

**Environment and Natural Resources Trust Fund
2020 Request for Proposals (RFP)**

Project Title:

ENRTF ID: 149-CH

Environmental Education through Regenerative Agriculture

Category: H. Proposals seeking \$200,000 or less in funding

Sub-Category: C. Environmental Education

Total Project Budget: \$ 80,000

Proposed Project Time Period for the Funding Requested: June 30, 2023 (3 yrs)

Summary:

The Audubon Center of the North Woods seeks to create a regenerative farm that models and teaches environmental education through sustainable agricultural practices to thousands of children and adults annually.

Name: Bryan Wood

Sponsoring Organization: Audubon Center of the North Woods

Job Title: Executive Director

Department: _____

Address: PO Box 530

Sandstone MN 55072

Telephone Number: (320) 245-2648

Email bwood@audubon-center.org

Web Address: www.audubon-center.org

Location:

Region: Statewide

County Name: Statewide

City / Township:

Alternate Text for Visual:

Our farm will model sustainable, regenerative practices that are based on no-tillage, perennial crops such as fruit and nut bearing trees and shrubs, and grasslands for grazing livestock and poultry.

_____ Funding Priorities	_____ Multiple Benefits	_____ Outcomes	_____ Knowledge Base
_____ Extent of Impact	_____ Innovation	_____ Scientific/Tech Basis	_____ Urgency
_____ Capacity	_____ Readiness	_____ Leverage	_____ TOTAL _____%



Environment and Natural Resources Trust Fund (ENRTF) 2020 Main Proposal Template

PROJECT TITLE: Environmental Education through Regenerative Agriculture

I. PROJECT STATEMENT

1. The Audubon Center of the North Woods (ACNW) seeks to build an educational sustainable farm based on regenerative agricultural practices that provides real, working solutions to the mounting negative impacts of conventional agriculture. Our farm will teach the thousands of children and adults that attend our campus each year how healthy, nutritious food can be produced that enhances environmental integrity by increasing soil health, decreasing erosion and water usage, sequestering carbon and increasing pollinator and wildlife habitat.

- Our farm will demonstrate how small, poly-culture farms are more resilient, sustainable and better able to produce more edible food per acre than mono-crop fields. In 2014, the United Nation's Food and Agriculture Organization released findings stating that for the world to produce the food needed for the planet's growing population, it will be possible only through small, local farms that incorporate natural systems and have high biological diversity and resiliency.
- Our farm will cover approximately seventy-five acres and will be a diverse and thriving landscape that demonstrates that food production can go hand in hand with habitat restoration, increasing environmental health and long-term preservation of soil and water resources.
- We will create lessons focused on sustainable agriculture to be used with our K-12 curriculum that reaches over 4,000 students and more than 75 schools annually, as well as college and adult audiences. Over 75% of all human land-use is for food production, meaning the largest impact we likely can have as an environmental learning center is educating people on how the choices they make with the food they purchase, grow and consume impacts the planet.
- Conventional agricultural practices are eroding topsoil, decreasing soil vitality, releasing sequestered carbon dioxide, damaging water resources, reducing insect populations, and becoming increasingly reliant on petroleum-derived chemical treatments. This is not sustainable. Our farm will be a living, functioning alternative that models sustainable practices for food production.
- Through the creation of a farm that utilizes ecological systems, biological diversity, natural animal behaviors and diets, ACNW will demonstrate how food can be produced sustainably and improve the soil quality, sequester carbon, reduce runoff, be more resilient to weather extremes and pathogens and eliminate the need for chemical applications.
- There are more people in prisons than there are farmers in the U.S. Today, less than 1% of U.S. population is farmers, compared to over 50% in 1900. Children today are less likely to grow up on a farm, and understand how food is produced. We want to demonstrate to children how they can grow & raise their own food, and see farming as potential career for them to consider.

2. This farm will consist of native-grass pastures for beef cattle, broiler chickens, egg-laying hens and hogs, orchards of fruit and nut trees, berry-producing shrubs, high-tunnel hoop houses for vegetable production, vegetable fields and pollinator habitats.

