Restoration within Dripping Springs Parks System

Student Leadership Grant 2021

Dripping Springs High School

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Application Form

Contact Information

Project Name*

Name of Project.

Restoration within Dripping Springs Parks System

Grant Amount Requested:

Please list the amount you are requesting from the DS Education Foundation.

$1,000.00

Project Description

Describe what you hope to accomplish with this project:*

This project hopes to create protected propagation areas in Charro Ranch Park and Dripping Springs Ranch Park to grow local ecotypes of native trees, shrubs, grasses, forbs, etc., to be reintroduced into the parks in a sustainable, low-cost way. In addition, funds are necessary to develop the Demonstration Garden at Charro Ranch Park, potentially create educational resources for hikers, among other projects. I am a member of the Junior Advisory Committee for Charro Ranch Park. Next week, there is a meeting where we will discuss topics surrounding improvement projects, such as the propagation area and the specific allocation of funds. As for the propagation areas, the idea is to create small areas surrounded by a high fence where deer and other wildlife cannot eat or otherwise disturb the seedlings. Seedlings will most likely be grown in reusable plastic containers, often offered free by local plant nurseries. There are numerous advantages to this method of restoration. First of all, we can collect many seeds from local ecotypes of native plants within the park. This style of seed collection protects diversity within a population by keeping the numbers of different species high, encouraging the regeneration of local populations. I think of it in this way: Regeneration within a population of plants may have occurred naturally hundreds of years ago, with an arbitrary number of 10 out of every 100 acorns germinating any given year. Today, due to climate change, land fragmentation, and relentless browsing from deer, maybe only 2 out of every 100 acorns germinate. A propagation area allows us to re-balance a natural cycle amidst direct and indirect human impacts. This method also avoids hybridization from trees grown and planted from other regions and populations, such as coming from a plant nursery, which would disrupt local population genetics and lead to many other problems. Also, note that smaller trees and plants transplant at higher rates as opposed to larger ones.

How many students do you expect to be involved in this project:*

10

How will the above students be impacted by the project:

Currently, I am the only student that is working on this project. But I am actively recruiting other people to help me build the propagation area, collect seeds, and begin growing and caring for plants. I believe that students directly involved with the project will learn about Native Texas plants and ecology and problem-

solving skills related to restoration. While similar operations have been successful before, this will be our first experience with using a propagation area, and there will be a fair amount of problem-solving involved. I envision taking a group out to collect seeds within the park a couple of times per year and having a schedule for the plants to be cared for, in which students take turns visiting the park and checking on the plants.

How will this project benefit your campus, community, or the world:*

This project will assist in the continued restoration and enhancement of the DS Parks System, used by students, faculty, and the community. Although I estimate about ten students to be directly involved in the propagation area, I expect the benefits and learning process to extend beyond those ten. Parks represent fragments of open, sometimes undisturbed land, that allow people to get back in touch with the natural world. It is essential to maintain a healthy ecosystem in these areas, to enhance the experience for those seeking that connection. During the pandemic, being extremely isolated from peers and friends, I spent many hours wandering and hiking the trails of Charro and DS Ranch Park. These excursions helped me develop a passion for native plants, aquifers, and geology/soil science. I believe that creating and/or experiencing pristine ecosystems can spark passions in others similar to me. Also, the parks in question are utilized by school sports such as Mountain Biking and Cross Country, and I think this project could encourage other school clubs and activities to use the parks.

Mission Alignment*

How does the project align the mission of DSISD to "inspire and equip student to be lifelong learners and positive contributors to the world?"

The way that I learned about Texas Native plants was driven by curiosity. If I saw a unique plant on a hike, found a seed, or saw something else that was interesting, I sought out literature or online resources to learn more about it. My observations led me to read multiple books, studies, blogs and browse the Lady Bird Johnson Native Plant Database. This experience embodied practical learning, born out of curiosity about and a desire to help the environment. I believe that other students, both now and in the future, can also have this experience. Having a baseline understanding of ecology and restoration is also an increasingly important skill in a world defined by the effects of human development. Encouraging students to see the value and tangible rewards in this form of restoration will promote this knowledge to become more mainstream and encourage careers within these fields.

