

# F<sup>REST</sup> IN THE CROSSHAIRS

**The Environmental & Health Impacts of Target Shooting in the Los Padres National Forest**



# Forest in the Crosshairs

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Cover Photo: Abandoned debris at a target shooting site along Sespe Creek in the Los Padres National Forest.

## About the Author

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Los Padres ForestWatch is an independent nonprofit organization based in Santa Barbara, California that works to protect the Los Padres National Forest. Since 2009, ForestWatch has worked with diverse stakeholders to address the problem of trash and debris left behind at target shooting sites throughout the forest. Collectively, more than 670 ForestWatch volunteers have contributed 3,800+ hours removing more than 17,400 pounds of trash from 23 key sites. We have also surveyed more than 300 miles of roads throughout the Los Padres National Forest to document the impacts of target shooting, giving us the expertise necessary to promote effective solutions.

## Acknowledgments

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This report was made possible through the generous contributions of our members and donors. Thank you for supporting our efforts to keep the Los Padres National Forest a clean and safe place for people to visit.

The following people, agencies, and organizations assisted with this report: our hard-working interns and contractors who carefully surveyed the forest for the last five years; the U.S. Forest Service, for providing us with data on shooting-caused wildfires; the Ventura County Star and photographer Jason Redmond for use of a photo of the Wolf Fire; Jeff Jones for providing the photo of the Santa Lucia Mountains; and our dedicated volunteers who have worked tirelessly to clean up these sites. We would also like to express our appreciation for target shooters who pack out their trash, shoot responsibly, and leave the forest cleaner than how they found it.

## More Information

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For more information about our efforts to protect the Los Padres National Forest or to get involved with future cleanups of shooting sites, please visit our website at [www.LPFW.org](http://www.LPFW.org) or contact us at:

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## **EXECUTIVE SUMMARY**

The Los Padres National Forest extends across nearly 220 miles of California's central coast, from the Big Sur shoreline in Monterey County, through the backcountry of San Luis Obispo, Santa Barbara, and Ventura counties, to the Interstate 5 corridor along the Los Angeles County Line. It is California's second largest national forest, and outdoor recreation is the predominant use here. Each year, hundreds of thousands of visitors come to the Los Padres National Forest to hike, camp, bike, climb, ride horses, swim, view wildlife, hunt, fish, play in the snow, and enjoy the great outdoors.

Recreational target shooting is also a popular activity in the Los Padres National Forest. Target shooting involves the discharge of firearms at paper targets, clay pigeons, and other inanimate objects, and provides a unique opportunity for citizens to practice their marksmanship in an outdoor setting. Target shooting can leave little or no environmental footprint when done responsibly, particularly when conducted at discrete, well-managed sites that are operated by non-profit gun clubs under permit from the U.S. Forest Service.



However, “dispersed” target shooting at informal, unmanaged sites has become an increasingly controversial activity on public lands throughout the country because of the risks it poses to the environment and public health and safety. Specifically, dispersed target shooting is known to cause the following impacts:

- Contamination of soil and water associated with the accumulation of lead ammunition
- Litter, hazardous electronic waste, and other items used as targets
- Vandalism of signs, campsites, picnic tables, restrooms, and other public facilities
- Wildfire risk from steel-jacketed bullets and exploding targets
- Threats to public safety from stray bullets across roads, highways, and private property
- Damage to centuries-old trees from repeated shooting
- Poisoning of wildlife that ingest lead bullets, trash, or hazardous e-waste

The Los Padres is the only national forest in southern California that still allows dispersed target shooting. Unmanaged target shooting has reached unprecedented levels, driven by the twin pressures of a growing population and a limited number of official, well-managed shooting areas. Rangers say the number of target shooters increases every year, and because of budget cuts and an overstretched staff they have no good way to police them or manage the impacts.



TELEVISIONS ALONG A CREEK AT A SHOOTING SITE NEAR OJAI.

Over the last five years, Los Padres ForestWatch has surveyed the most popular shooting areas in the Los Padres National Forest to document the damage caused by unmanaged target shooting. We surveyed a total of 210 miles of forest roads in the Santa Barbara, Santa Lucia, Ojai, and Mount Pinos Ranger Districts.

Our surveys – along with research of official Forest Service records – revealed an epidemic of target shooting debris and damage across the forest. Specific findings of this report include:

- Dispersed, unmanaged target shooting occurs at **94 distinct sites** throughout the Los Padres National Forest in Santa Barbara, Ventura, San Luis Obispo, and Kern counties. The Mount Pinos Ranger District in Ventura and Kern counties had the highest concentration, with nearly half of the shooting sites located within its boundaries.
- All sites contain varying levels of **trash, hazardous materials, vandalized infrastructure, and damaged natural resources**. Many of these shooting sites are within footsteps of fragile waterways and popular campgrounds, trails, and recreational hotspots.
- Between 1992 and 2016, a total of **53 wildfires** in the Los Padres National Forest were started by target shooting, **burning a combined 74,478 acres of forest land**. The largest fires caused by target shooting were the 1997 Logan Fire in San Luis Obispo County, and the 2002 Wolf Fire in Ventura County.
- The Los Padres National Forest is the **only forest in southern California** that still allows dispersed, unregulated target shooting.
- The 2005 Los Padres National Forest management plan banned dispersed target shooting, but ten years later, **the ban has not been implemented or enforced**.
- Forest officials have known about the damages caused by target shooting since the 1970s, when they recorded **“pure wanton acts of destruction”** throughout the Mt. Pinos Ranger District in Ventura County.

This report is the first comprehensive evaluation of dispersed target shooting throughout the Los Padres National Forest. The goal of this report is to demonstrate the extent and impacts of unmanaged target shooting, and to provide a comprehensive set of data that federal land managers can use to reduce or eliminate these impacts.

We recommend that the Forest Service take steps to immediately implement forest-wide target shooting restrictions in the Los Padres National Forest, consistent with the other three southern California forests. We also encourage the Forest Service to designate a limited number of target shooting ranges that are formally managed under permit. Volunteer trash cleanups and remediation of contaminated sites will also be needed.

## IMPACTS OF TARGET SHOOTING

Unmanaged target shooting can cause serious impacts to the environment, human health, and public safety. In particular, toxicology experts are expressing concerns over the accumulation of lead ammunition at shooting sites. Lead – a highly toxic metal – can leach into the soil and contaminate nearby rivers, streams, and groundwater, causing long-term effects on environmental and public health.

Other consequences of unmanaged target shooting include trash and litter left behind at shooting sites, vandalism and graffiti, wildfires and other public safety hazards, damaged and dead trees, and wildlife poisoning. These impacts are presented below in further detail.

### Litter & Aesthetic Impacts

Shooting sites are often littered with “trigger trash” – paper targets, cans and bottles, plastic buckets, propane canisters, cardboard boxes, furniture, and other items left behind by target shooters who do not practice the “pack it in, pack it out” land ethic. Bullet casings and shotgun shells are the most common forms of trash observed at shooting sites in the Los Padres National Forest. In some areas, mounds of shotgun shells provide a trashed kaleidoscope of blue, red, yellow, and green plastic that is visible from the surrounding landscape.



SHOTGUN SHELLS, TELEVISIONS, AND OTHER SHOOTING DEBRIS AT A SITE NEAR SANTA BARBARA

Heavily-used shooting sites are often sparsely vegetated due to a combination of trampling, shooting at native vegetation, wildfires, soil contamination, and off-road vehicle trespass. In the Los Padres National Forest, target shooting sites have resulted in the removal of several

hundred acres of chaparral, sagebrush, and other native vegetation. The largest shooting sites – several acres in size – serve as an eyesore to everyone who travels through the area.

### Soil & Water Contamination

Lead is the primary component of ammunition used for target shooting. Over time, lead shot (pellets) and spent lead bullets accumulate at shooting sites. This lead can leach into the soil and contaminate nearby rivers, streams, and even groundwater aquifers. In addition to lead, other toxins and heavy metals are found in bullets, casings, targets, and electronic or hazardous wastes commonly found at dispersed shooting areas.



SHOOTING TRASH ALONG A STREAMBED IN THE OJAI RANGER DISTRICT

Lead is perhaps the biggest environmental concern with shooting sites. When lead comes in contact with soil, it corrodes into small particles that can be inhaled through airborne dust. Lead can begin to breakdown into the environment as soon as a bullet or shell is fired. Abrasion that occurs when a bullet or shot hits soil, rock, or other natural features instantly exposes the area to lead particles and is only the start of the lead contamination that occurs to the surrounding area over time (Hardison et al. 2004).