- With this grant we would amend the soil of a former 48-acre corn field, adding nutrients and minerals that have been depleted from decades of intensive row-crop production and chemical applications.
- We will plant approximately 500 fruit and nut trees & 2,000 shrubs in aisles, which over time will create windbreaks and corridors for rotationally grazing livestock and poultry that move through them, as well as produce food to be harvested, stored and served in our dining hall at our residential environmental learning center, where we serve over 50,000 meals annually.
- With rows of fruit and nut trees, berry-producing shrubs underneath and pasture at the surface level, we create production at three levels vertically, increasing yield per acre. With the grazing animals moving through the corridors, they eat falling fruit and nuts, reducing insect and fungal pests that damage the crops, reducing losses and eliminating the need for chemical applications.



Environment and Natural Resources Trust Fund (ENRTF) 2020 Main Proposal Template

3. This farm will serve as an environmental education tool in innumerable ways.

- With the planting of native grasses for grazing, we can teach about the importance of prairie ecosystems, and the role grassland grazers play with nutrient cycling and stimulating vegetative growth.
- With the elimination of tilling, we will educate about soil health and vitality, water storage and carbon sequestration benefits of permanent vegetation on the ground. By not tilling acreage, we will help improve the water quality of nearby Grindstone Lake, which is now listed as impaired by the MN DNR.
- With fruit and nut production from trees and shrubs, we will educate about the role permaculture can have, and the importance of pollinators, which are responsible for pollinating 35% of the world's crops.
- Pollinator education through active beehives will help students learn about the importance bees play in food production. In 2014, an international team of biologists estimated that, in the past 35 years, the abundance of invertebrates such as beetles and bees had decreased by 45 percent worldwide. Recent studies show a stunning 76% decrease in flying insects in German nature preserves in the last 27 years, and a staggering 98% decrease of ground insects in Puerto Rico's rainforest in the last 35 years.

II. PROJECT ACTIVITIES AND OUTCOMES

Activity 1 Title: Improving Soil Health

Description: We will conduct soil testing, then amend the soil with the needed nutrients to improve soil vitality.

ENRTF BUDGET: \$10,000

Activity 2 Title: Planting Fruit and Nut Trees and Shrubs

Description: We will plant approximately 500 fruit and nut trees and 2,000 shrubs in rows that allow for grazing and production between them. The fruits and nuts will be a powerful educational tool for teaching the benefits of permaculture. The production of the fruits and nuts will be harvested and served in our dining hall.

ENRTF BUDGET: \$63,000

Activity 2 Title: Establish Honeybee Program

Description: We will purchase hives, beekeeping materials and bees to establish honeybee colonies that will aid in the pollination of our trees & shrubs, and allow for education about the role pollinators play in food systems.

ENRTF BUDGET: \$7,000

Outcome	Completion Date
1. Test and Amend Soil	Nov 1., 2020
2. Purchase bee hives, materials and establish honeybee colony	May 1, 2021
3. Plant 500 Fruit and Nut Trees and 2,000 Shrubs	June 30, 2023

III. PROJECT PARTNERS AND COLLABORATORS:

We have been contracting with a local organic farmer on farm concepts and are hiring him on as staff to oversee the farm, and working with our local Natural Resource Conservation Service (NRCS) office on the farm layout.

IV. LONG-TERM IMPLEMENTATION AND FUNDING:

We have received two grants from NRCS for livestock fencing, well and water systems, pasture plantings, and a high-tunnel hoop house. Grants are also being submitted to the MDA's Sustainable Agriculture Demonstration program, the USDA's Sustainable Agriculture Research & Education program, and Rural Development program.

