



# THE WILDLIFE SOCIETY

*Leaders in Wildlife Science, Management and Conservation*

## **Final Position Statement**

### **Lead in Hunting Ammunition and Fishing Tackle**

Lead is a naturally occurring element in the environment that has been used by humans for thousands of years. Lead has no functional or beneficial role in biological systems and its toxicity to humans and wildlife is well-established in the scientific literature. Lead can cause a variety of sublethal effects such as neurological, tissue and organ damage, reproductive impairment, and behavioral changes. At lethal levels it causes paralysis and eventual death.

The relative abundance, low cost, and physical properties of lead have made it common for use in ammunition and fishing tackle. Although lead from ammunition and fishing tackle is a small fraction of the lead being released into the environment, it remains stable for decades and can be ingested by wildlife. Lead from ammunition or fishing tackle is not readily released into aquatic or terrestrial systems, but under certain environmental conditions (e.g., acidic or basic water and soil) it can yield forms of lead that are more mobile and bioavailable to plants or animals.

Lead fragments in viscera or carcasses, lost lead fishing tackle (usually less than two ounces in size), and spent ammunition deposited at shooting sites are sources of lead available to wildlife. For example, during bullet passage through an animal, lead fragments can become embedded in organs and tissues that are left after field dressing, or in carcasses that remain in the field. Negative effects of lead have been reported across a number of taxa, but avian scavengers are particularly at risk because their gizzards grind lead into smaller sizes and the low gastric pH levels can dissolve lead, both of which enable it to be absorbed more easily. Several avian species have been monitored regularly for impacts of lead consumption and have shown likely population-level effects or substantial rates of mortality, notably bald and golden eagles, California condors, common loons, and mute and trumpeter swans, but sublethal effects that may go undetected in these and many other species can impact behaviors and reproduction. Lead fragments remaining in game meat after processing provides a pathway of exposure to people who consume animals shot with lead ammunition.

Regulatory and consumer choice programs at the regional or local level, focusing on non-lead alternatives, have reduced the use of lead materials in hunting ammunition and fishing tackle. Beginning in 1986, the U.S. Fish and Wildlife Service, in collaboration with state fish and wildlife agencies, used its regulatory authority under the Migratory Bird Treaty Act to phase out the use of lead shot for waterfowl hunting, a process that was completed nationwide in 1991. Similar regulations were implemented by the Canadian government between 1997 and 1999. State, provincial, and tribal governments have worked cooperatively with local lead-free organizations, ammunition and tackle manufacturers, and shooting sport trade groups to reduce lead deposition from hunting ammunition and fishing tackle. Their approaches have included educating hunters and anglers on the detrimental effects of lead on wildlife, promoting alternatives to lead for hunting and fishing, and, at times, regulating the use of lead. They also have promoted efforts among shooting range operators to follow best management practices to minimize lead ingestion by wildlife.

The policy of The Wildlife Society on the use of lead in ammunition and fishing tackle is to:

1. Acknowledge that the ingestion of lead from spent ammunition and lost fishing tackle can sicken and kill wildlife.
2. Recognize that given the well-established lethal and sublethal effects of lead in wildlife, conclusive population-level impacts need not be the threshold required to implement policies and practices designed to reduce lead exposure in wildlife from hunting and angling.
3. Support educational efforts, policies, practices, and regulations by fish and wildlife agencies to reduce the exposure of wildlife to lead from spent hunting ammunition and lost fishing tackle.
4. Advance the voluntary replacement of lead-based hunting ammunition and fishing tackle with non-lead products by encouraging and promoting the dissemination of information on the impacts of lead on wildlife as well as ammunition performance, effectiveness, accuracy, and availability.
5. Encourage industry to develop additional capacity to produce non-lead products and to develop new ones in order to meet consumer demand.
6. Advocate for policies that promote the phase-out of lead-based hunting ammunition and fishing tackle (particularly tackle that weighs less than 2 ounces).
7. Acknowledge that unintended wildlife morbidity and mortality from lead-based hunting ammunition or fishing tackle risks undermining public support for regulated hunting and angling, and hunters, target shooters, and anglers are important contributors to wildlife and fish conservation. The cooperation and support of these groups are critical for any effort to be successful in reducing wildlife exposure to lead from ammunition and fishing tackle.
8. Encourage human-dimensions research on attitudes toward and use of lead and non-lead hunting ammunition and fishing tackle to guide progress in advancing consumer choice for non-lead hunting ammunition and fishing tackle and to reduce lead exposure in wildlife.
9. Endorse the adoption and use of best management practices (BMPs) for lead at managed shooting ranges to ensure that adverse environmental impacts of lead deposition are minimized or eliminated.
10. Support the monitoring of lead levels among a broader range of wildlife species to document the extent of exposure and the toxic effects.

Approved by The Wildlife Society Council in June 2022.