Lead has accumulated in surface waters near shooting ranges at levels above that of the EPA's safe drinking water standard (1-Cao et al. 2003 & Stansley et al. 1992). Lead particles and lead-contaminated soil can also be transported in storm water runoff to nearby streams and rivers and then consumed by outdoor recreationists, wildlife, and downstream farms and residents. Lead is also directly deposited into waterways when target shooting occurs in dry creek beds, and is washed downstream during winter storms. Additionally, lead can leach into subsurface soils and leave not only the soil contaminated, but can seep into groundwater supplies (2-Cao et al. 2003). One study found that lead levels in the soils of a backstop at a shooting range were at levels high enough to be considered hazardous wastes and would require special handling according to the federal Resource Conservation and Recovery Act (Chen et al. 2002).

When lead is inhaled or swallowed, this highly toxic metal is rapidly absorbed into the bloodstream and has adverse effects on the central nervous system, the cardiovascular system, kidneys, and the immune system. Once ingested, lead builds up in blood, bones, fat, and muscle of those exposed. Children are particularly susceptible to lead exposure (ATSDR 2007). Lead has a range of health effects in humans, including:

- Damage to the brain and nervous system
- Behavioral problems and learning disabilities
- Reproductive problems
- Memory and concentration problems
- Muscle and joint pain

Lead is not the only hazardous substance that contaminates shooting sites. Bullets contain other toxic substances, including antimony and arsenic (which are used to harden the lead). In small doses, these toxic substances cause headaches, dizziness, and depression. Larger doses may cause inflammation of the heart and damage to other vital organs. (Johnson et al., 2005)

Clay targets are commonly found broken and scattered around target shooting areas, and contain toxins that contaminate the surrounding environment. Many clay targets use a class of hydrocarbon called polycyclic aromatic hydrocarbons (PAHs) as a binding agent. These hydrocarbons and other toxins found in clay targets, like cadmium and chromium, can leach into the environment and cause adverse health impacts. (Lobb 2006).

In addition to ammunition and clay targets, shooting sites are often littered with household appliances and electronics such as televisions and computer monitors. These devices contain toxic metals such as lead, barium, cadmium, mercury, copper, lithium, and nickel. (Johnson et al. 2014).



AN OLD TELEVISION LEACHES HEAVY METALS INTO THE SOIL AT A SHOOTING SITE IN THE MOUNT PINOS RANGER DISTRICT

## Wildlife Harm

In addition to these human health risks, lead contamination can also have negative effects throughout all levels of an ecosystem, from soil chemistry and microbes and worms in the soils (Rantalainen et al. 2006) to fungi and plants (Sorvari et al. 2006) and wildlife. Birds and other animals ingest lead shot and can build up deadly concentrations of lead to bioaccumulation (Scheuhammer et al. 1995). A study of wildlife lead concentrations around a shooting range found drastically elevated lead levels in tissues of mammals and amphibians (Stansley & Roscoe 1996). Another study showed that lead and other toxins associated with target shooting are toxic to frog tadpoles, causing high rates of mortality and severe physical malformations. (Stansley et al. 1996).



Lead pellets and bullet fragments left behind at shooting ranges can be mistaken for food, and directly ingested. Lead poisoning in wildlife is similar to that described above for humans – decreased survival, poor body condition, behavioral changes, and impaired reproduction. These impacts travel up the food chain when larger animals like raptors and mammals eat contaminated prey.

When lead particles enter streams and other water bodies, they can be consumed by aquatic species like fish, reptiles, and amphibians. Woodpeckers, scrub jays, and other birds that store acorns in tree cavities may pull lead slugs out of trees, thinking they're a food source. Under certain environmental conditions, lead from shot can be readily released and taken up by plants or animals, causing a range of biochemical, physiological, and behavioral effects in some species of fish, amphibians, reptiles, birds, and mammals (Rattner et al., 2008).

Lead poisoning is one of the leading threats to the recovery of the endangered California condor. Numerous shooting sites in the Los Padres National Forest are in close proximity to condor foraging, nesting, roosting, and watering sites. Using radio telemetry data from the U.S. Fish & Wildlife Service, we evaluated the proximity of dispersed shooting sites to high-use condor areas such as nesting, roosting, and perching sites. The data indicates that at least seven shooting sites are within a half-mile of these sensitive condor areas. The proximity and extent of these shooting sites – coupled with the amount of lead contamination present – suggest that some shooting sites may be a source of lead for condors. While lead ammunition has been banned throughout the condor's range in California, the prohibition only extends to ammunition used for hunting; it is still legal to use lead bullets for recreational target shooting. (Johnson et al. 2004).



LEAD BULLETS FOUND AT A SHOOTING SITE FREQUENTED BY CALIFORNIA CONDORS ON THE OJAI RANGER DISTRICT. FORESTWATCH HAS ORGANIZED 8 CLEANUPS AT THIS SITE.



AS SCAVENGERS, CALIFORNIA CONDORS ARE ESPECIALLY VULNERABLE TO LEAD POISONING.  
PHOTO BY DANIEL BIANCHETTA.

## Vandalism

Target shooting has caused hundreds of thousands of dollars of damage to public property in the Los Padres National Forest. Each year, dozens of signs are used as targets and are shot beyond recognition. Our field surveys also uncovered evidence of widespread vandalism of facilities across the forest, including restrooms rendered structurally unsound due to repeated shooting of walls and doors, damage and destruction to kiosks and interpretive displays, and senseless damage to historic structures like guard stations and fire lookout towers. Additionally, graffiti on signs and structures are common around shooting sites.



ABOVE, A BATHROOM IS VANDALIZED BY SHOOTING AND GRAFFITI AT A CAMPGROUND IN THE MOUNT PINOS RANGER DISTRICT. BELOW, A FORESTWATCH SURVEYOR RECORDS DATA AT A RESTROOM IN VENTURA COUNTY'S MOUNT PINOS RANGER DISTRICT, WHERE ENTIRE COLUMNS OF CONCRETE BLOCKS HAVE BEEN DESTROYED BY SHOOTERS.



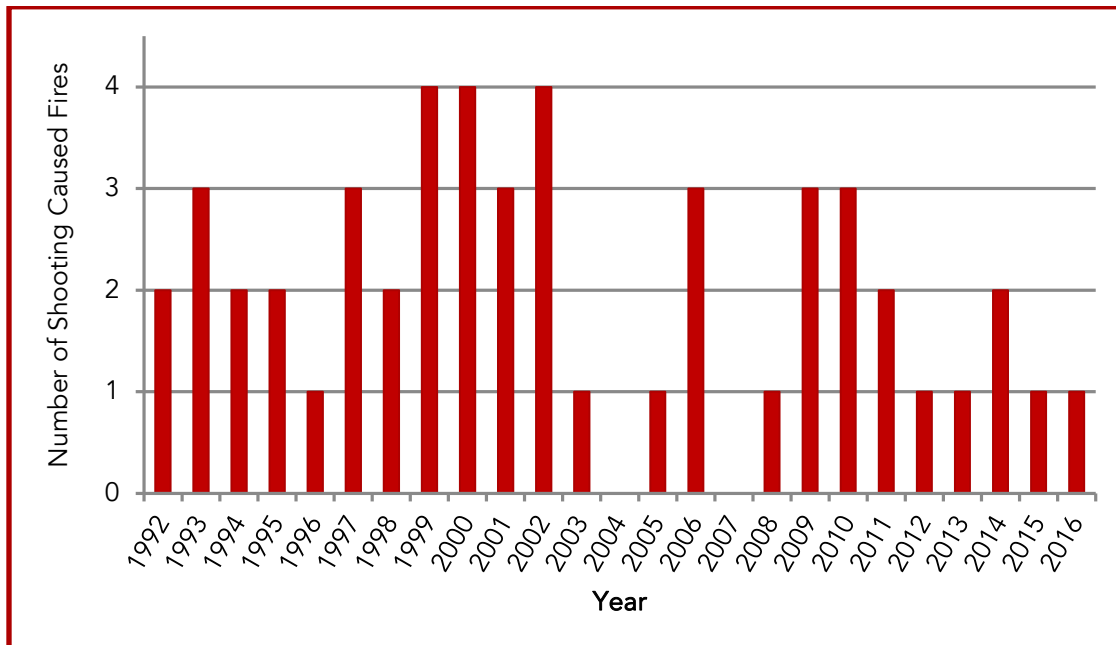
ABOVE: A FORESTWATCH SURVEYOR RECORDS DAMAGE TO A RESTROOM IN THE MOUNT PINOS RANGER DISTRICT. BELOW: TARGET SHOOTERS USED THIS STOLEN DISABLED PARKING SIGN FOR TARGET PRACTICE AT A SITE IN THE OJAI RANGER DISTRICT.

