



GREEN FUND

Sustainability Through Student Innovation

Project Application

Green Fund Mission Statement: “The NAU Green Fund promotes student participation in and provides funding for projects that reduce NAU’s negative impact on the environment and create a culture of sustainability on-campus.”

Requirements for Funding:

- The project must be implemented on campus.
- The person submitting the project must be a NAU student, faculty, or staff member.
- Projects must provide all necessary documents, letters of support, and authorizations prior to submission.
- The Green Fund distributes funding on a **reimbursement basis**. Project teams should partner with an administrative office to provide upfront funding for the project. Once the project has been successfully completed, the Green Fund will reimburse the administrative partner.
- All project applications should be submitted to greenfund@nau.edu for review.

Disclaimer: All applications will go through a comprehensive vetting process. We highly recommend meeting with a Green Fund Committee member prior to submitting the application. The Green Fund Committee member will assist you with every step of writing your project application. If your project is approved, you may be asked to provide more detailed information regarding specific deliverables. The Green Fund is not responsible for acquiring the necessary permits, permissions, or approvals for a project, although we are happy to assist with this process if needed. Additionally, the Green Fund does not provide any ongoing maintenance costs. A sponsoring department must take responsibility for operations and management.

Review Process: Upon project application submission, the Green Fund will review your project within two weeks. At this time, the Green Fund will provide comments on the project. Incomplete applications will not be reviewed until all components are submitted. **Note:** The Green Fund Committee only meets during the academic year. All projects submitted outside of the regular academic year will be reviewed at the start of the next academic session.

Contact Information

Project Leader Name: _____ Phone: _____ E-mail: _____

Project Advisor Name: _____ Phone: _____ E-mail: _____

Sponsoring Department: _____

Project name: _____

NAU Department/Unit for funding reimbursements (Attach letter of commitment from departmental representative): _____

Project Overview

Executive Summary

Please provide a brief overview of your proposal. Please address how this project will support the goals of the Green Fund (student involvement, creating a culture of sustainability, and lessening NAU's impact):

Please answer the following questions detailing the components of your project:

1. Does your project require space or construction on campus? If so, where? Please review the "Space Committee Document" located on our webpage and follow the steps to begin requesting a location.
2. Have you obtained all necessary approvals for this project? Please attach all letters of support to this application. Letters of support should include confirmation from the sponsoring department that the sponsoring department will cover all upfront expenses and work with the Green Fund Business Manager to acquire reimbursement after project completion. If any ongoing operations and maintenance is required of your project, provide a letter of support from the entity that will be covering those costs and/or services.
3. Will this project provide funding for student wages?
4. Please list all additional sources of funding you have pursued. Include departments, grants, ASNAU, Graduate Student Government, etc.
5. Have any of the Green Fund Committee members been involved in this project?
 - a. If Yes, please identify all committee members:

Project Specifics

Please address the following questions. One or more of these questions may not apply to your particular application. Answer as many questions as are applicable to your project.

Relationship to NAU Climate Action Plan (CAP)

1. How does your project align with one of the seven CAP categories (Energy, Water, Transportation, Waste Minimization, Sustainable Landscaping, Environmental Justice, Communication)?

Community

2. Is there a public outreach plan? How will faculty, staff, and students learn about this?
3. Are you working with other groups on or off campus? If so, describe your partnership.

Project Parameters

4. What are the environmental costs and benefits associated with your project?
5. Provide an economic cost/benefit analysis for your project. Focus on identifying specific cost savings.
6. Is this a one-time expense or will you require future funding?
7. When your project members no longer attend NAU, who will be responsible for running the project?
8. How will you monitor the impact of your project after implementation?

Project Budget

Please include a thorough breakdown of all project costs, as well as a 5% line item for contingency.

