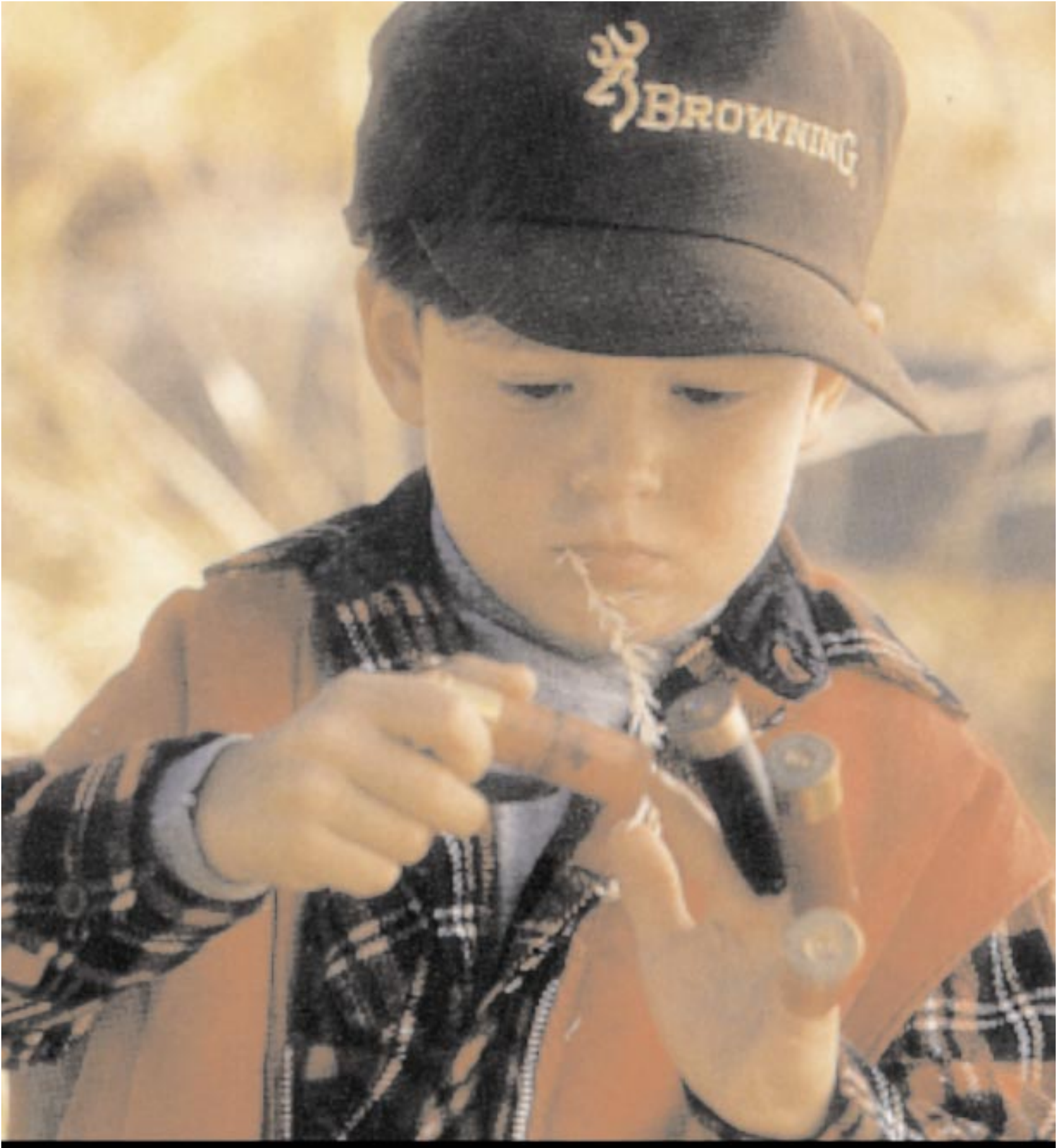

Poisonous Pastime

The Health Risks of Shooting Ranges and Lead to Children, Families, and the Environment

Violence Policy Center

Environmental Working Group

The Violence Policy Center is a national organization working to stop gun death and injury in America through research, analysis, and advocacy for effective firearms policy.

The Environmental Working Group is an independent, non-partisan research and watchdog organization that conducts computer investigations into the toxins in our food, air and water and the influence-peddling that makes it worse.

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- *Where'd They Get Their Guns?—An Analysis of the Firearms Used in High-Profile Shootings, 1963 to 2001* (April 2001)
- *Firearms Production in America—2000 Edition* (March 2001)
- *Every Handgun Is Aimed at You: The Case for Banning Handguns* (March 2001)
- *A Deadly Myth: Women, Handguns, and Self-Defense* (January 2001)
- *From Gun Games to Gun Stores: Why the Firearms Industry Wants Their Video Games on Your Child's Wish List* (December 2000)
- *Handgun Licensing and Registration: What it Can and Cannot Do* (September 2000)
- *License to Kill III: The Texas Concealed Handgun Law's Legacy of Crime and Violence* (August 2000)
- *Pocket Rockets: The Gun Industry's Sale of Increased Killing Power* (July 2000)
- *Gunland USA: A State-by-State Ranking of Gun Shows, Gun Retailers, Machine Guns, and Gun Manufacturers* (June 2000)
- *Guns For Felons: How the NRA Works to Rearm Criminals* (March 2000)
- *Deadly Exceptions: Gun Manufacturers That Would Be Protected by the "Small Business" Cap on Punitive Damages* (February 2000)
- *Where Did You Get <u>That</u> Statistic?—A Bibliography and Resource Guide for Advocates Working to Reduce Gun Death and Injury* (January 2000)
- *Cashing in on the New Millennium: How the Firearms Industry Exploits Y2K Fears to Sell More Guns* (December 1999)
- *Gold Medal Gunslingers: Combat Shooting Targets the Olympic Games* (July 1999)
- *One Shot, One Kill: Civilian Sales of Military Sniper Rifles* (May 1999)
- *Start 'Em Young—Recruitment of Kids to the Gun Culture* (April 1999)
- *Making a Killing: The Business of Guns in America* (January 1999)
- *Joe Camel with Feathers: How the NRA with Gun and Tobacco Industry Dollars Uses Its Eddie Eagle Program to Market Guns to Kids* (November 1997)
- *Cease Fire: A Comprehensive Strategy to Reduce Firearms Violence* (Revised, October 1997)

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Introduction:
There Goes the Neighborhood

The American gun industry is in big trouble. Hunting is fading as a sport. Guns are seen by most of the general public as either weapons of crime or dangerous toys owned only by a shrinking minority of Americans.[a] As a result, the civilian firearms market is becoming smaller and more concentrated.[b]

The gun industry is keenly aware that it faces eventual extinction unless it can break out of this fatal cycle of fewer and fewer people owning more and more guns. The industry and its satellite organizations—the National Rifle Association (NRA) and the National Shooting Sports Foundation (NSSF), in particular—have developed a long-range "survival" strategy to pump up gun sales. One arm of this survival strategy—selling lethality, or killing power—is described in a number of Violence Policy Center books and reports. But a hitherto less well-documented arm of the industry strategy is that of building more shooting ranges to draw new customers—especially women and children—into what it euphemistically calls the "shooting sports." (Appendix A documents the means by which the industry is using tax dollars and co-opted federal officials to help underwrite this strategy.)

As is so often the case, what is good for the gun industry is bad for the general public. Thus, as a Michigan hunter safety coordinator told a national shooting range symposium in 1990, shooting ranges are "like a waste disposal facility." The attitude most people have toward shooting ranges is "not in their neighborhood and definitely not next door."[1]

There is good reason to compare shooting ranges to garbage dumps. Part of this is because, in the understated words of ubiquitous gun industry defense lawyer Anne Kimball, "the activity of shooting is one that is controversial in our society."[2] Shooting is indeed controversial in America because of our world-record levels of

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[a] A measure of the growing disfavor with which firearms are held among the general public may be seen in the reported decision of the Make-A-Wish Foundation to reverse policy and no longer grant wishes that involve firearms or other weapons. The Foundation underwrites the wishes of children with terminal illnesses. "Make-A-Wish Opts To Shun Future Gun, Hunt Requests," *The New Gun Week*, July 1, 2000, 11.

[b] Firearms ownership has declined and those who own guns typically own more than one. In the 1950s, about half of American households reported owning a firearm. This dropped to just 35 percent by 1994. Only one in six adults owns a handgun. In 1994, just 10 percent of firearms owners held 77 percent of the privately owned guns in America. Philip J. Cook and Jens Ludwig, *Guns in America: Results of a Comprehensive National Survey on Firearms Ownership and Use, Summary Report* (Washington, DC: Police Foundation, 1996).

firearms death and injury.[c] But, as this report documents, shooting ranges actually *are* bad neighbors. They pollute the environment. They threaten public health, most severely among children—the gun industry's prime targets.[d] And they are backed by special-interest bullies like the NRA who use their lobbying clout to pass laws that block citizen recourse against unwelcome ranges and their influence with government agencies to cut back-room deals for special treatment.

Spokesmen for the gun industry and the "shooting sports" publicly describe shooting ranges as places where skilled marksmen engage in disciplined and wholesome sport shooting. But when they talk privately among themselves, they discuss a less savory reality: lead poisoning and other types of environmental pollution such as excessive noise, dangerous novice shooters who barely know what they are doing, the "Rambo factor" (shooters intent on destroying targets and other objects by blasting away at high speed with powerful guns), suicides, unintentional deaths and injuries—even murders.

These are truly neighbors that no one would want moving in next door. And "next door" is constantly getting closer and closer. As cities and suburbs expand into once-rural areas, new homeowners increasingly "complain of noise and safety," according to U.S. Fish & Wildlife Service deputy director Conley Moffett.[3]

This report documents the problems that shooting ranges bring to those who use them, their families, their neighbors, and even to entire communities stuck with the considerable costs of cleaning up the hazards that abandoned ranges leave behind. It suggests ways that local citizens can organize and take action to:

- help keep these bad neighbors from moving in next door;
- get them out of the schools; and,
- inform communities of the hazards of existing ranges.

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[c] Since 1960, more than a million Americans have died in firearm homicides, suicides, and unintentional shootings. In 1998 alone, a total of 30,708 Americans died from gun violence. Of these, 17,424 deaths were suicides, 12,102 were homicides, 866 were unintentional fatalities, and 316 were of an undetermined nature. "Deaths: Final Data for 1998," *National Vital Statistics Report* 48, no. 11 (2000).

[d] "Everyone past toddler age should get the chance to shoot," advises *Guns & Ammo* magazine in a special section, "Recreational Shooting: Fun for the Whole Family," May 2000, 52.

Section One:
Lead, Environmental Pollution, and Health Hazards

"Until fairly recent years, most shooters wore no hearing protection. As a result, most shooters over 40 have some hearing loss. For many, it is a very significant and noticeable hearing loss. Most of us didn't know how much damage we were incrementally inflicting on ourselves. There was little or no warning about the danger to our health years ago. The same is true with the lead problem. We fired round after round, match after match, without realizing what lead could do to us."

—Joseph P. Tartaro, Second Amendment Foundation news release, January 10, 1998

Shooting ranges are of two basic types. Indoor ranges are usually restricted to the use of handguns or lower caliber rifles—such as the .22s used by many school rifle teams—shooting at relatively short range. Outdoor ranges allow use of a wider variety of long guns: shotguns for skeet, trap, and "sporting clays,"[e] and higher-powered rifles for target shooting at longer ranges.

Both types of ranges share a common problem—lead. Most ammunition used at ranges is made of lead. Although no records on ammunition production are kept in the United States, it has been estimated that between 400 and 600 tons of lead are used each day to make bullets and "a high proportion of it is left to clutter up shooting ranges."[4] It is no wonder, then, that numerous studies—since at least the 1970s—have documented that *outdoor* shooting ranges are major sources of lead pollution in the environment, and that *indoor* shooting ranges are significant sources of lead poisoning among people who use them.[f]

The danger of lead poisoning extends not only to those who shoot in indoor firing ranges. It also reaches the shooters' families (especially children), and third parties, such as construction workers whose jobs bring them into contact with shooting ranges, and persons who share the building, such as children in a school in which a range is located.

