Environment and Natural Resources Trust Fund

M.L. 2024 Approved Work Plan

General Information

ID Number: 2024-103

Staff Lead: Tom Dietrich

Date this document submitted to LCCMR: June 14, 2024

Project Title: Conservation Grazing for Birds, Beef, and Better Soil

Project Budget: $342,000

Project Manager Information

Name: Dale Gentry

Organization: Audubon Minnesota

Office Telephone: (651) 274-1073

Email: dale.gentry@audubon.org

Web Address: https://mn.audubon.org/

Project Reporting

Date Work Plan Approved by LCCMR: June 20, 2024

Reporting Schedule: June 1 / December 1 of each year.

Project Completion: March 31, 2028

Final Report Due Date: May 15, 2028

Legal Information

Legal Citation: M.L. 2024, Chp. 83, Sec. 2, Subd. 08f

Appropriation Language: $342,000 the second year is from the trust fund to the commissioner of natural resources for an agreement with the National Audubon Society, Minnesota office, to assess Audubon Conservation Ranching as a strategic approach to improve grassland biodiversity, soils, and ecosystem resilience. This appropriation is available until June 30, 2028, by which time the project must be completed and final products delivered.

Appropriation End Date: June 30, 2028

Narrative

Project Summary: Assessing Audubon Conservation Ranching as a strategic approach to biodiversity conservation and grassland soils and vegetation ecosystem resilience.

Describe the opportunity or problem your proposal seeks to address. Include any relevant background information.

Native grasslands once covered one-third of Minnesota, but less than 2% of that native prairie remains. A similar loss of grasslands across North American has led to steep declines in grassland biodiversity. Grassland birds have shown the most drastic declines of any North American bird group, losing 53% of their total population and up to 75% of single species populations since 1970. Converting prairie to agricultural land affects not only wildlife but the soil upon with the prairie depends. Compared to native prairies, soils in agricultural fields are deficient in numerous characteristics associated with soil and landscape resilience. They contain less plant diversity, are more prone to erosion, and are less resilient to the flooding rains and variable weather. Restoring grasslands and improving management can improve habitat for birds and other wildlife, make land more resilient to climate change, and support farmer bottom-lines. Audubon's Conservation Ranching initiative is designed to develop bird habitat in private cattle pastures. It is supporting grassland bird communities, however it is unclear how it affects other components of the ecosystem and food web. Grazing practices that benefit birds, soil, and vegetation exist, but no one has tried to integrate them and study the outcomes.

What is your proposed solution to the problem or opportunity discussed above? Introduce us to the work you are seeking funding to do. You will be asked to expand on this proposed solution in Activities & Milestones.

Audubon's Conservation Ranching initiative is a market-based land certification and habitat enhancement program designed to create bird habitat on productive private grazing lands. We have over 100 ranches and three million acres certified in the western U.S. and we are expanding this initiative by certifying our first ranches in Minnesota in 2023. Audubon's regenerative grazing practices likely benefit more than just birds by developing climate change resiliency and benefits to pollinators through improved soil health and diversification of the plant community. However, research to date has only studied bird outcomes. Therefore, it is necessary to study the effects of different approaches to pasture management on biodiversity, soil health, cattle wellbeing and grassland ecosystem resilience to support the development of management practices that maximize birds, ranchers, and wholistic ecosystem health.
We propose to test the impacts of different approaches to bird-friendly management practices (e.g. the reintroduction of various native plants, different grazing and haying rotations) on the soil and plant community to determine how managing ranch land for birds also influences the soil and plants. We will use these outcomes to adaptively design our grazing land management practices to maximize benefits for rancher and ecosystem benefits.

What are the specific project outcomes as they relate to the public purpose of protection, conservation, preservation, and enhancement of the state's natural resources?

We will quantify the impacts of different bird-friendly ranch management practices in the Audubon Conservation Ranching program (e.g. the reintroduction of various native plants, different grazing and haying rotations) on grassland birds, soil health, and plant diversity to develop best bird friendly grazing practices that can also produce co-benefits for grassland ecosystems. This study will enable us to develop a handout defining these best management practices to support whole ecosystem health that we will share with the public through our website, through the NRCS, and through partner meetings, workshops, and conferences with the Minnesota grazing community.

