

Ethnobotanical Garden Proposal



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Introduction

Ashland, Oregon has a reputation for being home to environmentally and socially-conscious citizens who are engaged in pressing ecological and cultural issues. Southern Oregon University is a forward-thinking institution in many of these areas, and in considering prospects for our final capstone project at SOU, we saw an opportunity to foster a cultural bridge with the surrounding Native American community. In addition, we have the opportunity to strengthen bonds between organizations within our own student body. A broader initiative to promote native species in our campus' landscaping policies and philosophy, including the planting of pollinator-friendly gardens on our Bee Friendly Campus is already in place. In addition to promoting the cultivation of native and pollinator-friendly species to create healthy local ecosystems, we hope to expand upon these initiatives to include a cultural resource and educational tool in the form of an ethnobotanical garden at the Farm at SOU, a Center for Sustainability.

Context and Background

Not far from campus, North Mountain Park Nature Center in Ashland has an included ethnobotanical trail, with many native medicinal and edible plants highlighted through interpretive signs and knowledgeable educators. However, the location and university ties of the SOU Farm provide an excellent platform for an ethnobotanical garden to be implemented as another useful educational tool and focal point for community-engagement. Dr. Brook Colley and other members of the Native American Studies Program have shown particular interest in the garden as a place for Native American students and faculty to cultivate and harvest spiritually significant plants for ceremony. The Farm is a short walk from the SOU campus, and is adjacent to three

neighboring schools: Walker Elementary School, Ashland Middle School and Willow Wind Community Learning Center. Science Works Hands On Museum (a museum with programming designed for young children) is also located on the same block as The Farm. The close proximity to SOU, Walker Elementary School, Ashland Middle School, Willow Wind and Science Works allows an ethnobotanical garden to provide a broad range of educational opportunities, strengthening the existing curricula within the Sustainability Farm School. Nancy Shea, the Director of the Farm at SOU, has approved our plan and agreed to give us plots to cultivate on the Farm.

Ethnobotanical gardens provide many benefits to the community including education on local ecology, plant ecology, and discussion of the relationship between indigenous people and plants in the past and present, as well as “alternative” forms of land management and food cultivation. Native American students and faculty can utilize harvests from the garden for their own spiritual practices and study-based ceremonies. This project provides interdisciplinary opportunities for students with interests in native american studies, biology, education, environmental science, agriculture, language, and history. The ethnobotanical garden facilitates interdisciplinary, inter-community and cross-cultural work and thought for individuals and groups alike.

As an environmentally-aware university in a like-minded cultural setting, there is broad interest in combating climate change, social inequity, and conserving limited resources. At the Farm at SOU, there is a vested interest in educating younger generations on the importance of effective, low-input agricultural methods. We will plant a traditional three sisters garden illustrating a companion planting technique traditionally used by the Iroquois and other peoples all over North America (Kimmerer 2013). The

three sisters garden is a robust system consisting of corn, pole beans, and squash. Each plant has a physical or chemical biological component that complements the others, leading to a highly productive, low-input system. (Kimmerer, 2013; Kuepperer and Dodson 2001). In addition, we are in the midst of installing a ceremonial plant garden that includes one species that is native to this region and two that have become incorporated into Native spiritual life from other regions; regional native coyote tobacco (*nicotiana attenuata*), Southwest native white sage (*salvia apiana*), along with sweetgrass (*hierochloa odorata*), which grows well in a wide variety of climate zones and is used in many spiritual practices and ceremonies by Native American peoples (Kimmerer 2013). Because of these qualities, little maintenance and few applied nutrients are needed to cultivate a healthy, productive garden. The ethnobotanical garden will provide an example of how to build a climate tolerant, water-conservative, pesticide and fertilizer free garden, promoting sustainability and biodiversity in our unique region.

