



## Arkansas Environmental Education Association

# Sampling of Mini-grant Recipients

2023

### Formal Education

**Mann Magnet Middle School, Little Rock**

**Project: Native Plant Garden**

Mann Magnet Middle School has an established native plant garden that was affected by the pandemic and it needs to be renovated. Jackie Scott, the garden program's teacher, says students will be redesigning the bed with native bushes and ferns. The school lab program will be observing pollinators and other organisms, contributing data to a variety of citizen science projects. Students will start saving seeds from the native space to take home to plant or to begin to share with the community.



*Monica Woods, AEEA Board Member, and Jackie Scott, Mann Middle School Magnet teacher and project lead*

Objectives for the students include:

- Describe native plants and their importance to the environment.
- Evaluate what plants can be added to the native garden space.
- Explain his/her plant that he/she wants to add.
- Explain what pollinators would use the chosen plant.
- Create a plan to plant all items.

## **Formal Education**

### **Woodland Junior High School, Fayetteville**

#### **Project: Forestry Analysis Through Drones**

This project will use drones to allow students to examine forestry surveying techniques. Students will be trained in drone flight techniques and will use this training to analyze forest diversity and changes in urban areas.

The added benefit of exposing students to how urban development changes the composition of natural spaces is showing them career opportunities in drone flight. This project will extend beyond the timeline of the grant, as the equipment is durable, and can be used by students over several years.



*David McClure, Principal; Jon Bukont, Science/Tech/Engineering/Math Teacher and project lead; Shawn Bell, AEEA Mini-Grant Team member; Faebyan Whittle, AEEA Board member; and Sophia Stephenson, AEEA Executive Director*

**Non-formal Education**  
**Arco Iris Earth Project, Huntsville**  
**Project:Indigenous-Led Conservation Education**

Through a curriculum centered on native plants and the ecology of forests, the Arco Iris Earth Project Indigenous-Led Conservation Education's goal is to teach and provide a space for Students of Color to engage in critical thinking, problem-solving, and decision-making skills to identify and help resolve environmental challenges while also building relationships with themselves, their peers, and Mother Nature. Arco Iris' 2023 youth environmental education programming will focus on serving Youth of Color from working class families in Northwest Arkansas and specifically Newton County, Arkansas. The organization is led by working class Latino and indigenous People of Color, and is a cornerstone of the organization's mission to teach healthy sustainable living skills to our community.



Objectives for the program include:

- Engaging in outreach in local schools in both Spanish and English to reach Families of Color looking to experience nature and develop environmental literacy in a BIPOC safe space.
- Deepen environmental literacy among Children of Color by sparking curiosity about the natural world, increasing knowledge about native plants and invasive species, and providing students with a systems knowledge of forest ecology.
- Ground students in indigenous environmental ethics, indigenous science, and Traditional Ecological Knowledge; foster comfort among Children of Color and their families in outdoor settings.
- Help students to grow curiosity about our natural world.
- Provide a positive space for families and children to deepen their bonds with one another and experience joy.
- Encourage and inspire students to pursue conservation as a career and passion.
- Provide a positive and empowering example to BIPOC children of People of Color leading a conservation organization.



*Elise Ashworth, Arco Iris Secretary; Mario DeColores, Wild Magnolia Ranger; and Faebyan Whittle, AEEA Board Member*

# 2022

## **Formal Education**

### **Arkansas School for Math, Sciences and the Arts Foundation (ASMSA), Hot Springs Project: ASMSA Butterfly Garden**

Sara Brown, Lindsey Waddell and over three dozen students, through the Research in the Park (RiP) I & II courses and the Botany-Zoology (BoZo) Club at the Arkansas School for Math, Science, and Arts, encourage others to get involved in the ASMSA Butterfly Garden and to become more aware of the importance of landscaping with Arkansas native plants. As the garden progresses, the students hope to distribute seeds for their peers to take home and possibly hold a native plant sale each year as a fundraiser.

During the 2019-20 school year, the Research in the Park (RiP) II students created and installed the first phase of a native plant butterfly garden in front of the Student Life Center. With the help of funding through the AEEA mini-grant program, the RiP II students would like to undertake a variety of projects related to expanding the garden.

