

# Final Abstract

Final Report Approved on February 4, 2025

## M.L. 2020 Project Abstract

For the Period Ending June 30, 2024

**Project Title:** Workshops and Outreach to Protect Raptors from Lead Poisoning

**Project Manager:** Julia Ponder

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**Funding Source:**

**Fiscal Year:**

**Legal Citation:** M.L. 2021, First Special Session, Chp. 6, Art. 5, Sec. 2, Subd. 05j

**Appropriation Amount:** \$133,000

**Amount Spent:** \$95,676

**Amount Remaining:** \$37,324

### Sound bite of Project Outcomes and Results

Over 3,000 people received in-person education about the toxicology risks of spent lead ammunition and the impacts that their choices on hunting ammunition have on wildlife conservation. In addition, thousands more received – and will continue to receive – updated information through hunter education curriculum, partnership conferences/workshops and hunter-targeted websites.

### Overall Project Outcome and Results

Choice of ammunition by deer hunters impacts our environment and wildlife as non-target lead toxicity has been repeatedly demonstrated to be lethal problem, especially to bald eagles and other scavengers who feed at gut-piles. Although unintentional, the death of these non-game species is avoidable and in contrast with the long-held perspective of hunters as conservationists. As non-lead (e.g. copper, bismuth, steel, etc.) ammunition has been proven to be effective and accurate with a cost comparable to premium grade lead ammunition, our project was designed to provide the hunting public with information about alternatives to lead ammunition with the focus on voluntarily preventing deposition of a highly toxic substance into the environment, ultimately resulting in reduced risk to wildlife.

Hunters were informed about ammunition choices and the impacts of these choices through workshops and in-person learning experiences held throughout the state of Minnesota with over 3,000 participants in three years. Additionally, two adult learn-to-hunt programs utilizing lead-free ammunition were coordinated. A variety of educational printed materials, including message cards and empty-chamber indicators (chamber flags), were distributed to hunters through hunter educators, mentor hunters and wildlife professionals. And through the MNDNR's updated hunter education curriculum, hunters and students are instructed to consider conservationist ethics when choosing hunting ammunition.

The impacts of these efforts will be evaluated through hunter surveys underway that aim to take the necessary social scientific approach to gathering general hunter opinions and assess outreach programming effectiveness across multiple efforts.

Minnesota continues to be a national leader in grass-roots advocacy for the use of non-toxic ammunition and promotion of voluntary behavior change. Participants are better informed about how to: improve supply of lead-free options on store shelves: discuss these issues with fellow hunters: and minimize unintended consequences for non-game wildlife without limiting their hunting opportunities.

### **Project Results Use and Dissemination**

We established and kept up-to-date a website, [www.LeadFreeWildlifeMN.com](http://www.LeadFreeWildlifeMN.com), with events, calendar schedules, public education materials and partnerships. We supported partner organizations, including MN DNR, with information and updates for their web site and educational programs. As exhibitors, we provided educational displays at large outdoor sports events, using live raptor ambassadors to attract attendees and open conversations. And we printed and distributed multiple items with key messaging around ammunition choices and distributed through our network to hunters. Our resources for participants and public bring awareness to lead-based hunting ammunition effects and alleviate perceived burdens of switching to non-lead options.



## Environment and Natural Resources Trust Fund

M.L. 2020 Approved Final Report

### General Information

**Date:** February 5, 2025

**ID Number:** 2020-079

**Staff Lead:** Mike Campana

**Project Title:** Workshops and Outreach to Protect Raptors from Lead Poisoning

**Project Budget:** \$133,000

### Project Manager Information

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### Project Reporting

**Final Report Approved:** February 4, 2025

**Reporting Status:** Project Completed

**Date of Last Action:** February 4, 2025

**Project Completion:** June 30, 2024

### Legal Information

**Legal Citation:** M.L. 2021, First Special Session, Chp. 6, Art. 5, Sec. 2, Subd. 05j

**Appropriation Language:** \$133,000 the second year is from the trust fund to the Board of Regents of the University of Minnesota, Raptor Center, in cooperation with the Department of Natural Resources and other conservation partners, to provide hunters with outreach and workshops on alternatives to lead hunting ammunition, including copper ammunition as an alternative, and to promote voluntary selection of nontoxic ammunition to protect raptors and other wildlife in Minnesota from accidental lead poisoning caused by ingestion of ammunition fragments.

**Appropriation End Date:** June 30, 2024



## Narrative

**Project Summary:** This program will provide hunters with information and hands-on experience involving non-toxic rifle ammunition and promote voluntary change in hunter ammunition choices to reduce unintended wildlife deaths.

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

Choice of ammunition by deer hunters has impacts on our environment and wildlife. Deer hunting is popular in Minnesota with upwards of 200,000 deer taken annually, most with lead hunting ammunition. Typically, deer are field dressed with hunters leaving a “gut-pile” in the field. Investigations on lead toxicity in non-target wildlife have demonstrated that lead fragments in the carcass and gut pile of hunter-killed deer cause toxicity and death in wildlife that scavenge on remains left in the field. While the strongest research available is around the risk to bald eagles, other scavenging wildlife (mammals and birds) would be exposed to lead through gut piles. Although unintentional, the death of these non-game species is avoidable collateral damage that tarnishes the image of hunters and their hunting traditions. Additionally, while not a primary concern for this proposal, there are increasing concerns around the risk to human health of consuming meat harvested with and contaminated by lead ammunition. This proposal will provide the hunting public with information about non-toxic alternatives to lead ammunition with the focus on voluntarily preventing deposition of a highly toxic substance into the environment.

