



# Bald Eagles & Lead

The Game Commission maintains six region offices.

### Northwest Region

Butler, Clarion, Crawford, Erie, Forest, Jefferson, Lawrence, Mercer, Venango and Warren counties  
814-432-3187

### Southwest Region

Allegheny, Armstrong, Beaver, Cambria, Fayette, Greene, Indiana, Somerset, Washington and Westmoreland counties  
724-238-9523

### Northcentral Region

Cameron, Centre, Clearfield, Clinton, Elk, Lycoming, McKean, Potter, Tioga and Union counties  
570-398-4744

### Southcentral Region

Adams, Bedford, Blair, Cumberland, Franklin, Fulton, Huntingdon, Juniata, Mifflin, Perry, Snyder and York counties  
814-643-1831

### Northeast Region

Bradford, Carbon, Columbia, Lackawanna, Luzerne, Monroe, Montour, Northumberland, Pike, Sullivan, Susquehanna, Wayne and Wyoming counties  
570-675-1143

### Southeast Region

Berks, Bucks, Chester, Dauphin, Delaware, Lancaster, Lebanon, Lehigh, Montgomery, Northampton, Philadelphia and Schuylkill counties  
610-926-3136

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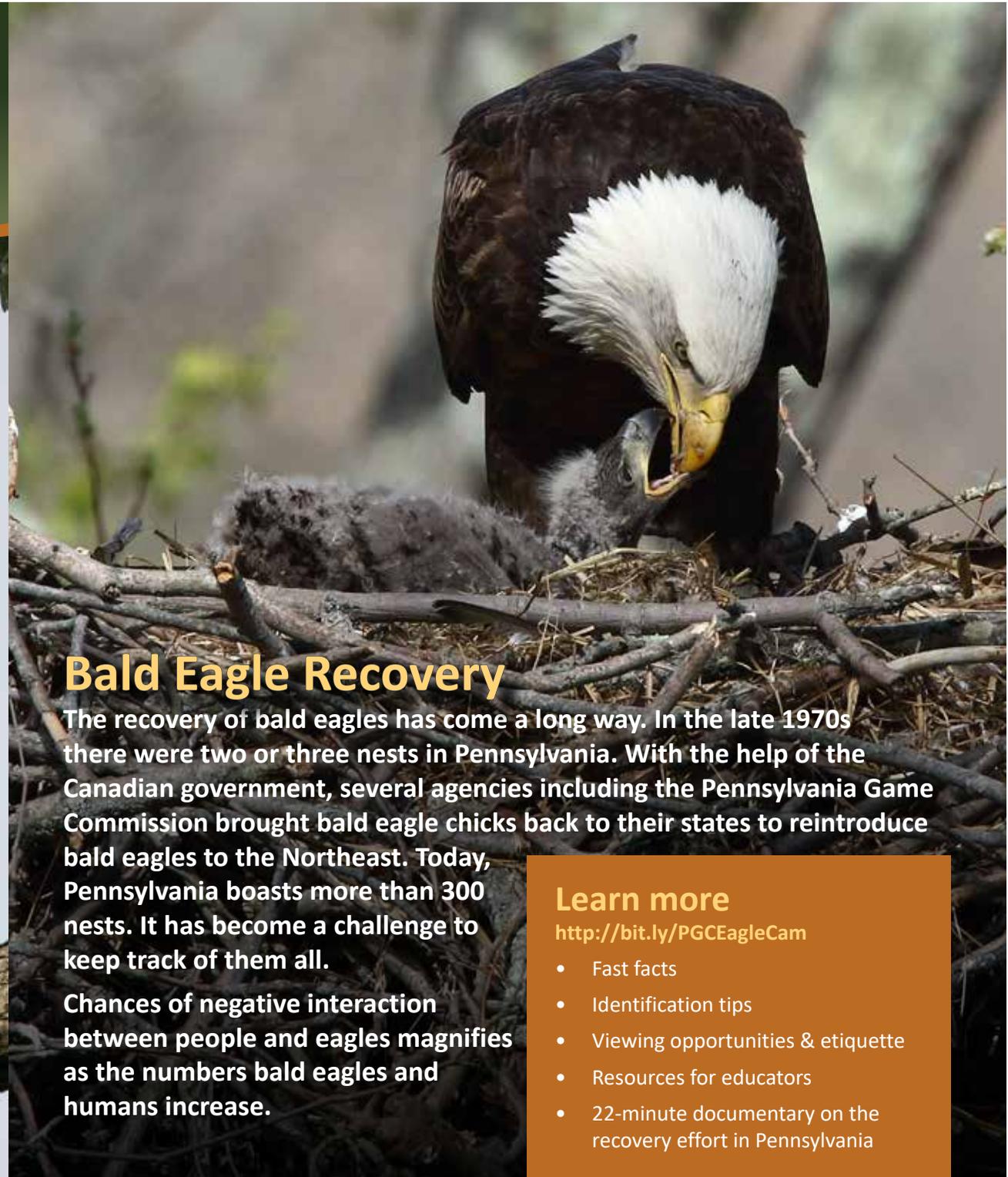
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**Lead** in the environment is **dangerous** to eagles. You can **help**.