The goals of this project are to

- expand existing plantings
- offer shelter for a wider variety of wildlife
- establish a formal compost area
- create and install interpretive signage
- explore the possibility of a mural
- explore the installation of features like a bench and herb spiral

Once expanded and established, the garden will offer a teaching and research space on campus in which students can study native pollinators and observe native plant-insect interactions. This will eventually provide the food necessary to support larger species such as songbirds. By deliberately planting not just nectar species but also host plants such as milkweed, the aim is for the garden to eventually attract and support a variety of butterfly species, including the monarch during its annual migrations.



*ASMSA students, Dr. Sara Brown, and Lindsey Waddell with AEEA board member Krissy Kimbro.*

## **Pine Haven Elementary, Bauxite**

### **Project: Butterfly Garden Expansion**

Marla LaSage and her students at Pine Haven Elementary School will be able to study the life cycles of plants and pollinators and learn about their declining habitats by building a flowerbed with native plants. They will learn by completing a small project and taking responsibility for their environment.

The measurable objective would be the completion of the flowerbed, beautiful blooms in all seasons, and seeing an increase in the butterfly and bee population. Students will help to water and care for the flowers. Ongoing activities would be the maintenance of the garden and continuing education about our environment.

The goals of this project are to

- complete a flowerbed
- learn the life cycles of plants, butterflies, and bees
- study the declining habitats of each
- learn about environmental responsibility

A successful project outcome will be a beautiful flower bed with native flowers blooming in all seasons with butterflies and bees in abundance. Students and teachers will learn many things that will positively impact Arkansas's environment.





*Previous AEEA board member Tiffany Dunn (right) presents a grant check to Mrs. Reynolds (left) and Mrs. LaSage of Pine Haven Elementary school. The butterfly garden project will be where they are standing in the photo.*

## **Non-formal Education**

### **Arkansas 4-H, Saline County 4-H, and Salem Superstars 4-H Club Project: Education of Arkansas Native Birds**

Under the direction of Dr. Rebecca McPeake, Wildlife Specialist for the University of Arkansas Cooperative Extension Service, and Megan Maulden, Saline County Extension Agent, the Salem Superstars 4H team have outlined a plan to create 3-D printed models of Arkansas native songbird eggs. These will be included in training kits to help other 4-Hers throughout the state learn to identify bird eggs and learn about bird reproduction and migration. The leaders of this project believe that protection begins with educating our youth at the local level.

The goals of this project are

- to create 3-D printed models of Arkansas native songbird eggs
- to create training kits to help other 4-Hers learn to identify bird eggs
- provide environmental education in Arkansas 4-H that teaches youth about native birds, their breeding and migratory habits

With the use of 3-D printers at the state 4-H office, this group will design and create model eggs. They will be painted carefully to replicate the actual bird egg. They will then be included in training kits to help other 4-Hers throughout the state learn to identify bird eggs. The design process will take a few months, and work will take place during monthly 4-H club meetings.

Through the bird egg identification kits, 4-H members throughout the state will continue to access these educational materials for years to come. Training kits will be available to County Extension Agents and teachers for in-school environmental education programs. Salem Superstars 4-H Club members will be encouraged to give countywide presentations, to teach their peers about native bird species, their reproduction & migratory habits, and how they can be protected.



*AEEA board member Jennifer Rankin and Arkansas 4-H teacher Megan Maulden*

### **Ozark Natural Science Center, Huntsville**

#### **Project: Making Nature Accessible at Ozark Natural Science Center**

The Ozark Natural Science Center (ONSC) provides most of their education on the 8 miles of hiking trails surrounding their campus, which is located in an area that is steep, rocky and can be difficult to traverse without full physical function. By creating a new accessible trail that is connected to the main parking lot, the trail will provide an area that is safe and accessible for those who need an easier hike. The trail will include diverse ecosystems to maximize ONSC's ability to provide education opportunities along the trail. More use is expected as programs are developed.



The goals of this project are to

- create a trail that can be navigated by a wheel chair or rolling walker.
- develop an education program (guided hike) that takes participants along the accessible trail through wooded, meadow, wetland, and pond habitats
- test the efficacy of the new program during summer camps in July 2022
- host a free public unveiling of the new trail in August 2022
- provide at least 3 educational programs along the accessible trail per year

The lasting outcome of this project will be a permanent new trail with ongoing maintenance, where people of all ages and physical abilities will be able to enjoy the beauty and educational opportunities available at Ozark Natural Science Center. A successful project outcome will be the use of the new trail by at least 800 people per year.



