
Date:	Contact:	Phone:	Email:	Address:
April 2003	Barnett A. Rattner	301-497-5671	Barnett_Rattner@USGS.gov	12011 Beech Forest Road Laurel, MD 20708-4041

Technical Assistance to the Fish and Wildlife Service on Candidate Shot for Hunting Waterfowl and Coots

Description:

Coincident with the prohibition of toxic lead shot for the hunting of waterfowl and coots in the U.S., procedures for registration of candidate nontoxic shot were instituted (50 CFR Part 20, section 20.134; 1986). These test guidelines focused on determining whether unintentional ingestion of the candidate shot or shot coating posed a significant hazard to waterfowl compared to lead and steel shot. Over the past decade, the safety of several candidate shot (e.g., bismuth, tungsten) and shot coatings (e.g., zinc, tin) have been evaluated. Unfortunately, the original registration guidelines do not address potential toxic effects of candidate materials on biota other than waterfowl (e.g., invertebrates, fish, amphibians, reptiles, mammals) or their supporting habitats. Accordingly, a new tiered testing protocol (FR vol. 62 no. 230 63607-63615), with a much broader ecological perspective was developed and has been implemented. This protocol for evaluation of candidate materials utilizes an ecological risk assessment approach. It is scientifically more robust and also less burdensome for those attempting to develop and register nontoxic shot. Attempts are underway to harmonize these new testing guidelines internationally.

Progress to Date:

The safety of several candidate shot (e.g., bismuth, tungsten, tungsten-polymer, zinc)

and shot coatings (e.g., zinc, tin) have been evaluated. New candidate shot and shot coatings for the hunting of waterfowl continue to be developed and their potential toxicity is under evaluation. Consultation with the Migratory Bird Management Office of the Fish and Wildlife Service during fiscal years 2000, 2001 and 2002 entailed evaluation or consultation related to toxicity data and approval of Hevi-Shot and Tin Shot for the hunting of waterfowl and coots.

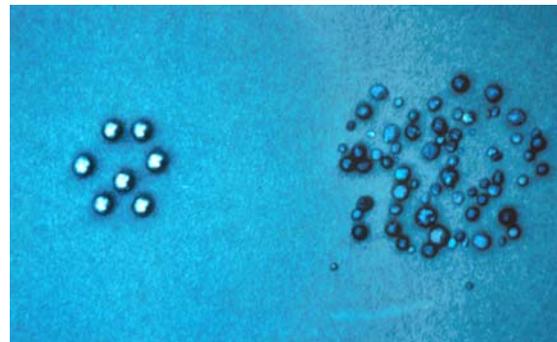


Fig1. Steel shot and ingested lead shot recovered from the gizzard of a duck.

Management Implications:

Several new shot materials and shot coatings have been approved for use in the hunting of waterfowl and coots. These materials do not possess the toxicological properties exhibited by lead shot when ingested to waterfowl and other species of birds. Furthermore, these new shot materials are relatively safe to other biota and their supporting habitat.