The main purpose of this capstone project is to provide a cultural resource for Native American community members on campus and nearby, as well as an educational resource for the Sustainability Farm School. These aims are captured in the two primary components of the garden and their respective contributions to these efforts. Our project has been highly iterative as we have developed goals with Dr. Colley and Dr. Shea, as well as the Native American Student Union and others with a vested interest in its outcomes.

Methodology and Functionality

Interviews, research, and curriculum development have taken place since October, and garden preparation has been underway during the past six weeks. Some of our research includes collection of detailed background and cultivation information on specific species and varieties chosen for the garden, and the development of informational materials on these plants' ecological and cultural significance in addition to cultivation conditions. We looked at local examples on how to model our garden by visiting both the Roca Arboretum and North Mountain Park's Ethnobotanical Trail and looked at their models for including native plants and education materials as part of their mission to create spaces that serve the community as well as educating them. Initially we sought to create a similar project but we shifted our focus after discussion and advising with Brook Colley, an Assistant Professor and Program Chair in the Native American Studies Program, Nancy Shea, Director of the Farm at SOU, in addition to expanding our conversation with Libby VanWyhne and other environmental educators at North Mountain Park. We believe that our project will serve as a unique contribution that will complement these efforts while expanding dialogue and providing a tangible resource as requested by our stakeholders.

We have created a two-component garden comprised of a ceremonial garden of white sage, tobacco, and sweetgrass, as well as a "three sisters" garden which includes corn, beans, and squash. This design provides numerous opportunities to discuss cultural exchange and ceremonial practices, as well as providing a practical benefit to Native Students who wish to utilize these plants for smudging and other ceremonial purposes by including these species for their use. A "three-sisters" garden illustrates a

widespread agricultural technique used by Native peoples in pre-colonial North America that remains popular today for its ingenuity and productivity, as well as a ceremonial garden with species relevant to the practices of our Native community members here at SOU and in the surrounding region. (Colley, p.c.).

The three sisters garden utilizes a technique called “companion planting”, in which corn serves as a structural support to pole beans, beans fix nitrogen and improve the soil nutrient content, and squash provides natural weed suppression through its sprawling vines and broad leaves that shade out competition.(citation) The three sisters garden provides a demonstrative model for the Farm’s Sustainability Field School, including illustrations of indigenous cultivation techniques, plant species mutualism, and small-scale intensive agriculture. In addition, it is the subject of several Native American legends and is part of the Haudenosaunee people’s Creation narrative (Kimmerer 2013). The varieties selected are heirlooms that, as much as possible, trace back to the tribes who cultivated them historically. While the varieties planted are not native to this region, they provide the opportunity to discuss the relationship of the corn, beans and squash; how they were grown, viewed, and consumed historically and in modern times. Additionally, each species has been sourced as locally as possible; heirloom corn was provided by a Will Gearen who is an expert gardener and seed saver, while squash and bean seeds were purchased from Restoration Seed Company, a heirloom-specialist based here in Ashland.

The ceremonial garden benefits Native community members and the Native American Studies Program on campus by providing a locally-cultivated source of organically-grown sweetgrass, white sage and tobacco. This is especially valuable in its

removal of exploitative, appropriative, and otherwise problematic trade practices through the placement of ownership in the hands of our fellows. All of these species are considered important to the spiritual practices of our Native community members on campus, and have become incorporated over time into the spiritual traditions of many modern Native American people despite their non-native status to our region.

The sweetgrass (*Hierochloe odorata*) was purchased from Redwood City Seed Company, which specializes in its cultivation. White sage (*Salvia apiana*) was purchased from Goodwin Creek Gardens in nearby Williams, Oregon. A native wild tobacco variety *Nicotiana attenuata*, or coyote tobacco, was purchased from nearby Klamath-Siskiyou Native Seeds. KSNS is a seed company committed to preserving native species to our ecoregion. They are active in educating the public through course offerings and workshops in partnership with the Siskiyou Field Institute in Selma, Oregon. This tobacco variety was cultivated and managed by the Klamath people and others in our region historically (Todt, 2009). As a result, it fulfills a dual role in our project by providing a focal point for discussion of the importance of preserving native plant species and providing a resource for ceremonially significant tobacco to our Native American community members.

