

GEORGIA HIGHLANDS

COLLEGE



Dear NANFA Grant Committee,

We at Georgia Highlands College Wetland Experience program are writing you to apply for the Corcoran Education Grant. Attached you will find our application in full. Georgia Highlands College is an access college in Northwest Georgia, where the Georgia Department of Education as well as the American Community Survey identifies several Northwest Georgia cities, towns and counties containing a relatively high number of economic disadvantaged than the rest of the state of Georgia. Furthermore, there are many news sources that identify K-12 students in Georgia and specifically in northwest Georgia that have lower access to books because of continued budget cuts in various school systems. With these economic times it is almost impossible for many of these schools to have the money or ability to allow their students any type of outdoor activities specifically ones dealing with their native wildlife and even harder to access aquatic life. Furthermore, The University of Illinois has shown that interaction with nature reduces behavioral symptoms associated with ADD in children. Our program gets these underrepresent rural community schools a free place to bring their children to experience nature and learn about it beauty and importance.

We started this program in Fall of 2015 and had a trial run of the program. Everyone involved viewed it as a resounding success. We had 60 students participate and on a feed back survey many described the experience as one of the best days of school they have had. For spring of 2016 we already have booked 5 schools and have another 2-3 discussing dates for August/ September as well. This is a program that we will continue on into the foreseeable future enriching the lives and knowledge of young children in their own backyard.

We believe this program lines up with NANFA's goals and if funded will be happy to provide pictures, a written article for NANFA's publication/ website, recognition in any publication or media coverage of the project, and potentially a presentation at an upcoming NANFA conference.

Thank you for your consideration
Jason Christian & Veronica Morin

Title: The Georgia Highlands Wetland Experience

Applicants:

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Summary Statement:

The Georgia Highlands Wetland Experience is an opportunity for students in local schools to spend a day with our volunteer faculty and staff and get a hands on experience with local wildlife and learn about geological principles. The program includes outdoor activities led by our experienced scientists that includes collecting native fish and exploring natural fish habitats. Students get an opportunity to observe the incredible diversity of fish that can be found in North Georgia. While most students are familiar with the game species of fish, very few are aware that other species of fish exist, such as the darters, or that a non-coral reef fish could be so vibrant in colors. Students leave our program with a new perspective of a diverse ecosystem that can be found in their own backyard.

Educational Objectives

- Students will experience how scientific data is collected
- Students will observe native fish and other wildlife found in their own backyards
- Students will learn to identify how habitats can affect diversity
- Students will get first hand experience understanding how their actions can affect a whole ecosystem

Demographics

The GHC Wetlands Experience is a program that was implemented in Fall of 2015. Local middle schools in Northwest Georgia are invited to the Floyd campus of Georgia Highlands College and spend a day collecting fish, turtles, macro-invertebrates, and exploring the geological habitat in which they live. Each school brings about 60-100 students for a one-day trip. Each year we accommodate up to 8 schools potentially impacting 800-1,000 students every year. North West Georgia is a low income region (60-70% of students require free or reduced meals in the area) with few resources for K-12 students to explore real world science outside of the classroom. This initiative allows these students, at no cost to them other than transportation, to participate in collecting native wildlife. This experience, in many cases, is the only exposure to native fish that these students will have an opportunity to experience in their lifetime. With this in mind, we make a great effort to impress on students the importance of native species and the importance of their conservation.

Project Procedure

Students arrive on campus Friday morning and are greeted by our Division, Dean Dr. Greg Ford. They are led on a brief nature walk to the Paris Lake Nature Reserve located behind the Floyd campus. Once at the wetlands, students are split into groups of 15-20, and are guided by a member of the science faculty. In these smaller groups, each faculty member discusses a specific aspect of wetland habitats in his or her area of expertise. Each faculty led discussion/activity is approximately 30 minutes with students rotating groups after each session.

One group will discuss ground water and water quality. Here they learn about how the water cycle works, sources of pollution, and how it affects our native species. With these groups students will observe a simulated water table to show how pollution can travel through the water table. Then they will also get to collect water quality conditions such as Dissolved Oxygen, pH, Temperature, Conductivity, Nitrites, Phosphorus, and discuss why they are important in an aquatic system.

The second group looks at Aquatic Macro-invertebrates. These students will use Hess samplers, kick nets, and hand nets to collect various macro-invertebrates from the flowing wetlands. These are identified and discussed for their importance for biological indicators as well as their importance in the food web.

The Third group looks at native fishes. This group will use seines to collect their own fish and identify them. They will also have an assortment of previously collected fish by electro shocking that can be discussed and observed. This region of GA (Coosa/ Etowah drainage) is one of the most bio-diverse areas in the country and students can encounter up to 40 unique species of fish in a single day. There are very few other places students would have access to this wealth of biodiversity and not only observe them but also handle them and get a sense of pride in the areas they live.

Depending on the size of the groups we have also included groups on aquatic bacteria, and turtles. Each group gets about 30 minutes with each scientist then they are lead to the next group in a rotation. This pattern continues until all groups have experienced each station. After a lunch break at the lake pavilion, students are allowed to further explore the aquatic wetlands collecting more species for observation, trying to find new species by collecting at different micro-habitats. Before long, students are looking in the right areas and without being directly told they have inferred where habitats will support the most fish diversity.

While we have not collected data on the program as of yet, we know we are successful at getting students interested in aquatic habitats due to the interest in local schools to participate in the wetland field trips. Unfortunately, we are limited in our resources and are unable to accommodate all requests at this time.

Not only have we had new requests, but we have also had schools who participated last fall interested in returning next year.

This is an ongoing project that is growing rapidly. The funds we are requesting will go towards informational signs that can be placed around Paris lake and the adjacent wetland. These signs will have specific topics addressing native fish species that can be found in the lake and wetlands. While the primary purpose is to provide learning experiences for the students in the wetland experience, thousands of people use the Paris Lake Nature Reserve for recreation and exercise each year and will have access to learning about fish and their habitats. A draft of what one plaque might look like is attached below. The remaining money will be for the purchase of Bathyscopes so students can observe fish in their native habitat. Both of these equipment items can be used over and over and can serve an unlimited number of youth over the years to come.

Budget

Item	Supplier	Cost/ item	#	Total
Informational Signs	Signs by tomorrow	\$130	4	\$520
Misc. mounting equipment		\$17		\$17
Bathy Scopes	Science First	\$42.13	11	\$463.43
				\$1000

In-kind funds

All Staff are full time employees for Georgia Highlands College volunteering their time to promote and accomplish this organizations goals. Many of the equipment items utilized for the project are shared with Zoology and Field studies courses at GHC.

List of Personnel

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Main point of contact for schools who wish to participate

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COLORS OF THE STREAM



Speckled Darter (*Etheostoma stigmaeum*) can be found throughout this region of Georgia in cool flowing streams.



The Red Breasted Sunfish (*Lepomis auritus*) is the most common sunfish in this stream, with its bright red belly and metallic scales.

For many people, when we think about brightly colored, vibrant fish we think of tropical coral reefs. However, right here in your own back yard you can find beautifully colored fish and all you have to do is take a look just below the surface!



The chain pickerel (*Esox niger*) is a voracious predator but also has some beautiful patterns to them.

The rainbow Shiner (*Notropis chrosomus*) travels in big schools of bright red minnows with bright blue/green flakes on top.



The Coosa Darter (*Etheostoma stigmaeum*) is only found in the Coosa river drainage. If we don't learn to protect our streams beautiful species like this can disappear forever.

