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Concerned about Lead Poisoning? Here's What You Can Do:

- Spread the word. Talk to your friends and family about lead and its potential effects.
- Bury the gut piles from harvested game so eagles and other scavengers can't get to them – or don't leave anything behind in the field.
- Give lead alternatives a try. Lead tackle and ammunition can remain in the ground for anywhere from 30 to 300 years [11]. The next time you restock your ammunition or tackle box, consider buying nonlead products such as steel, copper, tin, bismuth, and tungsten-nickel alloys.
- Ask. If you want to try nonlead products and your local store doesn't carry any, ask them to stock some.



Photo by: Eddie Callaway

When it comes to lead alternatives for ammunition and tackle, the Iowa DNR does not endorse any

one manufacturer or product. The list of brands and distributors is continually growing, including Bass Pro, Cabela's, Barnes, Federal, Remington, Nosler, Winchester, Kent, and Powerbelt, as manufacturers are finding a demand for and producing a variety of lead-free ammunition and tackle which in many cases are only a few dollars more than their lead counterparts. These alternatives perform comparably to traditional lead; as demand grows they will only get better.

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Photo by: Don Poggensee

Lead, Wildlife & You



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Photo by Susanne Sperring

From children's toy recalls to concerns about possible contamination of venison, lead is a substance that has been in the

news more and more. Much of this attention has focused on lead's potential effects on humans. According to the Iowa Department of Public Health, "Lead is harmful to all people... It affects the entire body, but the nervous system is affected the most. Small amounts of lead can cause learning problems for children when they start school. Children with very high lead levels may have severe brain damage or even die. Lead is more dangerous to children than adults. Children absorb more lead than adults, and children are more likely to be damaged by lead than adults are. In adults, lead can cause low sperm counts in men, and women may have trouble becoming pregnant. If a pregnant woman is exposed to lead, the unborn baby may be poisoned." [6]

Scientists are also looking at the impact of lead on animals, and the number of wildlife studies focusing on lead is growing. To date, more than 500 studies have been published looking at over 130 animal species worldwide. Some, like the turkey vulture and bobwhite quail, do not seem to be as susceptible to lead poisoning, while there is concern about others, like the bald eagle, trumpeter swan and common loon.

LEAD IN THE ENVIRONMENT

There are several ways animals can be exposed to lead in the environment. Before unleaded gasoline was used, they could inhale airborne lead from car exhaust. Water contamination from mines, waste dumps, and industrial plants is another means of exposure. Animals can also ingest lead from lost fishing tackle or hunting ammunition.

In the late 1980s and early 1990s, the US government enacted a nationwide phase-out of lead shot use on federal wetlands because of its impact on the waterfowl populations. Several

states, including Iowa, South Dakota, Minnesota, Wisconsin, and Missouri, have banned its use on or near state wetlands as well. An estimated 1.4 million ducks were spared from fatal lead poisoning in 1997 because of the switch to nonlead shot [2].

While the waterfowl populations are benefiting from the switch, other species are still being exposed. It was suspected that lead poisoning in bald eagles was mainly due to eating wounded waterfowl [1]; however, there has been no change in eagle lead poisoning since the ban [7]. This means accidentally eating lead embedded in ducks and geese is not the only way eagles are being exposed to lead.



In Minnesota alone, over 1,300 tons of lead shot are used each year [9], enough to completely cover approximately 11 acres of land.

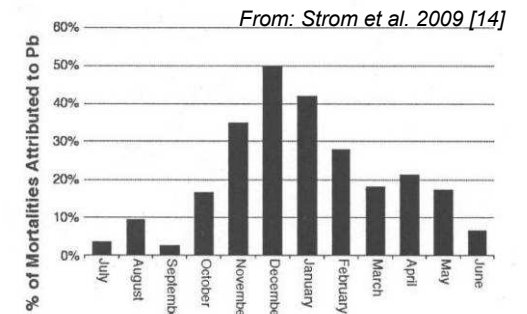
EFFECTS ON WILDLIFE

Animals can ingest lead one of two ways: they mistake it for food or grit and eat it directly (primary exposure), or they eat another animal that has shot embedded in it and accidentally swallow some of the lead (secondary exposure). Bird species susceptible to primary exposure include doves, cranes, loons, and swans. Scavengers are most at risk of secondary exposure. Gut piles left in the field after harvesting big game are an enticing meal to vultures, eagles, crows, and other scavengers.

A single lead sinker can poison a loon; an eagle can die from eating 1-2 pieces of lead shot [10]. Animals that are not fatally poisoned face other health effects from the lead; the nervous system, kidneys, and circulatory system are most affected. As a result, birds are more susceptible to predation, starvation, and disease. Their reproductive



Photo by Brad Smith

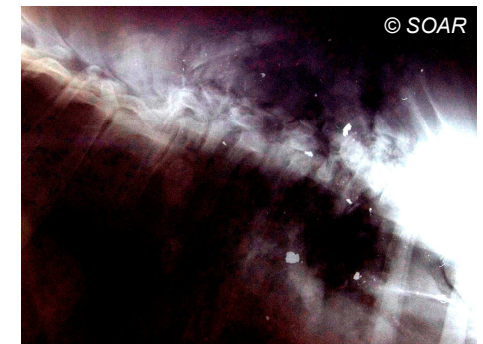


Percent of reported bald eagle deaths caused by lead, broken down by month.

abilities may diminish as well; mourning doves had 26% fewer eggs hatch after eating a single #8 shot pellet [3]. Unlike humans, there is no established exposure threshold for wildlife because each species is different.

In Wisconsin, lead accounts for 16%, 25%, and 29% of the reported deaths of bald eagles, trumpeter swans, and common loons, respectively [14]. Lead poisoning was found to be the leading cause of death for adult loons in New England [12], and 47% of ravens tested in Wyoming had elevated blood lead levels [4].

47% of bald eagles that come to wildlife rehabilitators with lead poisoning are adult females, even though females make up only 25% of the bald eagle population [15]. This bias may negatively impact bald eagle reproduction in the long run [16]. It is important to note there has not been a study documenting the effect of lead poisoning on entire bird populations, but there are concerns that over time the population viability of long-lived species could be negatively influenced [4, 16].



An x-ray of a shotgun-killed deer (the shoulder is to the left, out of frame). The white flecks are lead slug fragments.