Example:

NAU Pollinator Garden Budget			
Item	Price	Quantity	Total
Sunflowers	6.00	8	48.00
Golden Crownbeard	5.00	12	60.00
Rabbit Brush	3.00	6	18.00
Columbine	4.00	4	16.00
Skyrocket	7.00	9	63.00
Beebalm	2.00	13	26.00
Shovel	23.00	2	46.00
Fertilizer	12.00	3	36.00
5% Contingency	11.55	1	313.00
Total Pollinator Garden Cost			\$328.65

Project Timeline

The timeline should include significant implementation dates for your project. Please add information such as shipping time and consider any holidays or breaks.

Example:

NAU Pollinator Garden Timeline		
Action	Parties Involved	Month/Year
Order plants and gardening supplies from Home Depot	Project Leader, Green Fund Committee Member	April 2019
Organize student volunteers	Project Leader, Freshman Sustainability volunteers	April 2019
Fertilize ground for planting	Project Leader, Volunteers	May 2019
Plant the garden	Project Leader, Volunteers	June 2019
Monitor plant growth	Gardening Class Students	July 2019
Assess pollinator activity	Gardening Class Students	July/August 2019
Prepare garden for winter	Project Leader, Freshman Sustainability volunteers	October 2019

Project Checklist

Please ensure you have completed all of the following items before submitting your application:

- Meet with a Green Fund Committee member
- Obtain all necessary letters of support (sponsoring department, ongoing maintenance, etc.)
- Project Overview
- Project Specifics
- Project Budget
- Project Timeline
- Complete Project Checklist

Thank you for your submission. We deeply appreciate your commitment to sustainability at NAU, and we look forward to working with you.

Implementation Timeline

The general timeline for the renovation will be implemented over the course of 2022. Because of winter weather preventing the area from being accessed during the coldest months, we will begin our garden season at the beginning of April, weather permitting and complete the season the first week of November. Some initial planning, purchasing, recruiting, and organizing will be completed during the wintertime. Here follows the expected timeline:

<p>Winter/Early Spring 2022</p>	<ul style="list-style-type: none"> • Finalize design for garden layout • Recruit student interns and volunteers for the spring season. Begin spring internship projects. • Complete signage proofs for approval. • Complete material purchases. • Assess the garden post winter, remove any debris or obstacles. • Pin flag the garden perimeter and measure path width for ADA accessibility.
<p>April 2022 – First 2 weeks</p>	<ul style="list-style-type: none"> • Begin redesign of raised garden beds. Tear down existing beds, level the area. • Begin crusher fine deposition and compaction. • Sow pollinator restoration seeds in greenhouse for monsoon planting.
<p>April 2022 – Second 2 weeks</p>	<ul style="list-style-type: none"> • Continue crusher fine compaction. • Begin building gabion beds. • Begin border renovation. • Assess early season weeds and determine removal strategies.

	<ul style="list-style-type: none"> • Sow warm season crops in greenhouse.
May 2022 – First 2 weeks	<ul style="list-style-type: none"> • Continue building gabion beds. Create permaculture soil mix and fill beds. • Finish border renovation. • Begin recruiting summer interns and volunteers. • Spring interns finish final report.
May 2022 – Second 2 weeks	<ul style="list-style-type: none"> • Clear and level bike station and add crusher fines. • Clear and designate future snow removal area • Continue building gabion beds.
June 2022 – First 2 weeks	<ul style="list-style-type: none"> • Finish building gabion beds • Weather permitting, plant warm season crops. • Begin summer internship projects.
June 2022 – Second 2 weeks	<ul style="list-style-type: none"> • Plant remaining warm season crops. • Assess early summer weeds and prepare a priority list for removal. • Pin flag planting areas for pollinator restoration planting.
July 2022 – First 2 weeks	<ul style="list-style-type: none"> • Rain permitting, begin pollinator planting. • Continue weed removal. • Prepare dry seed mix for monsoon broadcast sowing. • Begin work on retaining wall. • Begin recruiting fall interns.
July 2022 – Second 2 weeks	<ul style="list-style-type: none"> • Continue pollinator planting