**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.**

Hunters have long been recognized as strong conservationists and those that have changed to copper ammunition have found an alternative that is both effective for hunting and aligns with their conservation views. Copper rifle ammunition is non-toxic and has been demonstrated to be effective with excellent accuracy, weight retention and capable of quick-kills, and it is increasingly available at a cost comparable to premium grade lead ammunition. In recent years, The Raptor Center convened several workshops to understand stakeholder perspective and define a way forward on this issue. An outcome of these meetings has been a better understanding of the deer hunting public's receptiveness to an education-based voluntary approach around hunting ammunition alternatives. Through these efforts, a broad coalition has come together to promote this grassroots effort, including the Minnesota Department of Natural Resources, Minnesota Pollution Control Agency, Three Rivers Park District, , Minnesota Chapter of The Wildlife Society and The Raptor Center at the University of 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?**

This group will collaborate on this project to achieve the following outcomes:

- Hunters will be informed about ammunition choices and the impacts of these choices. They will choose to be leaders in ethical decisions that support wildlife conservation and deer hunting traditions.
- Youth hunters will understand the importance of their ammunition choices for environmental stewardship
- Minnesota will be a national leader in advocacy for the use of non-toxic ammunition for big game hunting and in protecting wildlife from lead toxicity, while continuing and strengthening hunting traditions of the state.

## 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: Delivery a minimum of 25 learning opportunities reaching 1200 hunters

**Activity Budget:** \$45,470

**Activity Description:**

Hands-on demonstrations where hunters will be able to experience the different characteristics of ammunitions using a model that shows how bullets fragment will be held throughout the state at shooting ranges and Conservation Officer trainings. Hunters will bring their own guns and lead ammunition. Non-toxic ammunition will be provided for hunters to try.

The locations for these workshops will be distributed geographically to align with where hunters reside based on license data. While hunters from any part of the state can travel to the rifle zone to hunt deer, there will be an extra effort to deliver workshops in this area as lead bullets from rifles show much greater fragmentation than shotgun slugs, which are used for deer hunting in the southern part of the state. Workshops will be promoted locally and educational displays developed. Recognizing the strong oral tradition of deer hunters, it is expected that each 1:1 experience will be leveraged to additional hunters through personal and media contacts.

In addition, information on the advantages of alternative ammunition choices will be presented at State Park Youth Mentored Deer Hunt orientations; this outreach would include participants (364 in 2020) and adult mentors.

**Activity Milestones:**

Description	Approximate Completion Date
Development of demonstration model and materials	June 30, 2022
Delivery of 5 workshops in year 1	June 30, 2022
Delivery of 15 workshops in year 2	June 30, 2023

### Activity 2: Develop training materials on ammunition choices for 7,500 hunters

**Activity Budget:** \$31,170

**Activity Description:**

Provide guidance, multimodal resources, and direct instruction to youth hunters and instructors. There are non-profit organizations, sporting groups, and social clubs providing the skills and attitudes necessary for ethical firearm hunting. Sharing curriculum and support to diverse organizations will help scale toxicological knowledge and the effectiveness of non-toxic ammunition. These are critical variables for fair-chase firearm hunts. Additionally, by piloting educational materials across participatory groups, especially youth learners, MN DNR can more readily review and adopt relevant modules for their own certification programs. Furthermore, synthesizing key reasons hunters switch to non-toxic ammunition as well as struggles some hunters face will inform a wider instructor-set in MN than solely relying on youth instructors within MN DNR.

Training materials, both print and multi-media, will be developed and team will collaborate with partner organizations and DNR to incorporate into DNR Youth Firearm Safety classes, hunter education courses, and program participants. Instructional materials will provide objective information, encouraging hunters to make informed choices around the voluntary use of non-toxic ammunition.

**Activity Milestones:**

Description	Approximate Completion Date
Content development for training materials	December 31, 2022
Printed materials/handouts developed and received	June 30, 2024
Partner review and approval of printed material to be distributed	June 30, 2024

### Activity 3: Expand reach of program through partnerships and supplemental activities

**Activity Budget:** \$56,360

**Activity Description:**

Working with partners in agencies, retail, manufacturing, and non-profits, programs will be created to expand programmatic reach. Purchasing strategies and tools for switching to non-toxic ammo will be provided to all MN, especially supporting individuals in areas where State Law requires the use of non-lead ammunition.

In order to track the impact of this program, new surveys will be developed and delivered to key audiences, including youth hunters participating in mentored hunts, hunters participating in experiential workshops and women participating in Becoming an Outdoors Woman workshops. Minnesota deer hunters already receive a survey designed to track data on deer hunting in the state. New survey questions around types of ammunition used for hunting will be incorporated to inform educational approaches regarding non-toxic ammunition will be documented over time. In addition, participants in workshops, mentored hunts, and hunter education programs will be surveyed at the end of the deer season to determine degree of selection of and satisfaction with alternative ammunition.

