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THE MIGRATORY BIRD TREATY ACT: STEEL SHOT VERSUS LEAD SHOT FOR HUNTING MIGRATORY WATERFOWL

INTRODUCTION

This comment discusses the merits of the regulations prohibiting the use of lead shot for the hunting of waterfowl. The evolution of the Migratory Bird Treaty Act is examined along with the advantages of hunting as a tool for effective wildlife conservation. The controversy of lead poisoned waterfowl is also discussed, and a more effective conservation measure than steel shot is proposed.

EVOLUTION OF THE MIGRATORY BIRD TREATY ACT

Wildlife in early America was viewed quite differently than it is today. In early America, wildlife was a resource¹ It was harvested for both food and clothing.² From an agricultural standpoint, farmers encouraged hunting to eliminate vermin.³ In short, early America viewed wildlife as a "bottomless pit" from which it could take indiscriminantly. It was believed that early hunting was self-regulated due to the hard work and danger involved in a successful hunting outing.⁴ However, as the harvest grew excessive there appeared to be a need for some form of regulation. The question was *who* would regulate the nation's wildlife?

In 1894, the federal government indirectly asserted rights to wildlife through the establishment of Yosemite and Yellowstone National Parks.⁵ Shortly after the establishment of these parks, the federal government passed legislation which protected the wildlife within Yellowstone's boundaries.⁶ Congress took further action through enactment of the Lacey Act of 1900,⁷ which outlawed the transportation or sale in interstate commerce of any animal killed illegally within the state.⁸ Thereafter, additional federal legislation was instituted which not only established

¹ Lund, *Early American Wildlife Law*, 51 N.Y.U.L. REV. 703, 703 (1976).

² *Id.* at 706.

³ *Id.*

⁴ *Id.* at 705.

⁵ Coggins & Hensely, *Constitutional Limits on Federal Power to Protect and Manage Wildlife: Is the Endangered Species Act Endangered?*, 61 IOWA L. REV. 1099, 1109 (1976).

⁶ Act of May 7, 1894, Ch. 72, 28 Stat. 73. The sequence of events here is extremely interesting. The federal government did not pass legislation over the Yellowstone wildlife until it had acquired the land under eminent domain. Coggins, *supra* note 5, at 1109. The reason for this becomes evident when the federal government attempted to pass protective legislation for migratory birds which do not reside on government land.

⁷ Act of May 25, 1900, § 31 Stat. 187. Here Congress had the authority to regulate the transportation of wildlife under the commerce clause of the Constitution. U.S. CONST. ART. I, § cl. 3.

⁸ *Id.*

other refuges but protected animals such as the sea otter and fur seal.⁹

The most important early federal legislation concerning the preservation of wildlife¹⁰ was the Migratory Bird Act of 1913.¹¹ Through the Act, Congress attempted to take custody of the birds residing in the United States.¹² This legislation was challenged by the states on constitutional grounds, and thus began the great debate over ownership of the wildlife.

In *United States v. Shauver*,¹³ the defendant was convicted under the Migratory Bird Act of 1913.¹⁴ The defendant argued that the federal government had no power to regulate migratory birds because the birds were the property of the state in which they resided.¹⁵ The federal government argued that under article IV section 3 clause 2 of the U.S. Constitution, it had the power to regulate migratory birds as property of the United States.¹⁶ The focus of this argument centered on the fact that the birds "pass through or do not remain permanently the entire year within the borders of any state;" therefore, the birds were not the property of any state.¹⁷ Because the migratory birds were not the property of any state, the federal government "deemed [them] to be within the custody of the United States."¹⁸ The court concluded that animals residing in a state are owned by that state for the good of the people; therefore, the federal government had no property interest in migratory wildlife.¹⁹

The federal government also claimed that it had concurrent jurisdiction with the states over migratory wildlife.²⁰ The government argued that this concurrent jurisdiction remains a dormant right of the federal government until it is clearly

⁹ Coggins, *supra* note 5, at 1110.

¹⁰ *Id.*

¹¹ Act of March 4, 1913, Ch. 145, 37 Stat. 828, 847 (citing Coggins, *supra* at note 5, 1110).

¹² *Id.*

¹³ 214 F. 154 (E.D. Ark. 1914), *appeal dismissed*, 248 U.S. 594 (1919).

¹⁴ *Id.*

¹⁵ *Id.* at 157. This argument stems from the case of *Geer v. Connecticut*, 161 U.S. 519 (1896). In *Geer*, the defendant was convicted under a state statute which prohibited transportation of Connecticut game beyond the state's boundaries. The issue decided was whether the State could impose such a statute. *Id.* at 522. After the Court thoroughly reviewed historic law such as the Institutes of Justinian, the laws of Solon and the Code of Napoleon, it concluded that the people of a state have a transient property interest in wildlife, so long as that wildlife remains within the boundaries of that state. *Id.* at 527. The Court further stated that the interest in wildlife is one common to all the people of the state, and not an individual interest. *Id.* at 529. Finally, the Court recognized the state government's power to regulate wildlife in the form of a trust for the common benefit of the people, therefore the statute was upheld. *Id.*

¹⁶ U.S. CONST. ART. IV, §, cl. 2. The Constitution states, "The Congress shall have power to dispose of and make all needful rules and regulations respecting the territory or other property belonging to the United States, and nothing in this Constitution shall be so construed as to prejudice any claims of the United States, or of any particular state."