Attachment A: Project Budget Spreadsheet
 Environment and Natural Resources Trust Fund
 M.L. 2020 Budget Spreadsheet

Legal Citation:

Project Manager: Bryan Wood

Project Title: Environmental Education through Regenerative Agriculture

Organization: Audubon Center of the North Woods

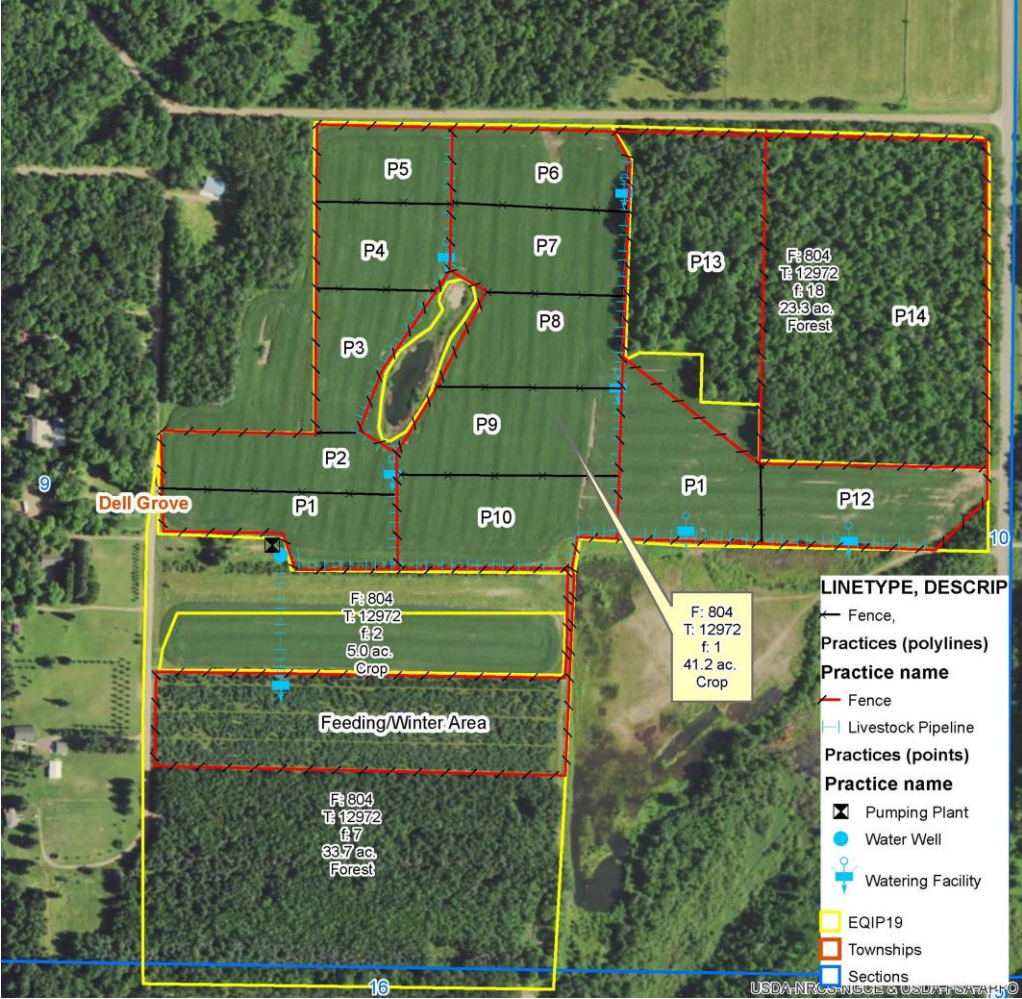
Project Budget: \$80,000

Project Length and Completion Date: 3 years - June 30, 2023

Today's Date: April 9, 2019



ENVIRONMENT AND NATURAL RESOURCES TRUST FUND BUDGET		Budget	Amount Spent	Balance
BUDGET ITEM				
Personnel (Wages and Benefits)		\$ -	\$ -	\$ -
Staff wages to implement grant		\$ 28,000		\$ 28,000
Professional/Technical/Service Contracts				
Contract with local farmer to spread and mix in soil minerals and nutrients		\$ 1,000	\$ -	\$ 1,000
Equipment/Tools/Supplies				
Beehives, suits, processing equipment, bees		\$ 5,000		\$ 5,000
Mulch, stakes, fertilizer, tree guards, hoses for planting, protecing and water trees and shrubs		\$ 5,000	\$ -	\$ 5,000
Soil Testing and purchase of minerals and nutrients		\$ 8,000		\$ 8,000
500 fruit and nut trees, 2,000 shrubs		\$ 33,000	\$ -	\$ 33,000
Capital Expenditures Over \$5,000				
		\$ -	\$ -	\$ -
Fee Title Acquisition				
		\$ -	\$ -	\$ -
Easement Acquisition				
		\$ -	\$ -	\$ -
Professional Services for Acquisition				
		\$ -	\$ -	\$ -
Printing				
		\$ -	\$ -	\$ -
Travel expenses in Minnesota				
		\$ -	\$ -	\$ -
Other				
		\$ -	\$ -	\$ -
COLUMN TOTAL		\$ 80,000	\$ -	\$ 80,000
SOURCE AND USE OF OTHER FUNDS CONTRIBUTED TO THE PROJECT	Status (secured or pending)	Budget	Spent	Balance
Non-State:			\$ -	
NRCS Grants for Livestock Fencing, Well & Water Lines, Pasture Planting, & Hoop House	Secured	\$ 41,937		\$ 41,937
USDA SARE	Pending	\$ 200,000		
USDA Rural Development		\$ 75,000		
State: Minnesota Department of Agriculture	Pending	\$ 50,000	\$ -	
In kind:		\$ -	\$ -	\$ -
Other ENRTF APPROPRIATIONS AWARDED IN THE LAST SIX YEARS	Amount legally obligated but not yet spent	Budget	Spent	Balance
M.L. 2017, Chp. 96, Sec. 2, Subd. 05g	\$ 73,327	\$ 130,000	\$ 56,673	\$ 73,327



Proposed layout of farm with livestock fencing and water lines outlined. Fruit and nut trees and shrubs would be planted in rows in paddocks P1 – P10. Hoop houses, vegetable production and apiary will occur on 5 acre field south of P1-P10.



Hogs and cattle will rotationally graze these pasture corridors lined by fruit and nut trees and shrubs, eating falling fruits and cycling nutrients into the soil.



