

Lead Ammunition: Toxic to Wildlife and the Environment

Humane Society of the US

Though excellent alternatives exist, lead ammunition continues to poison wild animals and the natural world

Lead is a toxic substance that kills millions of animals each year and contaminates land and waterways across the country. Because of its toxicity, lead has been removed from paint, gasoline, water pipes, and a host of other items to protect human health and our environment. Yet it is still the most common form of ammunition that hunters use.

The U.S. Fish and Wildlife Service began requiring non-toxic ammunition in hunting migratory waterfowl in 1991 after biologists and conservationists estimated roughly 2 million ducks died each year from ingesting spent lead pellets. Yet more than 130 species are still vulnerable to the toxic effects of spent lead ammunition.

There is overwhelming scientific evidence on the toxic effects of lead ammunition on humans and wildlife and broad support for eliminating its use.

Questions and Answers about Lead Ammunition

How does lead ammunition poison wildlife?

Wildlife can fall victim to spent lead ammunition through two avenues:

Primary poisoning - an animal ingests spent ammunition (or fragments of ammunition) directly from the environment, usually when foraging for food on the ground

Secondary poisoning - an animal consumes wounded or dead prey or scavenges gut piles contaminated with lead ammunition left behind by hunters

Both avenues can be lethal to wildlife. For those who survive, they often experience long-term, negative effects that make them more susceptible to predation and dangers like car collisions.

An estimated 10 million to 20 million animals die each year from lead poisoning in the United States.

How much lead ammunition does it take to hurt an animal?

A single ingested shotgun pellet is sufficient to cause brain damage and organ failure in an animal, resulting in inhibition of critical neuromuscular, auditory, and visual responses.^[1] Lead poisoning can induce lethargy, blindness, paralysis of lungs and intestinal tract, various organ failure, seizure, and death.

How pervasive is the threat of lead ammunition?

More than 130 species are exposed to or killed by ingesting lead shot, fragments, or prey contaminated with lead ammunition.^[2] It is estimated that 10 million to 20 million animals die each year from lead poisoning in the United States. Up and down the foodchain, animals are faced with varying degrees of risk for exposure to toxic lead ammunition, including mice, squirrels, frogs, ducks, swans, bald eagles, deer, grizzly bears, and yes, even humans.^[3, 4, 5]

How dangerous is lead ammunition for human health?

Lead is a potent neurotoxin, for which there is no safe exposure level for humans.^[6] Individuals who consume meat from animals killed with lead ammunition are at high risk for lead exposure.^[7] Several studies using x-ray imaging have shown lead ammunition is highly fragmentable and nearly impossible to completely remove from meat.^[8] Those who eat a lot of animals shot with lead ammunition tend to have [higher levels of lead](#) in their blood.

What are the alternatives to lead ammunition?

The U.S. Fish & Wildlife Service has approved a [dozen non-toxic shot types](#) for hunting. Many manufacturers are inventing and [developing non-toxic ammunition](#) using the most advanced technologies. Steel, copper, and bismuth are among the most common and effective non-toxic materials and are widely available at major outfitters.

[The mandated use of non-toxic ammunition has proven to be an extremely effective management approach to lead poisoning and contamination.](#)

How do non-toxic alternatives compare to lead ammunition?

A [survey](#) conducted by the Arizona Game and Fish Department found that over 75 percent of hunters rate the performance of non-toxic ammunition to be better or equivalent to its toxic lead counterpart.^[9] The superior performance and less toxic nature of non-lead ammunition spurred the [U.S. Army to "get the lead out"](#) of many of their bullets. With the increase in demand, the price of non-lead ammunition, such as steel, has fallen since lead ammunition was federally banned for waterfowl hunting in 1991. Today, there is no major difference in the price of equivalent lead and non-lead ammunition for the majority of popular calibers.^[10]

How effective are ammunition restrictions?

The mandated use of non-toxic ammunition has proven to be an extremely effective management approach to lead poisoning and contamination. In 1991, the U.S. Fish and Wildlife Service instituted a nationwide ban on the use of lead shot for the hunting of waterfowl. Within just ten years, researchers found significant improvements in the blood and bone lead levels in a variety of waterfowl species.^[11] The use of nontoxic shot reduced the mortality of Mallards from lead toxicosis by 64 percent, and saved approximately 1.4 million ducks a year from ingested lead shot mortality.^[12]

How commonplace are ammunition restrictions?

The majority of states have increased restrictions on lead ammunition beyond the 1991 federal waterfowl regulation. Government entities like the U.S. Army and the [National Park Service](#) have made serious commitments to getting the lead out, citing environmental and animal welfare concerns.^[13] In 2013, [California passed historic legislation](#) that marks the first-ever statewide non-lead ammunition requirement for all hunting.

Footnotes

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