**Activity Milestones:**

Description	Approximate Completion Date
Development of marketing tools	June 30, 2022
Survey questions (program participants relating to non-toxic ammunition use) developed	June 30, 2024
Evaluation of survey results	June 30, 2024
Survey questions shared with partner organizations and other venues	June 30, 2024



## Project Partners and Collaborators

Name	Organization	Role	Receiving Funds
Ed Quinn	MN Department of Natural Resources	State park collaborations	No
John Gilkeson	MN Pollution Control Agency	Collaborate in development of educational materials and events, facilitation of partnerships promoting the production, availability, and use of non-toxic ammunition products	No
Lori Naumann	MN Department of Natural Resources	Facilitate development of educational materials	No
Brian Hiller	MN Chapter of The Wildlife Society	Development and implementation of shooting clinics and experiential workshops.	No
Carrol Henderson	Retired	Management and facilitation of partnerships (agency, NGO, manufacturing, and retail) and oversight of ammunition workshops	No
Cynthia Osmundson	MN Department of Natural Resources	Review and comment on education materials	No
Jon Pareus	MN DNR	Firearms Safety program review and coordination	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.**

Throughout all activities, including shooting clinics/workshops and Youth Mentored Deer Hunts, we will invite media representatives to attend and participate. Announcements, calendar listings and press releases will be sent out statewide and regionally before workshops and provided to project partners for dissemination to their audiences. Each project partner will utilize its social media tools to reach its audience and raise awareness. These efforts will include blogs, Facebook pages, Twitter, and web sites already in use by The Raptor Center, University of Minnesota, and MPCA, among others.

## 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 builds on partnerships developed through stakeholder conversations funded by two internal grants from the University of Minnesota. Future phases are proposed to include expansion of the educational modules to larger audiences and increased opportunities for hunter-to-hunter education and awareness. Ultimately, the risks associated with lead ammunition are a widespread issue and we look to leverage the work done here in Minnesota across the nation. Many hunters are concerned about legal mandates to use non-lead ammunition and this voluntary approach provides a viable mechanism to avoid such mandates.

## Budget Summary

Category / Name	Subcategory or Type	Description	Purpose	Gen. Ineligible	% Benefits	# FTE	Classified Staff?	\$ Amount	\$ Amount Spent	\$ Amount Remaining
<b>Personnel</b>										
Principal investigator		Responsible for project oversight, sponsor reporting			33.5%	0.1		\$19,001	-	-
Naturalist/Project manager		Overall day to day project management, conducting trainings, content development			28.7%	1		\$46,943	-	-
							<b>Sub Total</b>	<b>\$65,944</b>	<b>\$32,213</b>	<b>\$33,731</b>
<b>Contracts and Services</b>										
The Wildlife Society	Professional or Technical Service Contract	Delivery of experiential workshops around state; outreach coordinator to deliver of training/training materials to youth hunters, instructors and non-profit organizations; travel and print materials for educational programs (including chamber flags); survey work.		X		0.4		\$60,000	\$59,457	\$543
							<b>Sub Total</b>	<b>\$60,000</b>	<b>\$59,457</b>	<b>\$543</b>
<b>Equipment, Tools, and Supplies</b>										
							<b>Sub Total</b>	-	-	-
<b>Capital Expenditures</b>										
							<b>Sub Total</b>	-	-	-
<b>Acquisitions and Stewardship</b>										
							<b>Sub Total</b>	-	-	-
<b>Travel In Minnesota</b>										

	Miles/ Meals/ Lodging	Lodging and per diem for 20 workshops around state	Delivery of experiential workshops to hunters around state.					\$5,000	\$4,006	\$994
							<b>Sub Total</b>	<b>\$5,000</b>	<b>\$4,006</b>	<b>\$994</b>
<b>Travel Outside Minnesota</b>										
							<b>Sub Total</b>	-	-	-
<b>Printing and Publication</b>										
	Publication	Publication of project	Dissemination of project results.					\$2,056	-	\$2,056
							<b>Sub Total</b>	<b>\$2,056</b>	<b>-</b>	<b>\$2,056</b>
<b>Other Expenses</b>										
							<b>Sub Total</b>	-	-	-
							<b>Grand Total</b>	<b>\$133,000</b>	<b>\$95,676</b>	<b>\$37,324</b>

## Classified Staff or Generally Ineligible Expenses

Category/Name	Subcategory or Type	Description	Justification Ineligible Expense or Classified Staff Request
<b>Contracts and Services</b> - The Wildlife Society	Professional or Technical Service Contract	Delivery of experiential workshops around state; outreach coordinator to deliver of training/training materials to youth hunters, instructors and non-profit organizations; travel and print materials for educational programs (including chamber flags); survey work.	The chamber flags serve as a dissemination tool for educational information on the use of lead-free ammunition and will provide visual reminders both in training classes and at hunting and shooting venues.

Non ENRTF Funds

Category	Specific Source	Use	Status	\$ Amount	\$ Amount Spent	\$ Amount Remaining
State						
			State Sub Total	-	-	-
Non-State						
			Non State Sub Total	-	-	-
			Funds Total	-	-	-

## Attachments

### Required Attachments

#### *Visual Component*

File: [923b770f-816.pdf](#)

#### *Alternate Text for Visual Component*

Map of potential workshop locations throughout the state of Minnesota...

