

**DEPARTMENT OF THE INTERIOR****Fish and Wildlife Service****50 CFR Part 20****RIN 1018 - AD41****Migratory Bird Hunting; Extension of Decision on the Conditional Approval of Bismuth-Tin Shot as Nontoxic for the 1996-97 Season****AGENCY:** Fish and Wildlife Service, Interior.**ACTION:** Final rule.

**SUMMARY:** The U.S. Fish and Wildlife Service (Service) is amending Section 20.21(j) and approving bismuth-tin shot as nontoxic for the 1996-97 migratory bird hunting season. Acute, chronic, and reproductive toxicity studies, undertaken for the Bismuth Cartridge Company, indicate that bismuth-tin shot is nontoxic when ingested by waterfowl (captive-reared mallards).

**EFFECTIVE DATE:** This rule becomes effective on September 1, 1996.

**FOR FURTHER INFORMATION CONTACT:** Paul R. Schmidt, Chief, or Cyndi Perry, Wildlife Biologist, Office of Migratory Bird Management (MBMO), U.S. Fish and Wildlife Service, (703/358-1714).

**SUPPLEMENTARY INFORMATION:** Since the mid-1970s, the Service has sought to identify shot that, when spent, does not pose a significant toxic hazard to migratory birds and other wildlife. Currently, only steel shot has approval by the Service as nontoxic. The Service believes approval for other suitable candidate shot materials as nontoxic shot is feasible. The Service is eager to consider these other materials for approval as nontoxic.

The nontoxic shot requirement for hunting waterfowl and coots created resistance among some hunters with only steel shot available. With the resistance came an unknown level of noncompliance. Although compliance with the use of nontoxic shot has increased over the last few years, the Service believes that this level of compliance will increase with the availability and approval of other nontoxic shot types.

On October 21, 1993, the Bismuth Cartridge Company petitioned the Service to approve bismuth-tin shot for hunting waterfowl and coots. At that time the company had not undertaken the studies necessary to demonstrate that bismuth-tin shot is nontoxic to waterfowl and the Service did not approve their petition. On June 24, 1994, the Bismuth Cartridge Company petitioned the Service to modify provisions of 50 CFR 20.21(j), to legalize

the use of bismuth-tin shot on an interim, conditional basis for the 1994-95 and 1995-96 hunting seasons while conducting toxicity tests. The petitioner's supporting rationale was: 1) bismuth is nontoxic; 2) the rule would be conditional; and 3) the evidence presented in the record, i.e., the application from the Bismuth Cartridge Company. The petition acknowledged the responsibility of the Bismuth Cartridge Company to complete all nontoxic shot approval tests outlined in 50 CFR 20.134. Final regulations published in the Federal Register [January 3, 1995, (60 FR 61) and August 18, 1995, (60 FR 43314)] provide conditional approval of bismuth-tin shot (nominally, 97 parts bismuth and 3 parts tin) as nontoxic for hunting waterfowl and coots during the 1994-95 and 1995-96 seasons, respectively. A complete review of the bismuth-tin shot application and review process is within the January 3, 1995, Federal Register (60 FR 61).

Aside from recently completed toxicity studies there are several other works that support the Service's decision. Sanderson et al. (1994), Ringelman et al. (1992), and Sanderson et al. (1992) saw no adverse effects when bismuth alloy shot was ingested by captive-reared mallards. In Grandy et al. (1968), there were no deaths associated with mallards dosed with tin shot.

The Service has been provided with evidence of completion of the conditions for approval that were previously established. First, a series of toxicity tests demonstrating bismuth-tin shot as nontoxic to waterfowl was necessary. The Service reviewed and approved the employed testing protocol, with technical assistance provided by the National Biological Service (NBS).

The short-term (30 day) acute toxicity test entails dosing ducks with shot and feeding them commercially available duck food. Researchers record survival, body weight, blood hematocrit, and organ analysis. Survival to 30 days post dosing, hematocrit values, body weight, mean weight of kidney, liver, gonad, and gizzard were similar in game-farm mallards dosed with either six No. 4 bismuth-tin shot, six No. 4 steel shot, or control animals (Sanderson et al. 1995).

The 14-week chronic toxicity test entails dosing ducks with either lead shot, steel shot, bismuth-tin shot, or a placebo (control group), during cold weather using a nutritionally deficient diet. Researchers record survival, body weight, retention and dissolution of shot, blood and tissue analysis, and histopathology. Sixty-five male and sixty-five female mallards underwent

doses of either No. 4 lead, or steel, or bismuth-tin shot, or a placebo (control group) on Days 0, 30, 60, and 90. All lead-dosed ducks died within 14 days of initial dosing. All steel- and placebo-dosed ducks survived until sacrificed. All bismuth-tin dosed ducks survived until sacrificing except one female who died of undetermined causes 131 days post dosing after laying 16 eggs. In general, the chronic test documents the absence of any deleterious effects of these bismuth-tin doses on captive-reared mallards (Sanderson et al. 1996).