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[e] Skeet, trap, and sporting clays are variants of an activity in which a circular disc is hurled, usually mechanically, simulating the flight of a game bird within sight of the shooter, who is armed with a shotgun. The object is to react quickly and accurately enough to hit and shatter the disc, sometimes called a "clay pigeon," with shotgun pellets.

[f] The U.S. military was reported to have closed more than 700 firing ranges as of August 1999 due to lead contamination, and taken major steps to clean up and prevent further contamination at others. "Army shoots for safe environment with tungsten bullets," *American Metal Market*, August 26, 1999, 4. Although beyond the scope of this study, the military's approach contrasts with the head-in-the-sand attitude of many civilian range owners and operators.

Seems like only yesterday that your father brought you here for the first time. Those sure were the good times—just you, Dad, and his Smith & Wesson.

Smith & Wesson Catalog, 1992, pp. 29, 30

Lead poisoning has long been known to cause terribly debilitating and sometimes fatal effects on one's body. But there is a growing body of evidence that the neurological damage that lead causes also helps cause violent criminal behavior, perhaps even "rampage" killings.[5] Ironically, overexposure to lead at shooting ranges may therefore cause some violent gun crime.

Lawsuits and regulatory action already have closed some shooting ranges because of the health risks and environmental pollution problems they pose.[6] Nevertheless, many ranges continue to operate as silent hazards, with little or no health and environmental protection measures. Their owners and operators are either ignorant of the effects of their businesses, or simply hoping that their users, their neighbors, and their employees will remain ignorant of the threat to their health.

Lead—An Extraordinarily Toxic Element

Effects on Human Beings. Lead is a highly potent toxic element that attacks many different body organs and systems, including the blood-forming, nervous, urinary, and reproductive systems.[7] It is especially dangerous to fetuses and young children. Unlike other metals such as zinc or iron, lead has no known useful function in the body. Lead taken in large enough doses can cause brain damage—leading to seizures, coma, and death in a matter of days. Although the good news is that such short-term, extreme overdoses are rare, the bad news is that chronic overexposure to lower levels of lead simply causes these and other serious health impairments to develop over a longer period of time.

Human beings can be exposed to lead from breathing air, drinking water, eating food, or ingesting dust or soil that contains lead dust or particles of lead. The effects of lead are the same no matter how it gets into the body, although how the body processes lead ingested in different ways varies. For example, most of the lead inhaled into the lungs moves into the blood stream, where it is circulated throughout the body and stored in various body organs, tissues, and bone. On the other hand, very little lead that is swallowed by *adults* enters the blood stream. However, much more lead that is swallowed by *children* enters the bloodstream than in adults, and children are much more prone to this form of ingestion.

Although some of the lead in the bloodstream is filtered out and excreted from the body, the remainder is stored, most of it in bone but some also in soft tissues. The level of this stored lead increases with chronic exposure. The victim may not be aware of it, since there is often no "bright line" at which obvious symptoms appear,[g]

[g] Many symptoms of chronic overexposure are subtle. They include loss of appetite, metallic taste in the mouth, anxiety, constipation, nausea, pallor, excessive tiredness, weakness, insomnia,

but he or she is slowly being poisoned, suffering long-term, chronic, and irreversible damage.

The effects of lead poisoning include: damage to the brain and central nervous system; kidney disease; high blood pressure; anemia; and damage to the reproductive system, including decreased sex drive, abnormal menstrual periods, impotence, premature ejaculation, sterility, reduction in number of sperm cells, and damage to sperm cells resulting in birth defects, miscarriage, and stillbirth.

Effects on women and children. Lead is particularly harmful to the rapidly developing brains and nervous systems of fetuses and young children. This harm has been well-studied in actual human cases, not mere theoretical calculations, animal studies, or academic conjecture.[8]

Most strikingly, the level of lead known to be toxic to children has shifted *downward* since the 1970s as health investigators have developed more sensitive instruments and better study designs. Also, children are at a higher risk because they normally have more hand-to-mouth activity than adults (thus ingesting lead-contaminated dust, for example) and because their bodies absorb lead more readily than adult bodies. Because multiple low-level lead input can result in significant overexposure, it is often difficult to pinpoint all the sources contributing to a given child's overexposure. Contaminated house dust is known to be a major source. "Take-home" exposure to children also results when adults launder contaminated clothing with the rest of the family's wash, track in dust, or bring contaminated materials home.

Unfortunately, like adults, most lead-poisoned children do not exhibit obvious symptoms. Their protection hinges on vigilant parents and aggressive public health authorities. Nevertheless, these poisoned children suffer a particular harm that will handicap them for life—lowered intelligence. A number of studies have shown conclusively that children's IQ scores are inversely related to lead exposure. Moreover, the decrease in IQ scores has a direct and serious practical impact: a substantial increase in the number of children with severe intellectual deficits and a decrease in children with superior skills.

"It makes you stupid," in the words of one lead testing expert, and the damage is irreversible.[9]

These effects on children and fetuses are logically of grave concern to women who are, or plan to become, mothers. In addition to the fertility problems described

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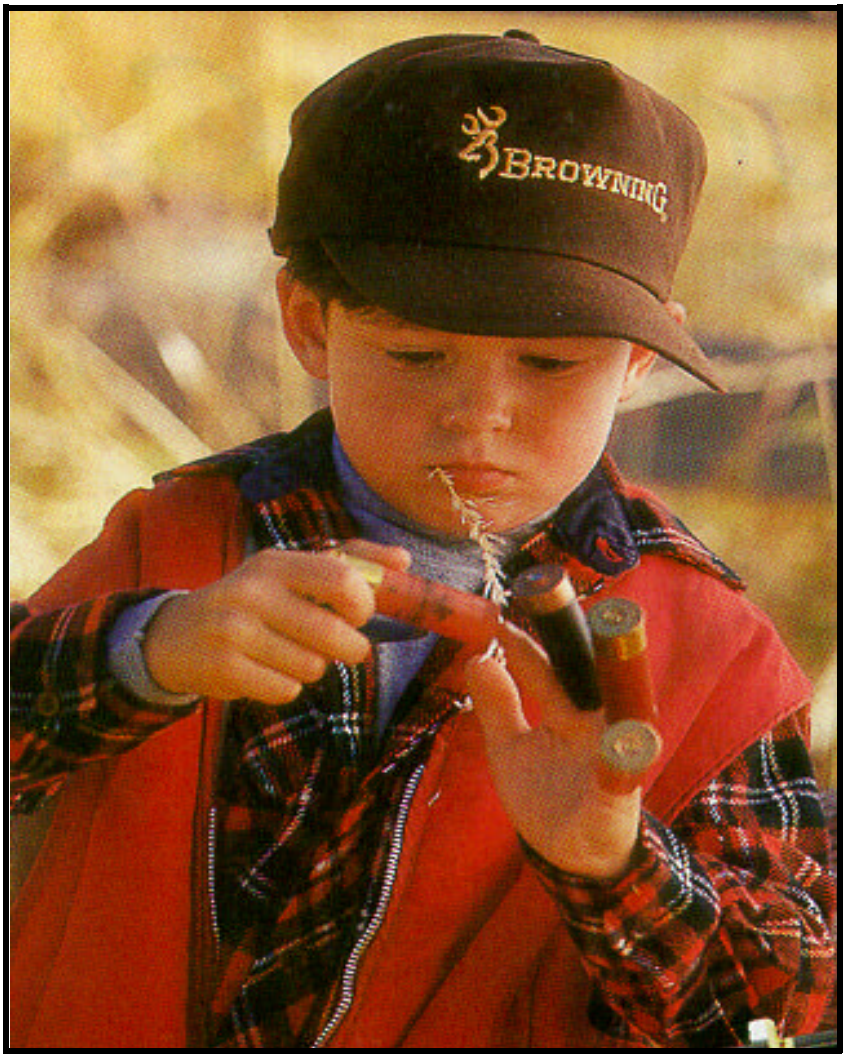
headache, nervous irritability, muscle and joint pain or soreness, fine tremors, numbness, dizziness, hyperactivity, and colic.



Catalog, Browning Arms Company, 1997

in the preceding section, it is known that lead crosses the placental barrier and puts developing fetuses at severe risk. Children born of parents either of whom were exposed to excess lead levels are more likely to have birth defects, mental retardation, behavioral disorders, or die within their first year.[10]

Lead Poisoning and Criminal Behavior. Perhaps the most ironic and problematic problem of lead poisoning in the context of firearms is a growing body of evidence that lead poisoning, particularly in childhood, may be a cause of violent criminal behavior in some individuals.[11] The point of this body of evidence is not that every person exposed to lead becomes a violent criminal, any more than every smoker contracts lung cancer. Rather it is that there is a scientifically demonstrable relationship between lead poisoning and criminal behavior, just as there is between smoking and lung cancer.[12]

For example, Dr. Deborah Denno, a sociologist and professor at Fordham Law School, conducted a comprehensive, landmark study of the relationship between lead and violence among young boys.[13] "Lead had its own independent effect on delinquency and adult criminality, separate from IQ," said Dr. Denno.[14]

Dr. Herbert L. Needleman, a psychiatrist at the University of Pittsburgh Medical Center, conducted another study of 301 boys in public school and reached similar findings.[15] Dr. Needleman explained the connection this way:

> I'm not saying that lead exposure is the cause of delinquency. It is a cause and one with the biggest handle to prevention. Lead is a brain poison that interferes with the ability to restrain impulses. It's a life experience which gets into biology and increases a child's risk for doing bad things.[16]

Even if the poisoning and original misbehavior may happen in childhood, its effects often continue into adulthood.[17] Indeed, at least one researcher has suggested that lead poisoning may have contributed to James Huberty's 1984 shooting rampage at a McDonald's restaurant in California, and linked Huberty's high lead levels in his blood to his handling guns and visiting shooting ranges.[18] Clearly, there is substantial cause to conduct further research into links between lead poisoning associated with firearms and rampage killings.

Effects on Wildlife. Lead has devastating effects on wildlife that mistake lead shotgun pellets for food or grit and ingest it. Ducks and geese, for example, "deliberately swallow small bits of stone and gravel to help grind up food in their gizzards."[19] When this grit contains lead, the result is lead poisoning and a slow and agonizing death. "You see them walking with drooping wings and they can't fly," an

Illinois veterinarian said recently. "It really is a terrible death because it's very slow and gradual."[20]

Waterfowl have been most directly impacted historically—from 1.5 to 2.5 million died every year from lead poisoning until 1991, when the U.S. Fish & Wildlife Service banned use of lead shot for hunting them. But other avian species, ranging from songbirds to bald eagles, are also poisoned by ingesting lead shot directly or in their prey.[21] In any case, the lead shot ban does not extend to other forms of hunting or to target shooting. In addition, in 1997 a source in the ammunition industry said that about 20 percent of American hunters still use lead in defiance of the ban—the result is that about 300,000 ducks and geese are still poisoned each year by lead shot.[22]

Sources of Lead at Shooting Ranges

Exposure to lead poisoning in indoor firing ranges comes primarily from inhaling lead particles suspended in the air in the range (although it may also be ingested orally, with contaminated food for example). These particles come principally from ignition of the primer, which contains lead styphnate,[h] from microscopic lead particles scraped off the bullet as it passes through the gun barrel, and from lead dust created when the bullet strikes the target or the backstop behind the target.[23]

Pollution from outdoor ranges comes primarily from spent shotgun pellets and rifle bullets, including materials fired into backstops, called "berms," or out over waterways. According to *Sports Afield*, "the quantity of recreational lead deposited in the environment is enormous. For example, at some trap and skeet ranges, lead shot densities of 1.5 billion pellets per acre have been recorded. That's 334 pellets in every square foot."[24] (This massive pollution at shooting ranges is entirely separate from another question, posed by a U.S. Forest Service official at a gun industry shooting range symposium, of "where the lead is going for the millions of shooters who currently are not using established ranges," but are instead shooting on open public land.[25])