### Supplemental Attachments

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

Title	File
ENRTF Background Check Certification	<a href="#">feb00b41-b99.pdf</a>
Final map of hunter engagement locations	<a href="#">6e650788-954.pdf</a>
Engagement Map	<a href="#">d82a8260-856.png</a>
MN Adult Hunter Safety Course_screenshot	<a href="#">45b0367a-406.png</a>
Map of Potential Hunter Workshop Locations (Original Visual Component)	<a href="#">e8ed3d3a-642.pdf</a>

### *Media Links*

Title	Link
Lead-Free Wildlife MN website	<a href="https://www.leadfreewildlifemn.com/">https://www.leadfreewildlifemn.com/</a>
MN DNR Hunter Education Module - Toxicology (New and Updated Pages Since 2021)	<a href="https://www.dnr.state.mn.us/hunting/ammo/index.html">https://www.dnr.state.mn.us/hunting/ammo/index.html</a>
MN DNR Hunter Education Module - Toxicology (New and Updated Pages Since 2021) #2	<a href="https://www.dnr.state.mn.us/hunting/ammo/nontoxic.html">https://www.dnr.state.mn.us/hunting/ammo/nontoxic.html</a>
Ballistic workshop photo album	<a href="https://drive.google.com/drive/folders/1Uj6CCxOtb41aproiDG4NNbowBw_oDKsR?usp=sharing">https://drive.google.com/drive/folders/1Uj6CCxOtb41aproiDG4NNbowBw_oDKsR?usp=sharing</a>

## Difference between Proposal and Work Plan

### *Describe changes from Proposal to Work Plan Stage*

Workplan and budget adjusted from earlier (2017) version to reflect current collaborators, workshop numbers and 2021 expense rates.

7/12/21 Updated to respond to comments.

## 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 understand that travel expenses are only approved if they follow the "Commissioner's Plan" promulgated by the Commissioner of Management of Budget or, for University of Minnesota projects, the University of Minnesota plan?**

Not acknowledged

**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

## Work Plan Amendments

Amendment ID	Request Type	Changes made on the following pages	Explanation & justification for Amendment Request (word limit 75)	Date Submitted	Approved	Date of LCCMR Action
1	Amendment Request	<ul style="list-style-type: none"> <li>• Budget - Professional / Technical Contracts</li> </ul>	Under budget, contracts, I edited TBD to The Wildlife Society. We contracted with The Wildlife Society for delivery of workshops to hunters on the risks to non-target wildlife of using lead-based ammunition.	January 17, 2024	Yes	January 22, 2024
2	Amendment Request	<ul style="list-style-type: none"> <li>• Budget</li> <li>• Budget - Professional / Technical Contracts</li> <li>• Budget - Printing and Publication</li> <li>• Activities and Milestones</li> <li>• Budget - Personnel</li> <li>• Budget - Travel and Conferences</li> </ul>	Requested amendment adjusts the deliverables to reflect expanded partnerships for activities originally planned with DNR to ensure deliverables are impactful and feasible given current status of lead ammunition regulations and discussions. In addition, personnel funding and printing/supplies and survey contract funds are being requested to move to the contract with The Wildlife Society as the project manager is now working for them.	March 18, 2024	Yes	March 20, 2024



# Status Update Reporting

## Final Status Update August 14, 2024

**Date Submitted:** January 26, 2025

**Date Approved:** January 27, 2025

### Overall Update

This project has successfully met our objectives to inform hunters about the toxicology risks of spent lead ammunition and the impacts that their choices on hunting ammunition have on wildlife conservation. We have expanded the reach of educational efforts to youth hunters and find them to be even more receptive to the concerns around the use of lead ammunition than many adult hunters. Minnesota continues to be a leader in this field and the work in our state will continue in partnership with other national organizations.

### Activity 1

In-person learning experiences were held at MN Deer & Turkey Show as well as Backcountry Hunters & Anglers National Convention this spring with over 600 engagements with hunters and their families across five days. The Deer & Turkey show had a wider audience and there was general appreciation of messages being shared while the BHA audience had more previous awareness of the issue. An in-person session was also held at the Sharp-tailed Grouse Society's Double-Gun Shoot with 27 competitors and their family; many of these hunters utilized antique-style firearms, which raised discussions of available non-lead options and the importance of transitioning to non-lead whenever possible.

Throughout the course of this grant, over 3,000 people have participated in 27 learning opportunities and engagement efforts. While most events were held within 45 miles of the Twin Cities, outreach events stretched to northern hunting communities like Bemidji, Detroit Lakes, and Grand Marais.

State Youth Mentored Deer Hunt Orientations: Access and collaboration on youth mentored hunts proved complex, yet we were able to coordinate two adult learn-to-hunt programs which all utilize lead-free ammunition totalling 35 participants and more than six mentors.

Attachment: Hunter Engagement Map

*(This activity marked as complete as of this status update)*

### Activity 2

DNR Hunter Education Curriculum and Website updates since 2023 have engaged ~23,000 hunters annually. All Hunter Ed. students (online and in-person) now engage with toxicology content regarding carcass contamination from lead-based ammunition. The 2023 Hunting Regulations booklet had new information for hunters regarding lead exposure mitigation practices. These were expanded in 2024, including changes to State Park and Youth Season hunts.