Over time, fruit and nut trees and shrubs will grow up to create grazing corridors similar to this regenerative permaculture farm above, stabilizing the soil and retaining soil moisture, while also creating wildlife and insect habitats.



Mobile chicken confinements like the ones above will be moved daily onto fresh grass, trailing cattle and hogs to pick through and spread out fecal matter and consume insects and eat the grass, stimulating soil.

Project Manager Qualifications

Bryan Wood- Executive Director at Audubon Center of the North Woods

- Leads organization with a \$1.8 million annual budget, 26 employees and 9 naturalist interns
- Oversees operations, programs, strategic plan, budget and development
- Teaches undergraduate and graduate level post-secondary courses
- Serves as public relations advocate on behalf of the Audubon Center of the North Woods
- Networks and forms productive partnerships with other environmental organizations
- Coordinates adult and community programs
- Chief grant writer with over 10 years of receiving and overseeing grant projects up to \$1.5 million

Organizational Description

The Audubon Center of the North Woods (ACNW) is a 501(c)3 non-profit residential environmental learning center residing on over 780 acres near Sandstone, MN. As an accredited school, ACNW serves over 15,000 individuals annually including approximately 4,000 K-12 students from across MN and WI. ACNW also provides undergraduate and graduate level field courses to several colleges and universities, youth and family camps, adult and Road Scholar programs, outreach programs and community events. ACNW is the State of Minnesota's largest charter school authorizer with 34 schools and over 9,000 students. ACNW has been providing environmental education experiences since 1972.

Our Mission: *To instill a connection and commitment to the environment in people of all communities through experiential learning*

Our Vision: *A healthy planet where all people live in balance with the Earth*

Our Core Values:

- *We demonstrate respect, care and passion for the Earth, all people and all things*
- *We strive for excellence in everything we do through integrity, open communication and teamwork*
- *We value, engage and appreciate individuals for their unique contributions*
- *We believe in life-long learning through positive shared experiences with the natural world*
- *We encourage others to recognize our interconnectedness with the Earth through their actions*