



THE STATE OF ARIZONA  
**GAME AND FISH DEPARTMENT**

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September 14, 2010

Lisa P. Jackson, Administrator  
Environmental Protection Agency  
Ariel Rios Building  
1200 Pennsylvania Avenue, N.W.  
Washington, DC 20460

Re: Docket ID No. EPA-HQ-OPPT-2010-0681

Dear Ms. Jackson:

The Arizona Game and Fish Department (Department) welcomes the opportunity to comment on the petition filed August 3, 2010 by the American Bird Conservancy, the Center for Biological Diversity, and others to ban lead ammunition and fishing tackle under the Toxic Substances Control Act. Since your Agency denied the proposed ban on lead ammunition August 27, 2010, we address our comments below to that part of the petition which proposes a ban on fishing tackle containing lead.

The Department has been involved in the lead and wildlife issue since the 1980's when we surveyed waterfowl hunting areas for lead shot and surveyed waterfowl to determine the extent of lead poisoning in Arizona waterfowl. We also have extensive experience with lead and the California Condor population within our state, and are active members of committees and working groups with the Association of Fish and Wildlife Agencies (AFWA) that deal with lead and wildlife. With AFWA, Arizona Game and Fish Department has been active in The Bird Conservation Committee, the Fish and Wildlife Health Committee, the Migratory Shore and Upland Game Bird Working Group, the Mourning Dove Task Force, and others; all have engaged the lead and wildlife issue since it was first described. The Department is also been engaged with lead and wildlife in our membership on the Bird Conservation Committee with the Western Association of Fish and Wildlife Agencies (WAFWA). Both AFWA and WAFWA have developed, or are developing, position statements on lead and wildlife and Arizona Game and Fish has played an active role in developing those documents.

Because of the ways in which they feed and digest food, birds are the most vulnerable wildlife to lead poisoning from ingesting fishing tackle. Lead poisoning due to ingestion or exposure to fishing tackle is rare in wildlife and not common in birds. The scientific literature documents cases of individual birds poisoned by the ingestion of fishing tackle containing lead in the United States (see Franson et al. 2003 for a review). Compared to other causes of mortality however

(disease, predation, hunting, habitat degradation), instances of lead mortality due to ingestion of fishing tackle are rare and affects small numbers of individual birds.

There are two pathways in which lost fishing tackle may have the potential to impact the aquatic environment and wildlife. The first is for lead to dissolve into solution. There is little information on the solubility of lead in natural waters and the possible effects dissolved lead might have on wildlife. However, the fate of elemental lead in water is influenced by water chemistry and natural waters in Arizona do not readily dissolve lead. Arizona lakes and streams are typically alkaline with pH values between 7.0 and 8.5 and hardness ( $\text{CaCO}_3$ ) between 100 and 300mg/l. Even the high elevation lakes in Arizona have hardness values of over 50 mg/l. (Arizona Game and Fish Department, data on file). Waters with high pH and elevated hardness prohibits elemental lead from going into solution. Also, Arizona waters carry a considerable amount of chlorides and sulfates which further decrease the solubility of lead (Scheuhammer, et al., 2008). Therefore, the probability of lead dissolving in the water column that can then be taken up by plants, invertebrates, fish or other wildlife is highly unlikely in Arizona. Furthermore, all waters in Arizona meet Arizona Department of Environmental Quality water quality standards for lead. In any case, we are unaware of any studies documenting poisoning of fish or amphibians resulting from dissolved lead from fishing tackle.

