field days can be expected to be long and somewhat intense, and intern must be comfortable completing up to 8 dives per day. Dive depths vary between 8 to 80 feet. All dives will be done with computers and/or dive table to ensure diver safety. Park waters are generally clear and warm, however periodic storms and other environmental conditions can cause limited visibility, surge, high seas, and strong currents.

Intern will be provided with necessary field/safety gear, such as a foul weather jacket, life jacket, and sunscreen. Dive gear will also be provided as needed.

Office work will require the use of a computer and desk, which will be provided. Basic statistical software is also available.

CONTACT INFORMATION

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