## Wildfires

Public land managers and firefighters throughout the West are becoming increasingly concerned about the wildfire risk posed by dispersed target shooting. When certain types of bullets strike rocks or other objects, they can throw sparks that ignite surrounding grass or brush and quickly spread. (U.S. Forest Service, 2013). Popular “exploding targets” have also caused several wildfires.

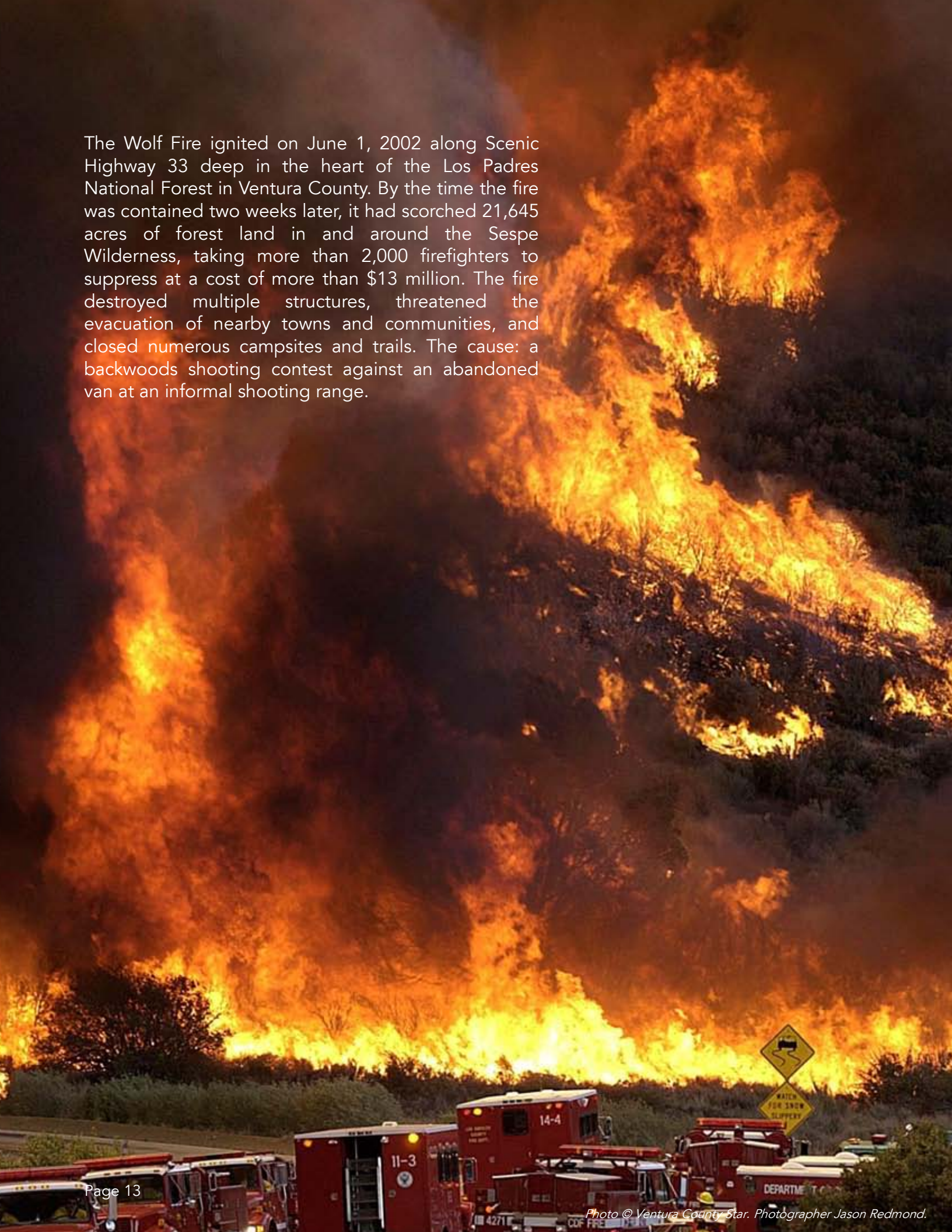
In 2012, fire officials blamed target shooting for sparking at least 21 wildfires in Utah and nearly a dozen in Idaho. Shooting also caused fires in Arizona, Nevada, and New Mexico. Perhaps the most notorious shooting-caused fire is the Telegraph Fire, which burned 30 homes, 100 other buildings, and jeopardized 4,000 near Yosemite National Park in 2008. The blaze burned more than 34,000 acres of land, prompted the evacuations of hundreds of people, cost \$37.6 million to fight and cut off power temporarily to parts of the Yosemite Valley.

The Los Padres National Forest has its share of shooting-caused wildfires each year. According to data obtained from the U.S. Forest Service, target shooting caused 53 wildfires in the Los Padres National Forest between 1992 and 2016, burning a combined total of 74,478 acres of forest land. While many of these fires were small, some became quite large. The 1997 Logan Fire burned 49,490 acres in the Santa Lucia Ranger District in San Luis Obispo County, and the 2002 Wolf Fire burned 21,645 acres in the Ojai Ranger District in Ventura County. Combined, the two wildfires cost more than \$19 million to extinguish and nearly took the lives of four firefighters.



SHOOTING-CAUSED FIRES IN THE LOS PADRES NATIONAL FOREST, 1992-2016.  
SOURCE: U.S. FOREST SERVICE DATA.

The Wolf Fire ignited on June 1, 2002 along Scenic Highway 33 deep in the heart of the Los Padres National Forest in Ventura County. By the time the fire was contained two weeks later, it had scorched 21,645 acres of forest land in and around the Sespe Wilderness, taking more than 2,000 firefighters to suppress at a cost of more than \$13 million. The fire destroyed multiple structures, threatened the evacuation of nearby towns and communities, and closed numerous campsites and trails. The cause: a backwoods shooting contest against an abandoned van at an informal shooting range.



Not just bullets are to blame for the wildfire risk posed by target shooting; the targets themselves are often flammable as well, with shooters taking aim at so-called “exploding targets,” illegal fireworks, propane canisters, and other flammable materials. Exploding targets are made from inert powders that are mixed at the site, placed into containers, and explode when shot. After they are combined, the compound is illegal to transport, and the California Department of Forestry & Fire Protection (CalFire) recently warned that using exploding targets may be punishable as a felony. In 2013, the FBI’s Terrorist Explosive Device Analytical Center issued a bulletin warning that exploding targets “can be used as an explosive for illicit purposes by criminals and extremists.”



SEVERAL NEWS OUTLETS ACROSS THE COUNTRY FEATURED STORIES IN 2014 HIGHLIGHTING LAW ENFORCEMENT OFFICIALS'S CONCERNS OVER EXPLODING TARGETS. SOURCE: [KNXV](#) IN ARIZONA.

Despite the danger posed by exploding targets, they are readily available for sale on the internet. While some manufacturers claim they are safe to use, not everyone is convinced. “A lot of the information that is being disseminated by the manufacturers of these types of materials on the internet, or at gun shows, or wherever you can purchase these materials, is misleading and absolutely wrong,” said Paul Zellerbach, Riverside County District Attorney, in 2012 after an exploding target started a wildfire there.



CANNISTERS OF PROPANE AND OTHER FLAMMABLE MATERIALS ARE OFTEN FOUND AT SHOOTING SITES, LIKE THIS ONE IN THE OJAI RANGER DISTRICT.

In 2013 and 2014, exploding targets started at least 16 wildfires in Western states that cost \$33 million to fight, according to the U.S. Forest Service. “Exploding targets pose a very real safety threat to visitors and our employees,” said U.S. Forest Service Chief Tom Tidwell in 2013 upon issuing an order prohibiting exploding targets on national forest land in the Rocky Mountains. “In the past year alone, at least 16 wildfires on national forests have been associated with exploding targets, causing millions of dollars in suppression costs while threatening the safety and well-being of surrounding communities.” The Forest Service has not issued any such order prohibiting exploding targets in the Los Padres National Forest or any other national forest in California. (U.S. Department of Justice, 2013).

In 2003, two brothers were charged with federal crimes after shooting at exploding targets in the Los Padres National Forest – on the same day that the Forest Service issued a press release urging the public to be extremely cautious because of extreme fire danger. The shooting caused the Happy Fire, a 75-acre blaze near Figueroa Mountain. (Sailant, 2007).

In 2013, target shooters in the admitted to starting a wildfire after using tannerite (an exploding target), according to a U.S. Forest Service investigation report obtained by ForestWatch under a Freedom of Information Act request. The fire burned 51 acres around Paradise Campground on the Santa Lucia Ranger District in San Luis Obispo County. As firefighters were battling the blaze, a bomb squad was called in to detonate the explosive debris that remained at the site. The shooters were criminally charged and were billed for the costs of fighting the fire. (Welsh 2013).

