Environment and Natural Resources Trust Fund

M.L. 2024 Approved Work Plan

General Information

ID Number: 2024-193

Staff Lead: Tiffany Schaufler

Date this document submitted to LCCMR: June 6, 2024

Project Title: Understanding Native Fishes in the Bowfishing Era

Project Budget: $588,000

Project Manager Information

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Project Reporting

Date Work Plan Approved by LCCMR: June 20, 2024

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

Project Completion: June 30, 2028

Final Report Due Date: August 14, 2028

Legal Information

Legal Citation: M.L. 2024, Chp. 83, Sec. 2, Subd. 03s

Appropriation Language: $588,000 the second year is from the trust fund to the Board of Regents of the University of Minnesota, Duluth, to collect foundational biological information on a selection of native Minnesota fish to aid in sustainable management, improve recreational opportunities, and educate the public about these shared aquatic resources. 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: Minnesotans increasingly value native fishes. For example, >95% of bowfished species in MN are native, yet all are poorly understood. Foundational natural resource data is absolutely necessary for all stakeholders.

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

There is a serious lack of understanding of a large group of native fishes in our state, even as user-groups have recently and significantly expanded their interests to include this group of native fishes. For example, bowfishing is a rapidly growing and extremely effective fishery in Minnesota in which fish are shot with arrows, and hauls from individual outings can exceed that of commercial harvest (LiteratureCited1-7). Small teams (2-4 people) at overnight tournaments in Minnesota can shoot native fishes at rate of 1.25 fish/min (450 fish over the course of 6 hours). Traditional anglers also increasingly value these fishes for sport and food, and lack of a basic biological understanding of these fishes has generated recent bills in the MN legislature including HF 1076 in 2021, HF 2764 in 2022, and HF 245 in 2023, the first effecting gar take limits statewide as of March 2023. At the gar fish hearing in 2021 (HF 1076), an LCCMR member stressed the clear need for updated data on these native fishes. The knowledge gap for these species creates an unmanageable position that is exacerbated by a lack of funding to support essential research on these fishes (LiteratureCited4).

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.

We will use our pioneering expertise in this area (LiteratureCited1,3-8) to document foundational natural resource data for six native fishes of MN that are now targeted as sportfish by new user-groups. We will study bigmouth buffalo, smallmouth buffalo, bowfin, silver redhorse, longnose gar, and quillback because this native species array is diverse, and these are all species that have become significant sportfish to Minnesotans. Vital rate data for each species will include validated: growth rate, age at maturity, reproduction rate, lifespan, and mortality rate estimates. Validated vital-rate data of fishes is crucial for sustainable management of aquatic ecosystems because such is the means to truly understand the resource replenishment rate (LiteratureCited1). We will validate ages using the state-of-the-art-technique called bomb radiocarbon dating using refined accelerator mass spectrometry, a method for which we have extensive experience (LiteratureCited1,9), using bigmouth buffalo as the geochemical reference species (LiteratureCited1). The age-validated life history information of these fishes will (1) provide a defensible basis for establishing sustainable management practices of these shared aquatic resources, (2) improve recreational opportunities by creating a sound basis for viable fisheries, and (3) educate community members that rely of these resources in Minnesota.

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?

Outcome1: These validated data will provide a defensible basis to establish sustainable management practices of these shared aquatic resources, allow us to gain incredible understanding of the amazing diversity of fishes in Minnesota, and will foster the beginning of a new aquatic-resource legacy for all Minnesotans.
Outcome2: These validated data will improve recreational opportunities by creating a robust basis for a multitude of sustainable fisheries in Minnesota.
Outcome3: Working with local stakeholders to spread this new knowledge, this work will educate community members at large that rely on, utilize, or in any way cherish these prized aquatic resources in Minnesota.

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?