Project Location

What is the best scale for describing where your work will take place?

Statewide

What is the best scale to describe the area impacted by your work?

Statewide

When will the work impact occur?

In the Future

Activities and Milestones

Activity 1: Complete soil, plant and bird data collection in year one

Activity Budget: $131,000

Activity Description:
We will collect pre-treatment soil samples and conduct surveys of the plant and bird communities on no fewer than six MN ranches that have begun certification by the summer of 2024. Bird and vegetation surveys will use linear transects. Audubon staff will collect multiple soil samples from each farm that will be analyzed for soil resiliency variables including the Haney test (which includes more than a dozen different soil test values), water infiltration, and % organic matter. We will also conduct one meter soil carbon tests on select ranches to establish a basis for comparison to future surveys 10 years in the future.

We will use the data from the bird surveys to calculate a "Bird Friendliness Index" score for each ranch and the soil and plant data to assess the conditions of the those communities The results from these pre-treatment surveys will provide a bases for comparison to future conditions two years later at the end of the study.

Activity Milestones:

Description	Approximate Completion Date
Identify soil and plant survey contractors	February 28, 2025
Interview ranchers and identify candidates for experimental manipulations	April 30, 2025
Complete plant, bird, and soil surveys in year one.	September 30, 2025
Complete initial analysis of survey data and share the results with landowners	March 31, 2026

Activity 2: Implement alternative management practices

Activity Budget: $20,000

Activity Description:
Our grassland ecologist will work with participating certified ranches to define and implement alternative pasture management practices. These practices will include the planting of native grasses and forbs, modifications to the timing of haying, and modifications to grazing stocking rates and rotation periods. Each rancher will already have a Habitat Management Plan (HMP) as part of their certification process and we will write a new HMP that with describe and assign the experimental modifications that will be a part of this project. We will support those modifications with financial support from the Minnesota NRCS.

Activity Milestones:

Description	Approximate Completion Date
Define which practices (eg vegetation and grazing manipulations) will be included in the manipulations	May 31, 2025
Create a revised HMP for participating ranches	June 30, 2025
Work with ranchers to implement the practices defined in the revised HMP	August 31, 2026

Activity 3: Complete soil, plant and bird data collection in year three

Activity Budget: $100,000

Activity Description:
We will follow the same procedures as were used in year one to collect soil samples and conduct surveys of the plant

and bird communities on each participating ranch. Bird surveys will consist of a linear transect with two forms of auxiliary data (distance and time of detection) enabling correction for imperfect detection. Plant surveys will include line transect surveys of plant diversity, abundance and percent cover. We will collect multiple soil samples from each farm that will be analyzed for soil resiliency variables including the Haney test (which includes more than a dozen different soil test values), water infiltration, and % organic matter.

We will use the data from these surveys to calculate a "Bird Friendliness Index" score for each ranch and assess the conditions of the plant and soil on the pasture. We will compare the results of year one to year three to determine how our grazing practices influenced the bird, plant, and soil communities. These results will guide the development of best management practices designed to maximize benefits to all three components of the ecosystem.

Activity Milestones:

Description	Approximate Completion Date
Hire contractors and coordinate with soil lab for year three field and lab data collection.	March 31, 2027
Complete plant, bird, and soil surveys in year three.	August 31, 2027
Complete initial analysis of survey data and share the results with landowners	November 30, 2027

Activity 4: Identify BMPs for grazing that maximize whole ecosystem health and develop and share a handout for ranchers and land managers

Activity Budget: $91,000

Activity Description:
Our field and data analysis teams will develop a scoring system to compare the outcomes of the various habitat management strategies to determine which practices were most effective at benefiting the bird, plant, and soil communities simultaneously. We will conduct interviews with landowners about their impressions of the costs and benefits of each management strategy. We will in coordinate with partners in the grazing community (NGOs, county, state, and federal agencies) to develop best management practices for grazing that maximize benefits to soil, plants, and birds.

We will create a handout that describes the BMPs and the tradeoffs of different management strategies that will then be published on Audubon's website and will be distributed at no fewer than two grazing workshops and one agriculture conference.