Another source of airborne lead for some range shooters is casting their own

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[h] Each round of ammunition is composed of four parts: (1) a bullet, or pellets in the case of a shotgun round, seated in (2) a cylindrical shell casing (or case), within which is (3) a charge of gunpowder, and (4) a primer, seated in the base of the case. The firing pin strikes the primer, made of a highly explosive compound, which explodes and in turn ignites the gunpowder. The burning gunpowder creates gas pressure which expels the bullet or pellets from the casing and through the barrel of the gun.

lead bullets by pouring molten lead into molds of the appropriate size for the caliber bullet desired. Although beyond the scope of this study, a number of sources warn that this practice can cause serious lead poisoning.[26] Melting lead produces a fume which can remain airborne for several hours, is easily inhaled, and can contaminate surfaces.[27] The director of a New Hampshire occupational health center said some of the worst cases of lead poisoning he has seen have been in people who make their own bullets, and warned of "an amazing lack of awareness" of the danger. "That's a wonderful way to poison not only yourself but members of your family," said another state health official.[28]

Indoor Shooting Ranges

Indoor shooting ranges have been identified as serious lead poisoners since at least the mid-1970s, documented in a string of studies by public health authorities.[29] Although an official of a major shooting range supply company attacked the early warnings as "lead-intoxication hysteria" in a 1976 issue of *The Police Chief* magazine,[30] no serious challenge has been mounted to the growing body of science underlying the indisputable fact that lead poisoning is a serious threat to health at indoor shooting ranges.[i]

An NRA official speaking in 1990 said, "Lead contamination directly contributed to closing hundreds of indoor ranges in the last 20 years."[31] Nevertheless, indoor shooting ranges continue to appear regularly in public health records and news stories as major offenders for lead poisoning. For example, the California Department of Health Services reported that, among commercial industries, indoor firing ranges had the largest number of lead poisoning cases as recently as 1993 and 1994.[32] Problems with lead overexposure also continue to be regularly seen at law enforcement firing ranges[33] and at both active and abandoned firing ranges located within school buildings. But most privately operated firing ranges (shooting clubs, for example) are completely unregulated by public health authorities, even though they present major health problems for their staff and users.

It should also be noted that most indoor shooting ranges, like any small business dealing with toxic materials, are subject to a wide range of state and local health and

[i] Indoor firing ranges also present problems of exposure to noxious gases such as carbon monoxide and oxides of nitrogen. See, e.g., T. Anania and J. Seta, *Lead Exposure and Design Considerations for Indoor Firing Ranges* (Springfield, VA: National Institute for Occupational Safety and Health, 1975); Brian O'Rourke, "Indoor firing range ventilation system," *Heating, Piping, Air Conditioning* (October 1992), p. 77.

Guns & Ammo, April 2001, p. 81

safety regulations, such as special health and safety provisions of building codes, and special procedures for containing and cleaning up lead waste (such as being sure that plumbing connections do not discharge lead waste into waters).[34]

A wide fan of risk. The risk of lead poisoning begins most acutely with firearm instructors, other range employees, and individual shooters, all of whom may inhale lead dust or fumes while shooting or engaging in other activities such as cleaning firearms, handling spent casings, or cleaning bullet traps and the range itself.[35] The risk then fans out widely over a surprising range of third parties who are not participants in the "shooting sports."

Risk to direct participants. It is logical that, as even the pro-gun Second Amendment Foundation warns, "the people at the highest risk are those with the greatest and most consistent exposure to the ambient lead—range officers, coaches, and those attempting to remove lead from a range without proper safety gear and equipment."[36]

Although the greater part of the indoor firing range lead problem appears to be chronic exposure over time, there are several reported cases of catastrophic effects due to intensive short-term exposure. For example, a police firearms instructor in New Hampshire died in his sleep of acute respiratory failure following exposure to lead dust and gases during a five-day training course at an indoor firing range.[37] At least one shooting range employee in the same state was also diagnosed as having suffered a chronic lung disease from a single day's intensive exposure. The employee cleaned up lead dust deposits wearing only a painter's mask, after members of a security firm spent a day of heavy shooting at the range.[38]

Maintenance employees are at especially high risk if proper procedures are not followed. The highest blood lead levels ever recorded by the Baltimore City Health Department (as of 1988) were in an attendant who regularly swept up in an amusement park shooting gallery.[39] A 17-year-old part-time employee at an indoor rifle range developed abdominal pain within one month's employment, and vomiting, severe abdominal pain, and constipation after five months.[40] Unfortunately, as California authorities have observed, "many ranges contract out range cleanup to other firms that may be even less aware of the potential for lead poisoning in this industry."[41]

Standard users of indoor shooting ranges are also at risk. Officials at the California Occupational Lead Poisoning Prevention Program currently report seeing elevated blood lead levels "among recreational and competitive shooters."[42] A doctor at Boston's Children's Hospital reported in 1999 the cases of four adolescent girls with elevated lead blood levels, all of whom were competitive shooters at an indoor firing range.[43] A public health doctor in London reported in 1994 that three out of four

Cover, *Insights*, January 1998

regular shooters at a Manchester range had lead blood levels so high that six-month monitoring of their blood levels would have been required had the exposure resulted from working in industry.[44]

A landmark study in Colorado dramatically demonstrated the risks to indoor range shooters. After getting frequent reports of elevated lead blood levels from firing range employees or users, Colorado public health officials tracked 17 members of a law enforcement trainee class during and after a three-month period of firearm instruction at a state-owned indoor firing range.[45] Despite the fact that a new ventilation system was installed early in the study, the researchers found levels of lead in the range's air 40 times those set in the applicable federal Occupational Safety and Health Administration (OSHA) safety standard. According to a study author, those levels were *low* compared to other indoor ranges examined by Colorado public health officials. None of the 17 trainees had elevated blood levels before the class, but 15 had elevated levels after the training, eight of those above the OSHA threshold requiring medical monitoring.

Private firing ranges in Colorado all refused requests by the researchers to test blood levels of their patrons. But the researchers concluded that "frequent users would be at risk for developing elevated blood lead levels and adverse health effects from the lead exposure."[46]

Risk to families and other third party nonparticipants. Because lead dust settles on clothing, shoes, and accessories worn or used at the range, the families of persons who work at or use firing ranges are also subject to "take-home" exposure to lead dust.[47] This can cause secondary lead poisoning, particularly in children.[48]

This risk may not be obvious, but it is no less real—shooters can even contaminate their children's clothing by washing them together with the clothes they wore to the range. "If you take your clothing home, you actually contaminate the family clothing when you wash it (together)," a New Hampshire police captain and range instructor warned.[49]

A 1996 National Institute of Occupational Safety and Health (NIOSH) lead health hazard evaluation of firing range activities at the FBI Academy's Firearms Training Unit found significantly higher levels of lead in the carpets of the dormitory rooms of FBI students as compared to the rooms of nonstudents. The study concluded, "FBI students may be contaminating their living quarters with lead," and that "a potential problem of 'take-home' lead exposure of families of firearms instructors was found."[50]

Persons who spend time in the same building in which a firing range is located will be exposed to lead dust from the range unless special precautions are taken. These include totally isolating the range's ventilation system from the rest of the

building and ensuring a negative air pressure in the range so that lead dust does not escape into adjacent offices or work areas, in which a positive air pressure should be maintained to keep lead dust out.[51] In any case, lead residue from inadequately designed old ranges may still be found in building air ducts long after the range has been retired.[52] This risk is especially acute in the case of firing ranges located within schools, a topic addressed in more detail below.

Air exhausted from an indoor shooting range can also threaten third parties. For example, a day-care center in Clearwater, Florida, was forced to close and the children were required to have blood tests after it was discovered that a neighboring indoor shooting range was venting lead-contaminated air into the center's playground area. Lead levels just outside the range's exhaust fan were found to be 8,000 times higher than the acceptable level set by the Pinellas County's Department of Environmental Management, and those in the soil near the border between the range and the daycare center were about 40 times the acceptable level. The proprietor of the private shooting range was reported to be "shocked" by the revelation, arguing that the ventilation system had been inspected by health officials 10 years earlier when the range was built.[53] (As is described in more detail below, poor maintenance of such ventilation systems is a major problem for indoor ranges.)

Construction employees who work on firing ranges may also be exposed to lead contamination, especially since they may not be aware of the danger when working in older buildings. California health officials have seen "some serious lead poisoning cases among construction employees engaged in demolition of a firing range, as well as among these employees' children."[54]

Exposure of Children at Indoor School Ranges. Given the vast amount of effort devoted to protecting children from lead in paint in recent decades, it may come as a shock to parents to learn that schools all over the country are exposing children to lead contamination from indoor firing ranges.[j] Yet using shooting ranges to get children and youth involved in the "shooting sports" is an integral part of the gun industry's survival strategy, described in more detail in Appendix A. The National Rifle Association supports the gun industry's overall range survival strategy by helping to underwrite school shooting ranges. In Illinois alone, for example, the NRA increased grants for school shooting ranges from $7,844 in 1995 to more than $23,750 in 1998.[55]

Unfortunately, many school administrators appear to be oblivious to the threat that lead from shooting ranges presents to the health of the children under their care—until after a problem is discovered. For example, officials in Lancaster County,

[j] About 500 schools nationwide are reported to have rifle teams, although it is not known how many of them use indoor ranges. Frank Eltman, "School rifle teams in spotlight amid spate of school shootings," *The Associated Press State & Local Wire*, 22 November 1999.

Cover, *Insights*, April 1996

Pennsylvania, learned of lead contamination at six high school shooting ranges only *after* one student had a routine blood test unrelated to the shooting program and was found to have elevated lead levels. When blood tests were given to other students in the program, they were also found to have elevated blood lead levels. As a result, the rifle ranges were closed.[56]

Similarly, lead contamination at an indoor shooting range in the basement of an elementary school in Lynbrook, New York, was discovered only after a parent raised the issue of lead contamination with the school superintendent. "I decided, innocently, to have an air test, expecting to be able to stand up and say the range had a clean bill of health," said the school official. "I got the results and was shocked. I made the decision to close the school, shut down the range and begin the cleanup."[57] The revelation prompted state officials to advise all schools with such ranges to have similar tests done, and two other schools with firing ranges were subsequently temporarily closed.[58]

Growing public concern with gun violence and an especial distaste for the mix of firearms in schools after such tragedies as the shootings at Columbine High School in 1999 have forced the closing of some school shooting ranges.[59] A New Jersey school board shut down an indoor range that had been inconspicuously operated by an adult gun club under an elementary school after a group of boy scouts wandered into the range from the school gym.[60] Although the danger of exposing elementary age children to lead has been well documented by public health experts, range supporters insist on maintaining ranges in schools.

But even after school ranges have been shut down, they may continue to poison students. For example, when the Louisville, Kentucky, school system tested for lead at sites in 20 schools slated for renovation, it found lead contamination at a school rifle range left over from an old ROTC program that had been shut down years earlier.[61]

Bad management, poor facilities. The primary causes of the dismal record of shooting ranges in lead contamination and other health matters are ignorance, bad or indifferent management, and antiquated facilities.

These problems are no secret within the gun industry. For example, the Boston-based Strategic Planning Institute found in a recent report outlining a gun industry survival strategy for the National Shooting Sports Foundation (NSSF) that "a large majority of shooting facilities in the country are not professionally managed, commercial operations."[62] Similarly, a major supplier of shooting range equipment, Caswell International Corp., was reported in 1989 by the NRA's *American Rifleman*

FrontPage Magazine web site at www.frontpagemag.com, downloaded April 20, 2001

magazine to have found that "a lot of people trying to get in on a shoestring" in the shooting range market were "cutting corners on costs that resulted in substandard ranges in terms of safety, environmental concerns and cleanliness."[63] An engineering consulting firm specializing in shooting ranges notes in its promotional materials that the increased attention to lead contamination and human health exposure "has put range owners and operators into areas outside of their expertise."[64]

Even the most well-designed indoor range demands constant and sometimes expensive attention in order to keep delicately balanced air filtration systems working effectively.