*Ozark Natural Science Center staff Brent Heatherly, Maintenance Technician; Rose Brown, Executive Director; and Alexie Pieper, Office Manager with their grant check.*

## 2021

### Formal Education

**JO Kelly Middle School, Springdale School District**

**Project: Sara Ford Outdoor Pocket Gardens and Learning Space**

Abigail Ferrell and the 6th grade students of her EAST (Education Accelerated by Service and Technology) class have big plans for their school grounds. Their project, named after the school's first

principal, is to renovate the school's butterfly garden and create an outdoor learning space. Students have led all aspects of this project, from learning about landscape design and plant choices, logistics of outdoor learning spaces, to grant writing.

Beginning in fall 2020, students began removing weeds from the butterfly garden on the school grounds. They researched nectar and host plants to attract pollinators and determined which species would work well in the space at their school. They polled teachers of all grade levels to ask what the teachers needed in an outdoor classroom. To address the teachers' needs, the outdoor learning space was located in an area bordered by the main building on three sides, allowing teachers to see all students, easy entry to restrooms, and shade during hot months. The plan also includes a class set of clipboards, dry erase markers, and small whiteboards and a large roll-out white board kept in a shed at the entrance to the site.



Once the site was determined, the students worked with the school district's maintenance department to pour concrete and place tables. The image above shows the beginning stage of the outdoor learning space. Concrete pathway and pads allow for easy access to areas for students to work, and the semi-circle areas will eventually have tables. Pocket gardens of various themes will be planted around the concrete areas.

Students will collect data on two aspects of this project. The first will be teacher use of the outdoor space and the second will be the number of monarch butterflies visiting their school grounds. During the monarch summer migration of 2021, J. O. Kelly EAST students will tag monarch butterflies and collect base data. Over the next year data will be collected and analyzed to determine if the number of monarchs tagged will increase.

This project shows signs for success through support from other teachers, buy-in from community partners, commitments from volunteers, and funding from multiple sources. The Arkansas Environmental Education Association is excited to be part of this effort that could benefit all students



and teachers at J.O. Kelly Middle School. We look forward to seeing the completed pocket gardens and hearing from students and teachers about their use of the space.



Abigail Ferrell and her students explain the final plan for the Sara Ford Outdoor Pocket Gardens and Learning Space. More students were involved in the project, but they are attending school on alternate days due to Covid-19.



Sebastin Alvarado-Perez, 6th grade EAST student, holding the grant check from AEEA. He was one of the main students to work on the grant application, and under his mask was a big smile.



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2020

**Formal Education**

**Fayetteville Public School District**

**Project: Bringing BEETLES Outdoor Science Learning to Northwest Arkansas**

Sim Barrow, Fayetteville School District Environmental Science Coordinator, will lead this project. Using techniques and lessons learned during a week-long BEETLES training he attended in August 2019, Sim will pilot professional development sessions for other Fayetteville staff. BEETLES is a research-based outdoor science education project that uses exploration, inquiry, and discussion in the outdoors to enhance science education for students of all ages. The activities and methods outlined by BEETLES are directly aligned to Next Generation Science Standards and Arkansas state science standards.

The goals are of this project are to

- increase use of outdoor learning areas at FPS schools
- increase exposure to the outdoors for students
- improve outcomes for students in environmental literacy and science
- increase administrative support for outdoor learning areas
- improve student performance at offsite EE experiences due to habituation to outdoor learning norms
- expand the use of BEETLES trainings to schools and EE providers in Northwest Arkansas

Feedback gained from the first round of teachers trained in the BEETLES methods will be used to shape future EE professional development in the District and region. By using the professional

learning sessions provided by BEETLES, the District plans to empower teachers to better use their outdoor learning spaces and provide a more consistent educational outdoor experience for all students.



*Pictured from left: Dr. Nandra Campbell, Fayetteville School District Director of Professional Learning; Michelle Hayward, Fayetteville School District Executive Director of Elementary and Middle Education; Sim Barrow, Fayetteville School District Environmental Science Coordinator; Sophia Stephenson AEEA Executive Director; and Larry Kenemore, AEEA Board Member.*

## **Non-formal Education**

### **Lake Nixon Outdoor Preschool**

#### **Project: Reducing Food Waste and Learning About the Food Cycle at Lake Nixon**

This project will enable the Lake Nixon Outdoor Center (LNOC) to implement a composting component to their programs that will provide educational opportunities, reduce food waste, and help sustain the new vegetable garden. The Lake Nixon Outdoor Center is a 220-acre property listed on the National Register of Historic Places and located just southwest of Little Rock. Their programs currently include an innovative Outdoor Preschool, in which children spend the bulk of their days learning in and about the outdoors. They also offer a summer day camp where campers enjoy hiking, swimming, fishing, boating, and other activities. Day camp has historically focused on recreation above all, but Lake Nixon is increasingly committed to incorporating environmental education into camp programming, and to instilling an ethic of stewardship and sustainability in the campers.