MNDNR updated their "Non-Toxic" webpage with a third-party purchasing tool ("AmmoSeek"), providing consumers a tool to find sustainable solutions to meet their needs. Despite some changing priorities at the MNDNR, we were still able to foster critical relationships for moving forward on curriculum across the state through various partnering organizations, including Backcountry Hunters & Anglers, MN Deer Hunters Association, Pheasants Forever, and many naturalist groups; these will be instrumental in swaying common hunter practices in the field and at the ammunition counter. Also, individuals within the DNR seem keen to expand collaboration wherever possible.

We disseminated over 3,000 message cards across activities and 320+ empty chamber indicators ("lead-free chamber flags") as part of professional development kits to hunter educators, mentor hunters, or wildlife professionals to share

with their stakeholders.

Attachments: Updated MN DNR Hunter Education Module - Toxicology  
*(This activity marked as complete as of this status update)*

### **Activity 3**

New professional partnerships have stemmed from key events such as the MN Wildlife Society (MNTWS) Conference, Native American Fish & Wildlife Society (NAFWS) National Conference, and the Gathering Partners Conference. At the NAFWS event, a relationship was established with Conservation Law Enforcement Officers (CLEO) tasked with culling wildlife or utilizing lethal force on wildlife exhibiting problematic behavior. According to the Red Lake Tribal Agency, this work is done using lead-based ammunition due to availability and the specific terminal performance required. Discussions between tribal agency officers and this group focused on the need to identify humane, non-lead alternatives, especially considering cultural significance of these species.

Discussing lead-free fair chase with hunters provided feedback informing further work. Much of this feedback was recorded in plain text during in-person events. Most engagements were more likely to utilize our website and online resources than opt-in for digital surveys. We're anticipating informative results from the DJ Case & Associates Hunter Survey on the topic of lead-free ammunition, which aims to take the necessary social scientific approach in gathering general hunter opinions and assess outreach programming effectiveness from groups like Lead-Free Wildlife MN, Sporting Lead Free, and the North American Non-Lead Partnership.

Attachment: Ballistic Workshop Photo Album  
*(This activity marked as complete as of this status update)*

### **Dissemination**

We continue to keep our website, [www.LeadFreeWildlifeMN.com](http://www.LeadFreeWildlifeMN.com), updated with our events, calendar schedules, public education materials and partnerships.

# Status Update Reporting

## Status Update April 1, 2024

**Date Submitted:** March 18, 2024

**Date Approved:** March 20, 2024

### Overall Update

Non-lead hunting ammunition outreach needs have changed in recent months, with a changing political landscape in MN and agency-specific directives contributing to our adapting strategies.

Beginning Fall 2023, MN hunters in select areas are required to use non-toxic ammunition, resulting in a need to address misconceptions with these rules. We provide how and why descriptions to fill important knowledge gaps, while providing strategies for transitioning ammunition type, which are key to smooth transitions. In the Fall of 2022, the DNR directive to disallow lead-based ammunition on select Scientific and Natural Areas and State Parks was retracted due to public consternation about non-lead availability. We were able to help Park staff and the public access tools to acquire non-lead ammunition for successful hunting.

We have also adjusted our information gathering via surveys by focusing on our own participant data, responses from partnering organization's members, and public responses. Given human resource constraints within the MNDNR and other variables identified in the Activity #3 update, we are gathering the best data possible within the limitations.

We expect to complete all deliverables before the end of the project except potentially not reaching 7,500 hunters in Activity 2 due to limited DNR capacity.

### Activity 1

The non-toxic working group continues to meet monthly to strategize support and programming for hunter education, collaboration with state agencies, non-profit organizations, and ammunition retailers. We have several winter, spring, and summer events scheduled for ongoing hunter engagement. We've reached 2,315 participants thus far, spanning 18 events across diverse locations to reach MN hunters

Since October 1st 2023, we held an educational seminar at the 4-H Annual Education Summit. Facilitators led a small group of young adolescent hunters and learners to acquaint themselves with questions surrounding ammunition toxicology, non-toxic ammo efficacy, and impacts of lead on wildlife. The Raptor Center graciously offered support at the event by presenting a rehabilitated eagle and owl to the group. This was highly engaging for participants and prompted countless topical questions about wildlife rehabilitation, raptor anatomy, physiology, and considerations for hunting, conservation, and future advocacy opportunities. The three-day MN Deer & Turkey Show beginning on March 8th offers another popularly attended event and opportunity to work with The Raptor Center. We'll share the key learning objectives for hunter consideration, tools to make the switch to non-lead, and gather information via survey.

### Activity 2

We have identified key tools to further support hunter education online, via print materials, and in-person. Two pilot drafts are scheduled to be completed, reviewed, and sent to print in time for scheduled Spring hunter engagements and professional collaborations.. We hope to offer two designs to best fit key audience demographics and remain sensitive to organization or agency-specific constraints regarding conflicts of interest. Additionally, the group identified other material to assist hunters and firearm enthusiasts to consider their impact on wildlife by sharing injection-molded chamber flags, a common device used to reinforce safe firearm handling. These inexpensive, highly visible, reusable, and embossed items will further reiterate key slogans and mottos worth consideration for any firearm hunter. Additionally, they're likely to outlast most print materials offering a continual reminder to hunters about the best strategies available

to leave no trace in their next fair chase.

