PROJECT DESCRIPTION
2020 FALL/WINTER

NPS UNIT: BIG BEND NATIONAL PARK AND
RIO GRANDE WILD AND SCENIC RIVER

Position Title: GIS Assistant (1)
Position Type: Guest Scientist
Primary natural resource discipline: Multidisciplinary
Project keywords: GIS, science communication, analysis, visual information, mapping, cartography
Location: Big Bend National Park, Texas

COVID-19 NOTICE
This project description was developed prior to the onset of the COVID-19 outbreak. Therefore, 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 GIP Team will work with the park and project mentors to assess the situation and determine the best course of action at that time.

PROJECT DESCRIPTION AND WORK PRODUCTS

Position Description: The GIS assistant will complete and assist with a variety of geographic information projects to provide park managers, researchers, and partners with visually compelling tools that convey up to date information about park resources.

Specific projects will include:

1) Updating the viewshed database for Big Bend and nearby parks through geospatial analysis, developing a portfolio of static viewshed maps, and developing web apps using ArcGIS Online to display viewshed information.

2) Contributing to a Rio Grande Wild and Scenic River (RIGR) Science Storymap by developing 3 to 5 interactive web maps and accompanying written narratives that describe past and ongoing research and monitoring activities that take place on the river.

3) Assisting with day-to-day park GIS activities that may include migrating legacy data to modern agency data standards; developing cartographic products; instructing others in the use of GIS or GPS/GNSS technology; conducting field data collection using the Collector app; developing Collector maps for data collection projects; and, up to 20% of the time and according to the intern’s interest and park need, participating in activities that support the Science and Resource Management division such as participating in monitoring and survey field activities, river trips, and using GIS skills to collaborating with other divisions to achieve the park’s mission.

The NPS strives to preserve resources for the enjoyment of the public; in order to preserve resources, we must understand them. Big Bend National Park outlines two goals in its Resource Stewardship Strategy related to understanding and documenting resources that this GIS assistant position will contribute to:

1) “Inventory and assess park views, repeating as warranted to monitor changes in condition” and
2) “Improve data sharing capabilities among NPS, conservation, research, and restoration partner organizations.”

This position is offered through the National Park Service’s Geoscientists-in-the-Parks (GIP) Internship Program in partnership with Stewards Individual Placement Program (Stewards) and The Geological Society of America (GSA).

**Work Products:** Final products will include:

1) an updated viewshed analysis portfolio for the region, including static maps, a webmap or app, and written descriptions of viewsheds and resources they contain; 
2) contributions to the Rio Grande Wild and Scenic Science Storymap in the form of 3-5 interactive webmaps and accompanying short (<500 words each) narrative descriptions of monitoring and restoration projects taking place on the river; and 
1) 3) a reasonable number of cartographic products and updated GIS datasets, to be determined according to intern’s interests and park needs.

**QUALIFICATIONS**

This is a 9-month internship that is best suited for a recent college graduate with a major or minor in GIS, geography, cartography, or related field. It would also be well suited for someone who has significant GIS coursework and is taking a break from undergraduate or graduate coursework to gain experience in the workplace using GIS for natural resource management. This internship requires that the candidate already have skill in basic GIS editing and analysis and strong written communication (especially informational writing). The candidate should have experience using desktop GIS software such as ArcGIS Pro or ArcMap, and the candidate should have some coursework in natural science (e.g. botany, geology, ecology).

A successful candidate will have experience OR a strong interest in 1) using ArcGIS Online and Esri desktop software (ArcMap or ArcGIS Pro) to develop interactive webmaps; 2) Python or other programming to support geospatial analysis or data management workflows; 3) lands management (coursework or interest); 4) interpretive and informational writing.

A successful candidate will be able to demonstrate the following "soft skills" through an interview or through references: 1) an ability to independently problem-solve, and 2) an ability to collaborate and communicate respectfully and effectively with colleagues with diverse backgrounds and experience levels.

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 veteran 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 driver license and a good driving record.** The intern will drive government vehicles to and from various work locations within the 801,000 acre park, and will occasionally drive a government vehicle to sites outside the park.

**A personal vehicle is REQUIRED for this position.** Due to the remote location of Big Bend National Park, a vehicle is required. Minimal driving of an NPS vehicle for work will be required for occasional site visits within the park and occasional trips to the park headquarters building, located about ½ mile from the primary work location. Housing is within ¼ mile of the work site and many residents commute by walking or bicycling; however, some prefer to drive. A personal vehicle is required for meeting basic grocery and healthcare needs. The housing area is located over 20 miles from the nearest grocery store and over 100 miles from the nearest pharmacy and hospital. Public transportation is not available.

If the GIP is required to drive a park vehicle for their position, Stewards will perform a driving records search, and the GIP’s ability to drive a park vehicle during work hours will be contingent upon the results.
GIPs will have to have had their license for 3 years or be over the age of 21 to be insured as drivers under Stewards insurance policy. Examples of things that will preclude a GIP from driving a park vehicle include: GIP under the age of 21 years old that has been licensed less than three years, DUlS, multiple moving vehicle violations, suspended or revoked license, or three or more accidents (regardless of fault) in the last 3 years. If the driver’s search is favorable, Stewards will provide driver’s liability insurance while the intern is driving a NPS vehicle for their GIP position. If the GIP is denied coverage by Stewards, they will not be permitted to drive during work hours.

