

***1 LEAD AMMUNITION: LEGISLATION REQUIRED OR A MATTER OF PERSONAL RESPONSIBILITY?**

The Arizona Game and Fish Department has found the toxicity of lead-based ammunition to be the leading cause of death among California condors within Arizona. Condor exposure to lead has also been problematic in California and Utah. In response, on October 11, 2013, California Governor Jerry Brown signed Assembly Bill 711 into law, making California the first state to fully ban the use of lead ammunition for hunting. This Comment begins by presenting an overview of the problem created by condor exposure to lead. It then discusses California's attempt to remedy the problem through legislative action, and compares Arizona's approach to the problem. Finally, the Comment considers whether Arizona should do more to protect the condors.

INTRODUCTION

In 1550, just a few centuries after the technology used to create cannons was advanced to produce personal firearms, lead became the preferred material used to make bullets.¹ Lead's widespread popularity for bullet making is perhaps due to its favorable characteristics. Elemental lead (*i.e.*, metallic lead--the form of lead used to manufacture ammunition)² is highly dense,³ yet soft and malleable,⁴ while very resistant to corrosion.⁵ However, lead is also quite toxic when ingested by humans⁶ and animals.⁷ In fact, wildlife poisoning from lead ammunition has been a serious concern of wildlife conservationists for more than a century.⁸ In 1991, the U.S. Fish and Wildlife Service sought to prevent the *2 ingestion of "spent" lead pellets and the consequent death of waterfowl⁹ by banning the use of lead "shot" or pellets used for hunting waterfowl.¹⁰ Since the 1991 ban, various groups with competing interests have entered the debate about the lead ammunition problem, and a variety of "green" ammunition¹¹ has been introduced into the marketplace.¹²

I. LEAD AMMUNITION AND THE CALIFORNIA CONDOR

The California condor is considered one of the rarest birds in the world.¹³ As the largest bird in North America,¹⁴ the California condor sits over five feet tall and possesses an impressive wingspan that exceeds nine feet.¹⁵ At one time, the stunning creature graced the entire Pacific coast, from British Columbia to Baja California.¹⁶ But by the late 1930s, the condor population had decreased to an alarming number--2.¹⁷

While various causes have been linked to the dramatic decrease in condor population,¹⁸ lead poisoning from spent ammunition is the leading cause.¹⁹ The condor, a scavenger by instinct, primarily feeds on the remains of larger mammals.²⁰ Thus, when a hunter harvests big game, the carcass--which contains spent lead ammunition--is typically *3 left behind.²¹ Condors indiscriminately feed on the remains, thereby often ingesting spent lead ammunition.²² Condors with lead poisoning can go blind, lose feathers, and become unable to fly.²³ In the most extreme cases, lead toxicity shuts down the condor's digestive system, which effectively causes it to starve to death.²⁴

Although it took until 1967, the California condor was eventually placed on the federal endangered species list;²⁵ and in 1983, the U.S. Fish and Wildlife Service (“Fish and Wildlife”) began a captive breeding program.²⁶ However, things only got worse before they got better for the condors, and by 1987, not a single condor remained in the wild.²⁷

In 1992, Fish and Wildlife released the first wave of captive bred condors back into the California wilderness,²⁸ and in 1996, six condors were released 30 miles north of the Grand Canyon in Arizona.²⁹ Subsequent releases have occurred every year since then, and today more than 200 condors are living in the wild.³⁰ Despite the captive breeding program producing positive results, the California condor remains at risk in both California³¹ and Arizona.³²

II. A LEGISLATIVE APPROACH

On October 11, 2013, California Governor Jerry Brown signed Assembly Bill 711 (“AB 711”) into law, banning the use of all lead-based ammunition throughout the entire state of California by 2019.³³ Before AB 711, California had already banned³⁴ lead-based *4 ammunition in hunting areas classified as condor habitats by the state.³⁵ The primary purpose behind AB 711: “lead poses a danger to wildlife.”³⁶

While many environmental groups praised Governor Brown, he was equally opposed by a number of hunters’ rights groups.³⁷ Some critics claim that the previous lead ammunition ban, AB 821,³⁸ was ineffective because, despite a reported 99% compliance rate, the lead levels in condors stayed the same or slightly increased.³⁹ Among the critics is former U.S. Congressman Allen West (R-FL), who thinks measures like AB 711, along with increased EPA regulations--which have led to the closure of the last lead smelter plant in America⁴⁰--are “backdoor” efforts at gun control.⁴¹ Rep. West concludes that “no lead means no bullets.”⁴²