Our unwavering objective has always been to facilitate a healthy, respectful, and responsible connection between the SOU community and local Native peoples through supporting our own Native American Studies Program and Native American students. As a result, our project went through an extensive iterative process in an attempt to work in the best interests of the Native peoples we intend to serve while providing educational assets to the Farm at SOU, in addition to satisfying the requirements of our

own coursework. Dr. Colley and our other stakeholders have broader projects that we see this garden complementing well. Its role in indigenous food systems projects on campus and adding new elements to the discussion of agriculture and land management on the Farm are valuable, if modest contributions. We see our project as a small and preliminary part of what we hope develops into a greater portion of our university's commitment to ecological and social justice.

As part of our initial project outline we expressed our intention to reach out to Native communities with a claim to this region as home, but in the end refrained from doing so, after discussing the idea with Native American faculty members and realizing how potentially fraught both politically and culturally such an action could become. The relatively short window of time for our project's completion further deterred this direction, however it is our hope that it may be an area for future growth once our project and others like it have become more firmly established, and future participants have more to offer these communities. We did, however, develop a plan for the garden which would meet the needs of current Native American students and faculty through a ceremonial herb garden, as well as providing an educational resource on traditional Native American agricultural techniques via a traditional Wampanoag or "three sisters" garden.

Each species planted has an included lesson plan and cultivation guide to be shared with the Farm staff, NASP, and the incoming practicum student who will be charged with leading the care and cultivation of the garden. Curriculum is as hands on as possible given that most visitors to the Farm are of elementary through middle school age. More academically rigorous materials have been compiled as well to provide resources for educators preparing lesson plans at the high school and collegiate levels.

Once summer is over the ethnobotanical garden will be handed off to the a practicum student whose position was also developed as part of our project to be offered each term. The practicum alleviates strain on the Farm staff and provides opportunities for student participation and academic focus. Our hope is that practicum student will take ownership in the continued development of this project after we have left the university. Dr. Colley will be overseeing the practicum in collaboration with Nancy Shea, the Director of the Farm at SOU. The selected student will be responsible for the general maintenance of the garden, lead groups through the garden and provide a good knowledge base for any questions. This practicum position has been designed and set-up for Fall of 2017 and Laci Hofweber will be filling the inaugural role.

Deliverables

The ceremonial garden site is integrated into the food forest; facing the front of the plot as one approaches from the path. We planted sweetgrass in raised planter boxes with the white sage surrounding the sweetgrass in a semi-circular pattern. The tobacco, which is still young and matures later in the season, will be planted behind the white sage along the angled fence line, where each plant should reach a height of 5-6 feet tall. The garden contains space for in-filling with other herbs and medicinals, which we encourage as future caregivers further the garden's development. The sweetgrass is elevated for the purpose of preserving the grass blades as they grow and drape over the sides; this technique is useful for creating long intact strands for braiding into traditional smudge sticks. The white sage is also used for smudging, and tobacco has numerous traditional uses (Sadik 2014). Additionally, coyote tobacco is appealing to many local pollinators including hawk moths, hummingbirds, and carpenter bees

(Savoie, p.c.), as is white sage, also known as “bee sage” (Mountain Valley Growers). The three sisters garden is located near the far edge of the food forest. We have used clay-rich soil from the Thalden Pavilion construction site to amend the sandy soil in our plot, creating a more hospitable and nutrient-rich soil environment for our young starts. Unfortunately, late rains and difficulty incorporating the soil pushed back our planting date. In addition to creating a functional ceremonial resource, educational, and agricultural resource, it is our hope that traditional techniques practiced by Native American peoples will be included in lessons taught in the food forest as it develops further. We have provided lesson plans and resource materials to assist in these endeavors.