## Bald Eagle Recovery

The recovery of bald eagles has come a long way. In the late 1970s there were two or three nests in Pennsylvania. With the help of the Canadian government, several agencies including the Pennsylvania Game Commission brought bald eagle chicks back to their states to reintroduce bald eagles to the Northeast. Today, Pennsylvania boasts more than 300 nests. It has become a challenge to keep track of them all.

Chances of negative interaction between people and eagles magnifies as the numbers bald eagles and humans increase.

### Learn more

<http://bit.ly/PGCEagleCam>

- Fast facts
- Identification tips
- Viewing opportunities & etiquette
- Resources for educators
- 22-minute documentary on the recovery effort in Pennsylvania

## How do eagles get lead poisoning?

Lead that causes toxicity in bald eagles is acquired through ingestion. Research shows that most lead acquisition comes from un-retrieved carcasses—gut piles, varmint carcasses left in the field, and carcasses of game that couldn't be located. Fragments of lead can be found up to 18 inches from a wound channel. Lead may also come from fishing tackle.

Bald eagles and other scavengers ingest lead ammunition fragments distributed in the tissues of these carcasses. When the lead hits the bird's acidic stomach, it gets broken down and absorbed into their bloodstream where it can be distributed to tissues throughout their body.

Lead has a variety of negative impacts. It can affect bodily functions; the nervous system, muscular-skeletal and digestive systems; and the function of the brain, liver, and kidneys.

## Diagnosis and Treatment

Diagnosis can include a review of the bird's known history, clinical signs, lesions, radiographs and expensive toxicology testing. Lead pellets may or may not be present.

Treatment depends on the condition of the bird and its level of lead exposure. Lead poisoning is often fatal. Chelation therapy, which removes lead from the bird's body requires long-term supportive care.



Photo: Wildlife Center of Virginia

This x-ray shows lead fragments within the gastrointestinal tract of a bald eagle.

## What are the symptoms of lead poisoning?

Lead poisoning in bald eagles can be chronic and debilitating. Birds with lead poisoning may be weak, emaciated, and uncoordinated. They may not be able to move, fly, or walk. They may have seizures, refuse to eat, and appear blind. Bald eagles with lead poisoning often do not respond at all when approached.

## How long does it take for lead to poison an eagle?

Lead toxicity is a result of cumulative exposures and is most often fatal. The amount of time required to develop symptoms of lead poisoning varies depending on the amount of lead ingested. It often takes weeks for a bird to succumb to the effects of toxicity. The source of lead may not even be present in the bird's digestive track. Beyond direct toxicosis, affected birds may die of other means as a result of impaired mobility due to lead.

Bald eagle photos by Jacob Dingel

Lead is an easy metal to use for a variety of purposes. As a result, humans leave behind a lot of lead when interacting with their environment.

Lead in the environment is dangerous to eagles and can be fatal if levels within their body become high enough.

## What do we know about lead and eagles in Pennsylvania?

Wildlife rehabilitators continue to be valuable partners contributing to our knowledge of lead toxicity in eagles.

The Game Commission has been monitoring disease in eagles since 2006. Full necropsies are conducted on all available carcasses and those with testable tissue are examined for the presence of heavy metals.

Between 2006 and 2016, 228 eagles were examined. Many causes of disease and death were recorded including

trauma by car, train, and gunshot, also electrocution and infection. Toxicosis presented in one-third of examined animals, most as a result of scavenging behavior. Of the 202 birds tested for heavy metals, 30 percent had detectable levels in their liver, the majority consistent with lead toxicity.

Hunting waterfowl with lead shot was banned in 1991. Since then, there has been no change in eagle mortality due to lead toxicity.

Though exposure occurs during all seasons, birds are more likely to suffer severe exposure between November and February—during fall and winter.

## You can help reduce lead toxicity in eagles and other scavengers?

License dollars helped fuel the Game Commission's reintroduction program during the 1980s. Now hunters and anglers can help protect their investment by helping to prevent lead from moving into this nontarget species.

**Choose to use non-lead ammunition and tackle:** One option is to use non-lead ammunition and fishing tackle, which prevents lead from these sources from entering the environment. Performance of non-lead ammunition is comparable to lead counterparts and costs of non-lead options are becoming more accessible.

**Bury the carcass or gut pile:** Another option is to retrieve carcasses and gut piles from the environment. If the carcass or gut pile is too large to be removed from the environment, it can be buried or covered with debris to prevent scavengers from accessing the carcass and lead fragments.