



Environment and Natural Resources Trust Fund

2024 Request for Proposal

General Information

Proposal ID: 2024-103

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

Project Manager Information

Name: Dale Gentry

Organization: Audubon Minnesota

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Project Basic Information

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

Funds Requested: \$361,000

Proposed Project Completion: March 31, 2028

LCCMR Funding Category: Methods to Protect, Restore, and Enhance Land, Water, and Habitat (F)

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

Narrative

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 America 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 which 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.

The National Audubon Society's Conservation Ranching initiative is a market-based conservation program designed to create bird habitat on productive private grazing lands. Surveys on Audubon certified ranches in the western United States have demonstrated benefits for grassland birds. Audubon is expanding this initiative and will certify our first ranches in Minnesota in the summer of 2023. There is evidence that Audubon's regenerative grazing practices could benefit more than just birds by developing climate change resiliency and benefits to the pollinator community through improved soil health and diversification of the plant community. However, we do not know for sure whether our grazing practices with demonstrated benefits for grassland birds, will also maximize soil and plant health. Therefore, it is necessary to study the effects of on-the-ground ranch management on biodiversity, soil health, and grassland ecosystem resilience to support the development of management practices that support birds and holistic ecosystem health. We propose to test the impacts of bird-friendly management practices on the soil and plant community to determine whether managing ranch land for birds also benefits 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 bird-friendly ranch management practices in the Audubon Conservation Ranching program on 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 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 and workshops with the Minnesota grazing community.

Activities and Milestones

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

Activity Budget: \$141,000

Activity Description:

We will 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 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 these surveys to calculate a "Bird Friendliness Index" score for each ranch and assess the conditions of the plant and soil on the pasture. These results will guide the development or revision of the habitat management plans that integrate current best management practices for soil and vegetation with our bird-friendly grazing practices, and as 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 partners	June 30, 2024
Complete plant, bird, and soil surveys in year one.	August 31, 2024
Complete initial analysis of survey data and share the results with landowners	November 30, 2024

Activity 2: Complete soil, plant and bird data collection in year three

Activity Budget: \$110,000

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 3: Develop Best Management Practices for grazing that maximize benefits to soil, plants, and birds

Activity Budget: \$110,000

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 share our process and the best management practices and other scientific results publicly online and shared through Audubon connections within the grazing community (conferences, workshop opportunities, coordination with agencies, etc.).

Activity Milestones:

Description	Approximate Completion Date
Interview ranchers about their grazing practices and their priorities and openness to revision.	October 31, 2024
Develop a scoring system to compare outcomes of the field and lab surveys.	November 30, 2024
Score the results of the first year of field surveys	February 28, 2025
Analyze and compare the results of the year one and year three field surveys.	November 30, 2027
Share results of our study with landowners and partners.	December 31, 2027

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

Project Manager and Organization Qualifications

Project Manager Name: Dale Gentry

Job Title: Director of Conservation

Provide description of the project manager’s qualifications to manage the proposed project.

Dr. Dale Gentry has 25 years of experience studying and teaching avian ecology and conservation. Dale joined Audubon as Conservation Manager in 2021 and transitioned to Director of Conservation in 2022. Before joining Audubon Dale was a professor at the University of Northwestern –Saint Paul where he studied the reuse of natural and woodpecker cavities and the role of woodpeckers as biological control for the invasive emerald ash borer. He also chaired the department of biology and taught courses in ecology, conservation, and ornithology. Before moving to Minnesota Dale was field science faculty at the graduate program of the Teton Science Schools in Grand Teton National Park. He supervised research, taught graduate courses in conservation, community, and winter ecology and partnered with the National Park Service and National Forest service on land management in Jackson Hole. Dale has a B.S. in Zoology from Idaho State University, a M.S. in Biology from the University of South Dakota, and a Ph.D. in Atmosphere, Environment and Water Resources from the South Dakota School of Mines and Technology. His graduate work compared the breeding biology of cup nesting songbirds in natural river corridors and anthropogenic woodlots (M.S.) and the keystone species concept in cavity nesting communities in old burns in the Black Hills in South Dakota (Ph.D.).

Organization: Audubon Minnesota

Organization Description:

Audubon Minnesota was established in 1979 and is the state office of the National Audubon Society, one of the oldest conservation organizations in the world. For the last 40 years, Audubon Minnesota has been at the forefront of critical conservation issues that will impact us for generations to come.

While we are one of 23 Audubon state offices, we establish our own statewide conservation projects, generate our own funding, and have an 11-member state Board of Directors who meet quarterly. Our state office mission is, “To conserve and restore natural ecosystems in Minnesota, focusing on birds and their habitats for the benefit of humanity and the

earth's biological diversity." Today there are 24,000 Audubon members in Minnesota and 13 geographically-based chapters from the Mississippi Headwaters Audubon Chapter in Bemidji to Zumbro Valley Audubon Chapter in Rochester.

Budget Summary

Category / Name	Subcategory or Type	Description	Purpose	Gen. Ineligible	% Benefits	# FTE	Classified Staff?	\$ Amount
Personnel								
Conservation Director/Program Director		Supervise project design and implementation and supervise report production.			30%	0.9		\$123,000
Prairie Project Manager		Coordinate bird, soil, and vegetation sampling and inform habitat management plans			30%	0.9		\$75,000
Grassland Ecologist		Certification of ranches, ranch relationships and implementation of habitat management plans			30%	0.45		\$46,000
Engagement Manager		Communication with Ranches and with MN grazing community			30%	0.15		\$14,000
Conservation Science Associate		Data management and analysis			30%	0.45		\$41,000
							Sub Total	\$299,000
Contracts and Services								
TBD	Professional or Technical Service Contract	Analytical analysis of soil composition including organic matter, available nutrients, and an assay of active microbes.				0.4		\$40,000
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		\$35,000
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	\$105,000
Equipment, Tools, and Supplies								

	Tools and Supplies	Soil collecting equipment	We will use the soil collecting tools to collect soil samples that will then be sent back to a lab for analysis.					\$500
	Tools and Supplies	Soil sampling equipment; soil probes X2 and soil sample containers X40	We will purchase soil probes and sample containers					\$2,000
							Sub Total	\$2,500
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.					\$6,000
							Sub Total	\$10,000
Travel Outside Minnesota								
							Sub Total	-
Printing and Publication								
							Sub Total	-
Other Expenses								
							Sub Total	-
							Grand Total	\$416,500

Classified Staff or Generally Ineligible Expenses

Category/Name	Subcategory or Type	Description	Justification Ineligible Expense or Classified Staff Request
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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 services) 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	Certification of ranches, assessment of habitat management needs, and bird surveys will be funded a secured National Fish and Wildlife Fund grant.	Secured	\$80,000
			Non State Sub Total	\$145,000
			Funds Total	\$145,000

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 letter of support	227caa28-bca.docx

Administrative Use

Does your project include restoration or acquisition of land rights?

No

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

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?

Yes

Does the organization have a fiscal agent for this project?

No

Does your project include the design, construction, or renovation of a building, trail, campground, or other capital asset costing \$10,000 or more?

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?

No