To be clear, there are lead-free ammunition alternatives currently available in the marketplace.⁴³ In 1979, Barnes Bullets introduced the Barnes Solids, its first ever 100% nonlead bullet.⁴⁴ Now, other industry leaders such as Hornady, Remington, Winchester, Nosler, and Federal each make nonlead alternatives.⁴⁵ However, nonlead ammunition is more expensive than its lead-based equivalent⁴⁶--and in some cases it can even double the cost of lead-based ammunition.⁴⁷

Another, and perhaps more severe, concern among those opposing the lead ban is that nonlead (namely copper alloys or tungsten) ammunition may be classified as “armor piercing,” which could result in a federal ban of such ammunition.⁴⁸ However, while bullets *5 made of copper meet the definition of armor piercing,⁴⁹ there is an exception to the definition that includes a “projectile which the Attorney General finds is primarily intended to be used for sporting purposes.”⁵⁰ The California Assembly, anticipating this fear, amended AB 711 to better protect the hunting community.⁵¹ The bill contains an exception to the ban, giving the Director of Fish and Wildlife authority to suspend the ban in the event the federal government prohibits the use of nonlead ammunition because it is considered armor piercing.⁵²

III. ARIZONA’S APPROACH

Though the outlook for the condors is much brighter than it was twenty-five years ago, condors in Arizona are still at risk.⁵³ About half of all condor deaths in the wild are linked to lead poisoning,⁵⁴ and the condor would not be able to survive without being trapped annually and treated intravenously (chelation treatment⁵⁵) for lead poisoning.⁵⁶

To remedy this ongoing problem, Arizona has taken an alternative approach to that of California’s. The Arizona Game & Fish Department (“Game and Fish”) has actively sought the aid of Arizona hunters in its wildlife conservation efforts.⁵⁷ Game and Fish distributes educational materials and coupons to purchase nonlead ammunition to about 7,000 hunters each year.⁵⁸ Game and Fish has also provided free nonlead bullets to licensed hunters holding permits within the condor range,⁵⁹ and instituted a “gut pile raffle”⁶⁰ for hunters that still elect to use lead.⁶¹

*6 The results have been outstanding: the approach has netted a 90% voluntary participation rate,⁶² and the lead levels found in trapped condors has reached a decade low.⁶³ Last year there were only eleven cases that required chelation treatment⁶⁴--a significant reduction from the sixty-six cases in 2006.⁶⁵ The U.S. Fish and Wildlife Service has acclaimed Arizona’s voluntary lead-reduction program and recommended implementing it in Utah,⁶⁶ noting that it could reduce condor mortality

to a level that would not affect the overall population.⁶⁷

IV. CONCLUSION

An outright ban on lead ammunition may prove to be an effective approach to sustaining the California condor conservation efforts. A ban on lead ammunition would, theoretically, put an end to lead ammunition used by hunters, which, in turn, would prevent condors from ingesting lead bullet fragments when they scavenge from the remains of big game.⁶⁸ In addition, the fines collected from offenders could be used to help fund condor conservation efforts.

Critics of such a ban argue that lead ammunition has not been scientifically proven to be the primary cause of lead poisoning among condors,⁶⁹ and had the first ban in California proven successful in the condor areas, a statewide ban would be unnecessary.⁷⁰ However, Game and Fish provides a logic chain supporting the inference that lead-based ammunition is the most likely source of lead in condors.⁷¹ It seems that the recent reduction of lead levels in Arizona's condors, realized after Arizona hunters voluntarily switched to nonlead ammunition, tends to prove that hunters' spent lead ammunition is at least a contributing factor of condor lead poisoning.

*7 While a statewide ban will send the message that Arizona is taking condor conservation seriously, the absence of an outright ban does not send the opposite message. Moreover, it can be argued that an outright ban is unnecessary because of the success Arizona has already seen with its voluntary lead ammunition reduction efforts.⁷² There is also valid concern that a ban may alienate hunters⁷³--a group regarded as the most important partner in the condor conservation efforts.⁷⁴

The bottom line is that, absent an outright ban on lead ammunition, hunters will most likely shoulder the blame if the condor conservation efforts fail. Furthermore, if Arizona hunters agree with Senator McCain that hunters are the greatest conservationists,⁷⁵ or with Governor Brown that hunters are the original conservationists,⁷⁶ the existing efforts must be continued in order to protect the long-term viability of all species, including the California condor.