Leadership*

How will you, as a student leader, grow in your leadership ability through this project?

I developed the idea of creating mini propagation areas based on past setups and fundamental knowledge of seed collection and germination and principles from biogeography. Turning this idea into a tangible setup will help me develop project management skills and continue my studies of native plants. I also want to be more vocal and let more people know about restoration efforts, as I think this would encourage more people to participate.

Why is this project important to you?*

I have grown up around a dichotomy of rampant, sprawling development and increasing awareness and action toward conservation. Preserving and restoring the few remaining uninhabited areas is very important to me, specifically, ensuring the continuation of endemic and relict species such as the Texas Madrone, Scarlet Clematis, and American Smoke Tree. As available habitat for these rare, native species is bulldozed due to development, suitable habitat in protected areas becomes more critical. Pointing out unique species to hikers and visitors may also encourage them to plant those species in their own yards.

Financial

How will the grant money be used?*

Please be as specific as possible, and include a list of items, materials, and/or services to be purchased, with estimated prices/costs.

The primary use of the grant money is to purchase cedar posts, mesh wire, and other building materials to create high-fenced propagation areas at city parks. Other uses for the funds are not precisely decided but will be determined soon. Potential other uses include: Purchasing or constructing a small rainwater collection system at DS Ranch Park, as there is already access to a much larger system at Charro Ranch Park. Purchasing landscaping materials for the Demonstration Garden at Charro Park. The potential creation of educational resources in the form of small signage along the trail and other, more specific jobs or items as they arise.

Is this a one-time project or will it continue in the future?*

Will Continue in the Future

Can this project continue without future funding from the Education Foundation?*

Yes

If you answered yes to the above question, how will your project be funded in the future?*

After constructing the propagation areas, they are self-sustaining and will only require minor maintenance as it pertains to the structure itself.

DSISD Funding*

Will your project require DSISD to spend additional money or time maintaining the product or program?

No

If yes, please describe the funding required from DSISD and approval you've received.

N/A

FACULTY SPONSOR ONLY

How will you be involved in helping this student or group of students execute their project?*

To be completed by DSISD faculty only.

I will serve as a faculty mentor and advocate, and I will assist Wesley in navigating the steps involved in executing his plan. I will also facilitate any communication necessary between involved parties.

What do you expect the students involved to gain from this experience?*

To be completed by DSISD faculty only.

I would expect that as a result of this project, Wesley will gain a deeper understanding of the importance of sustaining native plants and educating the community concerning the preservation of the Dripping Springs natural environment. Ultimately, Weston will lead this effort, gaining valuable into the custodial care of this long-term goal insight and honing his leadership skills.

Why are you interested in sponsoring this student or group?*

To be completed by DSISD faculty only.

I believe in this project because of the impact it can have on the sustainability of native plants in our area. I believe Weston Kirk to be focused and conscientious, and I have faith in his desire to give back to the community that has raised him. Establishing this area can inform generations to come and is a great service to this community.

How will the Education Foundation's partnership be recognized?

In addition to any sort of announcement or social media posts from DSEF, some kind of small signage near the entrance of the propagation area pointing out that the funds to build it came from DSEF would be a way to recognize the partnership. I would also be happy to speak about how the funds contribute towards the propagation area and goals of the park. I am also open to suggestions from DSEF.

Attachments

Budget

Not Required

Supporting Documents

Not Required.

Examples: Photos, Project Flyers, Etc.

Refined Ideas for Parks System.pdf

File Attachment Summary

Applicant File Uploads

- Refined Ideas for Parks System.pdf

Over the last 4 months, I have refined and shifted my ideas and areas of focus within the parks system. When examining and thinking about ideas, I thought about realistic goals in terms of time and capital, as well as starting points for projects that can potentially be scaled in the future.