**HOUSING**

*Park housing is available and will be provided at no cost to the participant.* Housing is available in the form of a single room in a house that may be shared with up to 2 housemates of the same gender and a shared bathroom (if housing is shared, each resident would have their own bedroom). Free laundry is within walking distance. Houses are modestly furnished with basic kitchen supplies, pots and pans, dishes, electric coffee maker, and furniture. Residents will need to provide linens for a twin size bed, towels, and personal items. Residents should bring clothes for a hot, sunny desert environment (long sleeves, light colors, and wide brimmed hats are recommended). A car is strongly recommended for grocery shopping and personal errands due to the remote location of the housing area and a lack of public transit in the region.

**INTERNSHIP DATES**

| Start Date: | 9/28/2020 |
| Number of weeks: | 36 weeks |
| Flexibility of dates: | Yes |

**LIVING ALLOWANCE**

| 36 weeks ($400/week = $14,400) |

**RELOCATION ALLOWANCE**

| $250 |

**PROFESSIONAL DEVELOPMENT ALLOWANCE**

| $500 |

**AMERICORPS PROGRAM**

AmeriCorps is a program that engages individuals in intensive community service work with the goal of “helping others and meeting critical needs in the community”. The GIP Program is supported through AmeriCorps by providing a Segal Education Award in addition to the GIP’s living stipend and relocation allowance.

Upon successful completion of the GIP position, the GIPs (AmeriCorps members) are eligible for a $1,612 - $6,095 pre-tax education award that can be used for paying back student loans or for continuing their education. The amount of the education award is based on the length of the position.

AmeriCorps limits the number of terms an individual can serve to 4 terms. If an applicant has previously completed 4 GIP or other AmeriCorps positions, they will not be eligible to apply for an additional GIP position.

**NATURAL AND PHYSICAL WORK ENVIRONMENT**

**Natural Environment:** Big Bend National Park is located at the southern tip of Brewster County, Texas, at the “Big Bend” of the Rio Grande. Slightly larger than Rhode Island, the park comprises 801,163 acres. The park’s southern boundary is comprised of 118 miles of the Rio Grande and is the International Boundary between the United States and the Republic of Mexico. In 1978, Congress designated a 196-mile portion of the Rio Grande from the Chihuahua/Coahuila state line to the Terrell/Val Verde county line as a Wild and Scenic River. The upper 69-mile section of the 196-mile corridor is within Big Bend National Park. The highest point in the park is Emory Peak, with an elevation of 7,832 feet; the lowest elevation in the park is
the point where the Rio Grande emerges from Boquillas Canyon at 1,700 feet. In 2012 Big Bend National Park was designated as a Gold Tier International Dark Sky Park by the International Dark Sky Association.

Weather in the Big Bend trends on the warm end of the spectrum of weather patterns found in North American deserts. May, June, and July are the hottest months, with low elevation high temperatures normally exceeding 100°F. Late summer heat is often broken by afternoon thunderstorms. Fall and winter are usually sunny and pleasant, though mountain air temperatures may frequently fall below freezing at night. Spring months tend to be hot and sunny. Outdoor activity planning must account for extreme sun exposure and allow for the possibility of extreme heat exposure year-round.

Communities in the Big Bend region are among the most remote and isolated in the contiguous United States. Panther Junction, located in the center of the park, is the primary residence and work area within the park and offers a gas station, post office, and a K-8 school. There is no pre-K childcare in the park. From Panther Junction, the nearest town is Terlingua/Study Butte, about a 45 minute drive. Terlingua/Study Butte offers a small grocery store, a hardware store, and several gift shops, galleries, and restaurants. The next largest town nearby is Alpine, about a 2 hour drive from Panther Junction. The closest hospital, pharmacy, supermarket, and chain stores are located in Alpine, as is Sul Ross State University.

**Physical Work Environment:** The majority of the work will take place in an indoor, climate-controlled office setting. Some outdoor site visits will be required for gaining familiarity with the resources; these will comprise approximately 10-20% of the total internship time. Site visits may require hiking over steep, rocky terrain; paddling a canoe in calm current; and/or may require camping overnight in the backcountry. All site visits, field work, and river travel will follow safety procedures for working outdoors in sunny, hot, exposed conditions (for example, beginning and ending outdoor exposure early in the day; wearing protective clothing and sunscreen; providing ample shade opportunities and water).

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**Mentoring:** Throughout the internship the supervisor/mentor will have regular contact with the intern to provide oversight and technical guidance. For the majority of the internship this contact will be in person in a shared office setting. When working offsite, the supervisor/mentor will maintain regular contact through email, instant messaging, and phone calls. When the supervisor/mentor is unavailable (up to 8 weeks of the internship), the intern will have the support of other park staff for general assistance and will have regional contacts within the NPS for technical questions.

**Learning Goals:** The internship will acquire experience in applying spatial analysis, cartography, webmapping, and data management skills in a federal land management and conservation agency program. The intern will learn NPS core spatial data standards and will gain experience in developing datasets compliant with enterprise standards. The intern will be exposed to a variety of land management and conservation projects and will have opportunities to participate as their interest allows. The intern will have opportunities for day and overnight travel within the greater Big Bend region to improve their understanding of the viewsheet resources.

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<td>Marie Landis</td>
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<td>Cartographer</td>
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<td>(432) 477-1146</td>
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