Footnotes

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¹ *Bullet. How Products Are Made*, <http://www.encyclopedia.com/topic/Bullet.aspx> (last visited October 18, 2014).

² *Elemental Lead*, HUNT FOR TRUTH, <http://www.huntfortruth.org/science/lead-forms-and-characteristics/elemental-lead/> (last visited October 18, 2014).

³ *Id.*

⁴ *Id.*

⁵ *Id.*

⁶ *Lead Poisoning*, MAYO CLINIC, <http://www.mayoclinic.org/diseases-conditions/lead-poisoning/basics/definition/con20035487> (last updated June 10, 2014).

⁷ Governor Jerry Brown, *Signing Message Assemb. B. 711* (October 11, 2013) available at http://gov.ca.gov/docs/AB_711_2013_Signing_Message.pdf [hereinafter *AB 711 Signing Statement*].

8 *Id.*

9 *Id.* See also M. Leah Wright & Gregory Tolbert, *Reform at Last for the Lead Shot Controversy*, 12 WM. & MARY ENVTL. L. & POL'Y REV. 8 (1987), available at <http://scholarship.law.wm.edu/cgi/viewcontent.cgi?article=1399&context=wmelpr>.

10 50 C.F.R. § 20.11 (2014).

11 “Green” ammunition is a term used by many to describe nonlead bullets. See, e.g., Perry Chiamonte, *End of the line for the lead bullet? Regulations, bans force switch to ‘green’ ammo*, FOX NEWS, (December 21, 2013) <http://www.foxnews.com/us/2013/12/21/end-line-for-lead-bullet-regulations-bans-forceswitch-to-green-ammo/> [hereinafter *End of Line for Lead Bullet*]; Michael Todd, *Gunning for Lead Bullets*, PACIFIC STANDARD, (October 14, 2013, 7:55 PM) <http://www.psmag.com/environment/duel-lead-green-bullets-68369/>.

12 Barnes, Hornady, Remington, Winchester, Federal, and Nosler are among the most recognizable ammunition producers, and each manufacture at least one type of lead alternative bullet. See *Non-lead Bullet Types*, HUNTING WITH NONLEAD, http://huntingwithnonlead.org/bullet_types.html (last visited October 19, 2014) [hereinafter *Non-lead Bullet Types*].

13 *Condor Re-introduction & Recovery Program*, NAT'L PARK SERVICE, <http://www.nps.gov/grca/naturescience/condor-reintroduction.htm> (last visited October 8, 2014) [hereinafter *Condor Re-introduction Program*].

14 *Fact Sheet California Condor*, DEFENDERS, <http://www.defenders.org/california-condor/basic-facts> (last visited October 18, 2014).

15 *Id.*

16 Condor Re-introduction Program, *supra* note 13.

17 *Id.*

18 *Id.*

19 *Id.* See also *Condors and Lead*, ARIZ. GAME AND FISH DEP'T, http://www.azgfd.gov/w_c/california_condor_lead.shtml (last visited October 19, 2014) [hereinafter *Condors and Lead*].

20 *Id.*

21 *Id.*

22 *Id.*

23 Ker Than, *Bullet Fragments Killing Condors*, LIVE SCIENCE (August 30, 2006, 5:39 PM) <http://www.livescience.com/7123-bullet-fragments-killingcondors.html>.

24 *Id.*

25 Condor Re-introduction Program, *supra* note 13.

26 *Id.*

27 *Id.*

28 *Id.*

29 *Id.*

30 *Id.*

31 *California Condor Reintroduction*, VENTANA WILDLIFE SOC'Y, [http:// www.ventanaws.org/species_condors/](http://www.ventanaws.org/species_condors/) (last visted October 19, 2014).

32 Condors and Lead, *supra* note 19.

33 Assemb. B. 711, 2013-2014 Gen. Assemb., Reg. Sess. (Cal. 2013), *available at* <http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml;jsessionid=935bf082d9e79a51bd3ede4f9c42>.