	<ul style="list-style-type: none"> • Continue weed removal • Finish retaining wall. • Broadcast dry seed mix.
August 2022 – First 2 weeks	<ul style="list-style-type: none"> • Summer interns final report. • Finish pollinator planting. • Continue weed removal. • Place improved signage in appropriate areas.
August 2022 – Second 2 weeks	<ul style="list-style-type: none"> • Begin fall internship projects. • Begin early harvesting. • Continue weed removal. • Begin native seed collection.
September 2022	<ul style="list-style-type: none"> • Continue weed removal. • Continue harvesting. • Continue seed collection.
October 2022	<ul style="list-style-type: none"> • Finalize harvest with the approach of frosts. • Finish seed collection. • Process the harvest. • Host a small harvest festival for interns, collaborators and volunteers.
November 2022 – last week of season	<ul style="list-style-type: none"> • All interns finish final reports. • Perform a final cleanup of the garden, mulch beds and prepare for winter.

Budget (Green Fund funded, pending approval)

Item	Purpose	Supplier	Unit	Quantity	Price/unit	Total estimated with sales tax
Labor - LOS	Assistance and Supervision	Landscaping Services	hour	10	\$ 39.46	\$ 416.70
Crusher Fines	Garden area base	NAU Landscape Connection	1 cu yard	56	\$ 57.00	\$ 3,370.75
Crusher Fines Stabilizer	Garden area base	NAU Landscape Connection	1 bag	19	\$ 120.00	\$ 2,407.68
Limestone 6"-12"	Garden border	NAU Landscape Connection	1 ton	3	\$ 100.00	\$ 316.80
Limestone 12"-24"	Retaining wall	NAU Landscape Connection	1 ton	4	\$ 100.00	\$ 422.40
Wood Chips	Weed smothering, mulch	NAU Property Surplus	1 cu yard	10	donation	\$ -
Composted manure	Soil amendment	NAU Property Surplus	1 cu yard	3	donation	\$ -
River rock 3"-12"	Gabion bed structure	NAU Landscape Connection	1 cu yard	8	donation	\$ -
4 ft. x 100 ft. Steel Welded Wire 14 gauge	Gabion bed structure	Home Depot	roll	2	\$ 89.00	\$ 187.97
Di-bond color printed descriptive sign	Informative signage	NAU Printing Services	estimate	1	\$ 1,000.00	\$ 1,056.00
Bike rack & repaint	Bike Rack	NAU	estimate	1	\$ 300.00	\$ 316.80
Aggregate NAU Trash Bin	Trash & Recycling receptacle	NAU Property Surplus	container	2	donation	\$ -
Furniture Rectangle Picnic Table	Meeting area furniture	Outdoor Wonders	estimate	1	\$ 1,145.00	\$ 1,552.12
Furniture Picnic Bench	Meeting area furniture	Outdoor Wonders	estimate	2	\$ 280.00	\$ 675.36
NAU Picnic Bench	Meeting area furniture	NAU Property Surplus	picnic table ALTERNATIVE	1	donation	\$ -
NAU Bench	Meeting area furniture	NAU Property Surplus	bench ALTERNATIVE	2	donation	\$ -
Weed barrier roll	Garden base	NAU Research Greenhouse	250 sq feet	3	donation	\$ -

1 inch ground staples	Garden base	NAU Research Greenhouse	200 pack	3	donation	\$	-
Recycled soil	Soil for beds/seeding in GH	NAU Research Greenhouse	1 cu yards	2	donation	\$	-
Garden Hose	Irrigation	NAU Research Greenhouse	100 ft	2	donation	\$	-
Square shovel	Digging	Existing SNAIL	shovel	5	donation	\$	-
Trench shovel	Digging	Existing SNAIL	shovel	3	donation	\$	-
Round point shovel	Digging	Existing SNAIL	shovel	2	donation	\$	-
Rake	Raking	Existing SNAIL	rake	2	donation	\$	-
Hand trowel	Digging and weeding	Existing SNAIL	trowel	10	donation	\$	-
5 gallon bucket	Carrying items	Existing SNAIL	bucket	10	donation	\$	-
Wheel barrow	Carrying large items	Existing SNAIL	barrow	1	donation	\$	-
Plants for the pollinator corridor	Pollinator habitat	NAU Research Greenhouse	plant	500	donation	\$	-
Bike Rack	Bike security	Existing SNAIL	rack	1	donation	\$	-
Recycled 4" pots, sterilized	Pollinator/crop starts	NAU Research Greenhouse	pot	400	donation	\$	-
Recycled gallon pots, sterilized	Pollinator/crop starts	NAU Research Greenhouse	pot	200	donation	\$	-
Subtotal						\$	10,722.58
8% Project Manager Fee for PDC						\$	857.81
Total including 6% contingency						\$	12,275.21