Outdoor Shooting Ranges

Just as shooters at indoor ranges fired away for decades ignorant of the public health risks, so have outdoor range shooters poured millions of tons of lead downrange, ignorant (or heedless) of the damage they have been inflicting on the environment. Although human lead poisoning is less of a problem at outdoor ranges, negative effects on the environment are far greater. Lead bullets and shot used in outdoor shooting ranges present at least three dangers to the environment:

- poisoning of wildlife, especially waterfowl, that ingest lead pellets;
- contamination of ground water, poisoning wells and other water sources; and,
- contamination of wetlands or waterways into which lead falls.

Shotgun shell casing, wads, and assorted packaging materials can also contain lead, chemicals, and other materials potentially harmful to the environment.[65] For example, certain polycyclic aromatic hydrocarbons found in clay targets are said to be known carcinogens.[66] (It is worth noting that shotgun shooters rejected a biodegradable clay target Winchester tried to market because it discharged white smoke when hit rather than the black smoke they were used to.)[67]

Dealing with these problems is complicated by the esoteric nature of the state and federal laws and regulations protecting the environment.[k] Several key issues of

[k] The National Shooting Sports Foundation advises its members: "Should a range manager be notified that the range may face legal or regulatory action involving environmental issues, they should *immediately notify or obtain legal counsel.* Because environmental laws and regulations are extremely complex, it is often advisable to enlist the aid of counsel with specific experience in environmental law,

federal environmental law have been roughly focused in a handful of shooting range cases litigated to conclusion. But the NSSF notes that the relatively low number of reported law cases is not a true measure of the activity going on because "many shooting range cases are resolved in the early stages of litigation through consent orders under which the ranges agree to close down and perform further environmental investigations and cleanup at the range."[68]

Three federal laws have been found to be especially relevant to outdoor shooting ranges: the Clean Water Act (CWA),[l] the Resource Conservation and Recovery Act (RCRA),[m] and the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA or "Superfund").[n] Other federal laws may apply to a particular case, and state protections may be more stringent than the applicable federal laws.

The Clean Water Act (CWA)

The Clean Water Act makes it unlawful for any person to discharge "pollutants" from any "point source" into waters of the United States without obtaining a permit, called a "National Pollution Discharge Elimination System" (NPDES) permit.

Two leading federal cases have held that lead shot and target debris (shattered clay pigeons) are "pollutants," and the trap shooting stations at shooting ranges are "point sources." Therefore, any range from which patrons shoot out over "Waters of the United States" must have an NPDES permit. This is a stringent requirement because "Waters of the United States" is broadly defined to include virtually all rivers, streams, lakes, ponds, drainage-ways, wetlands, and similar features, even those on private property, and it appears that, at least to date, *no NPDES permit has ever been issued to a shooting range*.[69]

Long Island Soundkeeper Fund, Inc. v. New York Athletic Club[o] involved a

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particularly with experience in defending shooting ranges." National Shooting Sports Foundation, *Environmental Aspects of Construction and Management of Outdoor Shooting Ranges* (Newtown, CT: NSSF, 1997), I-4 (emphasis in original).

[l] 33 US Code, Sec. 1251, et seq.

[m] 42 US Code, Sec. 6901, et seq.

[n] 42 US Code, Sec. 9601, et seq.

[o] 1996 U.S. Dist. LEXIS 3383 (SDNY 1996).

private trap shooting range at which spring launchers were used to toss clay targets out over Long Island Sound. Shooters fired at the clay targets from concrete platforms. Acting on a lawsuit brought by two public interest groups interested in preserving the Long Island Sound environment, the court ruled that "shot and target debris" generated by the shooting range constituted pollutants, and that the range was a point source. It is noteworthy that the court ruled that even though the club had switched to the use of steel shot, the shot was nevertheless a pollutant for purposes of the CWA. The club elected to discontinue the discharge rather than seek a permit.[70]

Stone v. Naperville Park District settled a dispute over a trap-shooting range in Naperville, Illinois.[p] The range was reported to have dumped as much as 230 tons of lead over 50 years of use on a small patch of land in a park near a high school.[71] The controversy began when neighbors became concerned about possible lead contamination of ground water and wells. Although state officials indicated they would allow the range to continue operation, federal officials expressed concern about lead pollution, especially noting two ponds on the site.[72] Eventually the court ruled, consistent with the *New York Athletic Club* case, that the range's operations fell under the CWA and barred shooting until an NPDES permit was obtained. Although city and park officials have pressed for a permit, it seems clear that it will not be issued, certainly if lead shot is used.[73]

It is almost certain that many other shooting ranges across the country are operating without permits required by the CWA. This is particularly true when the shooting range is located on or near wetlands or waters such as rivers or creeks, or where the range allows the natural flow of rain or runoff to carry lead contaminants into such waters or even into groundwater.[74]

The Resource Conservation and Recovery Act (RCRA)

RCRA established a "cradle to grave" regulatory scheme for the treatment, storage, and disposal of solid and hazardous wastes. The leading federal case in the field is *Connecticut Coastal Fishermen's Association v. Remington Arms Co., Inc.* The first such suit against a private range, it resulted in the closing of the Lordship Gun Club in Stratford, Connecticut, operated by Remington Arms Company.[75]

The Lordship trap and skeet range was located on Long Island Sound, directly across the mouth of the Housatonic River from two wildlife refuges. According to the

[p] 38 F. Supp2d 651, 1999 U.S. Dist. LEXIS 1828 (NDIL 1999).

U.S. Court of Appeals for the Second Circuit, "After nearly 70 years of use, close to 2,400 tons of lead shot (5 million pounds) and 11 million pounds of clay target fragments were deposited on land around the club and in the adjacent waters of Long Island Sound."[76] A 1987 study documented acute lead poisoning in 15 of 28 black ducks captured in the area.

Concerned about the effects of the range's operations, the Connecticut Coastal Fisherman's Association filed a lawsuit against the range, citing the CWA and RCRA. The case eventually wound up in the Second Circuit Court of Appeals which made three significant rulings:

- The CWA complaint was moot because the range had suspended operations and was unlikely to resume. In short, past violations will not support a CWA suit so long as it appears that operations have been permanently suspended.

- Under EPA's regulations and interpretations, shooting range operations do not constitute "discarding" a hazardous waste, and therefore do not require a permit.

- However, the deposited lead and potential target debris do constitute hazardous solid wastes that present a substantial threat to the environment. The range was therefore subject to another provision of RCRA requiring remediation and cleanup, even though the range had ceased operations.

As a result of this ruling, the range closed and Remington agreed to clean up both the lead and clay target waste.

According to NSSF, several other ranges have been charged with violating CWA and RCRA, but most either went out of business, settled out of court, changed their shooting direction, or switched to non-toxic shot.[77]

Comprehensive Environmental Response, Compensation and Liability Act (CERCLA or "Superfund")

One of the peculiarities of these laws, as interpreted by the EPA, is that so long as a range is being used, the lead and other toxic materials it dumps into the environment are not considered as being discarded or abandoned. Shooting ranges are therefore not required to get the permits that, say, a landfill or toxic dump would

be required to have if it wished to deposit the same material.

However, a range that is closed or abandoned triggers specific liabilities for lead and other toxic materials deposited on the land during shooting operations, since it is then considered to be "abandoned waste."[78] The reported transport of lead waste to landfill dump sites by some range operators also could subject them to any future "superfund" liabilities of the disposal sites, according to the NRA's range development manager.[79]

Cleanup costs can be substantial: New York City reportedly paid a Canadian company $25 million to clean up a police shooting range in the Bronx. Company officials found the prospects of such work in the United States "promising," estimating that there were about 28,000 such potential cleanup sites in the country.[80] The cost of cleaning up abandoned ranges often comes as a shocking surprise to new owners or to government units that operate or sometimes inherit the property in question. In some cases, governmental units simply continue the fiction that the abandoned range is still "in service" in order to avoid paying the costs. The following are representative examples of cleanup cases:

- As part of a consent decree, current and past owners of a former Playboy Club property in Wisconsin agreed to pay the U.S. government $1,000,000 in cleanup costs for contamination from a trap and skeet shooting range. The contamination at the abandoned site was discovered after 200 geese died of lead poisoning. The federal government was reported to have spent $1.75 million for cleanup as of the time of the agreement.[81]

- The State of Massachusetts inherited a cleanup problem when it acquired a former resort that included a skeet shooting range.[82]

- Port Richey, Florida, was hit with a $50,000 cleanup bill after it learned that a children's play area called Totsville had been designed and built by a well-meaning volunteer on a site that had formerly been a city firing range.[83]

- Port Salerno, Florida, was stuck with a $400,000 cleanup bill when tests of a proposed development site revealed contamination from an abandoned shooting range formerly used by the sheriff's office.[84]

- Crystal River, Florida, dodged cleanup costs by simply fencing off a shooting range area, keeping it in limbo between its former use as a pistol range and any new use. Should the city decide to make use of the parcel, which one council member compared to an abandoned

nuclear site, it would have to pay for the cleanup.[85]

- Brea, California, was sued by the owner of a parcel of land it leased for use as a firing range. The owner complained that the property lost value and that 165 tons of soil had to be removed as a result of lead contamination after 25 years of use.[86]

- Bay Village, Ohio, city officials abandoned cleanup plans when they saw a price tag of $600,000 to clean up an estimated 150 tons of lead blasted into Lake Erie over several decades by a private gun club. The federal EPA looked the other way. "Why invite trouble?" said one city official, who admitted he was aware of the court ruling in the similar *Connecticut Coastal Fishermen's Association* case.[87]

These and other abandoned range cases pose a serious question for communities with existing or newly proposed range operations: who will pay the cleanup bill when the shooters have moved on?[88]

National Environmental Policy Act (NEPA)

The National Environmental Policy Act (NEPA) established a national scheme to control and minimize the impact that federal government actions—including tax-subsidized activities—have on the environment. Prominent among these is the requirement that an environmental impact statement (EIS) be prepared for any major federal action that might significantly affect the quality of the human environment.[89] No one appears yet to have explored whether, given the extensive federal assistance extended to the gun industry for its shooting range programs, certain federal agencies—such as the Fish & Wildlife Service—should be required to develop such plans.

Other Major Pollution Sites

A number of other shooting range environmental horror stories can be found in news reports from all over the country. The following are a few representative examples:

- Westchester County, New York, entered into a consent decree with the EPA to clean up contamination from lead and targets at its Sportsmen's Center, located next to an elementary school. EPA sued the county under the imminent hazard provision of RCRA.[90] The case prompted

NSSF executive Bob Delfay to complain, “Lead is a four-letter word these days.”[91]

- Illinois environmental officials got a toxic double whammy when it turned out that the backstop of a rifle range originally built for the 1959 Pan American Games was made of asbestos waste. In addition to lead pollution problems, officials learned that the asbestos had simply been bulldozed into Lake Michigan, then later recycled onto a public beach as part of dredging operations.[92]

- A former skeet shooting range in Delaware earned the title “Harbeson Dead Swan Site” when it was designated a federal Superfund cleanup site after 41 dead black-billed tundra swans, victims of lead poisoning, were found by two bird watchers. The kill was reportedly one of the highest ever recorded for tundra swans. Federal taxpayers paid for the estimated $200,000 cleanup cost. The EPA originally tried to hide ownership of the site after a meeting with the owners was arranged by Senator Joseph Biden (D-DE), but relented under media pressure.[93] Taxpayers were also slated to pay the $250,000 cleanup costs at another private skeet-shooting range on Prime Hook National Wildlife Refuge in Delaware. “[T]he club doesn’t have the money,” the organization’s treasurer said. “I’m sure it would bankrupt us.”[94]

Section Two:
The Rambo Factor, "Slob Shooters," and Other Sporting Curiosities

"I think if you plan it well enough, you won't shoot up any more trees than you have to, and many trees recover from being shot if you move the station around. You just can't shoot the trees to pieces. I have seen courses where the same shot was presented year after year; it actually looked like a forest fire or a nuclear blast had occurred."

