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Non-Toxic Ammunition

Frequently Asked Questions



How is a bald eagle exposed to lead ammunition?

Lead ammunition is used by many hunters. When deer are field dressed, fragments of lead can remain in gut piles that are left behind. Also, when a wounded deer cannot be retrieved, it may die with lead fragments in its body.

Bald eagles and other wildlife scavenge on deer carcasses and ingest the lead shot or bullet fragments. Deer gut piles are an important source of protein for bald eagles in winter with multiple eagles feeding on a single gut pile.

Hundreds of thousands of deer are harvested annually in the Midwest Region and result in a large reservoir of potential lead exposure to scavenging bald eagles and other wildlife.



How does lead affect a bald eagle?

Once ingested, lead is dissolved by the acid in an eagle's digestive tract. Depending upon the amount of lead ingested, health problems may include muscle paralysis, organ failure, loss of vision, and seizures that can result in death by other means such as starvation.

How do wildlife rehabilitators treat bald eagles that have ingested lead?

Eagles that have ingested lead are often treated through a medical procedure called chelation. This process involves injection of a chemical into the eagle's body that bonds with the lead and allows it to be excreted rather than absorbed. Chelation is an expensive treatment that requires eagles be restrained for twice daily injections for four to five days. The few eagles that survive chelation often have other debilitating health problems that prevent release into the wild.

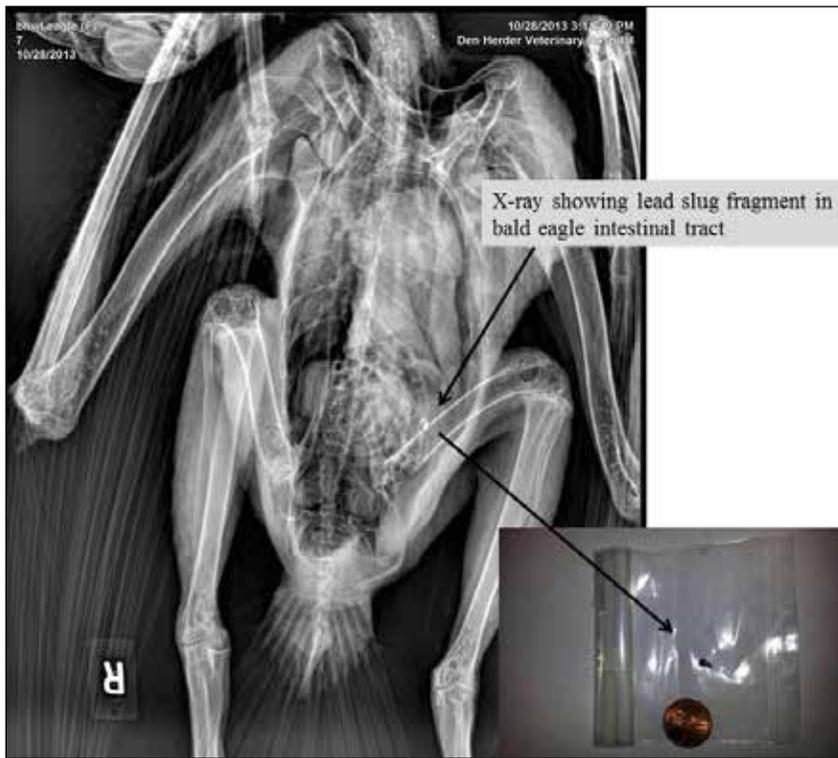


How much lead does a bald eagle have to ingest for poisoning?

Laboratory dosing studies show that just a little more than one grain (1.27 grains) of lead is a lethal dose for a bald eagle.

How much lead is contained in ammunition used for deer hunting?

Type of Ammunition	Grains of Lead*
20-gauge shotgun slug	344 grains
12-gauge shotgun slug	421 grains
.50-caliber muzzleloader bullet	329 grains
Rifle ammunition	100 - 150 (per bullet)
*(avg. or per manufacturer)	



Aren't all metals toxic to bald eagles when ingested?

In large doses, all metals are toxic to eagles when ingested. Lead is softer than most metals and fragments more easily into pieces that are as small as a grain of sand. These tiny fragments quickly dissolve into the bloodstream and are distributed internally throughout the eagle's circulatory system. Harder metals, such as copper ammunition, do not typically fragment into tiny pieces, do not dissolve as quickly as lead, and are not as toxic as lead. Therefore, these harder metals either aren't ingested due to large size or are excreted before they are dissolved into the bloodstream.

What is non-toxic ammunition?

We refer to any ammunition that does not contain lead as non-toxic. We may sometimes use the term non-lead when specifically comparing ammunition types. Non-toxic ammunition is made from bismuth, tungsten, tin, or copper. There are also lead bullets coated with non-toxic metals, but the bullet is considered harmful if it contains more than 1% lead. The term non-toxic has traditionally been used to refer to shotgun shells used for hunting waterfowl.

What is the cost comparison and availability of lead versus non-lead (non-toxic) ammunition used for deer hunting?

The cost and availability of lead ammunition versus ammunition that contains no lead varies depending upon the retail store.

The cost of ammunition is often the least expensive part of a deer hunting trip and the number of bullets required is typically low.

Do I need a rifled barrel to shoot non-lead slugs?

No, but rifled slugs should be used in smooth bore barrels. Smooth bore barrels can shoot sabot (which are not rifled) slugs but you'll need to determine which sabot slug is best for your gun based upon consistent accuracy.

Will non-toxic slugs damage my shotgun barrel?

Ammunition made from non-lead materials typically will not damage a shotgun barrel. If gun barrel damage is a concern, sabot slugs that have a plastic sleeve encasing the bullet are a popular choice.

How does non-toxic ammunition compare to lead ammunition for effectiveness when deer hunting?

Traditional lead-based deer hunting ammunition is designed to fragment and dissipate the bullet's energy to achieve an efficient kill; many lead bullet fragments are left in the animal's carcass. Alternatively, non-toxic ammunition is designed with a non-fragmenting bullet with "petals" that peel back from the bullet's tip causing a fatal wound channel and an efficient kill. Both bullet types are effective for hunting big game.

What is the difference in shooting non-toxic versus lead ammunition?

Experienced hunters know each rifle and shotgun has its own unique shooting characteristics, and each gun shoots different ammunition types differently. If you decide to switch to non-toxic ammunition, it may shoot differently in your particular rifle or shotgun compared to traditional lead-based ammunition. You should sight-in your firearm to achieve an efficient and clean kill.

What are the consequences if I do not switch to non-toxic ammunition?

None. This initiative is voluntary. This is a personal choice you make based on your values and beliefs.

Does the U.S. Fish and Wildlife Service non-toxic ammunition initiative for deer hunting include state managed lands?

No. We are encouraging deer hunters to use non-toxic ammunition on National Wildlife Refuge System lands in the Midwest Region.

The bald eagle population is at its highest level in many years and has been delisted as a threatened/endangered species, so why is U.S. Fish and Wildlife Service concerned about a few eagles dying when there is no population level effect?

Eagles are still a protected bird and we have a responsibility to protect this national treasure for the enjoyment of all Americans, especially on National Wildlife Refuge System lands.

Why isn't the U.S. Fish and Wildlife Service also advocating for the burying of gut piles or the removal of gut piles from the field?

Our experience has shown that buried gut piles are often dug up by scavengers, such as coyotes, and become available to eagles. Frozen ground conditions often prevent the burying of gut piles during deer hunting season. Removal and disposal of gut piles from the field is often difficult due to the logistics of handling and transporting body parts.