The reproductive toxicity test is a chronic dosage study which includes assessment of reproduction, fertility rates, and egg hatchability. Researchers record egg weight, shell thickness, and content analysis. For ducklings, researchers record body weight, sex ratios, blood and organ analysis. The reproductive test ran concurrently with the chronic study. Results confirmed no significant differences in the time required for either control, steel, or bismuth-tin-dosed ducks to lay 21 eggs, and no differences in the dates when the three dosed groups began to lay. Similarly, no significant differences among doses in the fertility rates, hatchability rates, or chemical content of the eggs arose. In ducklings, no significant differences among doses in the mean body weight (by day 7), sex ratios, hematocrit, mean weights of kidney and liver, mean amounts of elements in organs, or in the histopathology arose (Sanderson et al. 1996).

As a result of these toxicity tests, the Service concludes that bismuth-tin shot composed of 97 parts bismuth and 3 parts tin with <1 percent residual lead does not impose significant danger to migratory birds and other wildlife and their habitats.

The second condition of approval is residual lead levels. The Service will consider any bismuth-tin shot manufactured with lead levels equal to or exceeding 1 percent toxic and therefore, illegal. Bismuth may occur as a by-product of iron, copper, and tin smelting and often contains lead. In the August 18, 1995, Federal Register (60 FR 43314), the Service indicated it would establish a maximum level for residual lead. The Service, in consultation with the NBS, determined the maximum environmentally acceptable level of lead in bismuth-tin shot is trace amounts or <1 percent and is incorporating this requirement into the final rule.

Finally, enforcement is an important component in the approval of any alternative shot material. In the August 18, 1995, Federal Register (60 FR

43314), the Service indicated that final unconditional approval would be contingent upon the development and availability of a noninvasive field testing device. Several noninvasive field testing devices are available. Service Law Enforcement personnel assessed these devices determining them to be accurate and useful.

This rule amends 50 CFR 20.21(j) by extending the conditional approval on bismuth-tin shot as nontoxic for the 1996–97 migratory bird hunting season. It is based on the original request made to the Service by the Bismuth Cartridge Company on October 21, 1993, and subsequent toxicity testing. Results of the acute, chronic, and reproductive toxicity tests undertaken for the Bismuth Cartridge Company document the apparent absence of any deleterious effects of bismuth-tin shot when ingested by captive-reared mallards.

#### Public Comment

The Service, by this rule, is approving for one season (1996–1997) the use of bismuth-tin shot for waterfowl hunting without the standard notice for public comment. As required by the Administrative Procedure Act (5 U.S.C. 553(b)), the Service has found that the notice and public procedure required by the APA are impracticable, unnecessary, and contrary to the public interest for the following reasons: 1) At each stage of testing bismuth-tin shot has been shown to be non-toxic. 2) This approval is for one season only. 3) Bismuth-tin shot has been approved the last two years for one season each as a result of the public process that included public notices in the Federal Register and opportunities for comment. 4) Providing a third comment period at this time would preclude the availability of a proven alternative nontoxic shot for a significant portion of the upcoming hunting seasons. 5) The Service is simultaneously publishing a proposed rule that would finally approve bismuth-tin shot as nontoxic without season limitation and is providing the standard notice and opportunity for comment on that proposed final action, thereby providing the public procedure required by the APA on this issue.

#### Effective Date

Under the APA (5 U.S.C. 553 (d)) the Service waives the 30 day period before the rule becomes effective and establishes September 1, 1996, as the effective date. This rule relieves a restriction and, in addition, it is not in the public interest to delay the effective date of this rule. During the two prior public comment periods for conditional approval the Service received 386

comments. Of these, 360 were in favor of approving bismuth-tin shot for hunting waterfowl and coots with 26 opposed. The opposition felt that the incomplete toxicity tests and no noninvasive field detection device should delay the rule. These two objections are now remedied satisfactorily. It is in the best interest of migratory birds and their habitats to extend the conditional approval on bismuth-tin shot as nontoxic for the 1996–97 migratory bird hunting season. It is in the best interest of the hunting public to provide them an additional legal option for hunting waterfowl and coots for the 1996–97 season, which begins on September 1, 1996. It is in the best interest of small retailers who have stocked bismuth-tin shot for the coming season. The Service believes another nontoxic shot option likely will improve hunter compliance, thereby reducing the amount of lead shot in the environment.