—William L. Poole, Director, Division of Recreation Shooting, Training and Ranges, National Rifle Association (October 1993)

The gun industry and its surrogates publicly conjure shooting ranges as public palaces for old-fashioned family fun. But, shooting ranges attract or generate major problems (other than the health and environmental nuisances described in the preceding section) that make them unwelcome neighbors and downright dangerous sites.

The "Rambo Factor"

Gary Anderson, the NRA's executive director for general operations, coined the phrase the "Rambo factor" to describe one problem that modern shooting ranges (and their neighbors) face. His language was diplomatically phrased, but extraordinarily revealing, because it belies the notion that shooting ranges are mostly places where the gentry gather for controlled, precision marksmanship. On the contrary, the gentry more often just want some place to blast holes through things. Says Anderson:

> American shooting activities place a predominant emphasis on large caliber arms that can be fired rapidly. [emphasis in original]

- **!** If you look at the key words in arms and ammunition advertising, they are not skill, accuracy or marksmanship. The key words are "power," "speed" and "firepower."

- **!** If you visit ranges where informal shooting is taking place, note the range users' preference for centerfire rifles and pistols, often large calibers. You may observe that many shooters seem to prefer rapid firing. Whether we call this a "Rambo factor" in America's informal shooting or recognize it as a popularity trend, it is a reality which must be recognized in range planning and management.

- A majority of range use in this country stresses what we call "plinking." There is a preference for targets that fall, break or do something.

- Range shooting in this country is often not as disciplined as it could be. Whether it is from poor marksmanship or an unthinking attraction to targets that break or an occasional lack of responsibility, many shots fired on ranges do not hit the targets or anticipated impact areas and things like target frames or holders often are quickly damaged. A painted indoor range or baffled outdoor range will soon reveal bullet impact marks from numerous shots which obviously were not directed at the target.

- The implications of these shooting preferences for range planning and management are apparent. The demand for range use won't be satisfied by air guns or rimfire guns alone. Ranges must accommodate highpower rifles and pistols. And range operators must not assume that all range users will have the discipline, control or marksmanship skill to keep their shots on the targets.[95]

The "Rambo factor" not only affects the users of the shooting range. It also raises concerns for the range's neighbors. One reasonable source of concern is that, as noted in the preceding section, the industry itself has found that most ranges are not professionally managed. The lack of professional management leads one naturally to wonder exactly who at those ranges is capable of dealing with shooters who, in Anderson's words, do not have "the discipline, control or marksmanship skill to keep their shots on the targets." Cutting corners is serious business in the case of shooting ranges, because—in the words of R. Max Peterson, executive vice president of the International Association of Fish and Wildlife Agencies—shooting ranges "can be dangerous if improperly operated or maintained."[96]

It is small wonder that "successful range operations face a formidable public relations challenge."[97] Bullets that don't land in what Anderson delicately calls the "anticipated impact area" *on* the range can end up in an *unanticipated* impact area *off* the range—such as in a neighbor's house or head. "Many ranges operate today knowing a single projectile or a shot charge landing off the range property means closure," federal Fish & Wildlife Service deputy direct Conley Moffett told a tax-funded industry symposium.[98] News accounts from all over the country confirm that stray bullets from shooting ranges are not merely theoretical concerns but real problems for nearby residents.[99]

The "Rambo factor" also creates friction between hunters and non-hunting shooters at public ranges, as Peter S. Duncan, executive director of the Pennsylvania Game Commission, told the symposium:

> The non-hunting segments of the shooting public are using game land ranges in greater numbers, bringing with them semiautomatic pistols and rifles (which are not legal for hunting but are certainly legal to possess). In taking advantage of these free range facilities, these folks often monopolize the shooting points for hours at a time...we are more concerned about the apparent conflicts between the hunting and non-hunting users of our game land facilities.[100]

In plainer English, the would-be Rambos are pushing the hunters off of shooting ranges.[q]

Another NRA official, William L. Poole, director of the NRA's division of recreational shooting, training and ranges, told a shooting range symposium about a special kind of management problem with sporting clays ranges:

> In working with ranges, probably the top problems that we encounter in the NRA Range Development Department are environmental and sound problems at sporting clays courses. There is not enough consideration given to the necessary design. We're finding courses that are dropping shot on other people's property; that have given no consideration to where the broken birds go; that drop shot into an open waterway. In general there seems to be a prevailing attitude that you can walk into a woods, set up some trap machines, and have a sporting clays course.[101]

The nonchalance of that "prevailing attitude" toward non-shooters is reflected in other problems documented in many shooting ranges.

Slob Shooters—Vandalism, Litter, and Trashing of Outdoor Areas

U.S. Forest Service officials report that use of public outdoor firing ranges in national parks brings with it "unsafe acts, illegal weapons and ammunition, litter and destruction of property and signs."[102]

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[q] It should also be noted that Duncan's remarks further undermine the "hunter safety" rationale that the industry uses as its excuse for siphoning federal tax funds into shooting ranges. By his account "non-hunting users" dominate the use of many ranges.

The NRA's Anderson unintentionally confirmed what many critics of the "shooting sports" argue—that so-called "recreational shooters" are often little more than reckless vandals who threaten the lives of others, *even at shooting ranges*. Says Anderson:

> There are unfortunately a small minority of gun uses which are not responsible and which lead to a serious negative image for legitimate, safe range uses. [emphasis in original]
>
> - A trip through the rural areas of our country will almost always reveal a distressingly large number of road signs with bullet holes or shotgun patterns on them.
>
> - National Forest managers in the Los Angeles area have considered closing their forests to any public shooting because too many people bring in junk which they riddle with bullet holes and leave as dangerous litter.
>
> - A few weeks ago, an NRA police school and its shooting training which was conducted on a controlled, baffled range, was accused of being responsible for a bullet which struck a woman in a passing car over one-half mile from the range, even though it is almost certain that the stray bullet came from a plinker who didn't bother to find a safe backstop.
>
> - These lamentable occurrences of vandalism with guns establish a critical element in the socio-political climate for ranges and have two important implications. One is that as long as this kind of irresponsible gun use goes on, it will be difficult to win public acceptance of ranges, because the public won't understand that ranges can be safe. The second implication is that the best way to stop these irresponsible gun uses is to get as many informal shooting activities as possible onto ranges where guns can be used in a safe physical environment under the discipline of responsible range-use rules.[103]

But, with respect to Anderson's last point (getting more shooting activities onto "safe" ranges), one is reminded of his earlier lamentation—quoted earlier—that because of "poor marksmanship or an unthinking attraction to targets that break or an occasional lack of responsibility, many shots fired on ranges do not hit the targets or anticipated impact areas" *even at shooting ranges!*

Examples of shooter abuse on both open land and public shooting ranges abound. David E. Wickstrom, a recreation planner from the U.S. Department of Interior's Bureau of Land Management, told a shooting range symposium: "Open areas available for shooting, such as gravel pits, often become littered with refuse left from use."[104]

He described the situation mildly. In 1992, *American Rifleman* carried a detailed account entitled: "Gross abuse of a public shooting area by slobs with firearms forced its closing."[105] Although the gun industry likes to publicly portray gun owners as uniformly responsible citizens with only a few "bad apples," the author, a federal Bureau of Land Management official wrote that "we estimated that somewhere between 30% and 40% of the apples were bad." Because the agency could not afford to station an employee at the range, wrote the official, "we trusted the good sense and ethical standards of the shooting public. We were very disappointed by the result." Among the problems observed were the following:

> It very quickly became apparent that not all shooters understood the safe handling of firearms and were not true believers in law and order. As examples, I personally observed two young men set down their beers as they passed a loaded and cocked pistol back and forth to take turns shooting. Automatic weapons fire has been reported regularly....Fires have been started by people using illegal tracer bullets....
>
> It was also apparent that there was not much sensitivity to the environment. Citizens concerned about our environment do not shoot car batteries so that the acid runs into stream beds.[106]

The U.S. Forest Service has suffered similar experiences at the hands of shooters. Until 1988, target ranges were unwelcome in national forests "due to problems of littering, safety, and administration," according to John Shilling, chief of concessions and winter sports, speaking at a 1990 range symposium. "Current policy allows target ranges only when and where they will enhance forest management by consolidating shooting activities, thereby reducing vandalism and litter associated with dispersed target shooting."[107]

In plain English, Forest Service policy is to tolerate a shooting range only when shooters become so obnoxious that putting them all in one place makes more sense than letting them destroy the forest.

Shilling cited the example of Forest Service experience at the Angeles National Forest in southern California. Originally, shooters were allowed to shoot anywhere

in the forest, so long as they "followed guidelines such as distance from structures and places of habitation." But slob shooters got out of control under the "open shooting" policy:

> Conflicts with other recreationists and danger of starting forest fires created an unacceptable situation. Shooting areas were designated to control the activity, but these areas quickly became dumps, collecting debris used for targets, old car bodies and at least one murder victim....
>
> [T]hree to four fires a year occurred as a result of shooting activity, including one which burned 700 acres....[108]

In order to save the forest from the shooters, the Forest Service eventually allowed a commercial operator to open a public range and banned all open shooting in that forest. Fires caused by shooters were also a problem in the Cleveland National Forest in southern California, a Forest Service representative told a national shooting range symposium,[109] and fires at open shooting areas continue to be a problem in other forest areas.[110]

Forest Service official Jerry W. Davis described the kinds of "misuse and abuse" of firearms he has seen, and their effects on the environment and the public at the same symposium:

> These have varied from signs, mailboxes, cans, bottles, and the first illegal deer or other form of wildlife encountered afield, to Saguaro cactus in the deserts of Arizona and pine trees in the forests of East Texas. Something seemingly as innocent as using a loblolly pine as a backstop for a target has caused tree mortality and insect infestations that killed hundreds of trees. This action has led to the loss of revenue to counties, schools, local economy, and the national treasury, as well as habitat loss for some species of wildlife.[111]

But closing open lands and forcing shooters onto ranges is expensive and brings other problems. Lyle Laverty, director of recreation, heritage, and wilderness resources for the federal Forest Service, told the symposium:

> A big problem that forest officers are facing is junk and hazardous materials left scattered around national forest shooting ranges. It's not just a small problem; it's a major problem. At Angeles National Forest outside Los Angeles, you can find car parts, car bodies, anything that is dragged out there that people can shoot at. It just becomes a tremendous problem for the Forest Service managers to take care of....

