



Cummings School of Veterinary Medicine

7 October 2026

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Re: Colorado Amendment 83 (Constitutional Right to Hunt and Fish) and the Harms of Lead-Based Ammunition to Wildlife and Human Health

I am writing to express my serious concern about Amendment 83, which would add to the Colorado Constitution a right to hunt and fish “by traditional methods” and would declare hunting and fishing the “preferred means” of managing Colorado’s fish and wildlife. Because the amendment never defines “traditional methods,” it could effectively place the use of lead ammunition beyond the reach of ordinary policy making, treating it as a constitutional right and stifling any discussion of the issue at Colorado Parks and Wildlife (CPW) before it can even begin.

This matters because the science is indisputable: lead is terrible for wildlife, human health, and the environment. By shielding “traditional methods” from future reform, Amendment 83 puts Colorado’s wildlife at risk of inhumane hunting methods and would make it very difficult, if not impossible, to introduce wildlife protection measures in the future, including any restrictions on the use of lead ammunition. Using toxic lead ammunition in hunting should not be a constitutional right.

I write wearing several hats. One is that of a lifelong outdoorsman. One is in my role as a health professional. And one is my role as a scientist who has spent over 50 years in environmental conservation; most of those years studying health and disease in wildlife. I am an Emeritus Associate Professor of Wildlife Medicine at The Cummings Veterinary School, Tufts University, and former director of both Tufts Wildlife Clinic, and Tufts Center for Conservation Medicine.

Since 1987 my students and I have performed necropsies (post-mortem examinations) on thousands of wild birds from all over the eastern United States. Our work has documented a wide variety of causes of death including disease, predators, human caused problems (including gunshot, entanglement, oil spills, etc.). But I can unequivocally say that a very significant cause of death in many wild birds is lead poisoning. We continue to exhaustively document lead toxicosis from ingested bullet fragments and shotgun ammunition in a wide variety of species including bald and golden eagles. It is discouraging how common this poisoning is. And the problem is not going away.

As a life-long outdoors person, I deeply appreciate that sportsmen (and women) have a long and distinguished history as committed conservationists. Hunters and anglers play important roles in protecting the biodiversity and health of our natural ecosystems. I say this, because it is very important to understand that the large majority of those of us concerned about lead ammunition are NOT anti-sportsmen and are not trying to eliminate hunting. In fact more and more hunters are establishing organizations that advocate for the adoption of non-toxic ammunition and the elimination of toxic lead (see <https://www.leadfreepartnership.org>, <https://www.sportingleadfree.org> as two examples). I would ask hunters, and anyone involved in the shooting sports to join their fellows to take this important step in adapting their practices and equipment for the good of protecting the environment, human health, and the species we all cherish.

Over 30 years ago, waterfowl hunters took a similar step when they changed from using toxic lead shot to non-toxic products. At that time, concerns were expressed about the cost and performance of the non-toxic alternatives, but hunters all over the U.S. successfully made the change. Now we're asking others to take a similar step.

As a health professional I feel that it is important to emphasize that for both human and veterinary medicine, there is overwhelming scientific consensus that lead is profoundly toxic. **NO** level of exposure is considered safe for people, domestic animals, or wildlife species. Whether the lead comes from paint, gasoline, mining, industrial processes, or sporting goods, this metal is toxic and cumulative in us and other species. The websites and publications of such agencies as the CDC, OSHA, US EPA, US Fish & Wildlife Service, USGS and many others emphasize the toxicity of lead. Shouldn't we ask ourselves if there's ANY reason to put large amounts of such a long-acting, persistent poison into our bodies and the environment, especially when there are suitable non-toxic alternatives?

Traditionally, wildlife managers have primarily been concerned about threats to animal health in two circumstances. First, if such threats are shown to have population level effects on the species in question, and second, if these threats may serve a sentinel function to protect human health. There is no doubt that both of these are good reasons to replace lead in ammunition with non-toxic alternatives.

But I would be remiss if I did not point out the significant benefits to individual animals of switching to non-toxic ammunition. Hunters have long been some of our most ardent conservationists and traditionally abhor the unnecessary killing of non-target animals. Even if lead poisoning is not having a population level effect on a particular species, it is killing large numbers of animals in a manner that is prolonged, painful, and cruel. This flies in the face of two of the historic central tenets of American sporting traditions: first, that we should avoid harm to non-target species, and second, that wild animals being taken for food or sport should, whenever possible, be afforded a quick death.