Activity Milestones:

Description	Approximate Completion Date
Interview ranches about their perceptions of the value of the on farm trials.	October 31, 2027
Analyze and compare the results of the year one and year three field surveys.	November 30, 2027
Publish BMP handout on our website and share it at two workshops and one conference	December 31, 2027

Dissemination

Describe your plans for dissemination, presentation, documentation, or sharing of data, results, samples, physical collections, and other products and how they will follow ENRTF Acknowledgement Requirements and Guidelines.
Audubon Minnesota will work with the National Audubon Society science division to analyze the results of the surveys and prepare a final report of findings that will be disseminated to internal and external partners at grazing workshops, on our regional conservation ranching webpage, and future regional meetings and conferences of conservation professionals and agencies that work on the regenerative agriculture and grazing. We will also develop a bird friendly grazing best management practices handout that will be shared with technical service providers and cattle producers.

The Minnesota Environment and Natural Resources Trust Fund will be acknowledged through use of the trust fund logo or attribution language on project print and electronic media, publications, signage, and other communications per the ENTRF Acknowledgment Guidelines.

Long-Term Implementation and Funding

Describe how the results will be implemented and how any ongoing effort will be funded. If not already addressed as part of the project, how will findings, results, and products developed be implemented after project completion? If additional work is needed, how will this work be funded?
This project will inform grazing practices and grassland bird conservation efforts across Minnesota. It will produce best management practices for whole ecosystem health that will be used by Audubon and shared publicly in many formats (online, at meetings, with partners). We have funding from the National Fish and Wildlife Foundation to support the bird surveys and the certification of ranches. This project will increase the impact of Audubon's Outdoor Heritage Fund supported projects to Restore and Enhance Minnesota's Important Bird Areas in the Tallgrass Aspen Parklands and it will support improved grazing practices within the Minnesota Prairie Plan.

Other ENRTF Appropriations Awarded in the Last Six Years

Name	Appropriation	Amount Awarded
Implementing Conservation Plans for Avian Species of Concern	M.L. 2019, First Special Session, Chp. 4, Art. 2, Sec. 2, Subd. 03k	$124,000
Habitat Associations of Mississippi Bottomland Forest Marsh Birds	M.L. 2021, First Special Session, Chp. 6, Art. 5, Sec. 2, Subd. 08g	$275,000

Budget Summary

Category / Name	Subcategory or Type	Description	Purpose	Gen. Ineligible	% Benefits	# FTE	Classified Staff?	$ Amount
Personnel								
Conservation Director		Supervise project design and implmentation and supervise report production.			29%	0.3		$45,000
Prairie Project Manager		Coordinate bird, soil, and vegetation sampling and inform habitat management plans			29%	0.6		$50,000
Grassland Ecologist		Certification of ranches, ranch relationships and implementation of habitat manage plans			29%	0.45		$35,000
Conservation Science Associate		Data management and analysis			29%	0.45		$40,000
Conservation Manager		Supervise prairie project manager and grassland ecologist and coordinate data collection and analysis			29%	0.6		$75,000
							Sub Total	**$245,000**
Contracts and Services								
TBD	Professional or Technical Service Contract	Analytical analysis of soil composition including carbon, organic matter, available nutrients, and an assay of active microbes.				0.4		$30,000
TBD	Professional or Technical Service Contract	We will hire a contractor to complete vegetation surveys.				0.2		$15,000
TBD	Professional or Technical Service Contract	We will contract an analytical soil lab to analyze the soil samples for organic matter, microbial activity, nutrient content and soil carbon in year one.				0.6		$25,000
TBD	Professional or Technical Service Contract	We will hire qualified contractors to conduct the vegetation surveys in years one and three of the project.				0.5		$15,000
							Sub Total	**$85,000**

