

How Choosing Non-lead Ammunition Benefits Eagles



Golden eagle scavenging a deer carcass.
Photo by Randy Flament

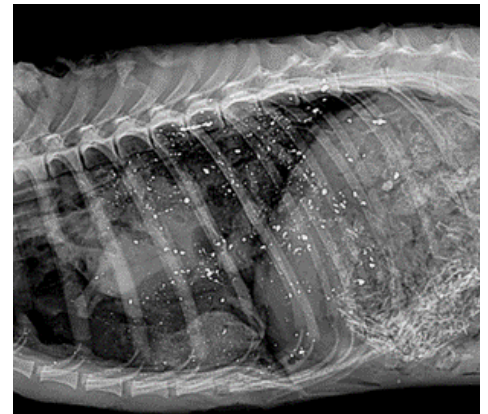
Decades of research and a multitude of studies have concluded that consumption of lead ammunition fragments is the primary source of lead poisoning in birds of prey. Even fragments as small as a grain of rice can cause elevated concentrations of lead in an eagle's blood and become fatal. Maine's bald eagle population is increasing, and golden eagle are suspected to be at best stable, but using non-lead ammunition or removing the remains of animals harvested with lead ammunition, demonstrates commitment to a long history of wildlife stewardship that is crucial to our future.

How are eagles exposed?

When animals are harvested using lead ammunition and the gut piles or whole carcasses are left in the field, lead fragments can be accidentally eaten by scavengers such as eagles as they consume the remains. When eagles eat lead fragments, the lead is absorbed in their blood, tissue, and bones and can be fatal.

Compared to other animals, avian scavengers such as eagles are particularly susceptible due to the high acidity in their stomachs which break down the lead fragments, exposing them to potentially toxic levels of lead.

When an animal is shot with lead ammunition, up to a third or more of the bullet's weight can potentially fragment into thousands of tiny pieces that remain inside the animal's body, as much as 18 inches from the wound channel (Leontowich et al. 2022). Some of these lead fragments are so small that they cannot be seen by the naked eye but are visible in X-rays.



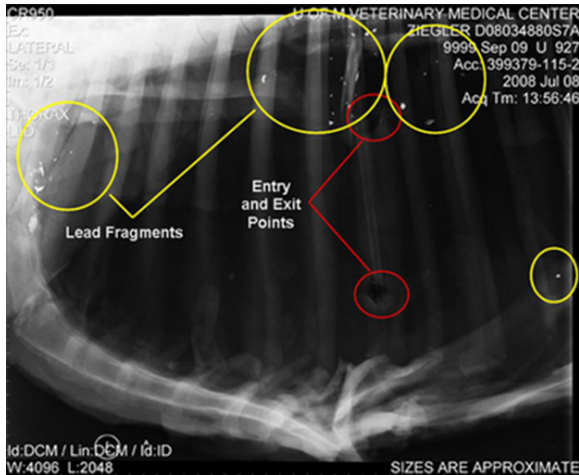
Radiograph showing lead ammunition fragments dispersed in a coyote.
Photo by Hunter-Ed

If I hunt with lead or place bait for hunting, how can I avoid exposure to eagles?

Switching to non-lead ammunition is the best way to avoid exposing wildlife to lead. If you do choose lead ammunition, avoid leaving gut piles or carcasses of animals harvested with lead ammo in the field. At the very least don't leave them in forest openings or a field. Any carcasses used as bait should be lead-free such as roadkill, trapping, or farm animals dispatched without lead ammo.

If the bullet passes through the animal, are lead fragments still a concern?

Yes, lead bullets begin fragmenting just after impact and continue to shed fragments as they pass through the animal. Rates of fragmentation vary depending on bullet construction, but any amount of lead can unnecessarily, and unintentionally impact scavenging wildlife like eagles.



Radiograph of the chest cavity of a deer illustrating lead fragmentation of a ballistic tip rifle bullet.

Image by Minnesota Department of Natural Resources



300 win mag solid copper (left)

300 win mag lead core with copper jacket (right)

Photo by Mike McTee

Where can I learn more about non-lead ammunition?

The best way to learn about switching to non-lead ammunition is from other successful hunters who have done so. They can share their experiences and advice on choosing the right ammunition for your needs, sighting your firearm, and using non-lead ammunition effectively in the field.

Visit mefishwildlife.com/nonlead to learn more about making the switch to non-lead ammunition.

Additional Resources

- North American Non-lead Partnership: nonleadpartnership.org
- Sporting Lead-Free: sportingleadfree.org
- Hunting with Non-lead: huntingwithnonlead.org
- Hunters for Eagle Conservation: huntersforeagleconservation.org

Literature

Leontowich, G., Panahifar, A., & Ostrowski, R. 2022. Fragmentation of hunting bullets observed with synchrotron radiation: Lighting up the source of a lesser-known lead exposure pathway. PLOS ONE, 17(8), e0271987. <https://doi.org/10.1371/journal.pone.0271987>