

FINAL DRAFT

AFS Policy Statement -- Lead in Sport Fishing Tackle

May 26, 2010

A. Issue Definition

Lead is a naturally occurring element in the environment. In biological systems, however, it has neither a functional nor beneficial role and can be toxic at very low levels of exposure. The medical community has documented that exposure to relatively low doses of lead can cause a variety of human health problems, particularly in children. For instance, lead at toxic levels damages the nervous system, causing paralysis and eventually death; at lower levels it is known to cause a variety of sub-lethal effects, such as organ damage and reproductive impairment. To limit exposure, and prevent the resulting detrimental effects on animal and human health, lead is now banned in gasoline, paint, and solder in many countries.

The use of lead in fishing tackle dates back thousands of years, because it is readily available, dense, malleable, and inexpensive. Several investigations have estimated substantial losses of lead fishing tackle in lakes and rivers. While lost fishing tackle remains relatively stable and intact for decades or centuries in the aquatic ecosystem, under certain environmental conditions (e.g., soft acidic water, mechanical agitation) lead can be broken down more rapidly. Whether or not the lead dissolves within the aquatic ecosystem does not alter its toxicity to biological organisms, as lead does not bioaccumulate through the foodweb.

Realization of the hazards of ingestion of lead fishing sinkers and jigheads by waterbirds became apparent during the 1970s and 1980s with identification of lead poisoning of localized populations of swans in the United Kingdom (UK) and loons in the United States (US). Loons and swans ingest lead fishing tackle when they mistake small lead sinkers and jigheads for the small stones they pick up from the bottom of lakes and rivers to help them digest their food, or when they ingest fishing line with a lead sinker still attached to a baited hook. A single ingested lead sinker or jighead will expose a waterbird to a lethal dose of lead since digested lead is readily absorbed into animal tissue.

Restrictions on the sale or use of lead weight have been instituted in the parts of the UK, Denmark, Canada, several other countries, and five states in the US (as of April 20, 2010, <http://www.pca.state.mn.us/oea/reduce/sinkers.cfm>) in order to minimize effects on waterbirds and other potentially vulnerable species. While the use of lead fishing tackle contributes a small fraction of the total amount of lead found within the environment in comparison to other sources of lead (e.g., surface runoff, atmospheric deposition, and mining activities), it exists in a form that can be readily ingested by some species of wildlife (i.e., sinkers and jigheads less than 2.5 cm or 1 inch). Although significant negative effects on localized populations of loons and swans from ingestion of lead fishing tackle in areas of high angling effort have occurred, this is not a widespread problem.

Several governments have initiated education programs to encourage anglers to use sinkers and jigs less than 2.5 cm made from non-toxic materials. This has corresponded with a variety of substitutes for lead fishing sinkers have entered the marketplace in recent years. A few (e.g., ceramics, bismuth, steel, tin, and tungsten), but not all (e.g., zinc, brass), alternative metals in fishing tackle have been deemed safe or less toxic if ingested by waterfowl and other birds and mammals. Sinkers and jigheads made from these alternative raw materials, however, are less dense resulting in a larger sized sinker to obtain a similar weight as with lead. This larger size for alternative metal sinkers and jigheads, in addition to the currently higher cost to acquire and manufacture these items, makes them less desirable for some anglers.

B. Needed Actions

The policy of the American Fisheries Society, in regard to lead fishing tackle is to:

1. Recognize that lead has been known for centuries to be a toxicant to humans and, more recently, has been observed that the ingestion of a lead sinker will result in the mortality of a waterbird. The loss and subsequent ingestion of sinkers and jigheads is not a widespread natural resource management issue; nevertheless, the elimination of lead from the aquatic environment is an important societal issue.
2. As stewards of the aquatic environment, advocate the phase out of the use of lead-based sinkers and jigheads less than 2.5 cm in any dimension, with a goal of complete elimination.
3. Develop a timeline for the elimination of small lead fishing sinkers and jigheads through collaboration with fish and wildlife professionals, tackle manufacturers, anglers, policy-makers, and the public. Potentially draft a series of incremental regulations with explicit and targeted educational strategies at both the national and international levels.
4. Encourage studies on reducing the economical and social barriers to non-toxic fishing tackle development and use; encourage additional research generating toxicological and environmental chemistry data; support monitoring and modeling of exposure and effects; and encourage studies predicting consequences of exposure and long-term population-level effects of different tackle material. The need for additional scientific research should not delay the education efforts and the phasing out of lead sinkers and jigheads less than 2.5 cm.
5. Support educational efforts to promote greater public awareness and understanding of the consequences of lead exposure in wildlife species and emphasize the potential gains in wildlife and environmental quality from use of lead-free fishing tackle.

C. References

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Rattner, B.A., J.C. Franson, S.R. Sheffield, C.I. Goddard, N.J. Leonard, D. Stang, and P.J. Wingate. 2008. Sources and implications of lead-based ammunition and fishing tackle to natural resources. *Wildlife Society Technical Review* 08-01. The Wildlife Society, Bethesda, Maryland.

Scheuhammer, A.M., S.L. Money, D.A. Kirk, and G. Donaldson. 2003. Lead fishing sinkers and jigs in Canada: review of their use patterns and toxic impacts on wildlife. *Canadian Wildlife Service Occasional Paper* 108, Environment Canada, Ottawa, Ontario.

(This policy will expire in 20xx)

Source: American Fisheries Society
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