



# GEOSCIENTISTS-IN-THE-PARKS Internship Program

## PROJECT DESCRIPTION 2020 SPRING/SUMMER

<b>NPS UNIT: BUFFALO NATIONAL RIVER</b>	<b>PD #: 2020056, 2020057</b>
<p><b>Position Title:</b> Biology Assistant (2)  <b>Position Type:</b> GIP Intern  <b>Primary natural resource discipline:</b> Biological resources  <b>Project keywords:</b> Bats, caves  <b>Location:</b> Harrison, Arkansas</p>	
<b>PROJECT DESCRIPTION AND WORK PRODUCTS</b>	
<p><b>Position Description:</b> Buffalo National River conserves a karst dominated landscape in the southern Ozarks, an area at the intersection of numerous biomes. The more than 500 documented caves and healthy forests provide roosting and foraging habitat for at least 11 bat species, 4 of which are listed as threatened or endangered under the Endangered Species Act. White Nose Syndrome (WNS) has taken a toll on several of these species. This position will assist Buffalo National River to continue collecting bat echolocation call data to guide future management actions throughout the park. This position will also assist with collecting information on bat roosts in caves, bluff cracks, and trees throughout the park. Bats are very important to the ecosystem, both above and below the surface. White Nose Syndrome has caused an unprecedented change in bat species assemblages and numbers across eastern North America. Bats at the Buffalo National River has been testing positive for WNS for about 7 years.</p> <p>This project will collect, compile and analyze acoustic and environmental data, and provide draft reports of bat usage relative to vegetation type, season, temperature, and proposed management activities.</p> <p>Data and metadata from these will also be analyzed to detect trends.</p> <p>Duties:</p> <ul style="list-style-type: none"> <li>• Design bat detector deployments to meet USFWS monitoring requirements for proposed management actions.</li> <li>• Set up and take down bat detectors in the field, collecting data on each deployment and entering the data into a spreadsheet or database</li> <li>• Process the resulting call files through Kaleidoscope Pro.</li> <li>• Enter the bat call analysis for each location into a spreadsheet.</li> <li>• Use ancillary data to look for trends in the dataset.</li> <li>• Develop reports on bat foraging use in areas of proposed management actions.</li> <li>• Operate dataloggers and weather stations to collect weather conditions for study period.</li> <li>• Work with bat researchers conducting further studies.</li> <li>• Assist Cave Research Foundation and other organizations and entities with locating and study of caves and karst features.</li> <li>• Develop GIS layers showing locations where bats of each species have been detected and season of detection.</li> </ul>	

The primary goal of the NPS is to conserve the natural and cultural resources in parks in an unimpaired state. Collecting information on bats, and making decisions from a position of knowledge, will help NPS meet this most basic mission as we move forward. The information will also provide a baseline to compare to in future years.

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:** Data from the detector deployments will be used for developing biological assessments to meet requirements of consultation under the Endangered Species Act. A comparison of bat call results and vegetation class, based upon the VegMap program, will be used to better understand the utilization of habitats by bats across the landscape. The temperature data collected concurrent with the bat calls will assist to better understand temperatures at which the bats forage in our area.

### QUALIFICATIONS

The best qualified applicants will have or be pursuing an undergraduate or graduate degree in the natural sciences, such as biology, environmental science, botany, or ecology. Field and laboratory experience, as well as data management and entry skills, are desirable, particularly related to bat surveying. The ability to work as part of a team is a must. The individual selected for this position should possess the physical ability to hike in relatively steep terrain over long distances. Strong oral and written communication skills are also desired.

This project will require fluency with Geographic Information Systems (GIS). The park is currently running ArcGIS. Knowledge of the biology of wildlife, particularly bats is also very important. There will be opportunities to observe bats and other wildlife in caves. Caving experience is a plus. An understanding of acoustics is also helpful. The best qualified applicants will have a proven ability to work on a project with minimal supervision, be self-motivated, and results driven.

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

### VEHICLE/DRIVER LICENSE REQUIREMENTS

**Applicant must have a valid driver license and a good driving record.** The intern will be driving a park vehicle.

**A personal vehicle is RECOMMENDED but not required for this position.** A grocery store is conveniently located adjacent to the park offices, so groceries may be picked up without driving. A personal vehicle is preferred as the location of housing is more remote than most people are accustomed to. There is no public transportation in the area.

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, DUIs, 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.** The housing provided is a shared house with private bedrooms, shared kitchen and bath. GIP will need to bring bedding, towels, etc. A limited supply of cooking pots and pans are available at the house.

**INTERNSHIP DATES**

**Start Date:** 5/18/2020  
**Number of weeks:** 20 weeks  
**Flexibility of dates:** Yes

**LIVING ALLOWANCE**

20 weeks (\$350/week = \$7,000)

**RELOCATION ALLOWANCE**

\$250

**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 \$1,638 - \$6,195 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 & PHYSICAL WORK ENVIRONMENT**

**Natural Environment:** Buffalo National River is situated in the southern Ozarks region of the mid-continent. The elevations range from approximately 800' to 2200' above sea level. The climate is best described as warm and humid. Annual precipitation is in the range of 46". Most of the river is heavily forested, but open areas are interspersed, particularly near the river. The Buffalo River is a free-flowing river of 152 miles length, 132 of which are within the national river. Hillsides are often very steep. The vegetation ranges from xeric south facing bluff dominated by prickly pear cactus and Ashe's juniper to mesic Beech forest enclaves in deep north facing coves and ravines. Buffalo National River is very rich in karst resources, with over 500 documented caves. Four threatened or endangered bat species are present, as well as several other cave roosting bats. Numerous tree roosting bats are also present.

**Physical Work Environment:** The work environment includes the duty station at park headquarters in Harrison as well as field sites scattered throughout the park. The weather in the summer can be quite hot. Within the park, black bears are present, though in low density, a population of elk is also in the area. There are four venomous snake species present in the area. In the summer, there is an abundance of ticks, chiggers, and mosquitoes. Poison ivy is also very common.

Terrain includes sheer bluffs up to 500' tall, steep hillsides with an abundance of chert rock, and alluvial bottoms and river terraces. The position requires an intern in good physical condition to hike to and from bat detector deployment locations with a heavy pack.

The upper sections of the river have Class III whitewater, but most of the river is Class I/II. The park has a variety of canoes and kayaks available for use by interns.

**MENTORING AND LEARNING GOALS**

**Mentoring:** The Natural Resource Program Manager and the Chief of Resource Management and Interpretation will provide mentoring to the intern. The program manager has a broad knowledge of caves and karst resources, including karst hydrology and endangered bats. The program manager can pair the interns up with other researchers doing cave related work in the park, or with bat biologists doing field work in the area.

**Learning Goals:** The intern will learn a good deal about bat echolocation calls as well as acoustic software to process those calls. The program manager or biologist will provide training in the use of the field equipment, computer software, etc. to complete the work. The data collected will be entered into the North American Bat Program database. The intern will have ample opportunity to learn a great deal about water quality and the karst resources of Buffalo National River.

**SUPERVISORS/MENTORS**

**Primary Supervisor/Mentor:**

Chuck Bitting  
Natural Resource Program Manager  
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**Secondary Supervisor/Mentor:**

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