34 Assemb. B. 821, 2007-2008 Gen. Assemb., Reg. Sess. (Cal. 2007), *available at* http://www.leginfo.ca.gov/pub/07-08/bill/asm/ab_0801-0850/ab_821_bill_20071013_chaptered.html.

35 Chris Clarke, *California is First State to Ban Lead Ammo in Hunters' Guns*, KCET (October 14, 2013, 2:21 PM), <http://www.kcet.org/news/define/rewild/legislation/california-enacts-first-statewidelead-ammo-ban.html> [hereinafter *First State to Ban Lead Ammo*].

36 AB 711 Signing Statement, *supra* note 7.

37 First State to Ban Lead Ammo, *supra* note 35.

38 AB 821, *supra* note 34.

39 Tom Pederson, *Lead Ammo Ban Proponents Avoid Science and Revert to Politics*, HUNT FOR TRUTH (May 29, 2013) <http://www.huntfortruth.org/lead-ammo-ban-proponents-avoid-science-and-revert-topolitics/> [hereinafter *Lead Ammo Ban Proponents Avoid Science*].

40 End of Line for Lead Bullet, *supra* note 11.

41 Allen B. West, *Backdoor gun control is here: no lead means no bullets*, (December 1, 2013) <http://allenbwest.com/2013/12/backdoor-gun-control-lead-meansbullets/>.

42 *Id.*

43 Non-lead Bullet Types, *supra* note 12.

44 *History*, BARNES BULLETS, [http:// www.barnesbullets.com/resources/about-us/history/](http://www.barnesbullets.com/resources/about-us/history/) (last visited October 19, 2014).

45 Non-lead Bullet Types, *supra* note 12.

46 *Id.*

47 *Id.*

48 See First State to Ban Lead Ammo, *supra* note 35.

49 18 U.S.C. § 921(a)(17)(B)(i).

50 18 U.S.C. § 921(a)(17)(C).

51 AB 711 Signing Statement, *supra* note 7.

52 *Id.*

53 Sen. John McCain Op-Ed., *My Turn: How hunters are helping recovery of our condors*, AZ CENTRAL, (September 25, 2014) [http:// www.azcentral.com/story/opinion/op-ed/2014/09/25/california-condor-arizonalead-ammo/16232981/](http://www.azcentral.com/story/opinion/op-ed/2014/09/25/california-condor-arizonalead-ammo/16232981/) [hereafter *My Turn*].

54 *Id.*

55 Chelation treatment is an intramuscular (pectoral) injection of calcium edatate. Treatment is reserved for condors showing high lead levels, and is given twice daily for five days. See Chris N. Parish et. al., LEAD EXPOSURE, DIAGNOSIS, AND TREATMENT IN CALIFORNIA CONDORS RELEASED IN ARIZONA 8, (2006) available at [http:// www.biologicaldiversity.org/species/birds/California_condor/pdfs/Parish-et-al-July06.pdf](http://www.biologicaldiversity.org/species/birds/California_condor/pdfs/Parish-et-al-July06.pdf) [hereinafter *Treatment in California Condors*].

56 *Id.*; see also Condors and Lead, *supra* note 19.

57 Condors and Lead, *supra* note 19.

58 *My Turn*, *supra* note 53.

59 Condors and Lead, *supra* note 19.

60 The “gut pile” raffle is an approach by Game and Fish that incentivises hunters using lead ammunition within condor populated units to remove the gut pile (*i.e.*, remains) of the harvested animal from the field for proper disposal. Removal of a gut pile containing lead fragments prevents condors from ingesting the lead contained in those particular remains. See Condors and Lead,

supra note 19.

61 Condors and Lead, *supra* note 19.

62 My Turn, *supra* note 53.

63 *Id.*

64 My Turn, *supra* note 53.

65 Treatment in California Condors, *supra* note 55.

66 My Turn, *supra* note 53.

67 *Id.*

68 *See* Condors and Lead, *supra* note 19. *See also* First State to Ban Lead Ammo, *supra* note 35.

69 Lead Ammo Proponents Avoid Science, *supra* note 39.

70 *Id.*

71 Condors and Lead, *supra* note 19.

72 *Id.*; *see also* My Turn, *supra* note 53.

73 My Turn, *supra* note 53.

74 *Id.*

75 *Id.*

76 AB 711 Signing Statement, *supra* note 7.