¹⁷ Act of March 4, 1913, Ch. 145, 37 Stat. 847.

¹⁸ *Id.*

¹⁹ *United States v. Shauver*, 214 F. 154, 157 (E.D. Ark. 1914), *appeal dismissed*, 248 U.S. 594 (1919).

²⁰ *Id.*

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COMMENTS

evident that the state is unable to pass effective legislation.²¹ Further, the government claimed that its right to regulate was no longer dormant because only *its* regulation could adequately protect migratory birds with any degree of success.²² The court took a conservative perspective, and held that because regulation of migratory wildlife is not an expressed power to the federal government, the states retain the power to regulate migratory wildlife under the tenth amendment.²³

The federal government's final claim was based on the theory that migratory birds are items of interstate commerce and therefore subject to federal regulation.²⁴ The government claimed that migratory wildlife is recognized as an article of interstate commerce.²⁵ The government reasoned that "a migratory bird [which travels from] one state into another, passes from the ownership of the former into that of the latter state."²⁶ Therefore, a change in ownership has taken place between the people of each respective state, and interstate commerce has taken place.²⁷ The court stated that the government incorrectly assumed that migratory birds were recognized as articles of interstate commerce simply because they were already recognized as articles of intrastate commerce.²⁸

The court finally ruled that the federal government had failed to show any provision in the Constitution which authorized it to regulate migratory birds when in a state; therefore, the Migratory Bird Act of 1913 was unconstitutional.²⁹

The federal government must have been quite frustrated with this decision, and rightfully so. While the federal government realized that there was a need for simple, uniform regulation enforced by a single managing body, it sat with its hands tied while the states retained the exclusive right to regulate wildlife.³⁰ There was very little regulation that was motivated by well-formulated management goals, which the federal government felt it could supply.³¹ However, after failing on three separate grounds to establish constitutional authority to regulate migratory wildlife,³² the federal government seemed to be at the end of its rope.

²¹ *Id.*

²² *Id.*

²³ *Id.* (citing *Kansas v. Colorado*, 206 U.S. 46 (1907)). "The powers NOT delegated to the United States by the Constitution, nor prohibited by it to the States, are RESERVED to the States respectively, or to the people." U.S. CONST. AMEND. X (emphasis added).

²⁴ See *Shauver*, 214 F. at 160. "Congress shall have the power ... to regulate commerce ... among the several states." U.S. CONST. ART. I, § 8, cl. 3.

²⁵ See *Shauver*, 214 F. at 160.

²⁶ *Id.*

²⁷ *Id.* at 160-61.

²⁸ *Id.* at 161. The courts have held that state statutes which forbid the transportation of game outside of the state in which it was taken are not in violation of the commerce clause because the statute regulated intrastate and not interstate commerce. See *Geer*, 161 U.S. at 519.

²⁹ See *Shauver*, 214 F. at 160.

³⁰ Tober, *Who Owns the Wildlife?* The Political Economy of Conservation in Nineteenth-Century America 139 (1981).

³¹ *Id.*

Then in 1916, at the request of Congress, President Woodrow Wilson initiated³³ the Convention with Great Britain.³⁴ This convention was a treaty between the United States and Canada³⁵ for the protection of migratory birds which “are of great value as a source of food or in destroying insects which are injurious to forests and forage plants on the public domain, as well as to agricultural crops, in both the United States and Canada, but are nevertheless in danger of extermination through lack of adequate protection during the nesting season or while on their way to and from their breeding grounds....”³⁶

Finally, there would be some uniform regulation for the protection of migratory birds.³⁷

The drafters divided the Treaty into nine articles.³⁸ Article I divides migratory birds into subsections, namely migratory game birds (including geese, ducks and swans), migratory insectivorous birds,³⁹ and migratory non-game birds.⁴⁰ Article II establishes closed seasons⁴¹ for certain migratory birds.⁴² Article V prohibits the taking of nests or eggs of migratory birds except for scientific and related purposes.⁴³ Article VI prohibits the interstate shipment of migratory birds, their nests or their eggs.⁴⁴ Article VII gives the respective governments of Canada and the U.S. the power to enact legislation to carry out the intentions of the Treaty.⁴⁵ While the more important articles of the Convention stated above indicated a thorough treaty, nothing in it imposed any penalties for the violation of its provisions.⁴⁶ In effect, the penalties left out of the Treaty would be injected through subsequent legislative enactment by the U.S. and Canada.⁴⁷

THE MIGRATORY BIRD TREATY ACT

This apparent loophole in the Treaty was later rectified when Congress

³³ Comment, *The Migratory Bird Treaty: Another Feather in the Environmentalist's Cap*, 19 S.D.L. REV. 307 (1974).

