



STUDENT SUSTAINABILITY COMMITTEE

Final Report

Thank you for your commitment to green initiatives at the University of Illinois. One of the final steps in completing the terms of the funding agreement for your project is the submission of a Final Report with key information about your project. You will also need to submit a detailed report of expenses (if you don't list it within this document) as well as supporting photos to showcase your project.

Please be as accurate as possible in describing the project (including possible setbacks or challenges in meeting the initial goals of the project). Not fully meeting your project's goals will not disqualify you from making future funding requests as long as your reports are as complete and accurate as possible. If you have any questions, please contact the Student Sustainability Committee, at sustainability-committee@illinois.edu.

Project Name: Sustainable Restoration and Growth of the Southern Arboretum Woods (Student-led)

Date of Report Submission: 6/9/2021

Project Purpose:

The South Arboretum Woods (SAW) is located at the south end of the UIUC campus and is in dire need of the establishment of native plant species to support our current restoration work. Supplementing the removal of invasive species, native plantings help to reduce the dominance of invasive species in this ecosystem. Planting native trees can also provide habitat for native insects, birds, and small mammals, as well as increase the aesthetic appeal of the woods. Through the support of the University Arboretum and the SSC, Red Bison is working towards establishing and stabilizing populations of native flora and fauna to increase overall biodiversity in the ecosystem. Red Bison has been working in this area for over six years, applying principles of Integrated Pest Management (IPM) to tackle common invasive species such as honeysuckle, buckthorn, garlic mustard, and others. The organization has also worked on planting native species in this area in the past.

The shed which Red Bison has used for many years to store equipment in the SAW is deteriorating in its condition, resulting in problems with frequent pest infestations. In addition, the shed is no longer large enough to accommodate the growth of Red Bison in its size of membership and purchases of new equipment. In order to better protect the equipment used for restoration in the SAW from pests and harsh weather conditions, the funding provided by SSC for this project has also been used to purchase a larger and more robust shed.

Project Summary:

This project primarily focused on supporting Red Bison's ecological restoration efforts in the SAW through the purchase of a shed to safely store equipment and herbicide. We worked with the Arboretum staff to determine the size and design of the shed so that it could be utilized for many years to come while also causing minimal environmental impact around the woods where it was constructed. This included the scope change which we submitted in 2019 to allocate the entirety of funds from this grant to the shed, with the Arboretum agreeing to supply materials and equipment for native plantings. This shed was constructed by the end of 2019 but was not delivered to the Arboretum until the summer of 2020 due to unfavorable weather conditions in the winter and delays later caused by the COVID-19 pandemic. The shed has now been in use for a year as the site for storage of Red Bison's equipment and where its members typically convene for volunteer workdays. Access to the shed is restricted to a handful of Red Bison officers and Arboretum staff members.

Red Bison has made significant progress in the removal of invasive species including honeysuckle, mulberry, and garlic mustard throughout the SAW. This has been a continuation of a long-standing effort by Red Bison to reduce the dominance of invasive species, which is a necessary precursor to planting native species for them to proliferate. Other steps to prepare for native plantings have also been taken, including the development of lists of species which are safe and viable to plant in the area and the drawing of a map for future planting distributions. In the Spring 2021 semester, we also collaborated with Jay Hayek's chainsaw training class in the NRES department to cut down trees in areas of the SAW where a high density of aggressive species would have hindered the growth of shrubs and prairie plants. Two brush burns and one prairie burn were executed in the SAW during Spring 2021. These helped to manage the amount of dead material in the woods and to reduce the growth of invasive species and shrubs in the pollinarium prairie. This work lays the framework for native tree saplings and prairie plants to be planted in these areas in collaboration with the Arboretum in the coming years.

Summary of Project Expenditures:

The only expense of this project was the \$9,866.24 spent entirely on the new shed, which was constructed by Bear Creek Yard Creations in Arthur, IL. Site preparation, installation of foundation footings and placement of the shed was conducted by Arboretum Staff at no-cost to our project. There is \$129.74 left unspent in our account which is no longer needed for the completion of the project.

Project Progress to Date:

In our original application, we indicated that we would begin planting work in the South Arboretum Woods in the Spring 2019 semester and provide an update on the plantings by the end of Spring 2020. The overall timeline of this project extended until May 2021, as specified in the signed agreement. We ultimately were not able to begin planting in Spring 2019, as we reached a time at the end of the semester when it was difficult to acquire native plant material while we still had not received access to the SSC funds yet. Later in the summer of 2019, we submitted a scope change for our project to allocate the entirety of the funding from this grant

towards a larger shed than the size originally planned for at the time of application (10' x 16'). As part of this scope change, it was agreed that more funding for native plant material and relevant equipment for planting would be provided by the University Arboretum.

Plans for the new shed were finalized in the summer of 2019, when an order was also placed for it from Bear Creek Yard Creations at the recommendation of the Arboretum staff. The new shed was delivered to the South Arboretum Woods in the summer of 2020. Unfortunately, the construction process and communication with the producer stalled significantly during the Fall 2019 semester. The shed was constructed by the end of the 2019 calendar year, but it was difficult to find a period of time in early 2020 with favorable enough weather conditions to have the shed delivered and set up. This delivery was delayed further by the cancellation of in-person activities on campus due to the COVID-19 pandemic in early Spring 2020. We began discussions with the Arboretum staff in Spring 2019 regarding what plant species to purchase and which suppliers to purchase them from for planting in the South Arboretum Woods. We were in discussion with Arboretum staff to place orders for native plant material in Spring 2020, but these plans were also disrupted by the COVID-19 pandemic.