During the Project and In the Future

Activities and Milestones

Activity 1: Fish collection, measurements, dissection; complete otolith processing for age estimation in lab at University of MN Duluth

Activity Budget: $166,772

Activity Description:
We will collect at least 70 individuals from each of 6 species (n ≥ 420): bigmouth buffalo, smallmouth buffalo, bowfin, silver redhorse, longnose gar, and quillback from specific sites in MN (Fig. 1 for bowfishing examples of these new sportfish). At least 30 of each species will be collected from a single site during spring prior to spawn, so that reproductive maturity (of the population) can be accurately determined. We will photograph each fish, measure each fish for size, dissect and measure reproductive tissue, and dissect the complete set of otoliths (earstones within fish used for accurate age analysis (LiteratureCited10)). We will process otoliths in the lab for age and vital rate estimates (growth, age at maturity, reproduction rate, longevity, and mortality rate) following standard protocols developed by our lab (LiteratureCited1,3-8). This involves photographing and weighing whole otoliths, embedding otoliths in epoxy, and thin-sectioning embedded otoliths to produce thin sections (< 400 µm) viewed and photographed under high-magnification compound microscopy. Although rigorous work, vital-rate information derived from otolith thin sections is foundational natural resource data that is crucial for the sustainable management of fish stocks, and to restore and conserve the integrity of aquatic ecosystems.

Activity Milestones:

Description	Approximate Completion Date
Collection of n ≥ 420 fish from MN across the 6 species	November 30, 2025
Measure and dissect all collected fish	December 31, 2025
Complete initial lab work associated with each fish (otolith processing for age)	June 30, 2026

Activity 2: Extract otolith microsamples at UMN Duluth; send for bomb radiocarbon dating at the AMS facility in Woods Hole, MA

Activity Budget: $259,863

Activity Description:
We will extract otolith microsamples from a subset of 30 individuals per species (n = 180) using a micromill for precision extraction (LiteratureCited1). Bomb radiocarbon dating uses the global radiocarbon signal that spiked in the late 1950s to early 1960s from global nuclear bomb testing, as a time-specific marker to carbon-date organisms (LiteratureCited1,9-10). Using the centenarian bigmouth buffalo, a long-lived legacy species of Minnesota (LiteratureCited1), we will reconstruct the entire radiocarbon chronology (pre-1950 to present) for use as a baseline on which to validate the ages of the other fishes. Dr. Allen Andrews is the world-expert in micromill use and bomb radiocarbon dating, and we collaborate (LiteratureCited1,3). He has published more than 80 peer-reviewed scientific papers on age validation of organisms around the world. He will train Dr. Lackmann in use of the micromill as a UMN affiliate. We will then send microsamples for radiocarbon analysis to the accelerator mass spectrometry (AMS) facility in Woods Hole, MA (there are no MN AMS facilities). Accelerator mass spectrometry requires an entire facility, and there are only ~100 AMS facilities in the world that offer services. We have collaborated extensively with the AMS facility at Woods Hole Oceanographic Institution, MA (LiteratureCited1).

Activity Milestones:

Description	Approximate Completion Date

Obtain a micromill for our lab at the University of MN Duluth	June 30, 2025
Prepare additional otolith sections - micromilling from fish subset (n = 180) for age validation	November 30, 2026
Micromill microsamples at UMN Duluth; then send microsamples to AMS facility for radiocarbon analysis	December 31, 2026

Activity 3: Analyze data, write, publish results in scientific journals; collaborate with MN conservation organizations to disseminate results statewide to the public

Activity Budget: $161,365

Activity Description:
We will analyze data, write scientific manuscripts, submit findings to scientific journals, publish, attend meetings, and present results wherever possible. Dr. Lackmann has presented his research more than 100 times since 2018. We will work with MN conservation organizations that we already inform including Native Fish For Tomorrow, the Minnesota Chapter of the Izaak Walton League of America, Minnesota Lakes and Rivers, MN representatives of the Nature Conservancy, and others, to disseminate our published research findings in non-technical format. We will also work with broad conservation organizations to share our work in an easily-accessible way to world. This will result in immediate impact of scientific research that will inform policy and lead to sound natural resource management. For example, Dr. Lackmann's research from 2019 was publicized by National Geographic and MeatEater, bringing international attention to Minnesota. As we have learned recently considering several bills in the MN legislature, many of these fishes were once historically-neglected native species. Our research will ensure these fishes can be enjoyed in perpetuity by future generations of Minnesotans in the land of 10,000 lakes. Minnesota is poised to lead this new legacy. Interest in these fishes is exponentially growing across North America.