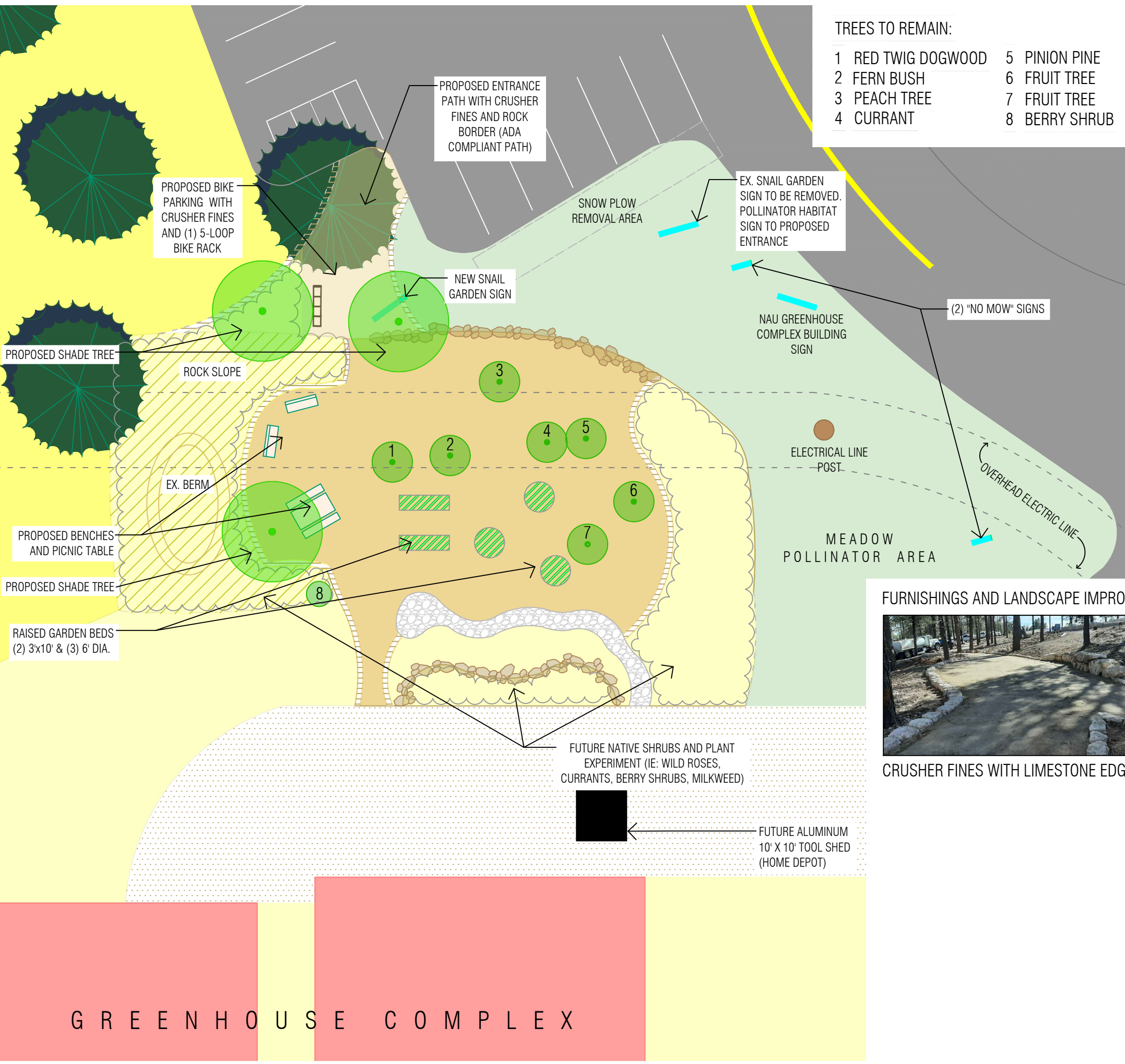
SNAIL GARDEN - GREENHOUSE COMPLEX IMPROVEMENTS PLAN

PREPARED BY NAU LANDSCAPE ARCHITECT 12.21 Scale: 1" = 20'

- TREES TO REMAIN:
- | | |
|--------------------|---------------|
| 1 RED TWIG DOGWOOD | 5 PINON PINE |
| 2 FERN BUSH | 6 FRUIT TREE |
| 3 PEACH TREE | 7 FRUIT TREE |
| 4 CURRANT | 8 BERRY SHRUB |

LEGEND:

	EX. BUILDING		EX. PONDEROSA PINE		PROPOSED CRUSHER FINES
	EX. DIRT PATH		EX. GARDEN PLANTS		POLLINATOR AREA
	EX. ASPHALT		EX. SWALE - REPLACE EX. ROCK WITH LIMESTONE		PROPOSED GABION RAISED GARDEN BED
	EX. NATIVE PERIPHERY LANDSCAPING		EX. FOREST AREA		EX. ROCK BORDER AT GRADE - REPLACE EX. ROCK WITH LIMESTONE
	EX. ROCK RETAINING WALL (+/- 18" HIGH) - REPLACE EX. ROCK WITH DRYSTACK LIMESTONE				



FURNISHINGS AND LANDSCAPE IMPROVEMENTS:



CRUSHER FINES WITH LIMESTONE EDGE BORDER



INTERPRETIVE SIGNAGE



DRYSTACK LIMESTONE RETAINING WALL



OUTDOOR WONDERS PICNIC TABLE (QTY: 1)



OUTDOOR WONDERS BENCH (QTY: 2)

GREENHOUSE COMPLEX



Office of the Vice President
for Research



University Greenhouse

NAU Research Greenhouse Complex
November 11, 2021

NAU Green Fund Committee Members,

After finalizing the budget for the SNAIL Garden and Pollinator Corridor Renovation, the NAU Research Greenhouse has agreed to provide the upfront funding for this project in its entirety, upon the condition of reimbursement by the NAU Green Fund after project completion. We understand that the Green Fund will review