Online tools and high-quality printed cards for strategic purchasing with prompts to encourage increased brick-and-mortar non-toxic ammunition supply will also be shared with program participants. Hunters have already begun demanding the high-performance, non-toxic options to be reasonably priced and available. We'd like to capitalize on this trend by offering resources to ammo buyers and sellers directly.

### **Activity 3**

Networking has led to work with University of MN Extension, Midwest Association of Fish and Wildlife Agencies, and Eagle Bluff Environmental Learning Center. Firearm hunting groups in tribal communities, organizations such as Becoming an Outdoors Woman, and Backcountry Hunters and Anglers are examples of popular demographics with upcoming collaborations.

Using Google Forms, social media responses, and in-person interviews have informed our work. We adapt messaging on how to positively impact behavior change among firearm hunters, locate access to non-toxic ammunition, and identify remaining challenges for hunters. Due to the limited space available in the MNDNR Annual Deer Hunter Survey, we moved to collecting information from a variety of partners, participants, and the public. We remain hopeful that one to two key questions related to ammunition could be included by MNDNR, although DNR collaborators have indicated it may be more realistic to broaden our approach. The pilot incentive program was deleted as our key DNR non-game contact for this retired and new regulations restricting the use of lead ammunition on many State Natural Areas have made this less relevant.

### **Dissemination**

Our website, [www.LeadFreeWildlifeMN.com](http://www.LeadFreeWildlifeMN.com), is updated with our events, calendar schedules, public education materials and partnerships. During this reporting period, most of our Activity 1 events were as exhibitors or educational displays at larger events, using raptor ambassadors to attract attendees and open conversations when possible.

# Status Update Reporting

## Status Update October 1, 2023

**Date Submitted:** October 10, 2023

**Date Approved:** January 11, 2024

### Overall Update

Our grassroots coalition continues to meet monthly to progress towards our project goals, brainstorming new intersections where we can interact with hunters to provide education on ammunition choices and impacts of those choices. We have reached a total of 2,302 participants to date (overall project goal: 1200) with 16 events (overall project goal:20). We are working with the DNR to develop tools and opportunities for youth hunter education.

### Activity 1

Between April and October 2023, we held 3 events, reaching 783 participants. To date, we have held 16 events, reaching 2,302 participants.

Community and public hunter outreach events have been project staples as hunters are eager to discuss the intricacies of gear options, how to make their hunting dollars stretch, and how to ensure clean meat is coming home to feed their families. These conversations have been overwhelmingly positive. We provided resources to help hunters navigate industry marketing, make thought-out purchasing decisions, and address misconceptions whether they're new to hunting or very experienced in the field.

Other recent learning opportunities included Game Fair, a two-weekend, six-day event where we were able to clarify misconceptions about lead ammunition bans and share information on hunting performance of non-toxic projectiles, and non-sportsman focused events like "Family Fun Fest", where many participants happen to be hunters and are thrilled to learn more, ask questions and take resources for further conversations with family and friends after the event.

We have also been sharing the ongoing work at professional events like the North American Moose Conference and Workshop (Grand Marais, MN), where wildlife biologists, researchers, and other specialists convened to present and discuss updates.

### Activity 2

Drafts for print and multimedia materials are in early-stages of development. Our message aims to provide an up-to-date description of the core issues regarding hunting ammunition. It will address key examples of lead toxicity, how it occurs, and include some risk mitigation practices. Ideally, the handouts will exemplify how non-toxic ammunition can perform as-good or better than traditional lead-based rounds, and showcase strategies to alleviate concerns around pricing and availability. All too often, folks forget their consumer-advocacy at locally owned brick-and-mortar stores goes a long way. This will help increase the distribution and diversity of stock offered around the state, and should reduce end-user costs in the long-term.

The newly developed materials will include strategies to switch for all types of hunting activities, so the less-common game is still represented, as the amount of ammunition used to take them tends to be higher for higher tag-limit animals like small game or upland birds.

### Activity 3

We have developed and selected prime questions for the DNR Hunter Survey, and await to hear if there's a possibility for inclusion in the rather competitive list they send to the hunting public. Meanwhile, we have a larger set of survey

questions to pilot at exhibitor booths, share with collaborative organizations, and host online. This question-set should be a great gauge for the diverse set of opinions, struggles, successes, and remaining concerns surrounding switching to non-lead hunting ammunition.

One early adopter of our larger survey-set could be Minnesota's Backcountry Hunters and Anglers Chapter, as they're helping host the national rendezvous this year and we're looking forward to a productive workshop, conversations, and ongoing professional development opportunities in the future. Similarly, 4-H has shown vigorous interest in promoting our work and we look forward to gathering a better sense of how their membership understands and feels about this issue as compared to other demographics we're engaging. We'll be presenting on non-lead advocacy work at their Educational Summit this fall.

In our working group, we've discussed an upcoming meeting with DNR representatives to advocate for unique hunter incentives to accelerate the rate of switching to non-lead hunting ammunition. Minnesota continues to be

### **Dissemination**

We continue to update our website, [www.LeadFreeWildlifeMN.com](http://www.LeadFreeWildlifeMN.com) with our events, public educational materials and partnerships.