Results and Discussion

We have approached completion of the following goals: (1) Build and plant an ethnobotanical garden. (2) Develop an educational curriculum that articulates the cultural and ecological significance of the plant species. (3) Develop a practicum position to provide proper knowledge and maintenance of the garden after our graduation from SOU. (4) Grow culturally significant plants for our on-campus Native community (NASU, NASP, and others). While we are disappointed to have fallen short of our goal of planting and finishing the garden by SOAR, we feel confident that a patient and prudent approach has been wiser in securing the garden’s long-term success.

In the interest of furthering the garden’s success after our departure, we have compiled resources to deliver to the incoming practicum student to ensure the plants are properly cared for and guide the student in ensuring its prosperous development.

While there still is a considerable amount of ongoing work and care to firmly establish the garden's success, our initial outreach has garnered the support we feel is necessary to ensure the project's successful completion, in addition to reinforcing the value of this contribution to our campus community.

Finally, we provided a ceremonial plant garden at the SOU Farm, compiled resources to ensure the success of our plants, created a practicum position for routine maintenance, and will have completed our Three Sisters Garden by the end of Spring 2017 after our three sisters plot has dried enough to till and plant and the tobacco is developed enough for planting.

Conclusion

This project has been incredibly eye-opening for all of us as we have gained valuable insights into the experiences, culture and worldview of Native American people who reside in the Rogue River Valley today, and especially our esteemed students and faculty here at SOU. This project has led us far afield from our initial vision, into a greater and more vital appreciation for the wisdom gleaned through the nuanced ontologies of our multifarious past and present kin. All told, we believe we have made a unique and practical contribution to our campus community, the NASP, and the Farm's Sustainability Field School.

Relevant Agencies and Individuals

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References

- 1) "The Native Plant Garden at the New York Botanical Garden." *Native Plant Garden NYBG*. N.P., n.d. Web. 29 Oct. 2016
- 2) "Conservation Program" *California Native Plant Society CNPS*. 2016.
<http://www.cnps.org/cnps/conservation/>
- 3) Kimmerer, R. W. (2013). *Braiding sweetgrass: indigenous wisdom, scientific knowledge, and the teachings of plants*. Minneapolis, MN: Milkweed Editions.
- 4) Anderson, K. (2013). *Tending the wild: Native American knowledge and the management of California's natural resources*. Berkeley, CA: University of California Press.
- 5) Plants Profile for *Nicotiana attenuata* (coyote tobacco). (n.d.). Retrieved March 17, 2017, from <https://plants.usda.gov/core/profile?symbol=niat>
- 6) Todt, D. L. (2009, April 06). Upriver and Downriver: A Gradient of Tobacco Intensification Along the Klamath River, California and Oregon. Retrieved March 17, 2017, from <http://escholarship.org/uc/item/1sj5709c>
- 7) Understanding the Historic Wampanoag Three Sisters Garden, A Short Lesson in Folklore and Planting. (2016, March 31). Retrieved March 17, 2017, from <http://archive.gardencityharvest.org/2016/03/30/understanding-the-historic-wampanoag-three-sisters-garden-a-short-lesson-in-folklore-and-planting/>
- 8) Tribe, W. (n.d.). Unit on Corn, Beans, and Squash. Retrieved March 17, 2017, from http://www.wampanoagtribe.net/pages/wampanoag_education/corn

9) USDA certified organic herbs, vegetables and perennials from the California Central Valley. (n.d.). Retrieved March 20, 2017, from

<https://www.mountainvalleygrowers.com/salapiana.htm>

10) Bush, Tony (USDA). Hierochloe odorata. (n.d.). Retrieved March 20, 2017, from

<https://plants.usda.gov/core/profile?symbol=hiod>

11) r, G., & Dodson, M. (2001, July). Companion Planting & Botanical Pesticides:

Concepts & Resources. Retrieved March 13, 2017, from <https://attra.ncat.org/attra-pub/viewhtml.php?id=72>