At the heart of this project is a partnership with the Urban Food Cycle, which currently provides composting services and consulting in the Little Rock Area. LNOC and Urban Food Cycle will develop a curricula (for preschool and camp) focused on food waste reduction and the potential for composting.

The goals of this project are

- reduction in food waste
- production of compost for use in the LNOC vegetable garden beds
- increased students knowledge about how and why to compost food waste
- create an on-site composting program

The plans for this project changed due to Covid-19. Lake Nixon shifted the use of these funds to substantially expand educational gardening programs. They participated as a school service site in the “Full Circle Farm Corps” -- a collaboration among a number of area non-profit organizations and schools, the national service Americorps program, and led by the St. Joseph’s Center of Arkansas and the office of Farm to School programs in the state agriculture department. During this time 2-4 Americorps members spent 2-3 days a week at Lake Nixon, constructing and preparing new raised garden beds in two different locations. They also provided short, socially distanced environmental and nutrition education sessions for outdoor preschool students. By the fall, these beds produced tomatoes, okra, and lettuce for students and staff to taste and take home.





*Lake Nixon staff and students pictured with Tiffany Dunn (center, back row), AEEA Board Member.*

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2019

**Formal Education Category**

**Kimberly Armstrong – Wynne Primary School, Wynne**

**Project: Raised Vegetable Garden**

Teacher Kimberly Armstrong at Wynne Primary School will use grant funds for a raised vegetable garden that will benefit all kindergarten through second grade students. The high school shop teacher has volunteered his students to build the raised garden planter, and the primary students will be responsible for planting, weeding, watering and harvesting. Kimberly teaches about plants each spring to all three grades at various degrees depending on their state standard. The lessons range from the parts of the plant and seed, type of seeds, needs of plants, how seeds travel, and pollination. The goal is to start with one raised bed and expand when possible.

The outdoor garden will be a valuable extension to these current lessons. Second grade students grow and pollinate sugar peas in the classroom using a Q-tip to transfer pollen from the pistil on one

plant to the other. A raised garden planter would allow the students to transfer the seedlings started indoors to the outdoors when the weather is appropriate. Students will be able to continue viewing the life cycle as the plants are pollinated and produce vegetables.

The garden would also be an asset to the P.E. coach as he teaches the food pyramid and discusses vegetables. The possibilities for extending lessons to enhance teaching through the garden are limitless as students make real-life connections to the vegetables grown in the garden. This will increase the student's ability to take what they learned from books and resources and apply their knowledge using real life situations. The students will be able to comprehend how living things need food, sunlight, and water to grow as they observe and take care of the garden. Students will be able to see first-hand how the plants change throughout the life cycle. Evaluation of student growth and

learning will be through discussions, journal entries, and observations during hands on experiences involving the garden.



*Tiffany Dunn, AEEA Board President, presents Kimberly Armstrong with a grant award.*

**Non-formal Education Category**  
**Angela Danovi – Ozarks Water Watch, Rogers**  
**Project: Ecology and Water Quality Field Trip**

Ozarks Water Watch will use grant funds to provide a hands-on interactive science-based day in the spring of 2019 at Lake Atalanta for 250 7th graders from Elmwood Middle School in Rogers, Arkansas. This field trip will be carried out in partnership with Elmwood Middle School teachers and administration. Students will visit stations where they will learn about a specific aspect of ecology or environmental science. Students will collect, record, interpret, and present their data as part of their field trip experience. Stations will be directed by a professional in the field who can help to direct student learning.

Field trip stations will include macroinvertebrate study, water chemistry, soil testing, Secchi disk reading, Hobbs State Park Interpreter, stream discharge, nature scavenger hunt, and geology of the Ozarks. The goals of the field trip are for students to have a hands-on outdoor ecology experience to assist them in reaching proficiency in three units of the 7th science standards. Angela anticipates the field trip will build students' investigative skills while they learn about the environment around them, improve student awareness about a local park and the recreational and natural resources it offers, expand student knowledge of what environmental science and professional environmental work can offer them in the future, increase proficiency in state science standards, and provide students with an opportunity to engage in field science, where outcomes can be unexpected.