# Status Update Reporting

## Status Update April 1, 2023

**Date Submitted:** May 9, 2023

**Date Approved:** May 9, 2023

### Overall Update

During this period, which aligned with the 2022 hunting season, the Non-Toxic Ammunition Working Group focused on delivering outreach and educational programming at events where hunters were gathering, moving back to targeted outreach after hunting season ended. While numbers reached at large expos and shows are estimated, the group also reconvened the Copper Roundtable (last held in 2016) with approximately 100 attendees (in-person and virtual). Images included in this update show an outdoor workshop where hunters experienced the different characteristics of ammunitions (lead-based and lead-free) as well as an informational booth hosted at the annual Minnesota Deer and Turkey Classic.

### Activity 1

The Non-Toxic Working Group continues to deliver diverse learning opportunities to public audiences and relevant professional communities. This spring, we facilitated the 2023 Copper Roundtable event where state and federal agency representatives, international researchers, and field experts across North America shared findings and discussed key issues related to non-lead hunting ammunition. Wildlife professionals, students, and hunters collaborated to brainstorm barriers remaining for this work and identify positive incentives to increase hunter engagement. Through partnership with Bemidji State University, we also provided outreach on hunting with non-lead ammunition. Attending large, hunter-focused events like Pheasant Fest and the MN Deer and Turkey Show extended our reach to hundreds of individual hunters and fostered new collaborative opportunities with conservation organizations, hunting clubs, and local businesses. We will target these organizations for future demonstrations to share resources and best-practices for discussing toxicology issues with hunters. Building relationships with similarly aligned lead-free conservation groups across the country has helped us improve learning opportunity quality and efficiency.

Total numbers for this reporting period: 8 events, 934 hunter contacts

Total numbers for project to date: 13 events, 1501 hunter contacts

### Activity 2

We laid the groundwork for targeted dissemination of learning materials based on demographics through ongoing conversations with state agency personnel (MN DNR) and conservation clubs. These contacts will be key for distribution of information to hunters in ways that are applicable and useful to them, while also creating a base of better informed hunters in the community. No materials are under review by the DNR yet as we are continuing to work with many people/roles in the DNR to better understand the limitations and gaps that they would like to prioritize. In addition, we are currently hiring a part-time position to focus on moving this activity forward more efficiently.

### Activity 3

We provided support and outreach for the MN State Park non-lead hunts this fall, providing an informational table at the Governor's Deer Opener and on-going discussions with State Park leadership on opportunities and challenges for non-lead hunts. The Copper Roundtable hosted a number of state employees who were looking to be more informed on the issue and strategize for next fall. In preparation for developing a model incentive program, we are leveraging lessons learned from the State Park lead-free hunts and creating plans to work with the coordinators of these hunts in the future to ensure that they have the tools and resources needed to help hunters looking for lead-free hunting ammunition in advance of the hunts.

At this time, we do not have an opportunity to survey hunters through the DNR tools as planned. We are continue to look for opportunities both inside and outside of the DNR system to get this information.

**Dissemination**

Dissemination efforts through this period were primarily our Activity 1 events, including the Roundtable hosted for Minnesota agency representatives, researchers and field experts from across the country with an attendance of 40 in-person and 55 remote (major winter storm impacted many travel plans) and presenting an informational booth at two large events for hunters: Pheasant Fest and the Minnesota Deer and Turkey Classic. Our free “Copper is Cool” stickers have been a popular item at our learning events.



# Status Update Reporting

## Status Update October 1, 2022

**Date Submitted:** October 20, 2022

**Date Approved:** October 21, 2022

### Overall Update

We reconvened a Minnesota-based working group that has collaborated in the past on hunter education and communicating both the benefits of using non-lead ammunition for hunting and the risks of using lead-based ammunition, and began expanding our network of people and organizations interested in working on this project. In doing so, we have begun to re-establish Minnesota as a national leader in promoting the use of non-toxic ammunition for big game hunting and in protecting wildlife from secondary, non-target lead toxicity. In addition, we have worked with The Wildlife Society to hire a project manager for content development, coordination with hunter training organizations and facilitation of hunter education opportunities. As we prepare our tools and resources for delivery of outreach programs to hunters, we are working with other organizations and education/outreach experts to ensure that we are building our program based on best-practices and educational models that will be delivered in age-appropriate and impactful ways for all hunters.

### Activity 1

During this period, we researched and assembled available materials as potential resources. We held an online webinar and panel discussion, summarizing the status of lead-free ammunition for hunting. Approximately 300 wildlife professionals and college students attended this discussion, which remains available online and was adapted for an in-person MN Wildlife Society workshop (25 professionals and volunteers attended). This fall, we presented at private ranges hosting "Public Sight-In Days" with lead-free ammunition resources, toxicology artifacts, and ballistic gel block models to highlight the differences between toxic and non-toxic ammunition options on the market. We provided rifle range instruction and lead-free hunting education workshops at five events in three locations (see map), using a format that included all of our traditional demonstration components except the exercise of shooting into the water jugs; this simplification increased accessibility during hunting season. In these five events, we reached 348 hunters (3 Forest Lake events: 200, 50, 35; Aitkin: 45; Scale Regional Training: 28). We also interacted with over 200 shooting sports enthusiasts at the USPSA MN State Section Match to promote awareness and education on this topic. Our plans are on target for more than 20 events and 1200 contacts by end of Year 2.

