

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.

Monitoring the Impacts of Everglades Restoration on Tree Island Archeological Sites at Everglades National Park

Everglades National Park
Homestead, Florida

PROJECT SUMMARY

Study and model impacts of everglades restoration (increasing water flow into the everglades ecosystem) on tree island archeology sites. Develop monitoring protocols to track the long-term impacts of changing water levels on tree island archeological deposits.

INTERNSHIP PROJECT BACKGROUND

Tree island archeology sites are anthropogenic features in the everglades sloughs built up over thousands of years of indigenous seasonal occupation and refuse discarded by the ancient inhabitants. Tree island archeology sites in the Shark River Slough at Everglades National Park will be impacted by freshwater level rise related to the Modified Water Deliveries (MWD) project as part of the long-term, multi-billion dollar Comprehensive Everglades Restoration Plan (CERP). The MWD will direct greater surface flow from Lake Okeechobee and rainfall into Shark River Slough.

Understanding the impacts of the state and federally funded modified water delivery into the everglades on archeological sites is both mandated by cultural and natural resource laws and critical for park cultural resource management. The results and products of the FPL internship will both contribute to our understanding of tree island archeology and the threats resulting from altered hydrological processes resulting from management decisions and changing environmental conditions. The intern will have the opportunity to work with park management, researchers and external partners including consulting tribal groups who are cultural stewards of the tree island sites.

INTERNSHIP PROJECT DESCRIPTION

- Synthesize the research and knowledge on tree island formation. Understanding tree island formation processes can help predict the impacts of increased tree island saturation.
- Generate a GIS model of the area and seasonality of inundation based on the planned MWD inputs into Shark River Slough. The results will enable the park to estimate the potential impacts of MWD on archeological sites.
- The intern will assist with the production of written protocols for monitoring threats and impacts to tree island archeological sites over time.
- The intern will produce a tree island formation research report including introduction, background/literature review, secondary data analysis, summary and implications for planned hydrological modifications in Shark River Slough.
- The intern will produce GIS products capturing the modeled hydrological changes and potential impacts on archeological deposits resulting from planned MWD.

QUALIFICATIONS

The most qualified applicants will have experience in modeling environmental changes such as sea-level rise, precipitation and temperature trends, or increased freshwater flow into systems as the result of management decisions. The intern should have skills and experience in geographic information systems (GIS) and other modeling software such as R. The intern must be capable of working in the challenging everglades environment that offers extremely difficult conditions in the summer.

- BA/BS in Archaeology, Ecology, Geography, Geology, Hydrology or related science.
- Pursuing a MA/MS in Archaeology, Ecology, Geography, Geology, Hydrology or related science.
- High level proficiency in GIS with experience using raster datasets required.
- Scientific research experience involving hydrological raster modeling.
- Backcountry field experience required.
- Experience using Trimble GPS units.

LEADERSHIP DEVELOPMENT

The intern will work closely with park cultural resource staff for the development and implementation of each component of the proposed internship. The intern will collaborate with their supervisor for developing an understanding on how their research and technical projects are integrated into compliance and park management. The intern will also engage with South Florida Natural Resources Center (SFNRC) staff who are supporting cultural resource research and monitoring efforts related to MWD. The intern will have the opportunity to attend, present and consult with the Seminole Tribe of Florida regarding the intern's tree island project at monthly Tribal Historic Preservation Office (THPO) meetings. Additionally, the intern will have the opportunity to present the results and implications of their project to park management including the park's SES Superintendent.

DATES OF POSITION

Approximate dates of internship: 06/01/2020 – 08/21/2020. Dates are flexible; time frame for project completion is between 07/31/2020 and 09/25/2020.

COMPENSATION

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

HOUSING & TRAVEL

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

Intern will stay in a shared 3 bedroom 1 .5 bath in Pine Island park housing unit about 1 mile from park headquarters in Homestead, Florida. On-site washer-dryer. The park house is shared with up to 2 other park interns or seasonal employees. No pets allowed in shared housing. The nearest grocery, gas, restaurant facilities are approximately 10-15 miles away. Lots of entertainment and recreational opportunities in the Miami area and the Florida Keys. Personal vehicle is recommended. Cell phone service in the park varies from poor to ok depending on the carrier.

WORK ENVIRONMENT

The majority of the internship will be office-based. However, the intern will participate in field work in the Shark River Slough. Travel will be by vehicle, foot, air-boat or possibly helicopter. Biting insects can be bad in the summer. Bug spray and bug jackets will be provided. Alligators and poisonous snakes are present in the slough; however, they tend to avoid people. Poison vegetation is present on tree islands which can be mitigated by avoidance, creams, washing and appropriate field clothing. Thunderstorms are common in the summer but fieldwork is avoided during storm activity. Footing in the slough can be rough (pinnacle rock and solution holes) so work boots are required. Work in the slough requires hiking in water and through dense vegetation. Heat can be extreme with real feel above 100 F all summer long. Despite the challenges, it is a beautiful landscape.

CONTACT INFORMATION

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