³⁴ Convention with Great Britain for the Protection of Migratory Birds, Aug. 16, 1916, 39 Stat. 1702 (1916), T.S. No. 628 [hereinafter Convention].

³⁵ At the time of the Treaty, Britain was the controlling government of Canada.

³⁶ See Convention, *supra* note 34, at 1702.

³⁷ *Id.*

³⁸ See Comment, *supra* note 33, at 309.

³⁹ Insectivorous Birds feed chiefly on insects. See Convention *supra* note 34, at 1702.

⁴⁰ *Id.* at 1702-03.

⁴¹ A closed season is a period during which “no hunting shall be done” except for scientific or other specified purposes. *Id.* at 1703.

⁴² *Id.*

⁴³ *Id.* at 1704.

⁴⁴ *Id.*

⁴⁵ *Id.*

⁴⁶ See Comment, *supra* note 33, at 310.

enacted the Migratory Bird Treaty Act (MBTA).⁴⁸ The MBTA is essentially a statutory version of the Treaty.⁴⁹ While the Treaty established closed seasons to control hunting, and prohibited certain acts relating to the interstate transportation of protected birds,⁵⁰ the MBTA is somewhat more comprehensive.

In short, the MBTA states, "it shall be unlawful at any time, by any means or in any manner, to pursue, hunt, take, capture [or] kill ... any migratory bird, or any part, nest, or egg of any such birds, included in the terms of the [convention] between the United States and Great Britain"⁵¹ The MBTA gives the Secretary of the Interior the authority

[t]o carry out the purposes of the conventions⁵² ... having due regard to the zones of temperature and to the distribution, abundance, economic value, breeding habits, and times and lines of migratory flight of such birds, to determine when, to what extent, if at all, and by what means, it is compatible with the terms of the conventions to allow hunting, taking, capture ... transportation ..., and to adopt suitable regulations permitting and governing the same⁵³

Probably the most significant differences between the Treaty and the MBTA, are the criminal penalties and procedures for arrest in the MBTA. Section 706 of the MBTA states that any authorized employee of the Department of the Interior has the power, without warrant, to arrest any person in violation of the Act while in the employee's presence.⁵⁴ An authorized employee has the additional power to take a violator immediately for examination or trial before an office or court of competent jurisdiction.⁵⁵ A violation of Section 707 of the MBTA, is a misdemeanor carrying a \$500 maximum fine and/or six-month maximum jail term.⁵⁶ A violation with intent to sell, actual sale, or offer to sell birds, eggs, or nests, is a felony carrying a \$2,000 maximum fine and/or a 2-year maximum jail term. In addition,⁵⁷ those violators intending to sell also forfeit all hunting equipment including guns, traps, vessels, and vehicles to the United States.⁵⁸

The MBTA has effectively closed the loopholes which were left in the

⁴⁸ Act of July 3, 1918, Pub L. No. 65-156, 40 Stat. 755.

⁴⁹ See Comment, *supra* note 33, at 310.

⁵⁰ See Convention, *supra* note 34, at 1703-04.

⁵¹ See Comment, *supra* note 33, at 310 (citing MBTA 16 U.S.C. § 703 (1970)).

⁵² The Convention between the U.S. and Great Britain. See Comment, *supra* note, 33 at 307.

⁵³ 16 U.S.C. § 704 (1970). The authority granted to the Secretary of the Interior is in compliance with the Convention which authorized both the U.S. and British governments to enact legislation to ensure execution of the Convention. See Convention, *supra* note 34.

⁵⁴ 16 U.S.C. § 706 (1970).

⁵⁵ *Id.*

⁵⁶ 16 U.S.C. § 707(a) (1970).

⁵⁷ 16 U.S.C. § 707(b)(2).
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⁵⁸ *Id.* at § 707(c).

Migratory Bird Treaty of 1916. The MBTA named the Secretary of the Interior as the enforcing body of the Treaty, and prescribed the procedures through which the Secretary may use his power.⁵⁹ Furthermore, the MBTA created specific criminal penalties for violators including fines and jail terms.⁶⁰

CONSTITUTIONAL CHALLENGE OF THE MBTA: *MISSOURI v. HOLLAND*

The MBTA did not smoothly proceed from a treaty to codified legislation. In the landmark case of *Missouri v. Holland*, the state of Missouri challenged the federal government's treaty with Great Britain as a violation of the tenth amendment.⁶¹ The plaintiff's chief argument was that Congress cannot obtain legislative power to limit a state's rights in migratory birds through enactment of a treaty.⁶² To decide this question, the Court first looked at the treaty power which states that the President shall have the power to make treaties with two-thirds consent of the Senate.⁶³ The Court stated that the scope of the treaty power covers any matter which may be the proper subject of negotiations between two nations.⁶⁴ The Court decided that the protection of migratory game is, a proper subject of a treaty between two countries interested in such game.⁶⁵ However, the Court did note that this federal power did not infringe on a state's ownership rights in the birds while they resided in that state, as long as that ownership right was not "incompatible with, or restrained by, the rights conveyed to the federal government by the Constitution."⁶⁶