Lead poisoning is inhumane and causes unnecessary stress, pain, and suffering in a wide variety of species including people, dogs, horses, ruminants, and birds. There is abundant literature over many years to demonstrate acute abdominal pain, peripheral muscle pain and weakness, incoordination, seizures, anemia, gout, and other clinical problems seen in many species. It is

worth the small economic cost to eliminate this poison from our outdoors activities to save large health care costs treating animals and humans from suffering, debilitating illness, or even death.

Eliminating lead from ammunition and other sporting goods also directly benefits human health. The medical and public health literature is abundantly clear in stating that damage from lead poisoning has the greatest impacts on several groups of people: children (including in utero), women of childbearing age, and post-menopausal women.

In the process of making and using ammunition, people are exposed to lead in many ways. I suspect that everyone is quite aware of the serious health problems caused by lead paint and water pipes in older housing units. But there is also abundant evidence that mining, smelting, manufacturing, and use of lead products, including ammunition, contaminates people and the environment. Meat taken from animals shot with lead projectiles regularly contains small lead particles, and an increasing number of agencies and organizations caution that there are real risks to eating meat harvested with lead bullets or shot. In most of the U.S., few food assistance programs screen donated game meat for lead. And even when screened, it's been shown that review of butchering practices or even x-raying of meat does not adequately protect consumers from ingesting significant quantities of lead. To add to the problem, many of "the needy" who obtain game meat from food pantries often have other significant sources of lead in their lives – including paint and solder in old housing stock, drinking water, or occupational exposures.

Conclusion

From our years of work, I can categorically state that lead toxicosis from ingested ammunition is a serious problem for eagles and other wildlife in the U.S. and around the world. It can also pose a worrisome health risk to people who consume wild game shot with lead projectiles. I am in frequent contact with biologists studying eagles throughout the country, and can testify to the consistency of their findings and ours over time. In wildlife, it is especially serious that much of the mortality is in breeding, adult animals, a critical group from the standpoint of population stability – especially as we consider the other threats that face eagles and other wildlife in our changing world.

This is why Amendment 83 concerns me. By constitutionally protecting hunting "by traditional methods," the amendment could create substantial new obstacles to future restrictions on lead-based ammunition used in hunting. Any proposal to reduce or phase out lead ammunition, whether it came before the CPW Commission, the legislature, or the voters, could be challenged as an unconstitutional burden on a protected traditional method. The amendment's exception for "sound scientific" wildlife management does not say what level of evidence would suffice, so the outcome would rest with attorneys and judges rather than with the science.

Decisions about lead exposure belong with wildlife management agencies like CPW, which can adopt evidence-based measures as the science continues to develop, just as waterfowl hunting successfully moved to non-toxic shot more than 30 years ago. These are not abstract legal questions. They are practical wildlife-management consequences, measured in poisoned eagles and lead-contaminated game meat on family tables. The science on lead is indisputable, and using lead ammunition in hunting should not be a constitutional right.

I would strongly recommend that anyone interested in issues of lead poisoning take the time to examine the following publications, available full text on the internet as well as some other documents I've appended to this letter. Let's work together to protect the health of people, wildlife, and the environment from this toxic threat. The time has come.

1. Proceedings of an international meeting, 2008. **Ingestion of Lead from Spent Ammunition: Implications for Wildlife and Humans.**

https://science.peregrinefund.org/legacy-sites/conference-lead/2008PbConf_Proceedings.htm

2. Ambio 48 (9), Sept. 2019 -- **Special Issue: Lead in Hunting Ammunition: Persistent Problems and Solutions.** <https://link.springer.com/journal/13280/volumes-and-issues/48-9>

3. Kanstrup, N. 2024. **The transition to non-lead ammunition: an essential and feasible prerequisite for sustainable hunting in modern society.** Aarhus University, Department of Ecoscience. https://dce.au.dk/fileadmin/dce.au.dk/Udgivelser/Eksterne_udgivelser/BlyBog.pdf

