



# THE WILDLIFE SOCIETY

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## Draft Position Statement

In accordance with TWS policy, The Wildlife Society Council seeks member review and comment on the following draft position statement, **Lead in Ammunition and Fishing Tackle**, prior to revising and finalizing it. Comments must be received by **15 February** to be considered in a final position statement. Please send comments to: **Laura Bies, Assoc. Director of Government Affairs, The Wildlife Society, 5410 Grosvenor Lane, Suite 200, Bethesda, MD 20814-2144**, or via email to [laura@wildlife.org](mailto:laura@wildlife.org).

### Lead in Ammunition and Fishing Tackle

Lead is a naturally occurring element in the environment, although in biological systems it has no functional or beneficial role and at very low levels of exposure can be toxic. Lead is banned in gasoline and paint because of its effects on animal and human health. Lead at toxic levels damages nervous systems, causing paralysis and eventually death; at lower levels it is known to cause a variety of sublethal effects. Its use in ammunition and fishing tackle dates back hundreds and thousands of years, respectively. Realization of the hazards of lead ammunition to waterfowl and upland game birds such as pheasants can be traced to the late 1870's, while the hazards of lead fishing sinkers to birds became apparent in the 1970's with lead poisoning of swans in the United Kingdom (UK). In the 1980's, the UK and some jurisdictions within the United States and Canada began placing restrictions on the use of lead ammunition and fishing tackle.

Metallic lead can remain relatively stable and intact for decades or centuries. However, under certain environmental conditions (e.g., acidic or basic water or soil) lead from such items can be more readily released and taken up by plants or animals, causing a range of biochemical, physiological, and behavioral effects in some species of invertebrates, fish, amphibians, reptiles, birds, and mammals. Lead in soil, adsorbed or incorporated into food items, and fragments left in carcasses or deposited at shooting ranges can be consumed by wildlife and result in elevated lead concentrations in birds and small mammals, with similar effects. Ingestion by reptiles, birds, and mammals of spent ammunition and lost fishing tackle has also been documented and can cause a range of negative effects in individuals, potentially leading to population-level consequences in some species (e.g., waterfowl, eagles, condors, doves).

From a public health perspective, relatively low doses of lead can lead to a variety of human health problems, particularly in children. When lead that is imbedded in game meat becomes exposed to acid in the human stomach, lead is absorbed into the system; this process is exacerbated when the meat is prepared with an acidic sauce using wine, vinegar, or lemon. Even if a lead pellet or bullet completely passes through an animal, a small amount of lead may be left behind and can be absorbed by a person consuming the meat.

Lead poisoning related to spent ammunition and lost fishing tackle has been extensively studied in avian species, and at least two studies indicate that the ban on the use of lead ammunition for hunting waterfowl and coots in North America has been successful in reducing lead exposure in waterfowl. Nonetheless, other species such as upland game birds (e.g., doves, quail) and

scavengers (e.g., vultures, eagles) have been documented to be exposed, and in some instances populations, such as the California condor, may be at risk. Despite the ban on lead shot for waterfowl hunting, current data for raptor and avian scavenger species indicate increases in lead exposure in these species. Accordingly, 24 states (as of 2008) have instituted restrictions on the use of lead ammunition to minimize effects to upland game birds and eagles, and other species.

The hazard of ingested lead sinkers and fishing tackle is well documented in swans and loons, and restrictions on the sale or use of lead weights have been instituted in the UK, Canada, several other countries, and 5 states in the United States (as of 2008) in order to minimize effects on these and other potentially vulnerable species. There are only limited data on the adverse effects of lead ingestion at shooting ranges on organisms, and reproductive and mortality rates at these sites have not been adequately investigated.

There has been an extensive effort in the development, efficacy testing, and regulation of alternatives to lead-based ammunition for hunting waterfowl and waterbirds. Non-toxic alternatives have been approved and currently are available in North America and elsewhere. Approved nontoxic ammunition can be used for the successful hunting of game. Various brands can be used safely in all gauges of shotguns and nontoxic rifle bullets have been developed for hunting large game species. However, the widespread availability of this shotgun and rifle ammunition depends on assured markets provided by extensive regulation and enforcement. Steel shot can be used in all clay target sports and already is required by some shooting facilities. Dozens of substitutes for lead fishing tackle have entered the marketplace in recent years. A few, but not all (e.g., zinc, brass), alternative metals in fishing tackle have been deemed safe if ingested by waterfowl and some other birds and mammals.

The policy of The Wildlife Society, in regard to lead in ammunition and fishing tackle is to:

1. Recognize that lead has been known for centuries to be a broad-spectrum toxicant to humans and wildlife.
2. Advocate the replacement of lead-based ammunition and fishing tackle use and production with non-lead products, with an ultimate goal of complete replacement.
3. Recognize that long-term elimination of lead from outdoor recreational activities will require collaboration among affected stakeholders, a series of incremental regulations, and explicit and targeted educational strategies.
4. Urge engineers, economists, and social scientists to conduct studies on reducing the barriers to non-toxic ammunition and fishing tackle development and use, and encourage additional research generating toxicological and environmental chemistry data; monitoring and modeling of exposure and effects; and predicting consequences of exposure and long-term population-level effects.
5. Encourage enhanced educational efforts leading to greater public awareness and understanding of the consequences of lead exposure in wildlife species and emphasize the realized gains in wildlife and environmental quality from use of lead-free ammunition.