Activity Milestones:

Description	Approximate Completion Date
Analyze data, write manuscripts, submit findings to scientific journals	November 30, 2027
Promptly respond to peer review; scientific papers published	June 30, 2028
Hold meetings (continuously) with organizations to disseminate research in a non-technical format statewide and internationally	June 30, 2028

Project Partners and Collaborators

Name	Organization	Role	Receiving Funds
Dr. Mark Clark	UMN Duluth	Dr. Mark Clark is a population biologist and Professor in the Department of Biology at UMD. He is a long-time colleague of Dr. Lackmann and is Co-I on this project.	Yes
Dr. Allen Andrews	Age and Longevity Research	Dr. Andrews is the world-expert in bomb radiocarbon age validation, with a volume of work on fishes, and expert in use of the micromill. He will train Dr. Lackmann in use of the micromill and provide services for bomb radiocarbon data analysis. Website: astrofish.me	Yes
Tyler Winter & Andrew Geving	Native Fish For Tomorrow (NF4T)	Tyler is co-founder and Director of NF4T; he testified in the MN legislature regarding the "no junk fish" bill and others. He has a vast network of contacts. He will disseminate our research findings across NF4T as well as other channels. Andrew is President of NF4T. Recommendation letter attached.	No
Corey Geving	Roughfish.com; MNDNR	Co-founder of roughfish.com, MN DNR employee, and roundtable discussion leader. Corey has worked in depth on fish and wildlife conservation. Corey will also disseminate our research findings across media platforms. Recommendation letter attached.	No
John Rust & Tim Johnson	Izaak Walton League of America (IWLA)	John is President of the MN Chapter of the IWLA. Tim is the Conservation Issues Chair of the Breckenridge, MN Chapter of the IWLA. Both have worked on several conservation issues including the "no junk fish" bill. IWLA supports, and will share our research across channels. Recommendation letter attached.	No
Jeff Forester	MN Lakes and Rivers	Jeff is the Executive Director of Minnesota Lakes and Rivers Advocates and has invited Dr. Lackmann to present research findings at venues in the past. He will help share our research findings across MN Lake and River associations and continue to invite us to present our research. Recommendation letter attached.	No
Tom Casey	Attorney at Law	Tom is a lawyer who has worked on numerous conservation issues, including those highlighted in the "no junk fish" bill. He worked with IWLA to file a legal petition to MNDNR in August 2022 to promote research of native "rough" fish in MN. He supports and will share our research.	No
Dr. Kristen Blann	The Nature Conservancy	Dr. Blann is a freshwater ecologist and MN representative of the Nature Conservancy and has voiced continued support of our research since we began presenting in 2018. Dr. Blann will share our research findings through the Nature Conservancy. Recommendation letter attached.	No
Association of Minnesota Counties (AMC)	AMC – all 87 counties of MN	The Association of Minnesota Counties supports and will share our research. In 2023, the AMC added a legislative policy position to their platform for Native Fish Species Management in MN. See page 11 of "Association of Minnesota Counties' 2023 Legislative Policy Positions" document accessible from their website: mncounties.org	No