Respectfully submitted,



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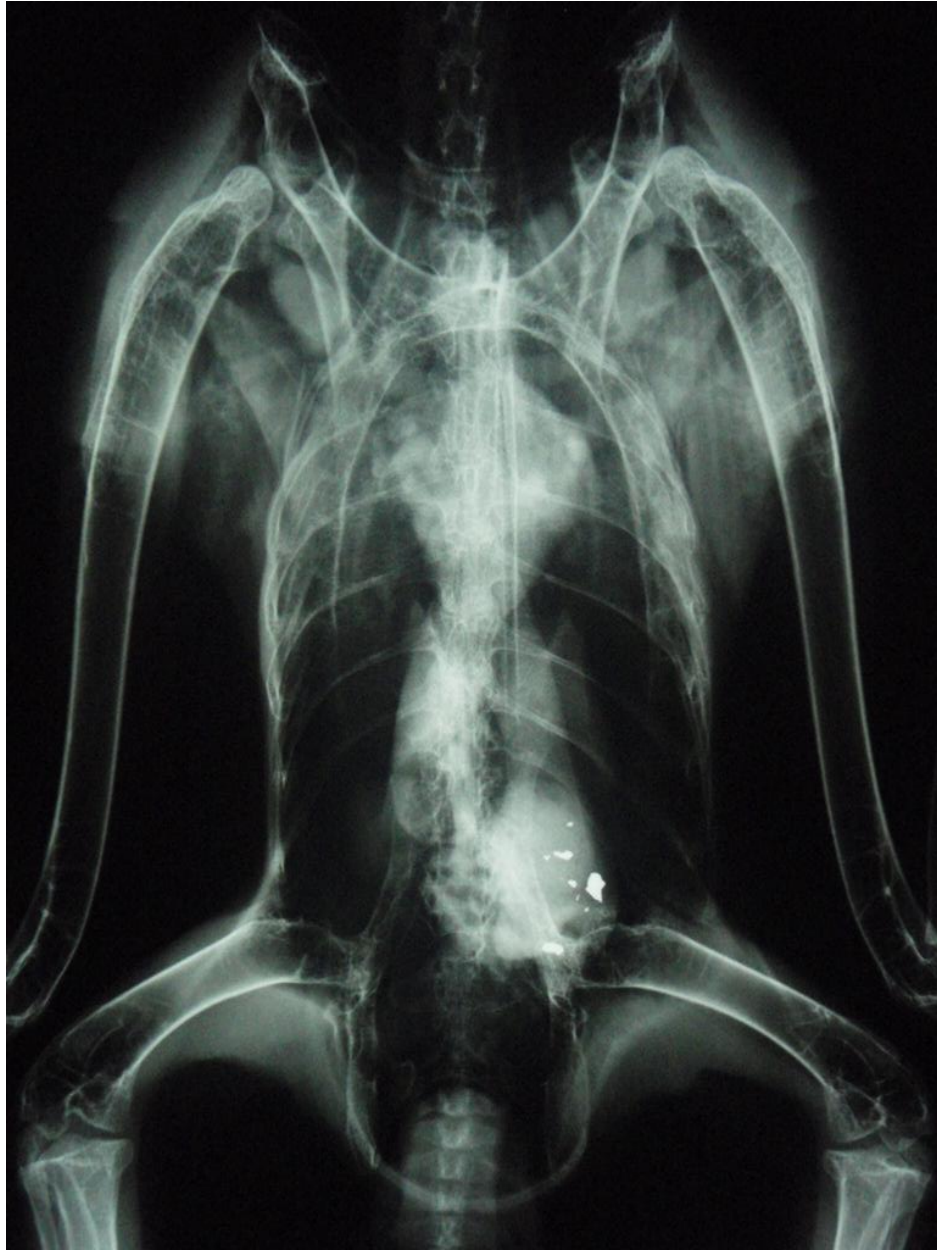
Enclosed Attachments:

Buenz, EJ, et al. 2024. X-ray screening of donated wild game is insufficient to protect children from lead exposure. Discover Food 4, 31.

Katzner, TE, et al. 2024. Lead poisoning of raptors: state of the science and cross-discipline mitigation options for a global problem. Biol Rev, Camb Philos Soc. 99:1672-1699.

Pokras, MA and MR Kneeland. 2008. Lead poisoning: using transdisciplinary approaches to solve an ancient problem. EcoHealth 5(3): 379-385.

Totoni S, et al. 2022. Biting the bullet: a call for action on lead-contaminated meat in food banks. Am J Public Health. 112(S7):S651-4.



x-ray of Bald Eagle with lead bullet fragments in gizzard



lateral x-ray of Bald Eagle with large lead bullet fragment in gizzard

Bald Eagle dying at rehabilitation center, lead poisoning from bullet fragment ingestion

