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Have raptors met their match?

In Montana, eagles, hawks and other birds are hitting a lead wall.

by Jessica Mayrer

Rob Domenech moves along the Clark Fork River on a cool summer day, creeping toward a bald eagle. The bird is perched on a tree snag, near Quinn's Hot Springs. Net in hand, Domenech is stealthy, but not stealthy enough: The eagle flaps its one good wing and musters enough lift to jump from the snag, over Domenech's head, and land with a splash in the murky river.

Domenech had a feeling he'd be getting wet today. He jumps in after the eagle, fully clothed, and bobs up, net extended. He scoops up the boney brown-and-white bird.

"I just had to get him," he says.

Domenech is clearly more pleased with the outcome than the eagle, which ends up loaded into a large plastic dog carrier inside a dark SUV. Salmon scraps help win him over. Domenech feeds the bird pink hunks from the end of his Leatherman.

Domenech is the executive director of the nonprofit Raptor View Research Institute, in Missoula. Among his many bird-related tasks is tracking sick and injured animals, banding them, and testing them for lead poisoning. His partner, Brooke Tanner, runs her own nonprofit, Wild Skies Raptor Center. She works to make the animals flight-ready. It's not an easy job. Power lines, pesticides, erosion of habitat, human aggression, and lead poisoning all take their toll. "It's just one thing after another for these birds," Domenech says.

•Photo by Chad Harder
X-Ray of a red-tailed hawk with a pellet in its shoulder.

The bird netted by Domenech today will survive. But because of his crushed wing tip, he won't fly again. He'll likely become an educational bird.

The last two eagles Tanner tried to rehabilitate weren't so lucky. In February she took in a golden eagle found by a contractor in Thompson Falls. The eagle was bruised and had road rash after being hit by a car. It also had "crop stasis," a digestive ailment that develops when a muscular pouch near the bird's throat used to store and soften food stops emptying. The crop fills with fluids and fermenting food. This bird had a crop the size of a softball. The vehicle collision could have caused the condition, but lead poisoning could also be responsible. Domenech says the bird had 45 micrograms per deciliter of lead in its blood. That's well above the 10 microgram-per-deciliter "threshold for concern" that the Centers for Disease Control sets for human children.

How does lead end up in raptors?

Often enough, the birds eat gut piles of animals harvested by hunters. Fragments from lead bullets linger in the carcasses.

Lead in raptors causes digestive and kidney disorders, blindness, slowed motor reflexes, involuntary clenching of talons, droopy wings, and, not infrequently, death.

Of the 130 golden eagles Domenech has tested through Raptor View, more than 50 percent had what researchers call "above background" levels of lead in their blood. In another study, conducted in Wyoming by Derek Craighead and Bryan Bedrosian, 63 bald and golden eagles were tested during and after large game hunting seasons. Three-quarters of the birds had elevated lead levels. But such testing is not common, which makes it hard to gauge the scope of the problem. Still, researchers have now found that as many as 130 species, including mammals, are poisoned by lead from bullets or fishing tackle.

Conservationists and wildlife biologists for years have worked to educate the public about the possible effects of lead poisoning, yet it remains a touchy subject. The gun industry and some hunters say there's too little science backing claims that lead harms wildlife. And organizations such as the National Rifle Association and the

National Shooting Sports Foundation say limiting lead, an inexpensive material compared to comparable metals like copper, will hit hunters in the wallet. The Center for Biological Diversity reignited this flashpoint last year when it petitioned the U.S. Environmental Protection Agency for a nationwide ban on lead shot, bullets and fishing sinkers. The move prompted an outcry from the NRA and the National Shooting Sports Foundation, which called it an attack on hunters' rights. The EPA ultimately denied the center's petition. Undeterred, the conservation group filed a lawsuit in November asking a U.S. District Court judge to overrule the EPA's decision.

Montana Sen. Jon Tester jumped into the fray in April. With support from the gun industry, Tester is now working to pass his Hunting, Fishing and Recreational Shooting Protection Act. The bill would head-off attempts by the Center for Biological Diversity to ban or even limit lead ammunition, by permanently exempting it from EPA regulation.

•Photo by Chad Harder
Bird rehabilitator Brooke Tanner holds an injured hawk.