*David Casaletto, Executive Director, and Angela Danovi, Regional Projects Director of Ozarks Water Watch receive grant money from Larry Kenemore, AEEA Board member.*

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2016

## **Beaver Watershed Alliance**

### **Project: Native Plant Landscaping Program**

Beaver Watershed Alliance will use funds to help launch their “Native Landscaping Program,” which seeks to establish or increase native vegetation on five public grounds in the Beaver Lake Watershed and increase learning among citizens regarding the vital role that native plants play in our environment.

The message of the program will be to use native plants in the landscape that benefit wildlife habitat, water quality, and natural heritage. The native plantings will be accompanied by presentations to school classes and placement of interpretive signage that will convey the benefits that native plants provide for water quality and a variety of birds, mammals, amphibians, reptiles and insects. Two native plant workshops will also be conducted for adults to help promote the benefits of native plants to the environment. For more information on the Beaver Watershed Alliance, please visit <http://www.beaverwatershedalliance.org/>.



## **Botanical Gardens of the Ozarks**

### **Project: Garden Buds**

Botanical Gardens of the Ozarks will use funds to enhance their “Garden Buds” program, a summer environmental education program for elementary children and their parents on sustainability, nutrition, and gardening. The program aims to encourage children to enjoy the great outdoors while they learn age-appropriate science, sustainable garden practices, and healthy eating habits, while gaining an appreciation for the natural world and a new desire to protect it through garden-based lessons. Students are given the opportunity to grow plants in the garden and return to harvest the food they planted to take home and share with their families. For more information on the Botanical Gardens of the Ozarks, please visit <http://bgozarks.org/>



## 2011

**Liz Smith – Russell D. Jones Elementary, Rogers**

**Project: Summer Children's Garden Program**

This project is an initiation into environmental education for many of our elementary students. Our summer garden project teaches students how to care for gardens over an extended time, wildlife interactions of insects, mammals and birds that help the garden grow organically, and it also helps students apply math, science and language skills they have learned during the academic year in a real life setting. By enabling students to experience vocabulary, writing, measurement, and scientific observation in the garden we help them understand their direct responsibility to be good guardians of the earth.

The summer garden program will have long term effects by inspiring community gardens in surrounding neighborhoods, welcoming parents and children to our school, and encouraging them to become responsible environmentalists. Many parents come with their children during the summer program to work and learn in the garden. They take produce home with them and learn new gardening techniques while they are here. The garden program has proven to be a worthwhile form of communication between the school and families of our multicultural community. It expands vocabulary, knowledge of environmental awareness and a sense of responsibility to care for our wildlife.

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## 2010

**Rebekah Spurlock – Devil's Den State Park**

**Project: Birder Backpack**

The Birder Backpack is a popular activity for park visitors. It has been checked out over 100 times in the past year. Park visitors have to "sign-up" to check it out and leave a deposit (although no fee is collected). Park visitors are given bird check lists to take with them during their outing. Mostly the birder backpack is checked out by families that would not ordinarily bird. Many times novice birders observe and identify birds around the feeders such as cardinals, robins, gold finches, blue jays, etc.

For many visitors, this is their first birder experience and it gets them excited about birding and makes them more aware of their surroundings. One example to share of a unique experience is when a family checked out the birder backpack and took it to Yellow Rock to try to call in a Scarlet Tanager – and they did! The birder backpack has been a great addition to our educational programs and we look forward to encouraging more birding excursions at the park.

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2009

**Kristi Trotter – Jonesboro Math and Science Magnet School**  
**Project: The Butterfly and Moth Indoor Garden**

A successful outdoor classroom led a teacher to have a greater interest to bring nature into the classroom all year long with a butterfly garden. The means to accomplish interaction with nature regardless of the season presented more than a challenge but also a learning opportunity about the natural world.

A valuable lesson was learned, butterflies' natural environment provides the best place for their survival and the irregular indoor temperature at school (with air conditioning) provided a surrounding that was not conducive to their survival. As Ms. Trotter explained, "Science is unpredictable and many variables affect how a project will turn out." Even though all the resources were available – netting, growing lights, and plants – the room temperature inhibited plant growth and the success of the butterfly garden. As with any science project; it is trial and error. Ms. Trotter will modify the project in upcoming school years to improve on its success.