the project after its completion and determine if the funds were spent appropriately within the scope of the project before refunding within the approved timeline. We also understand that if the Green Fund determines that funding was spent outside of the project parameters, they reserve the right to withhold reimbursement until the issue has been resolved.

Additionally, the NAU Research Greenhouse is committed to funding annual garden activity and maintenance over the course of the SNAIL Garden's existence through our own budget. An allocation of up to \$200 per year has been set aside for annual upkeep, seed and plant ordering, area maintenance and student interest projects.

We understand that the NAU Research Greenhouse assumes full responsibility for any long-term operations or maintenance costs that may arise after the Green Fund funded renovation is completed.

Thank you for your consideration and please contact Adair Patterson with any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Adair Patterson", with a stylized flourish at the end.

Adair Patterson, Laboratory and Research Facility Administration Manager
NAU Research Greenhouse Complex



ARIZONA MILKWEEDS FOR MONARCHS

Dr. Mike Wagner
President/CEO
75 Deerfield Rd.
Sedona, AZ 86351

Email: azmilkweedsformonarchs@gmail.com
Webpage: AZmilkweedsformonarchs.org

September 27, 2021

NAU Facilities Services
Landscape Review Team
501 E Pine Knoll Drive
Flagstaff AZ 86011

Landscape review team:

I have been asked to prepare a letter in support of the “Proposal for SNAIL Community Garden and Pollinator Corridor Proposal”. This proposal has been submitted or will be submitted shortly by staff at the NAU Research Greenhouse. As background, I was one of the original faculty members who received a \$500,000 grant from the US Department of Education to build the facility in support of research and teaching at NAU. I also served as the faculty representative on the design review committee and had a major role in designing the greenhouse. When the initial grant only covered the cost of 5 of 8 greenhouse bays. I was the leader of a School of Forestry research team that managed a multi-million dollar grant from the Stone Container Corporation that contributed \$300,000 to complete the greenhouse complex. From the beginning, it was the vision that the greenhouse complex would grow to include a shade house, demonstration plantings, experimental research projects, plant genetic conservancy and similar outdoor activities. The SNAIL Garden Proposal is highly consistent with the original vision for the Research Greenhouse.

Currently I am the leader of a 501c3 nonprofit corporation with a conservation mission to create and improve habitat of the imperiled monarch butterfly. We have been clients of the NAU Research Greenhouse for 6 or more years and when you include my years as an NAU faculty member my connection extends into 3 decades. Just this past weekend our non-profit established a butterfly/pollinator garden in the Village of Oak Creek Community Garden. We designed the garden, provided all the plants and with the help of Green Jacks and the Monarch Butterfly Conservation Interns planted the garden. We would be interested in a similar partnership with this proposal.

There is very strong support among the research and teaching faculty in the School of Forestry, Ecological Restoration Institute and Biological Sciences Faculty in having field research plots adjacent to the greenhouse. Integrating field research plots into the greater NAU Landscape Master Plan may be a challenge to traditional Landscape Designers.

In summary the overall concept described in the Proposal for SNAIL Community Garden and the integration of landscape design and field research projects would bring the NAU Research Greenhouse into concurrence with the original vision of the faculty who secured federal and corporate grants.

AZ Milkweed for Monarchs understands that any and all future expenses must be covered by the NAU Research Greenhouse. We understand that the Green Fund is only responsible for the initial purchase of the materials approved in this proposal and will not fund continued maintenance of the program.

Sincerely,

Dr Michael R Wagner
Regents' Professor Emeritus
NAU School of Forestry
President/CEO
AZ Milkweeds for Monarchs

School of Forestry

200 E. Pine Knoll Dr.
Flagstaff, AZ 86011

September 30, 2021

To whom it may concern,

We are pleased to have the opportunity to have an outdoor workspace for our research projects in the Forest and Rangeland Soil Ecology Research Group, near the SNAIL Garden and NAU Research Greenhouse Complex. This is quite valuable for our research and training activities. We both have research in which experimentation or outdoor cultivation of plants and biocrust organisms, is preferred to working indoors. We lack other space to do so. Currently we have projects funded by USDA, USGS and NPS that will need outdoor cultivation space.

The Forest and Rangeland Soil Ecology Research Group understands that any and all future expenses must be covered by the NAU Research Greenhouse. We understand that the Green Fund is only responsible for the initial purchase of the materials approved in this proposal and will not fund continued maintenance of the program.

Thank you,

Dr. Anita Antoninka

Assistant Research Professor, NAU School of Forestry



Dr. Matthew Bowker

Associate Professor, Nau School of Forestry





College of the Environment, Forestry,
and Natural Sciences

Biological Sciences

September 4, 2021

Dear Adair,

I am writing this letter in strong support of your vision for the SNAIL garden near the NAU Research Greenhouse. My lab group and I are excited by your plans and eager to help. In addition, students in my Mycology class will utilize the SNAIL garden for class activities consistent with your vision for the SNAIL garden by testing if inoculation with mycorrhizal fungi promotes native pollinator plant establishment and by setting out logs and more readily decomposable materials and inoculating those with native medicinal and edible fungi to teach students about mushroom biology and propagation.

Thank you for the opportunity to work with you and Nick on the renovation and expansion of the SNAIL garden.

The Gehring Lab Group understands that any and all future expenses must be covered by the NAU Research Greenhouse. We understand that the Green Fund is only responsible for the initial purchase of the materials approved in this proposal and will not fund continued maintenance of the program.

Best regards,

Sincerely,

A handwritten signature in blue ink, appearing to read 'Catherine Gehring'.