Propagation Areas:
Both Charro Park and DS Ranch Park should have a propagation area to aid in restoration efforts. Each propagation area is simply 4 tall posts and wire, with some sort of gate or entrance, plus whatever materials are needed for actual plant growth, (i.e. conetainers, potting soil, etc.); this area can then be reused with minimal upkeep. Water accessibility is crucial to the success of the propagation area. At Charro Ranch Park, the propagation area could be constructed by the rainwater collection tank, due to water access and proximity to the demonstration garden/parking lot. As for DSR, there are more possibilities. An area could be constructed near the RV Sites or playground, for water access, or a smaller area could be next to the creek.

Charro Ranch Park:
Initially, my ideas for Charro Park were very ambitious, (i.e. the four climax habitats), but I think that they need to be scaled back a bit. This is partially due to the realization that DS Ranch Park is a better location in terms of ecosystems and soils for much of my initial restoration efforts. That said, Charro Park remains a unique area, especially in terms of species and its demonstration garden. Specifically, I can think of the unique stand of Post Oaks/Blackjack Oaks, areas dominated by seep muhly (with a differing, almost larger form, could this be Canyon Muhly), as well as the area that met some of the criteria for an upland, alkaline wetland. I think that many of these areas do not need the restoration intervention that I initially suggested, but rather to be appreciated for what they are. Special signs denoting the uniqueness of these areas, along with small restoration efforts focused within the park, (i.e. growing seep muhly from seeds of the same stand), would be more beneficial and more in line with the character of Charro Ranch Park. As for the demonstration garden, I think that continued efforts to increase species diversity, as well as creating different gardens, using the wildflower center as inspiration, would be the best course of action. Deer-proofing the demonstration garden could also be a future goal.

Dripping Springs Ranch Park:
Dripping Springs Ranch Park is interesting in the fact that many small tributary streams come together to form Little Barton Creek, allowing for the existence of many different ecosystems within the park (upland grassland, riparian, slope forest), which reflects a, relatively, undisturbed Texas Hill Country habitat. Specifically, I think that many areas within the park are excellent sites for active restoration of threatened or uncommon species. We have previously talked about a potential Sycamore-leaf Snowbell restoration within the park, and I have since located 3-4 locations/possible habitats where this could feasibly occur. I also thought that other threatened plants such as Canyon Mock Orange, or Scarlet Clematis, could be reintroduced here as well. Planting these species in one area would allow for increased care and protection, as well as

accentuating to the public how these plants may occur in nature, as well as their simultaneous beauty and scarcity. For a project like this to work, seeds would likely need to be collected within the same, or possibly adjacent, watersheds. Building on the idea of grouping, the Ashe Juniper demonstration garden may be better suited for DSR as well. Along the trail that parallels above one of the main tributaries to Little Barton Creek, there is a dense Ashe Junipers that seems to delineate the Red Oak dominated slope forest and narrow riparian area from the Upland Juniper forest area above. This “room” of Ashe Junipers is shaded, on a slope, and has significant juniper mulch built up, as many of the trees are old, and there is no oak leaf litter to contend with. The soil shifts from Caliche above the area, to a seemingly shallow stony clay overlaying some of the area, that shifts to almost pure limestone as the percent grade of the hill increases as it gets closer to the stream. Because of these factors, I think this area would make an excellent site for the Ashe Juniper Demonstration garden, with plants such as the Texas Madrone, American Smoke Tree, Cedar Sage, White Limestone Honeysuckle, etc. There was even a Texas Redbud, albeit very small, naturally growing here. Next to this area is a very unique ledge of caliche and limestone, that stands above the limestone creek. Maybe this area could combine both of the above projects into one enhanced area of local ecotype plants, (mainly understory trees), on one area adjacent to a trail? There is one other area with a Texas Mountain Laurel that may be native, to somehow label, as well as areas of Lindheimer's Muhly, whose numbers could ideally be increased through efforts of the propagation area. I also notice that there is some algae in the creek, and I have some longer term solutions that I would like to discuss with you in addition to the projects mentioned above. Also, the caliche hillside leading down to the small stream that backs up to the neighborhood is another place to explore creating a small, more informal Ashe Juniper demonstration garden. I think that this area would be ideal for Madrones and Ladies Tresses Orchids.