> One problem is that even though the district has a lot of volunteer help to pick up the trash, the dump fees are costing the district 50 percent of their recreation budget.[112]

Vandals at Forest Service shooting ranges "shoot signs, displays, roofs, toilets, garbage containers, and posts," Laverty's colleague, Davis, told the same group. "They litter and have been known to use wooden shooting benches for firewood."[113]

State officials have similar problems maintaining public ranges. Pennsylvania state land management officials described how some shooting ranges literally become garbage dumps:

> Not unlike many other states, we also have some problems maintaining shooting ranges....The maintenance problems for these ranges are compounded by the large amount of litter that is often left behind by the users. An additional problem is how do we dispose of this litter. As the solid waste problem becomes more acute and the average family is less able to afford the costs of proper waste disposal, the ranges are increasingly being used for such purposes.[114]

The Kansas Department of Wildlife and Parks had to overhaul a free outdoor range under similar circumstances. According to an official, the lack of a range officer at the range led aficionados of the "shooting sports" to engage in the following family fun:

> We hauled out 10 cubic yards of trash after Thanksgiving weekend. People were shooting at car batteries, bowling balls, bowling pins, stuffed animals, a TV set. They'd get garbage from the trash bin to use as targets and leave it out there. It wasn't very safe.[115]

NRA official William L. Poole described the destruction that can be wreaked by a sporting clays shotgun course in a wooded environment:

> I think if you plan it well enough, you won't shoot up any more trees than you have to, and many trees recover from being shot if you move the station around. You just can't shoot the trees to pieces. I have seen courses where the same shot was presented year after year; it actually looked like a forest fire or a nuclear blast had occurred. With just a little bit of effort, you can move that shooting station and not relentlessly fire on the same tree. Pines do not hold up well. You'll find that they go very quickly, so I'd move the course away from them. Some hardwood trees will really take a lot, but eventually, if you keep it up, you'll destroy the tree.[116]

Vandalism often sets in when ranges open to the shooting public are not staffed, or are understaffed. For example, public ranges often depend on volunteer help. But when volunteer interest fades, vandalism and other problems follow, as Nebraska state officials described at a range symposium:

> Like many other new projects, this one received lots of tender, loving care in its early years. But, as the years went on, interest waned and management problems grew. The once-enthusiastic volunteer help became bored, and use of the facility dropped along with maintenance.
>
> Today, the trap range sees occasional use. The rifle range is accessible to anyone but no one oversees its use or attends to maintenance. Consequently, the target area is littered with junk which is scrounged or brought onto the area for use as target material.[117]

The message for local communities is that the nice, orderly range down the street has the potential of turning into a dangerous eyesore as soon as its users get tired of their new tax-funded toy. Not incidentally, the use of volunteers may also open ranges up to tort liability, if the range fails to check the background of its volunteers and harm results from allowing unsuitable persons to operate the range such as, for example, a "person of violent disposition."[118]

In short, public land managers are caught between two evils. If they allow so-called "open shooting" on public land, "slob shooters" often abuse the trust extended them by vandalizing public property, littering, and even dumping garbage and hazardous waste. On the other hand, corralling such shooters onto a shooting range imposes operating and liability costs on the taxpayer, simply to indulge (and control) these reckless gunslingers.

Noise Pollution

Zoning violations and the high levels of noise inherent in shooting range operations cause the majority of complaints about them, according to the NRA's general counsel.[119] Many shooting ranges have been involved in "costly litigation" and some have closed because neighbors objected to noise, especially during early morning or late hours.[120]

"Noise continues to be a major concern on our project and unless your project is built in a vacuum it will be on yours," Michigan state officials Bruce Gustafson and James Dabb told a shooting range symposium. "Persons living in proximity to the

proposed site invariably are concerned with the potential disturbances to their 'quiet' neighborhood."[121]

According to the NRA's *Range Manual*, a comprehensive technical guide for designing and constructing shooting ranges: "No set distance eliminates noise complaints entirely."[122] The manual, which devotes an entire chapter to the subject of noise pollution, generally recommends allowing a "maximum distance between the range and inhabited dwellings," and "where it is possible to do so, build a range on government-owned land that will generally have the advantage of noise buffer areas." The manual suggests a distance between homes and range of at least one half mile for ranges generally, and three quarters of a mile for trap and skeet ranges (where shotguns are used). "Controlling sounds coming from shotgun facilities is almost impossible," according to the director of the Delaware State Division of Fish and Wildlife, paraphrasing advice he got from the NRA on the problem.[123]

What might be called the "ostrich approach" to shooting range noise was urged on a range symposium by NRA official William L. Poole:

> I recommend that rather than using the term noise, you should use the term sound. Anytime you talk about what happens when the trigger of a firearm is pulled, that audible tone that comes from the firearm, you should talk about it as sound rather than noise. Noise has a bad connotation to it. Sound is more generally acceptable.[124]

On-Range Hazards—Suicides, Murders, and Unintentional Deaths

Another problem that the gun industry doesn't like to talk about is people killing each other (and themselves) at shooting ranges. For example, former U.S. Congressman and NRA board member Harold L. Volkmer painted a rosy picture of range safety in his address to the first shooting range symposium (for which he was paid a $1,000 honorarium).[125] Volkmer said "the use of shooting ranges takes the danger that arises from inexperience out of the picture."[126]

But in a 1994 article, *Shooting Industry* writer Ross Thurman offered a considerably different expert opinion on the safety of shooting ranges:

> Unfortunately, I've found most safety standards at shooting ranges to be extremely casual. On a number of occasions, I've cut short a range visit because of how carelessly other shooters handled firearms.[127]

Thurman's account is not an isolated example. A reader of *Guns & Ammo* wrote a letter to the magazine in 1986 to describe "a situation that was unbelievable"

at a shooting range:

> [A] person entered the shooting stall next to mine. He proceeded to take a brand-new handgun from its box and make a very futile attempt to load it. He started loading his ammo in the magazine backward. I offered my assistance, for which he was very grateful. He informed me that he had just purchased the gun (an S&W 639) and did not know anything about it or handguns in general....
>
> I was so concerned by this situation that I took a small, informal survey over a month or so when I visited the range and found that 80 percent of the shooters that came to the range were there for the first time, had just recently purchased a firearm and did not know anything about the firearm or firearm safety.[128]

The president of a New Jersey insurance company summarized the type of insurance claims filed against shooting ranges. These included eye injuries to shooters and spectators, often caused by ricochets; persons shooting themselves unintentionally; death from fire caused by muzzle flash igniting foam insulation; suicides; and, injury from an exploding handgun.[129] News accounts from all over the country again confirm that suicides,[130] unintentional shootings,[131] and even murders,[132] occur with depressing frequency at shooting ranges (often involving handguns rented at the range itself).

Lawyer Anne Kimball told participants at a shooting range symposium that "it may be advisable to require all range users to have passed an NRA instruction program."[133] But there is little evidence that many public shooting ranges impose even such a basic standard of care and prudence on paying customers.

William L. Poole, director of the NRA's division of recreational shooting, training, and ranges, described at a shooting range symposium the apparently widespread negligence by shotgunners. Musing on the duties of "pullers" (the people who release targets at trap and skeet shotgun ranges) Poole said:

> The pullers, of course, should know the safety rules. Shotgun shooters can be negligent. As a matter of fact, I was looking at a shotgun this morning down on the airgun range and set the darned thing on the end of my toe with the barrels closed. Well, I'm sorry, but it's a force of habit after 30 years and one I'm trying to give up. I knew the gun wasn't loaded, and that's not a good excuse at all, *but you're going to see that happen on a daily basis. If you're not familiar with the way trap and skeet shooters act, that's just a part of their mannerisms.* It's very difficult to make a safety monitor out of a 15-year-old kid [the

puller]....[134] [emphasis added]

Other problems include whether fully automatic weapons should be allowed at public ranges. Missouri found itself at odds with the NRA when a proposal was floated to ban machine guns from ranges on the grounds that they destroyed target stands and unnerved other shooters.[135] (The NRA opposes restrictions on private ownership of machine guns.)[136] Ranges also often bring increased traffic problems to nearby neighborhoods, with the associated noise and congestion.[137]

Section Three:
The Uphill Fight Back

"Everybody I've talked to has been against it. I'm a gun person. This is not anti-gun. This is anti-noise. I don't want to worry about my sons going into the woods and being shot by a stray bullet."

—Terry Trimble, vice president, Sunset Acres Homeowners Association (Tacoma, Washington), January 3, 2000

Because of their inherently obnoxious nature, shooting ranges have a serious public relations problem, as summed up by Dennis C. Eggers, assistant director of the NRA's Hunter Services Division:

> The reality is this—if the majority of the affected general public is opposed to that range, or just doesn't care one way or the other, the range is doomed. It's just a matter of time.[138]

Eggers' pessimistic proclamation of doom is typical of the Chicken Little mindset of America's gun culture. But reality shows that fighting back against a shooting range is often a costly, slow, uphill battle, complicated by protective special-interest legislation and behind-the-scenes deals by vested interests. Here are a few examples culled from news clips and public records:

- Like most states, Texas doesn't keep records of how many shooting ranges exist within its borders, how many injuries occur at them, or what kind of complaints are filed against them. And Texas counties have no authority to regulate shooting ranges. As a result, conflicts between residents and range owners often end up in civil court. A group of Austin homeowners, for example, spent $100,000 in a three-year battle that was only partly successful.[139]

- The residents of a small town in Maine have fought for five years to reduce the noise from a private shooting range. "It can go from irritating pops to ear-shattering blasts," said one of the residents in describing the noise.[140] Their efforts have been frustrated in large part by a special interest "range-protection law" rammed through the state legislature by the NRA. (Range protection laws are discussed in more detail below.)

- Homeowners near Des Moines, Iowa, were startled three years ago when Polk County allowed a new shooting range to open across the street from their residential neighborhood. The noise was so bad,

complained one resident, that he couldn't carry on a conversation, watch television, or sleep. Efforts to shut down the range slowed to a crawl in the county zoning commission.[141]

- A Pennsylvania court allowed a township and some of its residents to sue the Pennsylvania Game Commission last year to block a shooting range on the grounds that the commission violated its own procedures and a commissioner misled both the commission and individual taxpayers about details of the range, including supposed lack of opposition and no cost to the state.[142]

- Residents of Land O'Lakes, Florida, took it on the chin when they missed a court filing deadline to appeal dismissal of a law suit against Pasco County commissioners.[143] Reversing an earlier vote, the county commission ruled in favor of a shooting range backed by powerful investors, including retired Army General Norman Schwarzkopf and NRA top lobbyist James Baker, amid allegations that one commissioner had "sold his vote for future campaign contributions."[144]

- Residents of a Fort Worth neighborhood struggled for two years before they were apparently able to end operation of a nine-range gun club. Their complaints included noise, lead contamination, stray bullets, and accumulation of trash and debris.[145]

These few representative cases merely scratch the surface of scores of other instances in which ordinary people have found themselves locked in frustrating struggles with shooting ranges and their political and industry friends.[146]

"Range Protection"—The NRA Gag Laws

Lawsuits are one avenue that the general public has traditionally been forced to use to keep shooting ranges under control. The courts have often held shooting ranges to high standards, according to Anne Kimball, an attorney for the gun industry. She stated:

> Because of the nature of the activity and the use of firearms at shooting ranges, courts have generally looked at shooting ranges somewhat differently than they have looked at bowling alleys, driving ranges, and other recreational facilities....
>
> A number of courts have held shooters and operators of shooting ranges

> to a higher degree of care than the owners and operators of other establishments....Some courts have held firearms users to the highest degree of care.[147]

Lawsuits and other legal remedies against shooting ranges have usually been pursued by neighbors, neighborhood associations, or local governments, particularly zoning boards, environmental action groups, and regulatory agencies. There are a number of theories on which lawsuits against shooting ranges might be based. For example, if range activity has caused actual injury or death, various forms of tort action might be pursued to seek monetary compensation. If the shooting range is operating or proposes to operate in an area not zoned for such activity, zoning violations can form the basis of a lawsuit or regulatory proceeding. Poor control of hazardous materials is a basis for litigation under environmental laws.

But absent torts, zoning violations, or environmental violations, neighbors, associations, and local governments have traditionally relied on "nuisance" theories and noise control laws to abate shooting-range activity.

Nuisance lawsuits are based on the general premise, according to the NRA's general counsel, that "no person is absolutely free to perform acts that others find offensive or that interfere with others' rights to safety and the quiet enjoyment of their own property."[148] These lawsuits usually seek an injunction, either closing the range or forcing it to change its operations so as to lessen its obnoxious effects (e.g., stopping night shooting). State or local laws and regulations also often set noise limits, so that government officials can take regulatory or legal action against ranges that violate such limits.[149]

Nuisance law suits based on noise and noise abatement proceedings represent a serious obstacle to the gun industry's range expansion strategy. If neighbors whose tranquility and property values will be dramatically reduced by a shooting range can stop it from opening or expanding by appealing to the courts, the gun industry's national strategy will be seriously impeded, no matter how much of a federal tax subsidy it receives.

Well aware of this, the NRA devised and has quietly implemented a plan to frustrate the will of the general public. The NRA's ploy has been to hide shooting ranges from judicial scrutiny behind the skirts of state "range-protection" laws. These laws effectively bully ordinary people into submission by denying them access to the courts for relief from the most obnoxious features of shooting ranges.