Catherine Gehring
Lucking Family Professor
Department of Biological Sciences,
Co-Director, Center for Adaptable Western Landscapes
Northern Arizona University
Flagstaff, AZ 86011-5640
928-523-9158 (phone); Catherine.Gehring@nau.edu

School of Earth and Sustainability

NAU Landscape Review Team,

I am writing to support Adair Patterson's Students Nurturing Alternatives in Landscaping (SNAIL) Community Garden and Pollinator Restoration Corridor proposal. I am the Internship and Undergraduate Research Coordinator in the School of Earth and Sustainability here at NAU. Adair has hosted and mentored several interns from our Environmental Sciences and Studies programs. The internship requirement for our students requires that they work at least 150 hours over the course of a semester or summer, and the SNAIL garden offers an ideal location to support student learning while contributing to the functioning and improvement of the garden.

The proposed future mission of the garden aligns with many of our students' interests and will allow enhanced internship offerings across a broader spectrum of themes from sustainable agriculture to ecological research. The hands-on experiences that the garden provides to our students promotes rich place-based learning and a stronger connection to the university. The new opportunities for research associated with the garden will also open options for students to pursue undergraduate research experiences, adding to the sustainable garden care and maintenance-focused internships.

I see vital links, important to the university's mission, between the SNAIL garden and surrounding communities, including incorporating Traditional Ecological Knowledge to enhance sustainable agricultural integral to indigenous tribes across the region. Broad sustainability efforts associated with promoting pollinator function and diversity are important to our local ecological health, and the garden can provide both habitat and a venue for research while also enhancing the aesthetic value of the campus.

The School of Earth and Sustainability understands that any and all future expenses must be covered by the NAU Research Greenhouse. We understand that the Green Fund is only responsible for the initial purchase of the materials approved in this proposal and will not fund continued maintenance of the program.

Sincerely,



Taylor Joyal, PhD
Senior Lecturer
School of Earth and Sustainability
Northern Arizona University
taylor.joyal@nau.edu
(928) 523-1588



November 8, 2021

Re: SNAIL Garden adjacent to the NAU Greenhouse

To Whom it May Concern:

I write to the NAU Landscape Committee from Terra BIRDS, a Flagstaff non-profit organization that has school and community garden and stewardship programs. We have partnered with the NAU Greenhouse over the last ten years: growing vegetable starts for the Flagstaff community and school garden network, engaging high school students in silviculture projects, bringing elementary kids for field trips to inspire them about futures in growing plants, and supporting community efforts to grow and install pollinator plants in public gardens. Additionally, on multiple occasions, we have partnered with NAU service groups and NAU Greenhouse staff in maintenance of the grounds around the Greenhouse and learning projects in the adjacent SNAIL Garden. The SNAIL Garden represents a unique opportunity for local youth to visit and interact with NAU students, staff & faculty, while hands-on learning about urban land stewardship, stormwater management, soils, small scale urban farming and food forests, and career pathways in urban design, ecological restoration and growing.

I'd like to express our enthusiasm for, and commitment to, continued partnership with NAU Greenhouse and the SNAIL Garden. In the upcoming growing season (as we've done in the past), Terra BIRDS envisions bringing high school youth to help maintain the SNAIL Garden and environs around the Greenhouse as part of our youth green collar jobs program. We also have plans underway to engage high school youth, and elementary-age students, in a growing program to produce native plants for the local school garden network; and specifically, the new Killip Elementary School which is currently under construction.

The SNAIL Garden is a natural extension of the Greenhouse complex and thus a critical component to support NAU's ongoing partnerships with the Flagstaff community. Please register my support and continued partnership with the NAU Greenhouse and SNAIL Garden. Feel free to contact me for discussion and questions.

Terra BIRDS understands that any and all future expenses must be covered by the NAU Research Greenhouse. We understand that the Green Fund is only responsible for the initial purchase of the materials approved in this proposal and will not fund continued maintenance of the program.

Sincerely,

John Taylor
Founder and Executive Director, Terra BIRDS