Equipment, Tools, and Supplies								
	Tools and Supplies	Soil sampling equipment; soil probes X2 and soil sample containers X40	Audubon staff will collect the soil sampling equipment and supplies and send them to the analytical lab for analysis					$2,000
							Sub Total	**$2,000**
Capital Expenditures								
							Sub Total	**-**
Acquisitions and Stewardship								
							Sub Total	**-**
Travel In Minnesota								
	Miles/ Meals/ Lodging	60 trips of approximately 100 miles each at $.61/mile	We will have to make multiple trips to visit the ranches for development of habitat management plans and sampling the soils					$4,000
	Conference Registration Miles/ Meals/ Lodging	One conference attendance, lodging and meals, for 3 people per year. Also registration and meals for one field day per year for three people.	Three of our staff members who are actively involved in the project will attend one grazing conference and one grazing workshop per year.					$4,000
							Sub Total	**$8,000**
Travel Outside Minnesota								
							Sub Total	**-**
Printing and Publication								
	Printing	Handout of Best Management Practices for grazing	The handout will be used to share the outcomes of this project so they can be implemented by others.					$2,000
							Sub Total	**$2,000**

Other Expenses								
							Sub Total	**-**
							Grand Total	**$342,000**

Classified Staff or Generally Ineligible Expenses

Category/Name	Subcategory or Type	Description	Justification Ineligible Expense or Classified Staff Request

Non ENRTF Funds

Category	Specific Source	Use	Status	$ Amount
State				
			State Sub Total	**-**
Non-State				
In-Kind	Audubon indirect charges (24.66%)	Audubon charges 24.66 for indirect charges (support survices) per grant. Because these are ineligible expenses for ENRTF projects, we are counting them as in-kind match.	Secured	$65,000
Cash	NFWF grant 2004.22.074827	The certification of ranches, development of the original Habitat Management Plan, and bird surveys will be funded by a secured National Fish and Wildlife Fund grant.	Secured	$60,000
			Non State Sub Total	**$125,000**
			Funds Total	**$125,000**

Attachments

Required Attachments

Visual Component

File: a2be0a61-d8e.pdf

Alternate Text for Visual Component

The two page document provides a text summary of the project and some pictures to provide a visual connection to the project....

Financial Capacity

File: c25c41a4-8fc.pdf

Board Resolution or Letter

Title	File
Audubon board resolution	b442f6a5-7d5.docx

Supplemental Attachments

Capital Project Questionnaire, Budget Supplements, Support Letter, Photos, Media, Other

Title	File
What is Audubon Conservation Ranching flyer	0aae8ef2-5b5.pdf
Audubon Conservation Ranching Producer Brocure	53da9354-127.pdf

Media Links

Title	Link
Audubon Conservation Ranching homepage	https://www.audubon.org/conservation/ranching

Difference between Proposal and Work Plan

Describe changes from Proposal to Work Plan Stage

We reduced the allocation for personnel by removing the engagement manager from the project and by splitting project management from 0.3 to 0.1 for the Conservation Director and adding in 0.2 FTE for our Conservation Manager. We also reduced the FTE for other staff involved. We also reduced the request for contracts by slightly reducing the number of soil samples needed.

We made numerous changes to the narrative and the activities and milestones to clarify the process and the desired outcomes of this project. We also made other modifications as requested. We are happy to discuss or make further modifications if necessary.

Additional Acknowledgements and Conditions:

The following are acknowledgements and conditions beyond those already included in the above workplan:

Do you understand and acknowledge the ENRTF repayment requirements if the use of capital equipment changes?

N/A

Do you agree travel expenses must follow the "Commissioner's Plan" promulgated by the Commissioner of Management of Budget or, for University of Minnesota projects, the University of Minnesota plan?

Yes, I agree to the Commissioner's Plan.

Does your project have potential for royalties, copyrights, patents, sale of products and assets, or revenue generation?

No

Do you understand and acknowledge IP and revenue-return and sharing requirements in 116P.10?

N/A

Do you wish to request reinvestment of any revenues into your project instead of returning revenue to the ENRTF?

N/A

Does your project include original, hypothesis-driven research?

No

Does the organization have a fiscal agent for this project?

No

Does your project include the pre-design, design, construction, or renovation of a building, trail, campground, or other fixed capital asset costing $10,000 or more or large-scale stream or wetland restoration?

No

Do you propose using an appropriation from the Environment and Natural Resources Trust Fund to conduct a project that provides children's services (as defined in Minnesota Statutes section 299C.61 Subd.7 as "the provision of care, treatment, education, training, instruction, or recreation to children")?

No