History and effect of the "range-protection" laws. Range-protection statutes vary in detail but most are "very broad" and "protect shooting ranges from civil action

and criminal prosecution in matters relating to noise or 'noise pollution' resulting from operations of the range."[150]

The solicitous nature of these laws toward shooting ranges is neither an accident nor a response to broad popular will. From the very first "range-protection" law to the most recent, they have been a creation of the NRA, so quietly introduced and slickly passed through state legislatures that the public has by and large been unaware of their passage and of their devastating effect on neighborhoods exposed to shooting ranges.

The first range-protection law, according to Robert N. Pemberton, Sr., administrator of the NRA's range conference program, was herded to passage in New Hampshire by Doris Reilly, "a New Hampshire legislator and wife of former NRA president Dick Reilly."[151]

Delaware's experience is an interesting and illuminating example of the NRA's strong-arm tactics. The director of Delaware's Division of Fish and Wildlife presented a case study at the first shooting range symposium in 1990, describing (under the title "Maintaining Good Neighbor Relations") how the state's "premier" shooting facility worked out noise problems with its neighbors under existing laws.[152] Nevertheless, not content with an arrangement that clearly worked, the NRA later rammed a range protection law through the Delaware state legislature.

In short, the NRA, the gun industry in general, and the range industry in particular continue to use special-interest muscle to inflict noise, pollution, and public health harm on the general public so that a dwindling minority of range users can enjoy their destructive "shooting sports."

Section Four:
Recommendations

The vast majority of Americans who do not own guns and have no interest in subsidizing the gun industry can do a number of things about the shooting-range industry and its depredations.

Local Activism

There are several actions Americans can undertake at the local level to combat the serious hazards, especially to children, that shooting ranges and ammunition reloading pose. These include:

- **All children who have any direct or indirect exposure to a shooting range or to reloading should immediately have their blood lead levels tested.** There is no truly "safe" level of exposure to lead. Any child who has recently shot at a range, or otherwise been present at a shooting range, needs to be tested. Likewise, any child who has participated in, or had any exposure to, ammunition reloading should be tested. Furthermore, any child with indirect exposure through a parent, sibling, etc. who frequents shooting ranges or engages in reloading should be tested.

- **No children should be allowed at shooting ranges, nor should they participate in or be exposed to ammunition reloading, since there is no "safe" level of lead exposure for children**. Minimum age standards of 18 should be imposed at all shooting ranges and no parent should allow children access to ammunition reloading equipment.

- **Conduct local "audits" of shooting ranges to check lead levels at ranges and ensure compliance with all applicable laws and regulations, including zoning, noise, environmental, as well as health and safety.** One of the most effective things local activists can do is to form coalitions with health and environmental groups to challenge shooting-range compliance with all applicable laws and regulations and test ranges for lead. Applicable standards include not only zoning and noise ordinances, but state, local, and federal health and environmental-protection laws and regulations. (One of the best sources of information about this potential is material published by the NRA and the NSSF relating to shooting

ranges.) In many cases, citizens will find that they can themselves bring lawsuits directly against shooting ranges that are arguably not in compliance with environmental laws. In others, they can urge government officials to take appropriate action.

Federal Actions

Additional action can be taken at the federal level, primarily through legislation, but also through regulation.

- **Give first priority for Pittman-Robertson[r] funds to cleaning up and repairing lead damage to public lands—such as national parks—caused by "slob shooters" and others in the shooting sports.** New federal legislation earmarks at least $7.5 million each fiscal year for hunter education and "the enhancement of construction or development of firearm shooting ranges…and the updating of safety features of firearm shooting ranges…." As this report documents, serious resources need to be devoted to cleaning up the lead pollution generated by shooting ranges. Pittman-Robertson funds should first be devoted to this task. Resources should also be dedicated to repairing the environmental damage inflicted by "slob shooters."

- **Redirect a portion of Pittman-Robertson funds from the sale of handguns and handgun ammunition to paying the cost of handgun lethality and injury.** Firearms cause tens of thousands of deaths and injuries every

[r] All of the revenue generated by the excise taxes on pistols, revolvers, long guns (rifles and shotguns) and ammunition was deposited in the general treasury until 1937 when the Pittman-Robertson "Federal Aid in Wildlife Restoration Act" (Pittman-Robertson or Wildlife Restoration Act) was passed. The stated purpose of the legislation was to rectify dwindling wildlife resources. The bill set aside funds generated by the excise tax on long guns and ammunition to be allocated to the states for use in wildlife conservation projects. The bill did not earmark the revenue collected on pistols and revolvers which continued to flow into the general treasury until the Act was revised in 1970. The legislation was amended so that the tax on pistols and revolvers was diverted from the general fund of the Treasury to the Federal Aid in Wildlife Restoration Fund, with states having the option of using these funds for carrying out hunter safety programs or regular wildlife restoration programs. Organizations supporting the 1970 legislation included the National Shooting Sports Foundation, the National Rifle Association, and the National Sporting Goods Association. Despite protestations from the Interior and Treasury departments, the tax revenue from handguns was earmarked exclusively for hunter safety and wildlife conservation programs. This has remained the status quo for 30 years.

year, at a staggering cost to our public health system. In 1998 alone, 30,708 Americans died by gunfire. Since 1960, more than a million Americans have died in firearm suicides, homicides, and unintentional shootings. Nearly three times that number are treated in emergency rooms each year for nonfatal injuries. Most of this carnage is caused by handguns. The nation's health care system should have a superior claim on funds derived from the sale of handguns and ammunition. This money should be restricted to funding trauma centers, for example, rather than shooting ranges.

- **Forbid use of federal dollars for any range that permits use of assault weapons, high-capacity magazines, or machine guns.** The national policy against assault weapons, high-capacity magazines, and machine guns is clear and already law. No shooting range subsidized under Pittman-Robertson should allow the use of such banned weapons. Any range that does should forfeit federal tax dollars.

- **Investigate the use of federal government assets (including military resources) to support the gun-industry range strategy.** Congress and the General Accounting Office should investigate the extent to which federal agencies and military appendages are inappropriately expending taxpayer resources to support the gun industry's range strategy.

- **Investigate the propriety and administration of Pittman-Robertson grants for the National Shooting Range Symposiums.** This report raises serious questions, as detailed in Appendix A, about several aspects of the Pittman-Robertson grants for the National Shooting Range Symposiums. The General Accounting Office should be asked to investigate and report on these questions.

Other Policy Ramifications

In addition to the environmental hazards and health problems associated with shooting ranges, other concerns regarding the utility of ranges should be addressed. For example:

- **The serious lead hazard associated with shooting ranges calls into question the wisdom of encouraging or requiring firearm safety training as a mechanism to reduce firearm-related violence**. Studies indicate that firearm safety training has little or no effect in making gun owners store

their weapons in a safer manner. In fact, one of the leading studies indicates that safety training actually encourages gun owners to store their firearms unlocked and loaded for ready access. Taking into account the clear hazard posed to human health by exposure to lead at shooting ranges, any possible benefits of firearm safety training are outweighed by the risk of lead poisoning.

- **The significant health and environmental hazards associated with shooting ranges demonstrate the folly of supporting range development with public funds.** States and localities should consider moratoriums on the construction of new ranges.

Appendix A:
Financing the Strategy

A Tax-Funded Coordinating Mechanism

Having developed its long-range survival strategy of building more shooting ranges to attract new shooters, the gun industry faced a threshold problem: How to pay for it?

Jody L. Williams, a member of the Utah Wildlife Board, told a national shooting range symposium in 1993 that "budgetary and political realities make development of new ranges today much more difficult."[153] Since the gun industry either could not, or would not, put up the money itself to build more ranges, it needed financing from somewhere else. To overcome what Williams described as a "budgetary crisis" and subsidize its strategy, the gun industry turned to federal and state tax revenues and the use of other public resources.

Through the NSSF, the NRA, and a variety of compliant organizations like the International Association of Fish and Wildlife Agencies, the firearms industry is using federal tax dollars and other public resources both to (1) coordinate and promote the range-building strategy in general and (2) directly fund the building and operation of shooting ranges. Tax dollars the industry uses for these purposes include Pittman-Robertson federal excise tax receipts and other funds from the federal government, state recreation funds and licensing fees, and various forms of direct and indirect material and logistical support from government agencies at all levels.

Added together, these government programs amount to billions of dollars of federal tax subsidies supporting the gun industry's desperate strategy to stay alive.

Coordinating and Promoting the Gun Industry's Strategy— "National Shooting Range Symposiums"

Since at least 1990, federal tax dollars have underwritten the creation and operation of a centralized command and control structure through which the industry has coordinated and promoted its shooting range strategy. These tax-funded activities include encouraging political action to overcome citizen resistance to new ranges and seeking money to build them.

The heart of this gun industry structure is a series of "national shooting range symposiums." Held every three years since 1990, these symposiums have been paid

for largely with federal tax dollars funneled through the U.S. Department of Interior's Fish & Wildlife Service. The Violence Policy Center's investigation of these symposiums reveals an unusual degree of self-dealing, apparent conflict of interest, and industry-hand-in-government-pocket operation.

Grant History Raises Troubling Questions

The Violence Policy Center traced the genesis and growth of this federally funded mechanism for implementing the industry's shooting range strategy primarily through documents obtained through the Freedom of Information Act. The VPC's original interest was to review the record of the discussion of substantive issues regarding firing ranges at the symposiums. But examination of the records documenting the series of federal grants given to fund the symposiums raised troubling questions about conflict of interest, self-dealing, and proper disposition of surplus funds generated through the symposiums.

The process of self-dealing. The first issue these documents raise is a pattern of self-dealing among a handful of gun industry-related organizations.

The genesis of the symposium idea can first be traced to a discussion in 1988 among the members of a group of organizations calling itself the Hunter Education Council.[154]

Key members of the Hunter Education Council (the Council) were:

- the National Rifle Association (NRA), the nation's pre-eminent pro-gun activist organization;
- the National Shooting Sports Foundation (NSSF), the gun industry's national trade association;
- the International Association of Fish and Wildlife Agencies, a national combine of the hunting and fishing industry and state wildlife agencies; and,
- several federal agencies, including most significantly the U.S. Fish & Wildlife Service.[155]

The self-serving actions that these Council members subsequently took demonstrate how the gun industry and government at every level are thoroughly interlocked.

The Council agreed that a national symposium on shooting ranges would be "beneficial" to those "interested in shooting sports facilities," and the International

Association of Fish and Wildlife Agencies (the International Association) volunteered to "coordinate the planning of a National Shooting Range Symposium."[156]

The International Association convened a January 1989 summit meeting on shooting ranges in Washington, DC. This summit was attended by representatives of the International Association, the National Rifle Association, the U.S. Fish & Wildlife Service, the Wildlife Management Institute, and the Hunter Education Association. The agenda of that meeting included "how to further expand shooting ranges to maximize the use of available federal funds."[157] The outcome of the meeting included an agreement to "develop alternative ways to hold meetings to focus attention on the development and use of shooting ranges."[158]

The NRA was working on a parallel track. The agenda for a January 13, 1990, meeting at NRA headquarters of the organization's Hunting and Wildlife Conservation Committee—transmitted by memo dated December 21, 1989—included a "range symposium update" by NRA staff.[159]

The International Association did not have to look far to "develop ways to hold meetings." The U.S. Fish & Wildlife Service, a member of the Council that originated the idea, *also just happened to administer a multi-million dollar pot of federal tax dollars.* Although it is not clear exactly when application was made, the International Association applied to *fellow Council member* U.S. Fish & Wildlife Service for a federal grant to fund the first national shooting range symposium.

Not surprisingly—given the evidence of the cozy development of the idea—the first grant awarding federal tax dollars was signed on June 26, 1990. Thus the loop of self-dealing among the members of the Council was closed.