Figure 1. Red Bison shed, located in the South Arboretum Woods.

In the Fall 2020 semester, Red Bison hosted six volunteer workdays in the South Arboretum Woods, averaging approximately twelve student volunteers each week. During these workdays, invasive species (e.g. bush honeysuckle, mulberry) and aggressive native species (e.g. tulip tree, walnut) were removed. In addition, native Indiangrass, big bluestem, and bottlebrush grass seeds were collected and dispersed in areas of the plot where we hope to cultivate more prairie ecosystems.

In the Spring 2021 semester, Red Bison hosted seven more volunteer workdays in the South Arboretum Woods. The pollinatorium prairie was burned on 4/2/2021 to help control the growth of invasive species and aggressive shrubs and trees from overtaking the plot. In addition, several brush burns were performed in the woods to control the buildup of dead material from trees and removed invasive species (primarily honeysuckle). We also collaborated with Jay Hayek's chainsaw class in the NRES department to clear out some of the very dense areas of trees in the woods to clear space for prairie plants and shrubs to grow in the future. A collaboration with SECS also took place where their members assisted with a brush burn and planting of Solomon's seals in the woods. In addition, Invasive species removal efforts continued as usual during this semester.



Figure 2. Red Bison volunteers at the pollinatorium prairie burn on 4/2/2021.



Figure 3. Red Bison volunteers at the SAW brush burn on 3/7/2021.

We also communicated our ideas for planting of native trees, shrubs, and prairie seeds to the Arboretum. Despite these efforts, tree saplings and prairie seed for this project were not acquired by the Arboretum this semester. The Arboretum did obtain shrubs which were not on Red Bison's proposed list of species and planted them throughout the woods, as shown below.



Figures 4 – 5. Shrubs planted by the Arboretum staff throughout the SAW in Spring 2021.

Problems/Challenges Encountered:

There were significant delays both in the timeline of the shed construction and delivery as well as obtaining and planting new native trees and plant seeds due to the COVID-19 pandemic. Only two workdays (focused on (1) honeysuckle removal and (2) snow-seeding of native prairie grasses) took place in February 2020 prior to the onset of the COVID-19 pandemic disrupting any restoration activities from taking place for the next eight months. The number of workdays and number of students who could participate in the 2020 – 2021 academic year were also limited by dynamically changing COVID-19 protocols on campus.

There were also some delays in being able to coordinate the acquisition of plant material for SAW which all parties (Red Bison, Arboretum, and other UIUC natural areas stakeholders) agreed upon in the limited time frames where native prairie seeds and tree saplings are readily available. For this reason, significant progress has not yet been made in planting new trees. However, we have made the best of this time by focusing on preparing the land through clearing of dense areas of aggressive trees, removing invasive species, and executing prescribed burns. We plan to continue to work with the Arboretum to plant native trees in the coming year, which they have agreed to supply and which we are still discussing and planning.

Student Involvement and Outreach to Date:

Students are the driving force of our project through their volunteered time and efforts. Many students have participated in Red Bison through volunteer workdays to work on invasive species removal in the South Arboretum Woods. This primarily involves cutting and spraying invasive plants such as honeysuckle. In addition, a handful of workdays were hosted where volunteers gathered and spread seeds from native prairie plants (e.g. big bluestem, Indiangrass). Students also helped to prepare for prescribed burns (i.e., creating burn breaks), as well as executing and monitoring them. In the 2020-2021 academic year, each meeting averaged about twelve total students, who all observed COVID-19 guidelines and protocols set forth by the University of Illinois to ensure a safe working environment.

Marketing and Promotion Efforts to Date:

This project is publicized through Red Bison's social media (Facebook, Instagram) and weekly email updates. Red Bison also talks about this project publicly at relevant campus including Quad Day and Earth Day. In the future, we plan to place a sign in front of the shed recognizing SSC's financial support in its construction. We also intend to develop a website for our organization where we will publish details about the project and credit SSC for its support.

In Spring 2020, SSC reached out to Red Bison about developing a promotional video, and an SSC intern accompanied us to photograph our work areas and interview board members. We are unsure if these materials are still in possession of SSC, but we would love to work together in the future for more promotion of campus sustainability groups and events including our own volunteer workdays.

Additional Comments:

We plan to continue our efforts of restoration in the South Arboretum Woods for many years to come beyond the term of this project. The shed which we acquired using the funds from SSC has proven to be extremely useful to Red Bison and will continue to serve several cycles of students at UIUC. We at Red Bison are extremely grateful for the fruitful support which we've received from SSC throughout our years on campus and hope that we can collaborate more in the future.

For future correspondence on this project, potential collaborations, or other matters pertinent to Red Bison, please reach out to the following individuals:

Red Bison Faculty Advisor: Dr. Michael Ward (mpward@illinois.edu)

Red Bison President FA21: Michael Dzanott (mad2@illinois.edu)

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In addition to the above fields, please provide a detailed accounting of how the funding was spent as well as pictures of the final project in an email to sustainability-committee@illinois.edu. Thank you again for your commitment to sustainability.