The plaintiff also argued that there is a limit to the treaty power when Congress attempts to pass legislation through a treaty when it could not pass such legislation without a treaty.⁶⁷ The plaintiff further argued that the federal government's non-treaty attempt to pass the Migratory Bird Act of 1913⁶⁸ had previously failed under *United States v. Shauver*.⁶⁹ Therefore, the plaintiff concluded that *Shauver* should apply to the present Treaty with equal force.⁷⁰ The Court stated that *Shauver* cannot be accepted as a test for the treaty power because the legislation involved in *Shauver*

⁵⁹ See *supra* notes 54-55.

⁶⁰ See *supra* notes 56-58.

⁶¹ 252 U.S. 416 (1920).

⁶² *Id.* at 429. The plaintiff's argument was based on the theory that the power to regulate migratory birds is not specifically delegated to the United States and is therefore reserved to the sovereign states. U.S. CONST. amend. X.

⁶³ U.S. CONST. art. I, § 2, cl. 2.

⁶⁴ *Missouri v. Holland*, 252 U.S. 416, 428 (1920).

⁶⁵ *Id.*

⁶⁶ *Id.* The Court cited *Geer v. Connecticut* which established a state's ownership rights in wildlife which resides within its borders. 161 U.S. 519, 528 (1896). See *supra* note 15.

⁶⁷ *Missouri*, 252 U.S. at 432.

⁶⁸ See *supra* notes 11-29.

⁶⁹ 214 F.2d 54 (5th Cir. 1954), *http://www.arklaw.com/arklaw/1914.html*, *http://www.arklaw.com/arklaw/1914.html*, *http://www.arklaw.com/arklaw/1914.html*, 248 U.S. 594 (1919).

⁷⁰ *Missouri*, 252 U.S. at 433.

was not enacted pursuant to a treaty.⁷¹ Finally, the court held that

[H]ere a national interest of very nearly the first magnitude is involved. It can be protected only by national action in concert with that of another power.... But for the treaty and the statute there soon might be no birds for any powers to deal with. We see nothing in the Constitution that compels the Government to sit by while a food supply is cut off and the protectors of our forests and our crops are destroyed. It is not sufficient to rely on the States.... [T]he treaty and statute must be upheld.⁷²

After early recognition of the need for migratory bird regulation, the federal government attempted to pass legislation on a variety of constitutional grounds only to have it overruled as unconstitutional.⁷³ With the foundation of the Migratory Bird Treaty, the accompanying Migratory Bird Treaty Act finally enabled the federal government to regulate migratory birds through the treaty power.

HUNTING AND THE MBTA

Understandably, the MBTA has largely been considered a hunting statute.⁷⁴ The decimation of wildlife in early America⁷⁵ due to hunting led to the establishment of the present regulation including the MBTA. Many people see hunting as a direct threat to the present and future welfare of wildlife.⁷⁶ This animosity may have stemmed from hunter abuse of wildlife before the establishment of the MBTA and similar legislation. Unfortunately, those who oppose hunting are plainly unaware of the severe ramifications that a hunting prohibition would have on wildlife.

Hunting is an integral part of wildlife conservation⁷⁷ because wildlife is a renewable resource which cannot be stockpiled. In other words, "the annual surplus of individuals that arise from animals' natural propensity to overproduce can not accumulate for very long."⁷⁸ When there is a population surplus, the land unit cannot support the extra animals.⁷⁹ This excess in population would soon die-off due to starvation and disease.⁸⁰ Hunting is an ideal tool with which to harvest the excess of the population and insure the healthy survival of the remaining population.⁸¹

⁷¹ *Id.* at 433.

⁷² *Id.* at 435.

⁷³ See *supra* notes 19-29.

⁷⁴ Comment, *The Migratory Bird Treaty Act - Protecting Wildlife on Our National Refuges - California's Kesterson Reservoir, a Case in Point*, 26 NAT. RESOURCES J. 609, 617-18 (1986).

⁷⁵ See Comment, *supra* note 33.

⁷⁶ K. LAUB, WILDLIFE IN OHIO: THE ROLE OF HUNTING AND TRAPPING 41 (1975).

⁷⁷ *Id.* at 20.

⁷⁸ *Id.*

⁷⁹ *Id.*

⁸⁰ *Id.* at 45.