Other flammable items such as propane canisters and aerosol cans are also used as targets. Many of these items are found at shooting sites in the Los Padres National Forest, riddled with bullet holes and bearing signs of having exploded violently. Our surveyors also found illegal fireworks at various shooting sites in the forest.



ILLEGAL FIREWORKS RIDDLED WITH BULLET HOLES AT A SHOOTING SITE IN THE MOUNT PINOS RANGER DISTRICT

## Public Safety

According to the U.S. Forest Service and the Bureau of Land Management, target shooting presents a serious public safety threat when it occurs near heavily-traveled areas like roads, campsites, and trailheads. Responsible target shooters use hillsides as backdrops, following one of the fundamental rules of firearm safety: always be sure of your target and what is beyond. However, target shooters who use trees and vegetation may not realize that there could be people recreating within range. Stray bullets can travel from one-half mile to more than 4 miles from the shooting site, depending on the type of bullet and gun used and the terrain (Painter, 1999) – placing large areas of the forest within the line of fire and off-limits to other recreationists.

Conflicts also arise when target shooting occurs dangerously close to homes and private property adjacent to the national forest. Several landowners have expressed concern about stray bullets, trash, and unsafe conditions associated with target shooting.

These public safety hazards are not unique to the Los Padres National Forest – public land managers across the country have documented the dangers posed by unregulated target shooting. When the U.S. Bureau of Land Management closed 900 acres of federal land in Utah to target shooting, the agency stated:

TARGET SHOOTING IN THE AREA HAS RESULTED IN NEAR-MISSES OF HOMES, AUTOMOBILES, AND PEOPLE. RECENTLY, BULLETS SHOT FROM BLM-ADMINISTERED LAND TRAVELED APPROXIMATELY 2,000 FEET TO NEIGHBORING PRIVATE LAND AND INTO A HOME, JUST MISSING THE HOMEOWNER. IN ANOTHER CASE, SCHOOL CHILDREN WERE IN THE LINE OF FIRE OF TARGET SHOOTERS. (BLM, 2014).

Other National Forests have closed areas to target shooting over concerns for public safety including Mark Twain National Forest in Missouri, Santa Fe National Forest in New Mexico, Mount Baker-Snoqualmie National Forest in Washington, and Croatan National Forest in North Carolina, among others.

In July 2015, a 60-year-old grandfather was killed after he was struck by a stray bullet from target shooters while roasting marshmallows with his two grandsons while camping in Pike National Forest in Colorado. (Hernandez and Paul, 2015).

A former membership director of a shooting range in Colorado stated, "I've been out hiking myself and heard bullets whiz over the head. There's a lot of shooting going on, and it's very poorly controlled.... Everyone thinks it's the largest shooting range in Colorado." One shooting range owner called for a ban on gunfire in national forests. "They're drinking, they're shooting, they don't know where the bullet's going," said Mel Bernstein, who for 36 years has owned a public shooting range near the Pike National Forest in Colorado. "They shouldn't really allow anybody in a public forest to shoot. It endangers everybody. It's very unsafe." (Benzel and Anleu, 2015).



A SIGN IN THE LOS PADRES NATIONAL FOREST REMINDS VISITORS OF WHERE IT IS NOT SAFE TO SHOOT. OUR SURVEYS FOUND DOZENS OF POPULAR SHOOTING SITES IN THESE PROHIBITED AREAS.

Federal regulations prohibit discharging a firearm within 150 yards of a residence, building, campsite, developed recreation site, or occupied area; and also prohibit shooting on roads and across streams. However, in the Los Padres National Forest, dozens of popular target shooting sites are located in these prohibited areas. For example, Scenic Highway 33 – a narrow, winding two-lane highway in the Los Padres National Forest – is directly in the line of fire of one of the most popular target shooting areas in the forest, placing motorists on a potential collision course with stray bullets.

Compounding these risks is the use of illegal semi-automatic weapons, exploding targets, and other flammable materials. Alcohol is frequently consumed at these impromptu target shooting sites, as evidenced by countless bottles and cans strewn about the areas. While many target shooters follow the law and shoot safely, the proliferation of impromptu shooting sites and irresponsible behavior is turning vast expanses of forest into a backcountry war zone that recreationists enter at their own risk.

## Tree Mortality

Target shooters often hang paper targets from trees. Over time, repeated shooting of these trees splinters the bark and chips away at the inside of the trunk, weakening the trees and eventually causing them to fall. Other target shooters use the trees themselves as targets – one YouTube video shows a [shooter using a semi-automatic rifle to fell a tree with dangerous results](#).

Shooting at trees can also cause damage to the tree's phloem – living tissue that forms the innermost layer of bark that carries nutrients to all parts of the tree where needed. Damage to the phloem may affect nutrient transport, causing weakening or death to the tree. In addition, physical damage to the tree's protective layer – the bark – can expose the tree to fungal pathogens, also causing death (Wilken, 2013).



DAMAGED TREE AT A SHOOTING SITE IN THE MOUNT PINOS RANGER DISTRICT

Shooting at trees is prohibited by Forest Service regulations, but the practice is widespread in the Los Padres National Forest, where our surveyors documented dozens of trees that were weakened or killed by target shooting. Repeated shooting had blasted holes completely through some trees, like this one in the Mt. Pinos Ranger District. Numerous shooting sites in the forest are becoming battlefields of splintered trees, and other sites are becoming deforested altogether, with fewer and fewer trees remaining each year.



## **TARGET SHOOTING IN THE LOS PADRES: SURVEY RESULTS**

Forest officials have expressed concern with target shooting in the Los Padres National Forest since at least the 1970s, when the following was noted in Ventura County's Mount Pinos Ranger District:

"In recent years we have noticed a rapid increase in promiscuous shooting. All objects become targets for shooters. Garbage cans, campground entrance signs, visitor registration signs, fireplace chimneys, and toilet doors and vents have to be replaced because of shooting. Some visitors even test their shooting ability by felling a tree by successive shots at the trunk. These are pure wanton acts of destruction." (Hunter 1976).

To determine whether conditions have improved or worsened over the course of the last forty years, ForestWatch set out to investigate and document the extent and severity of target shooting throughout the Los Padres. We embarked on a five-year-long survey covering a total of 210 miles of remote forest roads in the Santa Barbara, Santa Lucia, Ojai, and Mount Pinos Ranger Districts. Along the way, we recorded the location of any shooting sites we encountered, monitored their use, and re-visited them to confirm that the sites were regularly-used. At each shooting location, we recorded detailed information on the severity of trash accumulation, distance from waterways and recreational areas, damage to natural resources like trees, vandalism to park infrastructure, and the presence of hazardous wastes.

The results of our surveys were astonishing. Nearly a half-century after forest officials first identified "pure wanton acts of destruction" in the Los Padres, the effects of unmanaged target shooting have increased dramatically, spreading to all corners of the forest. Unmanaged target shooting is now one of the most widespread threats facing the Los Padres National Forest.