The other potential pathway for lead fishing tackle to affect wildlife is through ingestion. For lost fishing tackle to be ingested it must be physically available. Arizona has an arid topography with rocky slopes incised by gorges and canyons. These gorges and canyons were formed by fluvial erosion caused by intense rainfall, rapid runoff and differential erosion rates resulting in vertical escarpments with abrupt changes in slope. Almost all of Arizona's lakes are reservoirs created from building dams in these gorges and canyons (there are only two natural lakes in Arizona). Consequently, when reservoirs are created by damming vertical drainages they are narrow, steep sided and rocky. Most of Arizona's lakes are fairly deep, and except for their shallow inflow regions, are too deep for many birds to encounter fishing tackle. In shallow inflow areas for these reservoirs, feeding waterfowl and waterbirds may encounter lost fishing tackle but these areas comprise small portions of most Arizona reservoirs. Diving ducks, grebes, and some other birds can forage deeper and may encounter lost fishing tackle in deeper regions of these lakes; however, there is no literature or evidence that this occurs in Arizona.

Urban reservoirs are the second most common type of lake in Arizona. These are managed primarily for recreation and are small and shallow with an expansive shoreline and an average depth of twenty feet or less. It might seem counterintuitive to believe that these urban lakes with high angling pressure and shallow water would not allow lost fishing tackle to be easily available to dabbling ducks and waterbirds. However, urban lakes are often constructed with vertical concrete shorelines typically over 18 inches and then quickly drops off to several feet to prohibit aquatic emergent vegetation from taking over the shoreline and interfering with recreation.

Bird species documented to have suffered from lead ingestion of fishing tackle in North America include some waterfowl and a smaller number of waterbird species. In a survey of waterbirds

Franson et al. (2003) examined 2,240 individual birds representing 28 species from 25 states for evidence of fishing tackle ingestion. From those samples, they found eleven common loons (3.5% of 313 samples), ten brown pelicans (2.7% of 365 samples), one double-crested cormorant (1.2% of 81 samples), and one black-crowned night heron (9.1% of 11 samples) had died from ingested lead attributed to some sort of fishing tackle. Their study confirmed that common loons, (and perhaps brown pelicans), were the most likely birds to suffer population level effects from ingesting lead fishing tackle (Pokras and Chafel, 1992; Sidor et al. 2003; Franson et al. 2003). Common loons occur in small numbers only during migration in Arizona and although White pelicans occur regularly in Arizona, brown pelicans appear in Arizona only occasionally, as storm-driven accidentals. Both black-crowned night herons and double-crested cormorants do commonly occur in Arizona. However, there are no documented cases of mortality attributed to ingestion of fishing tackle of any Arizona bird submitted for testing to the National Wildlife Health Center (J.C. Franson, pers. comm. Sept 2010).

Applying blanket regulations nationwide to address a restricted local problem appears heavy handed and inefficient because it regulates a large number of people when a more localized regulation would suffice. Common loon mortalities in New England are the only known example of a possible population level effect from wildlife ingestion of fishing tackle (Pokras and Chafel, 1992; Sidor et al. 2003). Maine, Massachusetts, New Hampshire, Vermont, and New York have all instituted state regulations to minimize loon exposure to lead fishing tackle based on evidence of localized mortality of loons in those states. A localized approach to a local problem, when there is scientific evidence to support it, like the loon-New England example, makes the most sense from a wildlife management and public policy perspective. To justify a restriction on lead fishing tackle in Arizona based on common loon mortalities in New England (when Arizona has relatively few loons during migration and no significant bird mortalities associated with fishing tackle) is neither logical nor science based.

The Department is not averse to taking necessary action to mitigate lead poisoning when science has demonstrated a population level cause and effect relationship. Arizona has been pivotal in restoring the endangered California condor to the wild; condors were introduced into Northern Arizona in 1996 and there are now 73 birds in Arizona (of 384 total worldwide). When it was demonstrated that ingestion of spent lead ammunition from hunter shot deer was hindering recovery efforts for the introduced condor population in 2002, the Department designed, managed, and funded a voluntary lead-free ammunition program. In that program, all deer hunters within the core condor range are offered free non-lead ammunition. In addition, we have spent thousands of staff hours educating hunters, promoting proper disposal of gut piles, and researching the best ways to minimize condor lead exposure.