Wildlife managers compile information regarding the welfare factors, mortality factors and limiting factors of a population.⁸² From this information, managers can forecast the surplus population and safely design a harvest season that will take only the surplus wildlife that would otherwise be harvested by nature.⁸³ The coordination of wildlife managers and hunters, in harvesting that portion of the wildlife which cannot be sustained by available resources, is a benefit wildlife cannot do without. It should also be noted that regulated hunting has never caused the demise of an animal species.⁸⁴

In addition to the vital function of cropping the surplus population, hunting also plays an extremely important part in the funding of wildlife conservation. Hunter funding is largely responsible for wildlife research, management and enforcement programs in effect today.⁸⁵ The wood duck is a documented success story of a management program sponsored by hunters.⁸⁶ In 1915, the wood duck population had become severely depressed from loss of nesting sites due to the destruction of its habitat.⁸⁷ Today, through the implementation of a program funded by hunters, the wood duck "is the most common breeding species of waterfowl in the United States."⁸⁸

Habitat preservation is essential to the abundance and health of wildlife.⁸⁹ Hunters are responsible both directly and indirectly for a substantial amount of habitat preservation. Hunting clubs such as Ducks Unlimited directly support habitat preservation through the private ownership or licensing of lands which otherwise would have been eliminated for use in agriculture, industry and housing.⁹⁰ Indirectly, hunters support the preservation of habitat through migratory bird stamp funds⁹¹ and hunting license revenues.⁹² These revenues are used for the purchase and maintenance of federal wildlife refuges.

Before the establishment of federal regulation, hunting was detrimental to the welfare of wildlife. Since the establishment of federal regulation, such as the MBTA, the joint efforts of both federal regulatory agencies and hunters have proven to be quite beneficial to the welfare of wildlife. Hunters provide the needed service

⁸² *Id.* at 9. Welfare factors include the food, water and cover needed to sustain a healthy population. *Id.* at 7. Mortality factors are those things which tend to reduce a population such as disease, parasitism and starvation. *Id.* Limiting factors are welfare and mortality factors which tend to limit the size or health of the population. *Id.*

⁸³ *Id.*

⁸⁴ *Id.* at 19.

⁸⁵ *Id.* at 41.

⁸⁶ *Id.*

⁸⁷ *Id.*

⁸⁸ *Id.*

⁸⁹ *Id.* at 42.

⁹⁰ *Id.*

⁹¹ *Id.* Under the MBTA, a waterfowl hunter may not take game unless he has first purchased a federal waterfowl stamp for that season. 16 U.S.C. § 718(a) (1970).

of cropping the agency recommended surplus of the population, to ensure a healthy remaining population. Hunters also preserve vital habitat directly, through the private ownership of lands, and indirectly, through funding raised from hunter bird stamps and licensing fees, which are used for the creation and maintenance of wildlife refuges.⁹³

LEAD POISONING IN WATERFOWL: THE CONTROVERSY BETWEEN LEAD AND STEEL SHOT

Although hunting is a necessary form of wildlife conservation, it has caused a problem in the form of lead poisoning of the waterfowl population. Specifically, a bird may become poisoned by eating the spent lead shot⁹⁴ that remains in hunting areas as a result of hunting activity.⁹⁵ This ingested shot becomes lodged in the bird's gizzard⁹⁶ and is then dissolved or worn away, passing into the body system.⁹⁷ Once lead is in the bird's body, it has sublethal effects and the bird usually dies.⁹⁸

Lead poisoning is not a newly recognized problem. As early as 1894 researchers acknowledged the threat of lead poisoning to waterfowl.⁹⁹ Since that time, an extensive amount of research has been done on the lead poisoning problem.¹⁰⁰

One of the first studies that proposed more than mere recognition of the problem was conducted in Illinois in 1948.¹⁰¹ Due to a large loss in waterfowl, the Illinois National History Survey along with the Western Cartridge Company,¹⁰² embarked on an intense investigation.¹⁰³ The investigation included study of the extent of lead poisoning as a mortality factor to waterfowl, and development of possible non-toxic substitutes for lead shot.¹⁰⁴ This study, along with numerous others, came to the conclusion that steel shot was the best alternative to lead shot for hunting waterfowl.¹⁰⁵ Among the other proposed solutions to the lead poisoning

⁹³ See *supra* notes 76-88.

⁹⁴ Lead shot are the pellets which are fired from a cartridge which is used as ammunition for the hunting of waterfowl. Spent shot is shot which has been fired from a cartridge.

⁹⁵ Migratory Bird Hunting; Final Frameworks for Late Season Migratory Bird Hunting Regulations, 49 Fed. Reg. 36,274 (Dep't. of the Interior (1984)).

⁹⁶ A gizzard is an organ in a bird similar to a stomach which is used for grinding partially digested food. Webster's New Collegiate Dictionary 483 (1980).

⁹⁷ *NRA v. Kleppe*, 425 F. Supp. 1101, 1104 (D.D.C. 1976).

⁹⁸ *Id.*

⁹⁹ *Id.*

¹⁰⁰ F. Bellrose, *Lead Poisoning: A Tragic Waste*, from FLYWAYS, PIONEERING WATERFOWL MANAGEMENT IN NORTH AMERICA, 471 (1984) [hereinafter Bellrose].