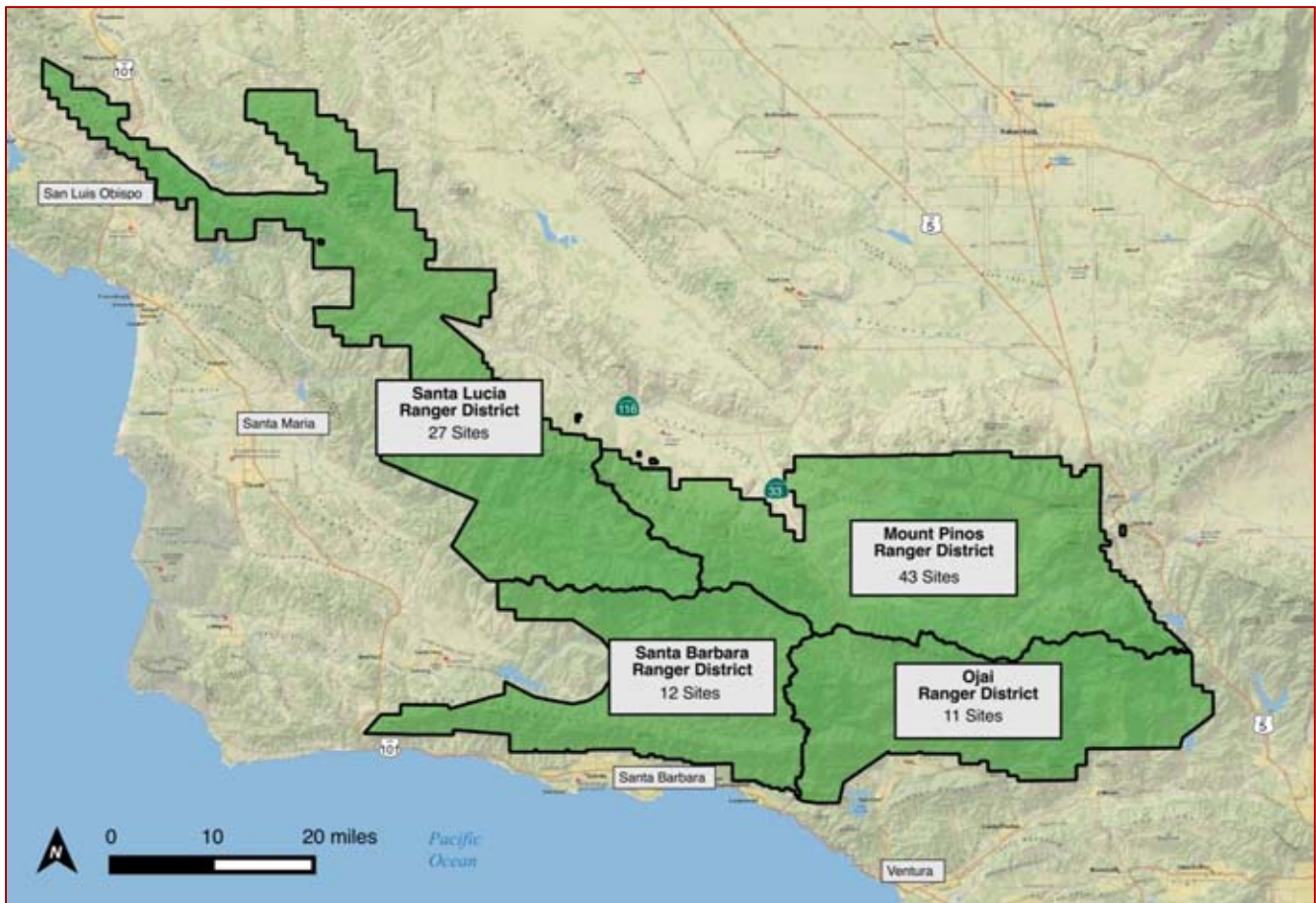


TARGET SHOOTING WITH A SEMI-AUTOMATIC ASSAULT RIFLE IN THE OJAI RANGER DISTRICT.

Our surveys reveal an epidemic of target shooting debris and damage across the forest. We identified and documented 94 shooting sites culminating in dozens of acres of trash, hazardous materials, vandalized signs and restrooms, and damaged natural resources. Many

of these shooting sites are within footsteps of fragile streams and rivers and popular campgrounds, trails, and recreational hotspots.

The 94 target shooting sites we encountered were found throughout all four Ranger Districts of the Los Padres National Forest. The Mount Pinos Ranger District had the highest concentration, with 43 shooting sites occurring within its boundaries – nearly half of all shooting sites in the entire forest.



SHOOTING SITES ARE FOUND THROUGHOUT THE LOS PADRES NATIONAL FOREST, WITH NEARLY HALF OF THE SITES IN THE MT. PINOS RANGER DISTRICT IN VENTURA AND KERN COUNTIES. TO DISCOURAGE ADDITIONAL SHOOTING AND DAMAGE AT THESE SITES, THEIR EXACT LOCATIONS WILL NOT BE DISCLOSED IN THIS REPORT.

## SUMMARY OF SURVEY RESULTS

- 94 distinct dispersed target shooting sites were identified
- Sites were given severity ratings between 1-3 with 3 being the worst sites
- Out of the 94 total sites, 10 were ranked with a severity rating of 3, while an additional 18 were given a rating of 2
- The Mount Pinos Ranger District had the highest concentration of dispersed shooting sites accounting for 43 of the 94 sites
- 29 sites were within 50 yards of rivers and streams
- 10 sites were within 150 yards of designated campgrounds
- 16 sites contained damaged trees
- 8 sites contained electronic/hazardous wastes such as computer/television monitors and propane canisters



## Mount Pinos Ranger District (Ventura & Kern Counties)

Nearly half (43) of the target shooting sites occur in the Mount Pinos Ranger District along numerous off-road vehicle trails between the Scenic Highway 33 corridor and Interstate 5 at Frazier Park. Several of the forest's most degraded shooting areas are found here, attracting shooters from as far away as Bakersfield and Los Angeles.

Two roads in particular are particularly troublesome. These roads – which are formally-designated for four-wheel-drive vehicles, ATVs, and dirt bikes – are two of the most heavily used target shooting areas in the forest. Each is littered with shooting sites, and many sites are oriented for target shooters to shoot directly across the channels, littering the waterways with casings, shells, and broken targets that are flushed downstream into the Cuyama River during storms. Another problem area just outside of a popular off-road vehicle recreation park has several large shooting areas next to a popular trailhead campground.



ONE OF MANY DAMAGED SIGNS FOUND THROUGHTOUT THE MPRD

The Mt. Pinos Ranger District also had more tree damage and mortality from target shooting than anywhere else in the forest. Vandalism is prevalent here, with three vandalized restroom facilities. At one site near a trailhead leading into the Sespe Wilderness – and within one hundred feet of a creek and meadow – shooters had damaged the concrete walls and metal doors of a small restroom. Another restroom near an entry point into the Chumash Wilderness was destroyed beyond recognition. A third restroom – newly installed – already had bullet holes in the doors.





The Mt. Pinos Ranger District had more shooting-induced tree damage and mortality – and more flammable propane canisters – than any other area of the forest.





The Mt. Pinos district also had the highest concentration of zombies, skeletons, and other creepy targets.

## Santa Barbara Ranger District (Santa Barbara County)



DEBRIS AT SHOOTING SITE IN THE SANTA BARBARA RANGER DISTRICT NEAR GOLETA AND THE SANTA YNEZ VALLEY

We identified 12 target shooting sites within the Santa Barbara Ranger District. These sites are located primarily along Camino Cielo Road, just a short drive from the cities of Santa Barbara, Goleta, Montecito, Carpinteria, and the Santa Ynez Valley. Even though this area contains a privately-managed shooting range under permit with the U.S. Forest Service, and three other designated (but unmanaged) shooting sites, much of the surrounding forest lands are littered with dispersed shooting areas. The "Glass Factory" at Arroyo Burro is the most popular shooting area in the forest, and it is regularly littered with broken glass and household appliances. Several wildfires caused by target shooting have occurred there.

The Forest Service coordinates a cleanup of this area twice per year with shooting organizations, but the volunteers who clean up cannot keep pace with the irresponsible shooters who trash the place. It is estimated that the site accumulates about 20-25 tons of trash every three months. The noble efforts of volunteers cannot keep up with the amount of trash left behind.





Target shooting caused nine wildfires at the Glass Factory site between 1995 and 2016. This site has the highest frequency of shooting-caused wildfires in the forest, costing millions of dollars of taxpayer funds to suppress and threatening residents in Santa Barbara just a few miles away. In this photo, a helitanker drops water on a fire at the Glass Factory in October 2011.



## Ojai Ranger District (Ventura County)

Nestled in a remote canyon along a scenic highway north of Ojai, Cherry Creek was one of the most popular target shooting areas in the Los Padres. The three-mile-long dirt road that traverses the canyon is littered with eleven shooting sites, covering much of the ground and the adjoining creekbed in a carpet of broken targets, spent casings and shells, and trash.

Cherry Creek Road follows Cherry Creek up several miles before reaching Cherry Creek campground, and is surrounded on either side by the Matilija Wilderness, a protected area established by Congress in 1992. Of the eleven target shooting areas that are scattered along this short dirt road, many are directly in or on the banks of Cherry Creek itself. The worst of the sites are those just a few hundred feet from Highway 33, a National Forest Scenic Byway, and a California Scenic Highway.

In 2011, as a result of a lawsuit filed by ForestWatch and other conservation organizations, the Forest Service agreed to close Cherry Creek to target shooting. Despite this long-standing closure, shooters still use the site and have migrated to a new site just outside the boundary of the closure area. ForestWatch volunteers have removed more than three tons of trash from this canyon, but with the vast amount of trash, spent casings, and broken targets that have accumulated over the years – coupled with the new target shooting sites that emerge each year – Cherry Creek and the Upper Sespe Creek watershed remains one of the areas in the Los Padres most devastated from target shooting activity.





Graffiti covers a "Pick Up Your Trash" message that was previously spray-painted on this rock near a popular shooting area in the Ojai Ranger District. A large infestation of yellow star thistle, an invasive plant, is prevalent.