The condor voluntary lead reduction program has been very successful with increasing hunter compliance rates as the program has progressed. In 2004, before the program began, 5% of hunters reported that they used non-lead ammunition. From 2005 to 2009, hunters reporting that they use non-lead ammunition within the core condor range have been 50%, 60%, 80%, 90% and 85% respectively. In the past few years, condors have expanded their foraging range from

northern Arizona into southern Utah, where we believe they again have encountered lead from spent ammunition. In response to that problem, Arizona and Utah are cooperating to offer a non-lead rebate program and begun educating Utah hunters about the condor-lead issue. Cooperative programs like the condor lead reduction program are effective because they couple education with hunter's concern for wildlife conservation. By asking the hunting community for help in solving the problem with lead ingestion by condors, hunters became part of the solution, without regulation.

Should science demonstrate that ingestion of fishing tackle has become a legitimate concern to Arizona's wildlife, the Department would take appropriate steps to address that concern. Beginning in 1999, the Department has published a health and wildlife advisory regarding lead fishing equipment in our fishing regulations brochure detailing the human health risks from exposure to lead in fishing tackle and asks fishermen to consider using alternatives to lead. We remain committed to voluntary, cooperative programs to educate sportsmen and sportswomen about wildlife issues based on science and need, and we fully intend to continue implementing such programs.

As a wildlife management agency, we typically manage for healthy and viable populations of wildlife, not individual animals. In the case of endangered species and other small populations, management must consider individual animals since they may affect population viability. Toward that end, we have an active game management program, an active habitat management program, and one of the largest nongame programs of any state wildlife agency. Nevertheless, all wildlife mortalities do not result in reduced population viability. When wildlife mortalities reach a scale that threatens population health and viability, we take steps to manage that mortality. Although we cannot state that no wildlife mortalities have ever occurred due to exposure to lead in fishing tackle in Arizona, there is currently no evidence that fishing tackle poses any significant risk to Arizona's wildlife populations.

A ban on lead in fishing equipment, causing significant disruption to fishermen who contribute greatly to fishery conservation with their license fees, time, and concern for the resource, when there does not appear to be any evidence that such a ban is necessary to protect wildlife populations, is not reasonable or supported by current scientific evidence.

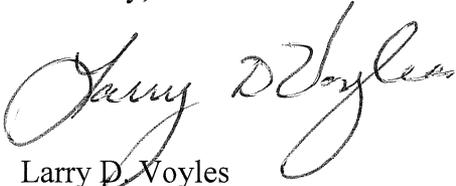
In 2006, 422,000 anglers fished 4.2 million days in Arizona with a total economic impact of 1.3 billion dollars (United States Department of the Interior 2007; Southwick Associates, 2007). Although the cost of a ban on lead in fishing is unknown, all experts agree that cost of fishing equipment would increase substantially. Any ban would likely cause confusion among anglers (as the ban on lead shot did with waterfowl hunters) and the increased cost of alternative fishing tackle may reduce participation rates. Driving fishermen away from the outdoors would be counterproductive to maintaining healthy fisheries in Arizona.

For all the reasons detailed above, we request that you reject the petition to ban lead in fishing tackle. Please let us know if we can supply any further detail regarding our experience with our

Ms. Lisa P. Jackson  
September 14, 2010  
5

voluntary lead reduction program in Arizona or other information referenced in this letter. The Department would welcome further inquires as to why we feel that regulation of lead in fishing tackle is unnecessary.

Sincerely,

A handwritten signature in cursive script that reads "Larry D. Voyles". The signature is written in black ink and is positioned above the printed name and title.

Larry D. Voyles  
Director

LDV:mr

cc: Arizona Game and Fish Commission  
Mr. Doug Kinsall, Policy Advisor for Natural Resources, Office of the Governor  
Arizona Congressional Delegation  
Mr. Denby Lloyd, President, Western Association of Fish and Wildlife Agencies  
Mr. John Frampton, President, Association of Fish and Wildlife Agencies

attachments

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- United States Department of the Interior, Fish and Wildlife Service, and U. S. Department of Commerce, U. S. Census Bureau. 2006 National Survey of Hunting, and Wildlife-Associated Recreation.