### Activity 2

We identified existing training materials from a variety of resources, including DNR, FWS, Sporting-Lead Free WY and North American Non-Lead partnership, as well as reviewed existing media on the issue of lead ammunition for hunting to assess gaps and establish materials needing development, as well as the need for multimedia assets. New curriculum is being designed from public sources, scientific publications, like-minded conservation groups, and shooting sports experts. This multi-modal design should engage novice and experienced hunters with up-to-date information for lead-free ammunition efficacy as well as explain the primary concerns facing raptors and other wildlife. The digital media and curriculum available on our website will be synthesized for publication in traditional mediums such as pamphlets and posters. Our process aims to ensure conservation officers, hunter safety instructors, and students can engage with and share these educational materials. We have ongoing conversations with DNR coordinators regarding Adult Learning programs and aim to blend our curriculum to the core instructor groups moving forward. This will be critically helpful to bring awareness to scavenger toxicology issues. Modernizing pamphlets and digital media alongside DNR representatives will help publicize the knowledge and skills necessary to mitigate projectile lead from entering the food chain.

**Activity 3**

We developed and proposed survey questions to include in the annual DNR hunter survey; and identified the need for further alignment with Fish and Wildlife and DNR in order for integration/inclusion. Will continue discussion for inclusion in the next DNR hunter survey. Meanwhile, our group gathered survey materials from other non-profit organizations and will continue to collaborate with others who have done surveys to develop a backup survey plan to ensure Activity 3 surveys are successfully completed. Met with multiple potential partners including Sporting Lead Free, Get the Lead Out, and the National Loon Center, in a series of discussions to gather information, discuss best practices, and explore potential collaboration opportunities.

**Dissemination**

We have launched a website [www.LeadFreeWildlifeMN.com](http://www.LeadFreeWildlifeMN.com) to host public educational materials, showcase recent events, and acknowledge partnerships. The lead-free working group has been able to garner notable interest in diverse communities for a webinar and ammunition advocacy workshop. The webinar and panel discussion with almost 300 participants is saved and available for future viewing at our website. We've also engaged more than 200 people, mostly hunters and shooting sports enthusiasts with learning materials. These in-person events are a great chance to provide direct resources to the public and sharing on social media to garner future interest with supporters. The ENRTF logo is embedded in our online curriculum as well as in-person learning opportunities. We will continue to place this acknowledgement in printed materials. Many learners have been pleased to discover the educational nature of our programming, advocacy, and appreciate the funding source making this work possible.

# Status Update Reporting

## Status Update April 1, 2022

**Date Submitted:** April 8, 2022

**Date Approved:** April 11, 2022

### Overall Update

We reconvened a Minnesota-based working group that has collaborated in the past on hunter education and communicating both the benefits of using non-lead ammunition for hunting and the risks of using lead-based ammunition, and began expanding our network of people and organizations interested in working on this project. In doing so, we have begun to re-establish Minnesota as a national leader in promoting the use of non-toxic ammunition for big game hunting and in protecting wildlife from secondary, non-target lead toxicity. As we prepare our tools and resources for delivery of outreach programs to hunters, we are working with other organizations and education/outreach experts to ensure that we are building our program based on best-practices and educational models that will be delivered in age-appropriate and impactful ways for all hunters.

### Activity 1

We laid the groundwork to develop materials and deliver Activity 1 workshops. We convened key stakeholders from across organizations and agencies to identify roles and responsibilities, established a working group and regular meetings. The team finalized the job description, marketed, and hired for a content expert to develop the hands-on workshop models, as well as develop and deliver the other Activity 1 learning opportunities. As part of the development of demonstration materials, we researched available resources and assembled a collection of materials as potential sources for our own content. We also built a calendar of known events and efforts where we would potentially deliver our Activity 1 workshops.

### Activity 2

We identified and captured existing training materials from a variety of resources, including DNR, FWS, Sporting-Lead Free WY and North American Non-Lead partnership, as well as reviewed additional existing media on the issue of lead ammunition for hunting in order to assess gaps and establish what new materials need to be developed. Identified areas of need for the creation of new multimedia assets. The Raptor Center assessed its public education message around lead and is developing the inclusion of new materials in public programming for lead outreach.

### Activity 3

We developed and proposed survey questions to include in the annual DNR hunter survey; and identified the need for further alignment with Fish and Wildlife and DNR in order for integration/inclusion. Will continue discussion in later summer of 2022 as planning begins for a potential 2023 DNR survey. Meanwhile, our group gathered survey materials from other non-profit organizations and will continue to collaborate with others who have done surveys to develop a backup survey plan to ensure Activity 3 surveys are successfully completed. Met with multiple potential partners including Sporting Lead Free, Get the Lead Out, and the National Loon Center, in a series of discussions to gather information, discuss best practices, and explore potential collaboration opportunities.

### Dissemination

Focused dissemination efforts to engage and inform hunters will begin in the next period as we begin to implement workshops and outreach programs. In the meantime, members of our working group have been interviewed or quoted in the media on this topic over 30 times since the beginning of the year, as well as testifying at the state capital.