Volunteers from Ojai, Ventura, Santa Barbara, San Luis Obispo, and even farther have come out to help restore their national forest, getting down on hands and knees to pick up shrapnel and bullet casings, and hauling out larger targets like TVs, refrigerators, and even a grand piano.





"I hiked up the canyon further to find beautiful stands of alder, canyon oak and some of the biggest specimens of big-cone spruce I have seen in the forest. Unfortunately, in one of these groves was another "shooting range" again littered with tons of trash, spent shells, toilet paper, etc. I hiked up to the ridge overlooking the Matilija drainage only to find more trash and several recently used illegal fire rings in turnouts along the road. This situation is deplorable." Complaint filed with the U.S. Forest Service by a hiker in 2010.

## Santa Lucia Ranger District (San Luis Obispo & Santa Barbara Counties)

We recorded 27 target shooting sites throughout the Santa Lucia Ranger District, ranging from popular roads and trails near Figueroa Mountain just outside of Santa Barbara County's wine country, to frequently used trails near Arroyo Grande and San Luis Obispo. As with the Mount Pinos Ranger District, the Santa Lucia Ranger District has numerous off-road vehicle areas, few of which can be traversed without encountering debris and damage from target shooting.

In 2009, the Forest Service issued an order prohibiting target shooting along Cuesta Ridge. The area had long been afflicted by target shooting, and the order will allow the land to recover while various volunteer organizations coordinate clean-up efforts along the corridor. In 2015, ForestWatch volunteers joined with members of Central Coast Concerned Mountain Bikers, Los Padres Forest Association, the U.S. Forest Service, and the local high school water polo team to clean up an area named – quite appropriately – “Shooters.”



Target shooting in this district is now primarily concentrated in an off-highway vehicle area east of Santa Maria. But perhaps the most-used shooting site on the district is located further south, in the foothills above the Santa Ynez Valley and Happy Canyon near Figueroa Mountain. This site is frequently littered with trash, shotgun shells, and appliances. Several wildfires have started here.



A shooting site in the Santa Lucia District, with evidence of a recent shooting-caused wildfire in the background.



## MISSED OPPORTUNITIES TO MANAGE TARGET SHOOTING IN THE LOS PADRES

The three other National Forests of southern California – the Angeles, San Bernardino, and Cleveland national forests – have all taken significant actions to manage target shooting, significantly reducing the environmental and safety hazards associated with dispersed target shooting.



The neighboring Angeles National Forest – in Los Angeles County – allows target shooting in two designated areas operated by private concessionaires under the terms of a Forest Service permit. The permit – along with regular oversight by the Forest Service – ensures that the site is safe, clean, and well-managed.



The San Bernardino National Forest in San Bernardino County allows dispersed target shooting in four officially-designated areas, with seasonal restrictions based on fire danger. In addition, there are three developed shooting ranges that are operated by concessionaires or nonprofit organizations under permit with the Forest Service.



The 500-acre Oroco Ridge Recreational Target Shooting Area in San Diego County was open to target shooting. However, in 2010, Cleveland NF officials closed this area over concerns for public safety stemming from an accidental shooting, near-misses, and repeated wildfire starts. A study is underway to determine how to address hazardous metals, old appliances, and discarded e-waste on the site and whether any environmental remediation needs to take place.

On the other hand, the Los Padres has the most lenient target shooting regulations of the National Forests in southern California. For decades, target shooting has been allowed throughout the Los Padres except in certain limited areas that have been formally closed to target shooting.

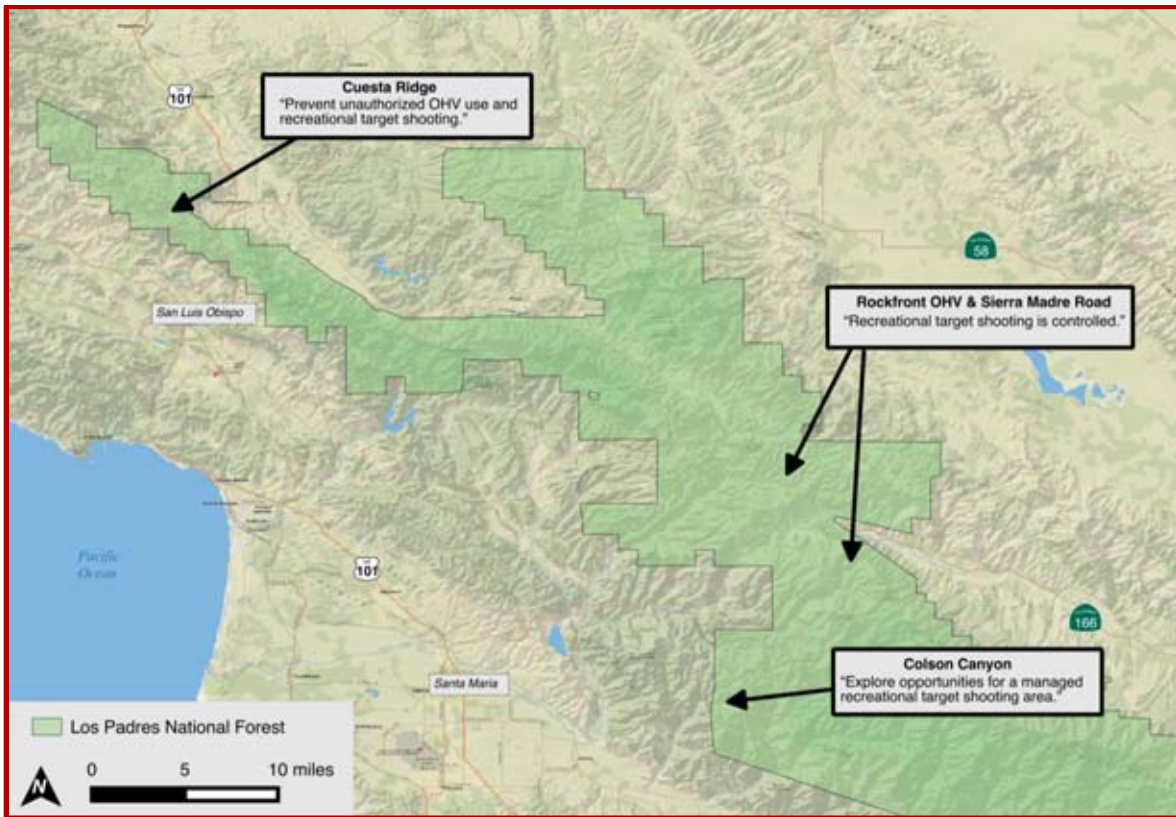
In 2005, the Forest Service took a monumental step towards improving the management of target shooting in the Los Padres National Forest. That year, forest officials approved a forest-wide ban on dispersed target shooting throughout the forest. Regional Forester Bernie Weingardt – the top forest official in California – hailed the forest-wide ban as a “fundamental change in policy” and issued the following statement:

The Los Padres National Forest has been historically open to recreational target shooting except where prohibited by closure order; however, with increasing numbers of national forest users, concerns for public health and safety, resource damage to areas where the activity has been concentrated, and the documentation of numerous wildland fires that have been caused by recreational target shooting, the Los Padres National Forest intends to develop a Forest closure order based on Standard S36 in Part 3 of the forest plan. This means the Los Padres National Forest will generally be closed to recreational target shooting except where it is allowed in designated open areas and ranges. The ranges are specific sites that are managed under special-use authorizations. This is not new in southern California. The other three southern California national forests (the Angeles, the Cleveland, and the San Bernardino National Forests) have restricted recreational target shooting to designated areas. Because of its rural character, the Los Padres National Forest has not seen the need to implement this strategy until now. As the population continues to grow and recreation demand increases, I must manage shooting in a way that provides for public health and safety and protects the forest environment. Shooting associated with hunting is not affected and will continue as in the past.