Although the International Association fronted as sponsor for the symposium, the gun industry and the NRA were operating behind the scenes: the NSSF (the gun industry trade group) provided a "bridge loan" of $15,000, which was repaid to it after the federal grant was awarded, and a donation of $10,000. The NRA also donated $10,000. The federal government put up $44,813.66 in tax dollars.[160]

Two other symposiums have been held since, in 1993 and 1996. Federal tax dollars have paid for about 75 percent of the costs of the meetings.[161] The costs have also dramatically escalated: the symposium's organizers were awarded a grant of $105,000 for the 1993 symposium[162] and $174,580 for the 1996 symposium.[163]

Incredibly, the Fish & Wildlife Service even approved a $24,500 increase to the original $150,000 1996 symposium contract, based in part on this fact: "With budgets in public and private sectors being slashed, the amount of steering committee and speaker travel costs that the symposium will cover have increased sharply." The

increase also helped pay for a "Shoot 'N Feed" banquet and entertainment for delegates at a Florida shooting range.[164]

In sum, gun industry leaders (1) saw the need for an ongoing series of meetings to coordinate and implement their shooting-range strategy, (2) met with federal government officials in conveniently interlocked forums, (3) came up with the idea of tax-funded symposiums to meet that need, and (4) got the U.S. Fish & Wildlife Service to pay for the symposiums with federal tax dollars.

Some troubling administrative questions. An obvious question arises whether a certain conflict of interest does not reside in a federal agency that both generates and funds programs to benefit a given industry.

This potential conflict is crystallized in a question noted by Fish & Wildlife Service official Eugene Stephenson on an undated "Project Review Summary" form obtained under the FOIA. Scoring the proposal for the 1993 symposium on the form, Stephenson noted: "Does not meet criteria—costs could be absorbed in registration fee."[165] The question is a good one—why shouldn't the industry pay its own way through registration fees? Although, in fact, some fees apparently were charged at the symposiums, the federal government nevertheless ended up footing most of the bill. This is in spite of the fact that an International Association official reported that "attendance may burst at the seams at 400 people" at the 1996 symposium.[166]

Other troubling questions lurk in the details of this tax-funded gun industry subsidy program.

Proper disposition of surpluses or profits. One such question is how the federal government and the symposium's sponsors should deal with "surpluses," which one might call *profits*, that the symposiums have generated. Should these surpluses remain in the hands of the grantees, or should they (or a portion of them) be returned to the taxpayers?

For example, as noted above, the organizers of the 1990 symposium received a federal grant totaling almost $45,000. Yet the organizers netted a surplus of $28,697.37 after all receipts and expenses were accounted for.[167] It is not clear how that surplus was disposed of. However, the 1993 symposium "carried over" $10,500, which was subsequently counted as income for the 1996 symposium.[168] Since the 1996 budget also showed only $10,000 in contributions from "sponsors," it appears that the "carryovers" have in effect been used in lieu of the "seed money" and "bridge loan" that the industry put up for the first symposium.

It is not clear whether a surplus was "carried over" from the 1996 symposium to help fund another planned symposium.

Proper use of "administrative" funds. Although the federal tax-funded grant for each of the three symposiums has been approved individually, it was clear that the 1989 summit envisioned a *series* of such meetings. In fact, industry leaders describe the symposiums as being on a regular three-year schedule, and appear to regard the federal funding approval process as a mere pro forma exercise.[169] For example, in a letter to the Fish & Wildlife Service attaching a final invoice for federal tax dollars for the 1996 summit, Don McLaughlin, international resource director for the International Association of Fish and Wildlife Agencies, noted a planned meeting to "make sure the lessons learned from this experience are well documented *so that they will be of use for the next symposium.*"[170]

This raises a question about the propriety of the federal grants, which are from "Federal Aid Administrative Funds." A memorandum in Fish & Wildlife Service files from the acting director of its "Region 5" notes with respect to another proposal: "Administrative funds should be considered 'seed' money to get projects started, not fund them indefinitely."[171] It is interesting that the same source questions the "appropriateness of inviting staff from other Service programs to be involved in eligibility determination" as it is a "departure from policy and creates the potential for conflict of interest."[172]

These symposiums are invaluable tools for implementing the industry's range-building strategy. They bring range operators, representatives of the gun industry, state and federal government, hunting and wildlife groups, and the National Rifle Association together to share strategies and "brainstorm" plans to build more ranges and defeat opponents of those ranges.

The notion of "sides" in a global conflict. The symposium proceedings also reveal an "us" against "them" tone. For example, John Powell, the chairman of the Missouri Conservation Commission, sounded a tone of decidedly global conflict over shooting ranges and all that they represent in his welcoming address at the first symposium. Powell drew the following contrast between the two notional "sides" he saw contending over the question of shooting ranges:

> Many are well aware of the international movement that is surging to stop cutting trees, restrict and impede our agricultural industry, abolish sport hunting, giving animals the same rights as humans, and, of course, gun control. This will directly affect those of you wanting to use

> shooting ranges. We are all in the same boat and indeed have a common enemy.
>
> By and large, the same people or people with the same thinking are our adversaries. A prototype [sic] of their leadership would be a person who is well-educated and, in some cases over-educated, bold, fanatic, radical, very vocal, with no common sense and who won't compromise on anything. They are out of touch with reality; they are nonworldly [sic]; and their causes tend to become a religion with them....
>
> Who's on our side? Well, we have those in the timber industry, the farmers, sportsmen, a good portion of our industry and businesses and their respective organizations. I would like to believe we have some of the sound thinkers in our society, but we certainly do not have a united front.[173]

Political issues. Some might also question whether it is appropriate for federal tax money to underwrite forums where speakers urge those who attend: "Get involved in politics," in the words of Robert N. Pemberton, Sr., administrator of the NRA's range conference program (speaking at the second symposium).[174]

"The ultimate control of shooting range activities will be political," Gary L. Anderson, the NRA's executive director for general operations, told the 1990 symposium in a talk titled "The Socio-Political Climate for Ranges."[175] Anderson told participants that "political decision-makers will decide whether or which guns can be owned for use on ranges, whether or where a range can be built and how it can be operated."

He also spoke directly in favor of political lobbying at this tax-funded meeting:

> The implication of the gun control debate for ranges is that shooting clubs must have a strategic plan to develop sufficient political influence to enhance their chances to win favorable governmental decisions when that debate affects their range and shooting activities.[176]

Conley L. Moffett, a federal bureaucrat in the U.S. Fish & Wildlife Service, did a little lobbying of his own, explicitly criticizing proposed legislation pending before Congress during the second symposium in 1993, describing it as a "raid" on wildlife funds that his agency administers. That proposal (S. 868 and H.R. 2276) would have redirected Pittman-Robertson funds to hospitals and trauma units to help pay for the medical costs of treating gunshot victims. "No good will be accomplished by victimizing one of the cornerstones of wildlife conservation in this country—the P-R

funds," Moffett complained, attending and speaking on federal taxpayers' time and dollars.[177]

In summary, the national shooting range symposiums are nothing less than a command and control mechanism for the gun industry's shooting range survival strategy underwritten by federal tax dollars.

Endnotes

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2. International Association of Fish and Wildlife Agencies, *Proceedings of the First National Shooting Range Symposium* (1990), p. 143.

3. North American Hunting Club, *National Shooting Range Symposium: Proceedings* (1993), p. 34.

4. Jonathan Beard, "Fill 'em full of tungsten," *New Scientist,* December 2, 1995, p. 25.

5. See, e.g., Deborah W. Denno, "A Response To 'Childhood Lead Poisoning As A Criminal Defense: An Examination of the Research,'" *Mealey's Litigation Reports*, August 28, 1998; Andrew Rubin, "Researcher says poisoning contributed to shooting spree," *UPI,* 1 August 1986.

6. North American Hunting Club, *National Shooting Range Symposium: Proceedings* (1993), p. 73.

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10. U.S. Occupational Safety and Health Administration, "Health Hazard Data" in Appendix A, 29 CFR Sec. 1910.1025.

11. See generally, Deborah W. Denno, *Biology and Violence: From Birth to Adulthood* (New York: Cambridge University Press, 1990); Jane E. Brody, "Aggressiveness and Delinquency In Boys Is Linked to Lead in Bones," *New York Times,* 7 February 1996, p. C9.

12. Deborah W. Denno, "A Response To 'Childhood Lead Poisoning As A Criminal Defense: An Examination of the Research,'" *Mealey's Litigation Reports,* August 28, 1998 ("...the scientific question becomes—is there a statistically significant association between the independent variable (lead poisoning) and the dependent variable (crime) while controlling for other, potentially influential variables? The results of the Biosocial Study strongly suggest that such a relationship exists, making no claim that it exists for each and every individual.").

13. Deborah W. Denno, *Biology and Violence: From Birth to Adulthood* (New York: Cambridge University Press, 1990).

14. Jane E. Brody, "Aggressiveness and Delinquency In Boys Is Linked to Lead in Bones," *New York Times,* 7 February 1996, p. C9.

15. Herbert L. Needleman et al., "Bone Lead Levels and Delinquent Behavior," *Journal of the American Medical Association* 275 (February 7, 1996): 363.

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17. Jane E. Brody, "Aggressiveness and Delinquency In Boys Is Linked to Lead in Bones," *New York Times*, 7 February 1996, p. C9.

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19. Kurt Kleiner, "Good news for ducks," *New Scientist,* August 30, 1997, p. 11.

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21. Ted Kerasote, "The sportsman's choice: regular or unleaded? Effect of lead shot on wildlife and measures for preventing it," *Sports Afield,* December 22, 1997, p. 20.

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164. Letter from Don MacLauchlan, International Resource Director, International Association of Fish and Wildlife Agencies to Mr. Gene Stevenson [sic], Division of Federal Aid, U.S. Fish & Wildlife Service, dated May 6, 1996, requesting $24,500 increase; "Modification of Contract" approved June 14, 1996, increasing award by $24,500; "Grant Tracking Form" dated December 17, 1996, showing funds disbursed. (The official in question actually spells his name "Stephenson.")

165. U.S. Fish & Wildlife Service "Project Review Summary" form for "The Second National Shooting Range Symposium," undated, signed by "Stephenson."

166. Letter from Don MacLauchlan, International Resource Director, International Association of Fish and Wildlife Agencies to Mr. Gene Stevenson [sic], Division of Federal Aid, U.S. Fish & Wildlife Service, dated May 6, 1996. (The official in question actually spells his name "Stephenson.")

167. First National Shooting Range Symposium Financial Report (15 May 1991), attachment to memorandum from George D. Lapointe, Symposium Coordinator, to Shooting Range Symposium Coordinating Committee (21 May 1991).

168. "Income Projection," in attachment to letter from Mark J. Reeff, Resource Director, International Association of Fish and Wildlife Agencies to Ms. Ramona Polk, Division of Contracting and General Services, U.S. Fish & Wildlife Service, dated June 29, 1995.

169. See, e.g., "Groups Set Shooting Range Talks," *Firearms Business*, February 1, 1996, p. 5 (event is "held every three years").

170. Letter to Mr. Gene Stevenson (sic), U.S. Fish & Wildlife Service, from Don MacLauchlan, International Association of Fish and Wildlife Agencies, November 19, 1996 (emphasis added). (The official in question actually spells his name "Stephenson.")

171. Attachment, Memorandum to Director of Federal Aid, U.S. Fish & Wildlife Service, from Acting Regional Director, Region 5, November 10, 1994.

172. Memorandum to Director of Federal Aid, U.S. Fish & Wildlife Service, from Acting Regional Director, Region 5, November 10, 1994.

173. International Association of Fish and Wildlife Agencies, *Proceedings of the First National Shooting Range Symposium* (1990), pp. 3-4.

174. North American Hunting Club, *National Shooting Range Symposium: Proceedings* (1993), p. 107.

175. International Association of Fish and Wildlife Agencies, *Proceedings of the First National Shooting Range Symposium* (1990), p. 88.

176. International Association of Fish and Wildlife Agencies, *Proceedings of the First National Shooting Range Symposium* (1990), p. 91.

177. North American Hunting Club, *National Shooting Range Symposium: Proceedings* (1993), p. 35-36.