



RESOLUTION 2025-02-05

IN SUPPORT OF THE *VOLUNTARY BEST MANAGEMENT PRACTICES (BMPs) FOR REDUCING UNINTENDED INGESTION OF LEAD AMMUNITION AND TACKLE RESIDUES IN WILDLIFE* DEVELOPED BY THE MIDWEST ASSOCIATION OF FISH AND WILDLIFE AGENCIES

WHEREAS, the Association of Fish and Wildlife Agencies recognizes the infrequent unintentional ingestion of lead ammunition and tackle may cause inadvertent negative health effects, up to and including mortality, in individual animals; and

WHEREAS, the Midwest Association of Fish and Wildlife Agencies (MAFWA), representing thirteen states and three provinces, engaged in a collaborative process with state, federal, industry, and specific non-profit partners to address the challenges, needs, and opportunities associated with reducing the infrequent unintentional ingestion of lead from spent ammunition and tackle; and

WHEREAS, a collaborative approach prioritizing education, information, and voluntary, informed choice is recognized by state fish and wildlife agencies as an effective way to prevent unnecessary regulatory action on lead ammunition and tackle; and

WHEREAS, MAFWA has taken the initiative to develop and provide options and tools for hunters and anglers seeking to voluntarily minimize the infrequent unintended ingestion of lead by individual animals in their pursuits; and

WHEREAS, these BMPs provide information to hunters and anglers about lead-free ammunition or tackle or, when using lead, incorporating voluntary actions to reduce ingestion of lead residues by wildlife; and

WHEREAS, the Northeast Association of Fish & Wildlife Agencies (NEAFWA) has instituted a series of in-service training workshops throughout the northeast to inform agency personnel about non-lead and lead ammunition, and NEAFWA has verified through these workshops that a voluntary approach to the use of non-lead hunting ammunition is widely accepted and valued by state agency personnel and their conservation partners; and

WHEREAS, the BMPs outline specific actions and alternatives that AFWA recognizes as effective and efficient in mitigating the risks of lead ingestion from ammunition and tackle; and

WHEREAS, the practices described in the BMPs are related to hunting and angling activities only and are not meant to provide guidance on the use of lead use in other recreational activities; and

WHEREAS, in 2024, MAFWA resolved to promote the Voluntary Best Management Practices (BMPs) for Reducing Unintended Ingestion of Lead Ammunition and Tackle Residues in Wildlife;

NOW, THEREFORE, BE IT RESOLVED, that the Association of Fish and Wildlife Agencies recognizes a need to provide best practices on the use of lead ammunition and tackle, and

BE IT FURTHER RESOLVED, that the Association of Fish and Wildlife Agencies adopts the Voluntary Best Management Practices (BMPs) for Reducing Unintended Ingestion of Lead Ammunition and Tackle Residues in Wildlife developed by MAFWA.

Submitted by the Fish and Wildlife Health Committee, Hunting and Shooting Sports Participation Committee, Angler and Boater R3 Committee, and One Health Committee.

Adopted by the Association on September 24, 2025 in Tucson, Arizona.

Voluntary Best Management Practices (BMPs) for Reducing Unintended Ingestion of Lead Ammunition and Tackle Residues in Wildlife

MAFWA Ammunition and Tackle Subcommittee

August 2024

How do I reduce the unintended ingestion of lead residue from ammunition and tackle by wildlife?

Choose lead-free ammunition and tackle

When using lead, incorporate voluntary actions to reduce ingestion of lead residues by wildlife*

Voluntary Best Management Practices (BMPs)

Hunters and anglers interested in eliminating or reducing the risks of unrecovered lead to wildlife from their pursuits can choose actions that:

- (i) avert their contribution to the potential for lead ingestion, or
- (ii) those that reduce the risk of unintended ingestion of lead by wildlife

As with all pursuits, prior to hunting and angling be sure to know and follow local, state and federal regulations.

Ammunition

Select the appropriate ammunition

Recover spent materials

Practice using selected ammunition

Use all legal means to recover game

Remove entire animal

Fishing Tackle

Inspect your gear

Use appropriately sized lures and split shot

Recover lost line, lures, and split shot when possible

*see complete BMPs for additional guidance.

Voluntary Best Management Practices (BMPs) for Reducing Unintended Ingestion of Lead Ammunition and Tackle Residues in Wildlife

MAFWA Ammunition and Tackle Subcommittee
August 2024

The Midwest Association of Fish and Wildlife Agencies (MAFWA) Directors, representing thirteen states and three provinces, charged the Fish and Wildlife Health Committee and R3 and Relevancy Technical Working Group to address needs, challenges, and opportunities to reduce ingestion of lead from spent ammunition and tackle. With this charge, members of the two committees met with state, federal, industry and non-profit partners pursuing a collaborative path forward emphasizing education, information, and choice as the most appropriate, and potentially effective approach.