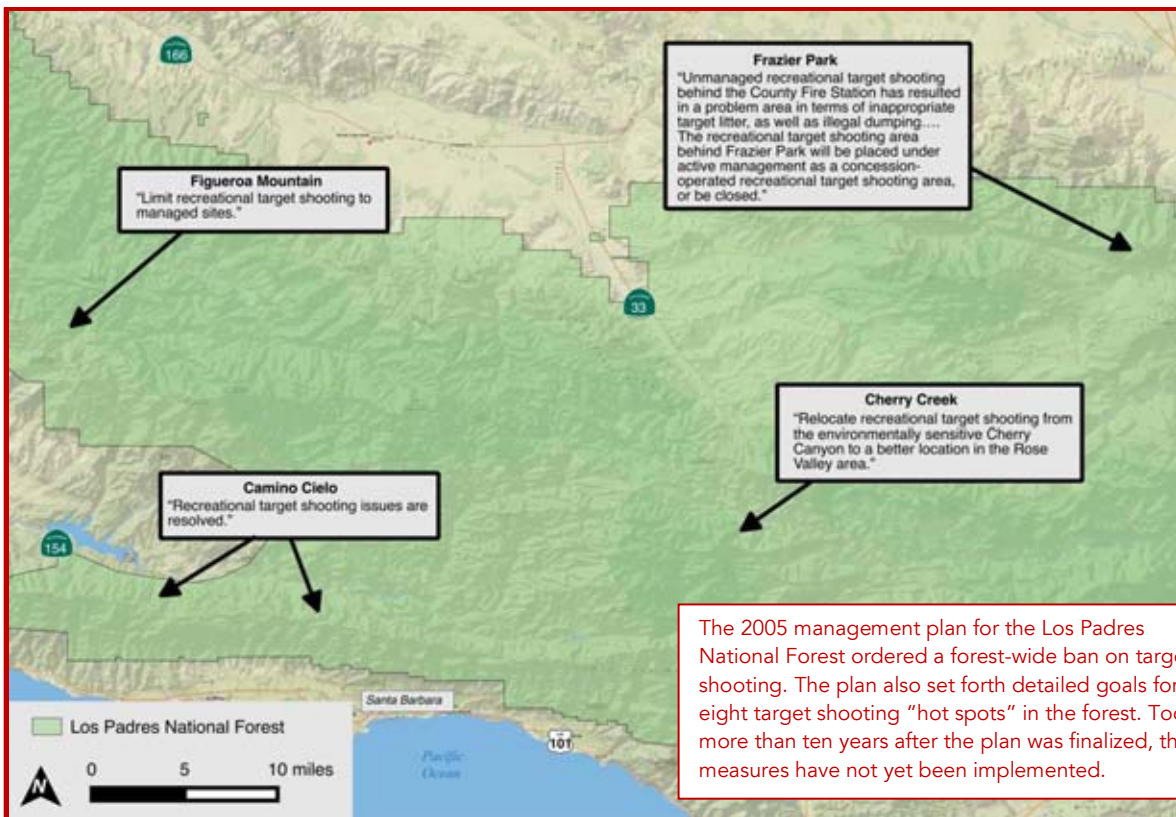
The ban was issued as part of a long-awaited update to the management plan for the Los Padres National Forest. The updated plan identified eight key “hot spots” in the Los Padres that were suffering the most resource damage from target shooting – Cuesta Ridge in San Luis Obispo County; Rockfront OHV, Sierra Madre Road, Colson Canyon, Figueroa Mountain, and Camino Cielo in Santa Barbara County; and Frazier Park and Cherry Creek in Ventura and Kern counties – and set forth clear steps for how to improve these sites.

The forest-wide ban announced by Regional Forester Weingardt would be implemented by standard S36 in the 2005 forest plan, which states:

Recreational target shooting will only be allowed in designated areas and ranges. Shooters shall remove their targets and spent shells when departing designated shooting areas. Shooters shall not use paintballs or other forms of ammunition that would result in visible residue except where authorized in ranges that operate under special-use permit.



FOREST MANAGEMENT PLAN GOALS FOR TROUBLED TARGET SHOOTING AREAS



The 2005 management plan for the Los Padres National Forest ordered a forest-wide ban on target shooting. The plan also set forth detailed goals for eight target shooting "hot spots" in the forest. Today, more than ten years after the plan was finalized, the measures have not yet been implemented.

Despite the plan's stated life span of 10-15 years, the Forest Service has not initiated any process to implement the forest-wide ban. In 2008 – three years after the plan took effect – ForestWatch formally requested that the Forest Service implement standard S36 and embark on a forest-wide target shooting prohibition.

The Forest Supervisor at the time – Peggy Hernandez – refused to take any steps to begin implementing standard S36, pointing out that the standard “does not have a specific timeline for implementation other than within the lifetime of the Plan.” Forest Supervisor Hernandez offered to consider a forest-wide ban as part of the forest's long-range five-year program.

Seven years later – and ten years after standard S36 was first approved – forest officials have still not taken any steps to implement a forest-wide prohibition on unmanaged target shooting in the Los Padres National Forest, leaving a major component of Regional Forester Weingardt's “fundamental change in policy” unfulfilled.

The Forest Service does implement a seasonal prohibition on target shooting in the Los Padres National Forest. Under the forest's Level 3 fire restrictions, recreational target shooting is prohibited in all areas of the national forest unless specifically authorized by a permit.



VANDALS REGULARLY FLAUNT SHOOTING PROHIBITIONS DURING HIGH FIRE SEASON. THIS SIGN IN THE FOOTHILLS OF THE SANTA YNEZ VALLEY STATED “FIRE RESTRICTIONS: NO TARGET SHOOTING ALLOWED” UNTIL SHOOTERS SPRAY-PAINTED IT.

However, these restrictions are only in place during the high fire season, and compliance is inconsistent. Our surveyor observed recreational target shooting occurring at three different sites during a one-month period while the closure order was in full effect last summer, in direct defiance of the ban. Additional sites surveyed in summer 2015 showed signs of recent use when the ban was in place. These findings suggest that illegal target shooting during seasonal fire restrictions is widespread, posing a serious fire

danger. With winter rains, fire restrictions were lifted earlier this year, opening the forest to target shooting once again.

## SOLUTIONS & RECOMMENDATIONS

### Implement Forest-Wide Target Shooting Regulations

Forests outside of California have started to take efforts to combat the destruction of target shooting by implementing closures, including Arizona’s Coronado National Forest, where the Forest Service has closed two popular target shooting areas to all shooting activity over concerns of the environmental harm being caused by the activity.

“The emergency closure is being implemented due to excessive resource damage to trees and other vegetation in both canyons and large amounts of trash, shells, and lead deposited in trees and on the ground,” said officials with the Coronado National Forest when issuing the closure in 2014. (U.S. Forest Service, 2014).

Other federal agencies are also taking note about the need to implement area-wide target shooting closures. For example, the Bureau of Land Management in 2013 banned target shooting throughout the 129,000-acre Ironwood National Monument in Arizona (Davis, 2013), and – under court order – is considering a similar ban across the 500,000-acre Sonoran Desert National Monument (Stern, 2015). Target shooting is already prohibited across the 250,000-acre Carrizo Plain National Monument adjacent to the Los Padres National Forest in San Luis Obispo County. (BLM, 2010).

### Increase Law Enforcement

The “No Target Shooting” signs riddled with bullet holes are emblematic of a much larger problem – the lack of adequate law enforcement resources. As Congress continues to slash the Forest Service budget each year, and as wildfires consume an increasingly disproportionate share of the agency’s resources, fewer law enforcement officers are charged with patrolling more and more acres of remote forest land.

Regulations are already in place to guard against much of the damage caused by target shooting, but with widespread non-compliance and a low likelihood of being caught, many shooters adopt a “Wild West” mentality in flagrant disregard of the rule of law.



In 2012, the Forest Service – in conjunction with ForestWatch, local Congressional representatives, and the U.S. Attorney’s Office in Los Angeles – strengthened the penalties associated with violating the existing shooting regulations. Previously, the fine for violating these regulations was as low as \$35. Now, the penalty has been increased to an automatic court appearance before a federal judge in U.S. District Court in Los Angeles, and potential fines and penalties of up to \$5,000 or 6 months in jail. While these enhanced penalties have provided some deterrent effect, our surveys show that illegal target shooting continues to occur with relative frequency throughout the Los Padres National Forest.

The Forest Service has started to spread the word about the penalties associated with illegal shooting, posting signs and notices outlining the serious penalties for violating the law. A systematic public relations campaign – perhaps in conjunction with a forest wide closure outlined below – would help spread the word throughout the shooting community that lawbreaking will not be tolerated.



## Forest Service Target Shooting Regulations

Federal code that applies to target shooting on national forest land includes regulations regarding prohibited target shooting areas, prohibited ammo use, and damaging natural resources and property.

The following are prohibited:

36 CFR 261.9(a) Damaging any natural feature or other property of the United States.

36 CFR 261.5(b) Firing any tracer bullet or incendiary ammunition.

36 CFR 261.10(d) Discharging a firearm or any other implement capable of taking human life, causing injury, or damaging property as follows:

- (1) In or within 150 yards of a residence, building, campsite, developed recreation site or occupied area, or
- (2) Across or on a National Forest System road or a body of water adjacent thereto, or in any manner or place whereby any person or property is exposed to injury or damage as a result in such discharge.
- (3) Into or within any cave.

The US Forest Service website lists general target shooting practices, many of which are not followed or enforced in the Los Padres based on the survey results throughout the forest.