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.
The results of this project will be disseminated in multiple ways. First, results will be published in peer-reviewed scientific literature within relevant academic journals such as fisheries or natural resource journals. Dr. Lackmann and colleagues have much experience publishing in scientific literature, as this represents the ultimate culmination of a scientific work. In addition, immediately following scientific publication we will inform LCCMR members, community stakeholders, conservation groups, and representatives of the press in Minnesota by presenting key insights from our findings in non-technical format. We will hold meetings, discussions, and seminars to explain the scientific findings to various stakeholders and to the public. These will include meetings with anglers (traditional, bowfishing, commercial) in Minnesota, and individuals who represent angling groups such as roughfish.com. We will also hold meetings and discuss published results with natural resource agency personnel including the MNDNR, as well as US Fish and Wildlife Service

groups based in MN. We will also brief conservation organizations including the MN Chapter of the Izaak Walton League of America, the MN division of the Nature Conservancy, Native Fish For Tomorrow (founded in MN), and other groups such as MN Lakes and Rivers Associates. Our findings will be shared across social media by these groups. We will also work with media and the press to disseminate our results more widely to the public at large. Dr. Lackmann and colleagues have considerable experience working the media interested in publicizing their scientific work, including venues such as the Star Tribune, MPR, MeatEater, and National Geographic, and this experience will prove valuable throughout the course of this LCCMR project. Dr. Lackmann and colleagues are highly motivated to share scientific results with the public regarding these valued native fish resources of Minnesota.

Furthermore, all other products including the Micromill equipment and samples stemming from this project will be stored at the University of Minnesota Duluth. This will provide opportunities for future researchers to utilize samples indefinitely. In addition, the micromill equipment will provide ample research opportunities across disciplines at the University of Minnesota Duluth because micro-sampling layers of a small sample with sub-micron level precision is extremely valuable in other fields of science such as geology, environmental science, engineering, and chemistry. This equipment housed at UMN Duluth will be valuable to more LCCMR proposals in the future.

Across all these efforts, the Environment and Natural Resources Trust Fund (ENRTF) will be acknowledged as the funding source. We understand that this is a legal requirement of ENRTF funding. We will follow the ENRTF Acknowledgment Guidelines webpage and will not only do what is required, but also work with third party media coverage to ensure to the best of our ability that ENRTF is acknowledged wherever possible. Dr. Lackmann and colleagues strongly desire to provide acknowledgment of ENRTF as the funding source. By funding this work on historically underappreciated native fishes in MN, ENRTF will set a precedent that will be looked towards not only across the state of MN, but also nationally. A new aquatic resource legacy is emerging, as across the nation these once-ignored fishes have been undergoing a paradigm shift in appreciation by scientists and the public. However, funding channels have remained cut off from these fishes due to archaic bias, despite this growing attention. ENRTF is about to change this dynamic, setting a noble example for those to follow.

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?

Our findings will be disseminated to managers and the scientific community through peer-reviewed publications, and also to the public via collaboration with local stakeholders (Activity 3). If additional work is needed (e.g., research on more than the six species we propose here), then we will submit another proposal to continue this work on more species after this project's completion.

Budget Summary

Category / Name	Subcategory or Type	Description	Purpose	Gen. Ineligible	% Benefits	# FTE	Classified Staff?	$ Amount
Personnel								
Alec Lackmann		PI, Conduct the research; involved in all aspects of the work; extensive full-time work (> 40 hours per week) throughout all summers. Summer Salary for three months all 4 years, plus one course buyout each semester, each year.			27.1%	1.76		$192,982
Mark Clark		Co-I, Collaborate on the project; conduct data analysis and contribute to manuscript writing. Three weeks of summer salary all four years.			27.1%	0.24		$48,430
GRA		Master's student, 50% FTE all 4 summers; 50% time one semester during academic years 1 and 2. Assist and conduct research.			60%	1.24		$80,682
Undergraduates		Lab & Field Assistants; Assist and conduct research; gain lab and field experience. Funding for the equivalent for 1 undergrad 50% time across 4 academic years; plus 1 undergrad 50% for the first 2 summers.			0%	1.92		$54,600
							Sub Total	**$376,694**
Contracts and Services								
Dr. Andrews, Scientific Inquiries and Innovations	Professional or Technical Service Contract	Micromill training; bomb radiocarbon sample prep training; bomb radiocarbon reference analysis		X		0		$60,000
Woods Hole Oceanographic Institution National Ocean Sciences Accelerator Mass Spectrometry (NOSAMS)	Sub award	Age validation – carbon dating. A subset of 30 otoliths from each of 6 species will be prepared for bomb radiocarbon analysis for age validation. The NOSAMS Academic Rate fee is very competitive at $268 per sample.		X		0		$48,240
							Sub Total	**$108,240**