¹⁰¹ *Id.*

¹⁰² *Id.* at 472. See also *NRA*, 425 F. Supp. at 1104.

¹⁰³ The Western Cartridge Company is a hunting ammunitions manufacturer.

¹⁰⁴ F. Bellrose, *supra* note 100, at 472.

problem were wetlands management and state regulation.¹⁰⁶

Wetlands management would require the tilling of marsh bottoms to bury the spent shot out of the reach of waterfowl.¹⁰⁷ This proposal was not feasible in many wetlands areas and was therefore rejected.¹⁰⁸ Under the state regulation proposal, the federal government would take no action, but would leave it up to the states to regulate the lead poisoning problem.¹⁰⁹ This proposal was also rejected because only a few states had taken any positive action to address the poisoning problem.¹¹⁰

In 1974 the National Wildlife Service published its "proposed non-toxic shot regulations for public review and comment."¹¹¹ The arguments for and against the use of non-toxic shot for waterfowl hunting centered on the risk of steel shot to human health and safety, and the adverse effects of steel shot on waterfowl and the environment.¹¹²

From the human safety standpoint, advocates for the continued use of lead shot argued that steel shot increases the possibility of injuries resulting from the bursting of gun barrels, ricochet of the steel shot, and reloading.¹¹³ Sources indicate that the bursting of gun barrels is an inherent risk when using either steel or lead shot.¹¹⁴ Although the risk is hypothetically more probable with steel, numerous field and laboratory tests have shown that steel shot does not present a greater risk of injury to the hunter.¹¹⁵ While lead shot advocates have argued that the ricochet properties of steel pose a greater risk to humans,¹¹⁶ the National Wildlife Service has concluded that lead and steel have different ricochet properties and that it is unclear whether steel presents a greater danger than lead.¹¹⁷ The danger of injury from reloading¹¹⁸ is due to the possibility that reloaders will not be able to safely change over from the procedures and materials used for lead shot ammunition to those procedures

¹⁰⁶ See generally: F. Bellrose, *supra* note 97; *NRA*, 425 F. Supp. at 1104-06; Steel Shot: Hearing Before the Subcommittee on Fisheries and Wildlife Conservation and the Environment of the Committee on Merchant Marine and Fisheries House of Representatives on the Use of Steel Shot as Opposed to Lead Shot in the Atlantic and Pacific Flyways, the Effect the Lead Shot Has on Waterfowl, and the Ballistics of the Two Shots as It Relates to the Hunting of Waterfowl, 95th Cong. (1977-78) [hereinafter *Steel Shot*].

¹⁰⁷ See *NRA*, 425 F. Supp. at 1109.

¹⁰⁸ *Id.*

¹⁰⁹ *Id.*

¹¹⁰ *Id.*

¹¹¹ *Id.*

¹¹² *Id.* at 1106. These proposals were published in 39 Fed. Reg. 36745-47 (Dep't. of the Interior 1974).

¹¹³ *Id.*

¹¹⁴ *Id.* at 1107.

¹¹⁵ *Id.*

¹¹⁶ The danger of ricochet is caused when the shot rebounds off of a hard flat surface, such as a pond or lake, after being fired. Rebounding shot could injure another hunter.

¹¹⁷ See *NRA*, 425 F. Supp. at 1107.

¹¹⁸ Reloading is the process of using ammunition cartridges which have already been fired, and subsequently reducing them. This is accomplished through placing gunpowder and shot in the used cartridge.

necessary for steel shot.¹¹⁹ While the government did not directly address the risk of injury to reloaders, it stated that the arms industry would be responsible for adequately informing the public of the dangers and correct procedures associated with the reloading of steel shot ammunition.¹²⁰ While the danger of injury to humans from steel shot is possible, the evidence substantiating these dangers is inconclusive at best.

THE EFFECTS OF STEEL SHOT ON WATERFOWL

Probably the most significant argument against the use of steel shot for waterfowl, centers on the theory that steel shot is not as effective as lead in killing waterfowl, and as a result more birds are crippled using steel as opposed to lead shot.¹²¹ Many studies have been conducted on this issue ranging from the testing of steel loads on stationary and moving targets, and ballistics studies, to surveys of hunter preferences for steel or lead.¹²² One study, conducted at Nilo Farms in Maryland, tested the effectiveness of lead and steel loads on moving targets at varying distances.¹²³ This test indicated that lead and steel loads were very similar in killing and crippling ducks.¹²⁴ On closer review of the data from Nilo Farms, one researcher found a slight difference in lead and steel loads at shooting distances up to fifty yards; but as the shooting distance increased from fifty to eighty yards, lead loads were more effective.¹²⁵ A later study conducted at Max McGran Wildlife Foundation, indicated that "there was no significant difference in the total number of crippled ducks resulting from the use of lead or steel shot."¹²⁶ Skeptics complained that these tests were not realistic because they were experimentally controlled, and therefore did not reflect actual hunting conditions.¹²⁷

One study which did reflect actual hunting conditions was conducted in Louisiana.¹²⁸ Volunteer hunters were given unmarked ammunition containing either steel or lead shot.¹²⁹ Observers were hired by the National Wildlife Service to

¹¹⁹ See *NRA*, 425 F. Supp. at 1107. The possible danger of incorrectly reloading a shell is the bursting of the shotgun barrel or similar hazards.