The potential impacts of lead on wildlife are complex. Hunting ammunition and fishing tackle containing lead are widely available and commonly used. The unintentional ingestion of residues from these components can cause health effects, up to and including mortality, to individuals or population impacts to certain wildlife species.

Tools are available for hunters and anglers who want to voluntarily reduce these risks to wildlife. Information and communication on conservation approaches safeguarding wildlife have long been embraced by hunters, anglers, industry, and governments in their commitment to conserve natural resources. The priority of this collaborative effort was to provide recommendations to support hunters and anglers in making voluntary, informed decisions on ammunition and tackle and to address the potential impact; and, thereby, avoid regulatory measures related to the use of lead ammunition and tackle.

Hunters and anglers interested in eliminating or reducing the potential risks of unrecovered lead to wildlife from their pursuits can choose actions that (i) avert their contribution to the potential for lead ingestion or (ii) those that reduce the risk of unintended ingestion of lead by wildlife. Hunters and anglers who prefer to eliminate the potential for lead ingestion should choose ammunition and tackle that does not contain lead. When lead-free options are not feasible or desirable, hunters and anglers using ammunition and tackle containing lead can take other voluntary steps to reduce the potential for unintended consequences of spent lead ammunition and tackle on wildlife.

These Best Management Practices (BMPs) describe specific actions and alternatives recognized as effective and efficient in reducing the risk of ingestion of from lead ammunition and tackle (Figure 1). BMPs are science-informed and adaptive; they evolve as new research, technology, and management priorities emerge and are designed to provide options to reduce the risk of lead ingestion. The practices described in this document are related to hunting and

angling activities only. They are not meant to provide guidance on the use of ammunition in other shooting activities or lead use in other recreational activities. As with all hunting and angling pursuits, know the hunting and angling laws for species you are pursuing in locations you hunt and fish. In certain locations and for some species lead-free ammunition and tackle may be required.

MAFWA does not make any guarantee or assume any liability with respect to the use of any information or recommendations contained in this document and instead encourages continued research and consultation with scientists, engineers, industry, and other appropriate professionals to advance conservation outcomes and long-term support for hunting and angling. Such practices are consistent with the conservation ethic which we, as fish and wildlife professionals, as well as hunters and anglers, continually work to manage and protect.

Reduce lead ingestion by wildlife

Removing lead bullets, shot, and fragments, and reducing the accumulation of lead tackle and shot from the landscape reduces the possibility of unintended ingestion.

- Retrieve spent materials. Recovering split shot, sinkers, jigs and ammunition, whenever possible, decreases the likelihood that wildlife will ingest these materials in the future.
- Remove harvested animals in their entirety from the field. If complete carcass removal is not possible, remove the portion of the remains that are most likely to contain lead. If remains cannot be removed, bury or cover the remains. Note: Carcass disposal options/regulations may vary among locations.
- Recover game. Wounded-lost game and fish are sources of potential secondary ingestion by wildlife. Support the use of game recovery methods (dogs, drones, thermals, etc.) to increase retrieval of wounded and lost game and fish as permitted by regulations.

Hunting Ammunition

- Use lead-free ammunition.
- When using ammunition containing lead:
 - Plan ahead to remove fragments, carcasses, or impacted meat from the field.
 - Review variety of ammunition designs, learn how they function including necessary changes to choke sizes. Most manufacturers provide information on specific ammunition types and the applications for which they are best suited.
 - Try a variety of ammunition in your chosen firearm to determine which choice presents the best opportunity for the most ethical harvest. Monolithic bullets, bonded bullets, and controlled expansion bullet designs are shown to result in less fragmentation., Consider different performance characteristics including accuracy, terminal performance, and bullet construction when selecting ammunition.

- Practice makes perfect – Practice with your choice of ammunition to improve your shot to reduce bullet fragmentation.

Fishing Tackle

Selecting and maintaining appropriate tackle and limiting tackle loss protect wildlife from unintended ingestion of lead.

- Use lead-free tackle.
- When using tackle containing lead:
 - Inspect your gear. Inspect and replace, if needed, leaders and lines to make sure they are competent and unlikely to break under normal use.
 - Use the appropriate size of jigs/split shot. Selecting sinkers and jigs greater than 1 oz and longer than 2.5 inches provides the best protection to water birds, including loons, against exposure to lead from tackle. Using larger split shot, sinkers and jigs can help reduce the risk of unintended lead exposure to wildlife.
 - Recover lost sinkers, split shot and jigs whenever possible, including lines lost in shrubs, rushes and trees which can become accessible to waterbirds over time.