Equipment, Tools, and Supplies								
	Tools and Supplies	Miscellaneous lab supplies (e.g., storage vials, microscope slides, isomet blades, image analysis computer software)	Expendable items used to store samples in the lab, prepare samples for analysis and analyze otolith images for age determination.					$3,916
	Tools and Supplies	Miscellaneous field supplies (e.g., waders, nets, scales, coolers, ice, projector, screen)	Various field supplies needed for surveys, collecting fish, dissection & transport.					$2,000
							Sub Total	**$5,916**
Capital Expenditures								
		Micromill	Computer-controlled New-Wave MicromillV2 for high-precision micromilling of sample powder (micrometer-drilling precision in all three axes: x,y, & z). This equipment is crucial to extract micrograms of sample powder from the calcified otolith. The micromill must be controlled and extremely precise. This equipment would enhance University of MN Duluth's overall research program and capability as the University does not currently have this equipment. The equipment would be used across its full lifetime (numerous decades) and would have numerous applications to several fields of science.	X				$45,000
							Sub Total	**$45,000**
Acquisitions and Stewardship								
							Sub Total	**-**
Travel In Minnesota								

	Miles/ Meals/ Lodging	We assume 100 miles per trip @ $0.655 per mile. We assume standard per diem each trip at $59 per day. We assume hotel rooms for the subset (~1/2) of trips that go late into the evening (night bowfishing fish pick-ups) (n = 50) @ $98 per room (n = 2 total rooms), $59 per diem overnight per person and 3 persons per hotel trip. 1 person x 50 day trips = 50*100*0.655 + 50*59 = $6,225 3 people x 50 night trips = 50*100*0.655 + [(50*98*2) + (50*59*3)] = $3,275 + $9,800 + $8,850 = $21,925	Trips to field sites (100 total) to collect fish					$28,150
							Sub Total	**$28,150**
Travel Outside Minnesota								
							Sub Total	**-**
Printing and Publication								
	Publication	Publication; page chares; OA fees. At least 6 manuscripts for scientific journals are anticipated from the study.	Dissemination of findings through peer-reviewed scientific journals.					$24,000
							Sub Total	**$24,000**
Other Expenses								
							Sub Total	**-**
							Grand Total	**$588,000**

Classified Staff or Generally Ineligible Expenses

Category/Name	Subcategory or Type	Description	Justification Ineligible Expense or Classified Staff Request
Contracts and Services - Dr. Andrews, Scientific Inquiries and Innovations	Professional or Technical Service Contract	Micromill training; bomb radiocarbon sample prep training; bomb radiocarbon reference analysis	Dr. Allen Andrews is the world-expert in fish-otolith micromilling, and bomb radio carbon dating. He is uniquely suited to assist with this research.
Contracts and Services - Woods Hole Oceanographic Institution National Ocean Sciences Accelerator Mass Spectrometry (NOSAMS)	Sub award	Age validation – carbon dating. A subset of 30 otoliths from each of 6 species will be prepared for bomb radiocarbon analysis for age validation. The NOSAMS Academic Rate fee is very competitive at $268 per sample.	This is a highly specialized form of counting carbon atoms in a sample. There are no AMS facilities in MN; NOSAMS is the world-renown AMS facility in the USA.
Capital Expenditures		Micromill	This equipment is not among the types of generally ineligible expenses **Additional Explanation :** Extremely high precision (± 1 µm in all axes: x,y,z) micromilling and documentation (computer controlled) of micro-subsamples extracted from otoliths; an absolutely crucial step to extract exclusively hatch (birth) year material (<10 milligrams of sample powder) from otoliths and test for radiocarbon – necessary to perform radiocarbon-dating age validation work.