Use approved targets. Certain forests may have specific restrictions, such as the type of targets used (i.e. cardboard targets, paper targets, clay pigeons). Exploding targets are not permitted on any forest or grassland.

In general, you may target shoot only if you:

- Use approved targets with a safe, bullet-proof backstop. Do not to attach your targets on trees, log decks, slash piles, fences, or water tanks.
- Are not in possession of alcoholic beverages while discharging a firearm.
- Are at least 150 yards from a residence, building, campsite, developed recreation area or occupied area.
- Are not shooting across or on a national forest or grassland road or body of water.
- Are not shooting in any manner or place where any person, wildlife, or property is exposed to injury or damage as a result of such discharge.

<http://www.fs.fed.us/visit/know-before-you-go/shooting>

## Establish Managed Shooting Facilities

The Forest Service first recognized the need to provide formal, managed shooting areas in the 1970s, when the agency released a nationwide survey of vandalism occurring throughout the national forest system. That 1970 report – now over 45 years old – identified the need for the establishment and designation of formal shooting areas.

Consistent with this report, the U.S. Forest Service’s Land Management Plan for the Los Padres National Forest – approved in 2005 – suggested that officials issue a closure order banning target shooting except at select sites that are officially designated and well managed. Nearly a half-century after the 1970 report, and a decade after the forest plan was approved, the Forest Service continues to struggle with how to implement a forest-wide closure in the Los Padres National Forest.

Currently, only two formally managed shooting ranges exist in the Los Padres National Forest – the Winchester Canyon Gun Club near Santa Barbara, and the Rose Valley Gun Club near Ojai. The Forest Plan recognizes a need to establish additional managed shooting areas authorized through a special permitting process administered by the Forest Service.

Managed facilities provide safe shooting opportunities for the public, consistent rules, educational programs and training, and improved debris collection. They are also approved through a public review process to identify ways to reduce or eliminate public safety and environmental impacts.



## Organize Volunteer Trash Cleanups

Given the extent of target shooting sites, limited staff, and a dwindling budget, the U.S. Forest Service lacks the resources necessary to coordinate a systematic cleanup of target shooting sites. In conjunction with the Forest Service, ForestWatch – along with other nonprofit partners including the Los Padres Forest Association, Central Coast Concerned Mountain Bikers, Calguns, and local Cub Scout Troops, plus local trash haulers like MarBorg and E.J. Harrison & Sons – has organized volunteer cleanup efforts at target shooting locations throughout the forest. Local members of the Conservation Alliance – consisting of employees from Patagonia, REI, Toad&Co, and Deckers – helped clean up the Arroyo Burro designated shooting area in 2011. Recently, dozens of employees from LUSH Cosmetics have donated their afternoons to clean up target shooting sites in the forest. To date, ForestWatch volunteers have cleaned up nine distinct sites, contributing more than 3,800 hours and removing more than 17,400 pounds of spent casings and shells, broken targets, trash, and other hazardous materials from the forest.



VOLUNTEERS AT A FORESTWATCH EVENT LOAD UP DEBRIS FROM A SHOOTING SITE



SHOTGUN SHELLS GATHERED BY FORESTWATCH VOLUNTEERS AT A CLEANUP EVENT

Unfortunately, these volunteer efforts cannot keep up with the proliferation of target shooting sites across the forest. After spending hours cleaning a site, it often becomes trashed just days (or hours) later when target shooters return to use site. This perpetual cycle does not provide nonprofit organizations or volunteers with incentive to return to the site for future cleanups, reducing the availability of volunteer resources over time. In addition, volunteers can only clean up trash and do not have the special training needed to remediate lead and heavy metal contamination at these sites.

For these reasons, ForestWatch has implemented a policy of only cleaning up sites that have been formally closed by the U.S. Forest Service. Once an area is formally closed, volunteers have some assurance that their efforts will result in permanent improvement to the area. After the Forest Service closed Cherry Creek, ForestWatch organized a series of cleanups in collaboration with the U.S. Forest Service, and the area has shown a remarkable improvement over time.

*To join ForestWatch on a future cleanup effort of a closed shooting area, please contact (805) 617-4610 ext.3 or email [volunteer@LPFW.org](mailto:volunteer@LPFW.org).*

## Remediate Contaminated Sites

As outlined earlier in the report, there are numerous environmental and health impacts associated with dispersed and unmanaged target shooting sites. Given the extent of these sites across the Los Padres, remediating the negative impacts from lead and other hazards is an important step in restoring the forest for all users. One common yet expensive measure for remedying environmental harm of target shooting areas is soil excavation and disposal. However, this method is often unsightly and comes with its own host of environmental impacts. Another method involves altering the soil chemistry of shooting areas by using lime to lower the pH and make lead less mobile (Sorvari et al. 2006). Phosphate or biochar can also be used to immobilize the lead in the soil (Cao et al. 2003 & Moon et al. 2013). Finally, the most natural possible solution to remedying the environmental contamination of shooting sites is to use plants that can uptake lead. Some species of plants, including conifers, have the ability to absorb and immobilize lead in their roots (Sorvari et al. 2006).



SHELL CASINGS AT AN ILLEGAL SHOOTING SITE IN THE OJAI RANGER DISTRICT

Given the uncertainty surrounding these methods and environmental harms that can be equal to or greater than the initial contamination, the best course of action is to prevent further contamination at shooting sites and to restrict the spread of shooting at new sites.

## Pursue Additional Funding Opportunities

One of the primary issues with increasing patrols and enforcement, and conducting remediation projects, is an overall lack of funding for these actions. Finding new sources of funding – both public and private – will provide opportunities to implement reasonable, effective solutions to the problems associated with dispersed target shooting.

State and federal officials can prioritize funding received under the Pittman-Robertson Federal Aid in Wildlife Restoration Act. The law was passed in 1937 with the support of sportsmen's groups and established an excise tax on the sale of firearms and ammunition to help fund wildlife conservation in the United States. The revenue is granted to state wildlife agencies, such as the California Department of Fish & Wildlife, for conservation efforts, hunters' education, and shooting projects and programs.

Since the program's inception, more than \$15 billion has been collected and awarded to states. In 2014 alone, the State of California received more than \$41 million dollars through this shooting-sponsored wildlife recreation fund. However, a very small percentage of this amount has been devoted to the cleanup and remediation of target shooting sites. The Forest Service – working with the California Department of Fish & Wildlife – could work to prioritize cleanup and remediation of target shooting sites under this program.

## Promote Responsible Shooting

As the Forest Service implements its Forest Plan direction to close the Los Padres National Forest to target shooting, it will be important to promote a responsible shooting ethic among those who shoot at any designated, well-managed shooting area. Providing education on shooting safety, regulations, and responsible practices can be done with a collation of organizations including the Forest Service, sporting groups, and NGOs. The nonprofit organization Tread Lightly! – in conjunction with shooting sports organizations to promote responsible land use – compiled a list of simple steps that shooters can take to limit their impact:

1. Target shoot only on lands open to shooting.
2. Use only appropriate targets. Shooting at trees and other natural objects is illegal and leaves a negative image about shooters.
3. Identify the possible environmental and social impacts resulting from irresponsible recreation.
4. Only shoot where there is a good backstop to stop your bullets.
5. Shooting at signs, kiosks, trash containers, buildings, and other property is vandalism and illegal.
6. Be sure to pack out your trash including food wrappings, shotgun shells, brass or steel cases, fragmented clay pigeons, and other targets. Be a thoughtful shooter and pick up litter and target trash left by others.
7. Do not shoot household appliances or other objects dumped in shooting areas. It is misconstrued that shooters are the dumpers.
8. Shooting across roads, trails, waterways or into caves or rocky areas is unsafe. Be sure you see your target clearly and you know what lies between you, the target, and beyond. Keep your finger off the trigger until you are ready to shoot.
9. Shoot away from developed recreation sites such as campgrounds, trailheads, parking areas and boat ramps.
10. Travel on designated routes. Avoid traveling in sensitive areas such as meadows, lakeshores, wetlands, and streams.

## CONCLUSION

The Los Padres National Forest is a natural treasure with vast beauty, abundant natural resources, rich biodiversity, and countless recreational opportunities. Target shooting is one of the many recreational opportunities that the forest offers. When done responsibly and when managed appropriately, the risks posed to the environment and public safety can be minimized.

However, in the Los Padres, target shooting has become an epidemic that plagues the entire forest, where carpets of spent casings and shells, broken targets and trash cover some of the forest's most beautiful and important places. With proper management, regulations, cleanup efforts – and with collaboration between the Forest Service, nonprofit organizations, other agencies, and the public – the forest, its wildlife, and its users can be protected for today and future generations.



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