¹²⁰ *Id.* at 1108.

¹²¹ Cohn, *Lead Shot Poisons Bald Eagles*, 35 *BioScience* 474 (1985). Steel shot is significantly lighter in weight than lead shot. As a result, the ability to kill a bird is theoretically greater using lead than steel. As an illustration of this concept, imagine the difference in force between a golf ball and a ping pong ball when thrown at a wall. The golf ball which represents lead would have a much greater killing force than the ping pong ball which represents steel.

¹²² See F. Bellrose, *supra* note 100, at 473-77.

¹²³ *Id.* at 474.

¹²⁴ *Id.*

¹²⁵ *Id.*

¹²⁶ *Id.* at 475.

¹²⁷ *Id.* at 474.

¹²⁸ Herbert, Wright, Szank, Newsom & Kasul, *Hunter Performance Using Steel and Lead Loads for Hunting Ducks in Coastal Louisiana*, 48 *J. Wildlife Mgmt.* 388 (1984).

accompany the hunters and record the data of each hunt.¹³⁰ After two years of testing,¹³¹ researches found that "hunters using the steel load would cripple more ducks in order to bag¹³² the same number of ducks as hunters who used the lead load."¹³³

After the review of numerous studies on the effectiveness of steel shot as a lead substitute, the National Wildlife Service admitted that the number of crippled waterfowl as a result of hunting would increase if lead shot were banned.¹³⁴ However, the Service also concluded that the increase in crippled waterfowl would be offset by the benefits expected from the conversion from lead to steel shot.¹³⁵ Based upon these conclusions, the Secretary of the Interior decided to mandate the use of steel shot in designated problem areas.¹³⁶ This mandate was implemented by the "gradual and orderly transition beginning in the Atlantic Flyway in the 1976 hunting season, the Mississippi in the 1977 hunting season, and the Central and Pacific Flyways in 1978."¹³⁷

OPPOSITION TO STEEL SHOT MANDATE

Despite the extensive review of the costs and benefits before implementation of steel shot, many organizations and hunters still resisted the steel shot legislation.

In *National Rifle Assoc. v. Kleppe*, the NRA brought an injunctive action against the Secretary of the Interior based on a claim that the Secretary had abused his discretion in mandating the use of steel shot in hunting areas.¹³⁸ The NRA claimed that there was insufficient scientific evidence to warrant the regulation.¹³⁹ The court held that the Secretary had properly balanced environmental factors and considered factors mandated by the Migratory Bird Treaty Act.¹⁴⁰ The court further held that "it is not appropriate for a court to substitute its judgment for that of the administrator;"¹⁴¹ therefore, the steel shot mandate remained in force.

Ammunition manufacturers complained of the exorbitant cost difference

¹³⁰ *Id.*

¹³¹ The test was conducted during the 1980 and 1981 hunting seasons.*Id.* at 388.

¹³² A hunter "bags" a duck if he is able to shoot and recover it.

¹³³ *Id.* at 398.

¹³⁴ See *NRA*, 425 F. Supp. at 1108.

¹³⁵ *Id.*

¹³⁶ *Id.* at 1106. The designated problem areas are those along which the waterfowl annually migrate on their ancestral travel routes or flyways. A. Hawkins, *The U.S. Response*, from *Flyways*, *Pioneering Waterfowl Management in North America* 2 (1984). These flyways are the areas most hunted due to the concentration of waterfowl during the fall migration. Therefore, the greatest amount of lead poisoning occurs in these areas.

¹³⁷ See *NRA*, 425 F. Supp. at 1106.

¹³⁸ See *id.* at 1101-02.

¹³⁹ *Id.* at 1103.

¹⁴⁰ *Id.* at 1102.

¹⁴¹ *Id.* at 1111. Here administrator refers to the Secretary of the Interior.

between the manufacture of steel versus lead shot loads. It is estimated that use of steel shot as opposed to lead would save approximately one million waterfowl each year.¹⁴² Because steel shot costs manufacturers an additional \$.22 per load, the estimated additional cost for ammunition for one year is \$16,896,000.¹⁴³ This would place the cost per duck saved from lead poisoning at around \$17.00.¹⁴⁴

A hunter who testified on steel shot before the Subcommittee stated that the crippling rates of steel are so high it is ridiculous.¹⁴⁵ He claimed that game wardens felt that crippling problems with steel shot are enough to make a person quit hunting.¹⁴⁶

It is quite evident that an enormous amount of time, attention and money has been invested in the lead poisoning problem, both before and after implementation of the steel shot rule. In fact, "a foot-high stack of papers and reports" on lead poisoning attest to the amount of effort that has been expended on this problem of waterfowl.¹⁴⁷ The question is, why? The exorbitant funding and effort which went into the steel shot controversy should have been invested in the preservation of waterfowl habitat.