#### References

- Grandy, J.W., L.N. Locke and G.E. Bagley. 1968. Relative toxicity of lead and five proposed substitute shot types to pen-reared mallards. *J. Wildl. Manage.* 32(3):483–488.
- Ringelman, J.K., M.W. Miller and W.F. Andelt. 1992. Effects of ingested tungsten-bismuth-tin shot on mallards. CO Div. Wildl., Fort Collins, 24 pp.
- Sanderson, G.C., W.L. Anderson, G.L. Foley, L.M. Skowron and J.W. Seets. 1994. Toxicity and reproductive effects of ingested bismuth alloy shot and effects of embedded bismuth alloy, lead, and iron shot on game-farm mallards. Final Report. Ill. Nat. Hist. Survey. Champaign, IL. 64pp.
- Sanderson, G.C., S.G. Wood, G.L. Foley and J.D. Brawn. 1992. Toxicity of bismuth shot compared with lead and steel shot in game-farm mallards. *Trans. 57th N.A. Wildl. Nat. Res. Conf.*, 57:526–540.
- Sanderson, G.C., W.L. Anderson, G.L. Foley, L.M. Skowron, J.D. Brawn and J.W. Seets. 1995. Toxicity of ingested bismuth alloy shot on game-farm mallards (Revised Final Report). Report to Peterson Publishing Company by the Univ. of Illinois, Ill. Nat. Hist. Survey. Champaign, IL. 69pp.
- Sanderson, G.C., W.L. Anderson, G.L. Foley, K.L. Duncan, L.M. Skowron, J.D. Brawn and J.W. Seets. 1996. Toxicity and reproductive test including chronic health effects of ingested bismuth alloy shot on game-farm mallards (Revised Final Report). Report to Peterson Publishing Company by the Univ. Illinois, Ill. Nat. Hist. Survey. Champaign, IL. 113pp.

#### NEPA Consideration

In compliance with the requirements of section 102(2)(c) of the National Environmental Policy Act of 1969 (NEPA) (42 U.S.C. 4332(C)), and the Council on Environmental Quality's regulation for implementing NEPA (40 CFR 1500–1508), the Service prepared an Environmental Assessment in July, 1996. This EA is available to the public at the Office of Migratory Bird Management, U.S. Fish and Wildlife Service, ms 634-ARLSQ, 1849 C Street NW., Washington D.C. 20240. Based on review and evaluation of the information in the EA, the Service determined the action to amend 50 CFR 20.21(j) to extend conditional approval on bismuth-tin shot as nontoxic for 1996–97 migratory bird hunting season would not be a major Federal action that would significantly affect the quality of the human environment.

#### Endangered Species Act Considerations

Section 7 of the Endangered Species Act (ESA) of 1972, as amended (16 U.S.C. 1531 *et seq.*), provides that, "The Secretary shall review other programs administered by him and utilize such programs in furtherance of the purposes of this Act" (and) shall "insure that any action authorized, funded or carried out ... is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of (critical) habitat ..." The Service completed a Section 7 consultation under the ESA for this rule. The result of the Service's consultation under Section 7 of the ESA is available to the public through, the Office of Migratory Bird Management, U.S. Fish and Wildlife Service, ms 634—ARLSQ, 1849 C Street NW., Washington D.C. 20240.

#### Regulatory Flexibility Act, Executive Order 12866, and the Paperwork Reduction Act

The Regulatory Flexibility Act of 1980 (5 U.S.C. 601 *et seq.*) requires the preparation of flexibility analyses for rules that will have a significant effect on a substantial number of small entities, which includes small businesses, organizations or governmental jurisdictions. The Service determined this rule will have no effect on small entities since the approved shot merely will supplement nontoxic shot already in commerce and available throughout the retail and wholesale distribution systems. The Service anticipates no dislocation or other local effects, with regard to hunters and others. This rule was not subject to Office of Management and Budget

(OMB) review under Executive Order 12866. The Service has examined this regulation under the Paperwork Reduction Act of 1995 and found it to contain no information collection requirements.

#### Unfunded Mandates Reform

The Service has determined and certifies pursuant to the Unfunded Mandates Act, 2 U.S.C. 1502 *et seq.*, that this rulemaking will not impose a cost of \$100 million or more in any given year on local or State government or private entities.

#### Civil Justice Reform - Executive Order 12988

The Service, in promulgating this rule, has determined that these regulations meet the applicable standards provided in Sections 3(a) and 3(b)(2) of Executive Order 12988.

#### Authorship

The primary author of this rule is Cynthia M. Perry, Office of Migratory Bird Management.

#### List of Subjects in 50 CFR Part 20

Exports, Hunting, Imports, Reporting and record keeping requirements, Transportation, Wildlife.

Accordingly, Part 20, Subchapter B, Chapter I of Title 50 of the Code of Federal Regulations is amended as follows:

#### **PART 20—[AMENDED]**

1. The authority citation for Part 20 continues to read as follows:

Authority: 16 U.S.C. 703–711; 16 U.S.C. 712 and 16 U.S.C. 742 a-j.

2. Section 20.21 is amended by revising the introductory text of paragraph (j) and paragraph (j)(2) to read as follows:

#### **\$20.21 Hunting methods.**

\* \* \* \* \*

(j) While possessing shot (either in shotshells or as loose shot for muzzleloading) other than steel shot, bismuth-tin (97 parts bismuth: 3 parts tin with <1 percent residual lead) shot or such shot approved as nontoxic by the Director pursuant to procedures set forth in I82§20.134. Provided that:

\* \* \* \* \*

(2) Bismuth-tin shot (97 parts bismuth: 3 parts tin with <1 percent residual lead) is legal as nontoxic shot for the 1996–97 migratory bird hunting season.

Dated: August 1, 1996.  
George T. Frampton, Jr.,  
*Assistant Secretary for Fish and Wildlife and Parks.*

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