Non ENRTF Funds

Category	Specific Source	Use	Status	$ Amount
State				
In-Kind	UMN Duluth	Unrecovered F & A at federally negotiated 55%	Secured	$275,388
			State Sub Total	**$275,388**
Non-State				
			Non State Sub Total	**-**
			Funds Total	**$275,388**

Attachments

Required Attachments

Visual Component

File: feb49e17-0f9.pdf

Alternate Text for Visual Component

There are more than 20 native fish species newly-targeted as sportfish in Minnesota. For example, (A) Bowfishing is a recently popular, highly-effective, lethal method of catch of various native species (B-H). (B) Bowfin (C) Freshwater Drum (D) White Sucker; (E) Longnose Gar; (F) Quillback; (G) Redhorse, Bullhead; (H) Bigmouth Buffalo....

Supplemental Attachments

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

Title	File
Nature Conservancy (MN) Recommendation Letter by Dr. Kristen Blann	9a1d2821-9a9.pdf
Izaak Walton League of America Recommendation Letter - MN Chapter	642e73f5-692.pdf
MN Lakes and Rivers Advocates Recommendation Letter	e2d07d47-1ea.pdf
Native Fish For Tomorrow - founded in MN - Recommendation Letter	29625598-da9.pdf
Roughfish Community - founded in MN - Recommendation Letter	ed533725-7f6.pdf
Bombs and Fish - Bomb radiocarbon dating visually explained	85811939-ded.jpe
Literature Cited	fdfc047f-5fe.pdf
SPA Transmittal Letter	7a0dc0d3-5fe.pdf
Research Addendum revised 2024-279_final	435acef0-817.pdf

Difference between Proposal and Work Plan

Describe changes from Proposal to Work Plan Stage

Hello LCCMR team,

A few necessary budgetary changes have occurred from submission stage (March 2023) to draft work plan stage (August 2023).

Changes and justification:
The cost of hiring a GRA (masters student), according to Sponsored Projects Administration (SPA) at the University of MN Duluth, is projected to increase by approximately 20-25% this year, which is unprecedented. There are also other increases in fringe and tuition that should be expected as the fiscal year transitioned. However, because of this projected substantial increase in the cost of masters students that was unexpected, we have decided to cut GRA funding in half compared to what was originally envisioned back in March of 2023. Thus, instead of funding two masters students, the project will fund one. With this reduction in the number of masters students, there will be more support for the PI and Co-I to work on the project, thereby allowing them to work on the project at an even higher level.

In July of 2023 the PI met with his Department Head and received approval to work on the project using more of his time. This will benefit the project. The PI and Co-I will utilize an advanced technique (bomb radiocarbon dating) to validate otolith fish ages, and with only one masters student (not two as originally envisioned) the demands require

more of the PI and Co-I's time. Therefore, the PI and Co-I will dedicate more time and effort than initially proposed.

The proposed changes are as follows:

1) A reduction from 2 masters students to 1 because of GRA's new substantially higher cost. The adjustment will allow for more effort and time dedicated to the project for the PI and Co-I.

2) PI will increase his effort from 0.25 FTE per year to 0.44 FTE per year. The Co-I will increase his effort from 0.04 FTE to 0.06 FTE.

3) We also increased lab supply costs from $3,081 to $3,916 because we recently found out our current lab freezer is on the fritz, and we will need to purchase an additional freezer for temporary cold storage of fish samples (prior to dissection) during the project. We reduced printing and publication costs from $25,000 to $24,000 to make up for this difference needed in lab supply costs. The total budget is still at $588,000 as originally envisioned.

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?

Yes

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 UMN Policy.

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?

Yes

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