HABITAT PRESERVATION RATHER THAN STEEL SHOT STUDIES AND IMPLEMENTATION

Frank Bellrose, a leading authority on the lead shot controversy, estimated that only 2-3% of the North American waterfowl population was lost to lead poisoning annually.¹⁴⁸ Furthermore, recent studies have shown that this figure is overestimated.¹⁴⁹ This mortality figure becomes increasingly insignificant when one examines it in light of a few considerations.

The normal mortality rate for the waterfowl population has remained at about

¹⁴² See Steel Shot, *supra* note 106, at 126.

¹⁴³ *Id.*

¹⁴⁴ *Id.* at 127.

¹⁴⁵ *Id.* at 209.

¹⁴⁶ *Id.*

¹⁴⁷ See F. Bellrose, *supra* note 100, at 471.

¹⁴⁸ *Id.* at 473. See also NRA, 425 F. Supp. at 1105.

¹⁴⁹ See Steel Shot, *supra* note 106, at 116. Some of the testing methods conducted to measure the extent of lead poisoning have exhibited error. For example, in one testing method, waterfowl biologists would examine the lead shot found in the gizzards of waterfowl which were taken by hunters. Steel Shot Regulations: Hearing Before the Subcommittee on Administrative Practice and Procedure of the Committee on the Judiciary United States Senate, 95th Cong., 2d Sess. 310 (1978). This test indicated that a greater portion of the waterfowl population was poisoned than actually existed. *Id.* The reason for this error was because lead poisoned ducks are slower and weaker than non-poisoned ducks. *Id.* Therefore, poisoned ducks are more likely to be taken by hunters than non-poisoned ducks. Consequently, the percentage of poisoned ducks among the hunter-taken group will be larger than the percentage of the poisoned ducks which actually exist in the waterfowl population. *Id.*

50% per year.¹⁵⁰ This annual rate is caused by a number of mortality factors including, predation,¹⁵¹ disease, hunting, old age, and the exposure to environmental pollutants such as lead.¹⁵² In time, nature enforces the population balance.¹⁵³ If the population of a species exceeds the carrying capacity of the land, disease and starvation will increase along with the predator population to overcome the population imbalance.¹⁵⁴ Therefore, if the mortality factor due to lead poisoning were eliminated through the mandate of steel shot, "some combination of other [mortality] factors would replace lead poisoning in order to maintain the natural mortality requirement."¹⁵⁵ The minor percentage of waterfowl which would be saved from lead poisoning through the implementation of steel shot would be eliminated anyway, through other mortality factors. Therefore, all of the funding and effort expended on the steel shot controversy appears to be inconsequential. This funding and effort could have been focused on the much greater problem of habitat preservation.

Habitat preservation is essential to both the abundance and health of wildlife.¹⁵⁶ Presently, "loss of habitat is the MOST SERIOUS THREAT facing North American Waterfowl."¹⁵⁷ Each year, nearly half a million acres of prime waterfowl habitat are lost due to agricultural, urban, and industrial expansion.¹⁵⁸

Under the MBTA, the Secretary of the Interior has the authority to acquire lands for the purpose of migratory bird preservation.¹⁵⁹ If the Secretary had used this authority to acquire and preserve habitat instead of instituting questionable regulation on unwilling hunters, the waterfowl population would have been better off. In addition, the organizations opposing steel shot, such as the ammunition manufacturers, should have used their funds for habitat preservation rather than the legal fees in opposition to the steel shot regulation. It is quite shortsighted for ammunition companies to oppose regulation in order to keep manufacturing costs down,¹⁶⁰ when the need for ammunition may become moot. If the waterfowl species perish due to lack of habitat, what need will anyone have for ammunition?

It is difficult to understand why such a great amount of time, attention and money was spent on a program that only affected 2-3% of the waterfowl population.

¹⁵⁰ See Steel Shot, *supra* note 106, at 117.

¹⁵¹ Predation is the mortality factor under which waterfowl are preyed upon by other animals.

¹⁵² See Steel Shot, *supra* note 106, at 117.

¹⁵³ *Id.*

¹⁵⁴ *Id.* See *supra* notes 79-80.

¹⁵⁵ See Steel Shot, *supra* note 106, at 117.

¹⁵⁶ See K. Laub, *supra* note 76, at 42.

¹⁵⁷ U.S. Fish and Wildlife Service, Canadian Wildlife Service, *Waterfowl for the Future, The North American Waterfowl Management Plan*, 8 (1987) (emphasis added).

¹⁵⁸ *Id.*

¹⁵⁹ See generally, 16 U.S.C. § 715 (a-c) (1970).

¹⁶⁰ See *supra* note 142.

This effort could have been directed towards the preservation of habitat which would benefit the entire population. One can hardly imagine a better example of focusing too closely on a tree and missing the forest.

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