As the debate has reached a higher pitch in the months leading up to Tester's 2012 reelection bid, the senator from Big Sandy is being accused of playing politics to the detriment of wildlife and, potentially, people. For example, Center for Biological Diversity senior legal counsel Adam Keats calls Tester's proposed legislation "one of the more craven and pathetic forms of kowtowing to a lobby that I've ever seen in Congress" and, for good measure, "a morally repugnant bill."

Domenech finds himself squarely in the middle of the debate. He doesn't support the center's attempt to get an all-out ban of lead. That would only cause hard feelings among stakeholders, Domenech says. He'd prefer to educate people about the dangers of lead instead. After watching dozens of birds fall ill from eating lead fragments, he thinks using lead ammunition to hunt is a bad idea. And he bristles talking about Tester's bill: "Lead poisoning is a huge issue out there for avian species. Why anybody tries to deny that when the evidence is so, so strong and so factual is amazing to me."

This bird is grounded

Brooke Tanner holds a red-tailed hawk on a black grate as a veterinarian places a plastic mask over its beak. The animal's wings finally relax. Even with anesthesia, the bird's body responds to the painful stimulus as a veterinarian attempts to repair its dislocated elbow. The hawk's discomfort is measured by a spiking heartbeat, a jagged green line on a black screen at Pruyn Veterinary Hospital: The line goes from 50 beats per minute to 200 as the vet manipulates the raptor's elbow. It flinches, drawing its wing closer to its body. The vet gently pulls the left wing out again, displaying the animal's tapered black, brown and white flight feathers.

Tanner squeezes the bird. The procedure is excruciating for the hawk, and it's also excruciating for Tanner. No matter how many times she takes a bird to the vet, it's never easy. "I hate stressing," she says.

The hawk has dirt on his talons. He's been hunting rodents. A raptor's talons in many ways tell the bird's story. In young eagles, they're bright yellow, not yet worn from a predator's hardscrabble life. In older animals, talons darken and become gnarled and pockmarked from wounds inflicted by sharp-toothed prey.

This hawk exposed at Pruyn today likely has a mate. Like eagles, red-tailed hawks mate for life. They are, in fact, known for their elaborate courtship rituals, in which the male flies high and dives repeatedly, eventually rising back up to touch the female. It's clearly time to nest when the pair links talons midair, pausing only for a moment before spiraling in free fall, then separating with impeccable timing before safely hitting the ground. This bird at Pruyn today likely left a family behind.

•Photo courtesy of Raptor View Research
A golden eagle regards educator Rob Domenech.

Tanner found the hawk grounded on a golf course next to Lee Metcalf National Wildlife Refuge. Someone shot it with a BB gun. The pellet remains in its shoulder, but that's the least of the hawk's problems today. He fell, presumably from a perch or flight. Tanner surmises he dislocated the elbow in the landing. Today's vet visit—Dr. Shoni Card at Pruyn is attempting to put the joint back in place—will shape whether the hawk flies again and, more importantly, if he lives in the wild again.

Tanner, 32, realized she wanted to be a wildlife rehabber when she was in sixth grade and found a raccoon with an open wound on its back leg. "I knew I had to do something," she says, "so I was out there with a box...I was on a mission."

She started professionally rehabilitating birds in 2006, when the Grounded Eagle Foundation in Condon hired her. Tanner smiles when she remembers the first raptor she released. It was a red-tailed hawk, on a sunny day near Brown's Lake, in Ovando. "Once I released a bird, I was like, nothing is ever going to be that fulfilling...It immediately just started circling and soaring—and then it just went so high that we couldn't even see it anymore."

Tanner and Domenech care for birds at their house in Missoula, a white home with chipping paint on Trail Street west of Russell. Dandelions, dog toys and cardboard boxes dot the yard. Pigeons coo in a wooden enclosure attached to the garage. Crows call from a fenced-in corner of a storage shed. "We're just making due with what we have," Tanner explains.

Tanner gets rescue calls from Fish Wildlife & Parks, 911 operators and local veterinarians. She's on call constantly, ready to run and pick up a bird at a moment's notice. People bring birds to her, too. The Trail Street house is tricky to find, so she meets people at the Good Food Store, a few blocks away. They hand over winged creatures packed into dog kennels and cardboard boxes with holes in the top.

Tanner's commitment to—and love for—birds is branded on her skin. She has a blue outline of an eagle tattooed on her left forearm. An owl perches beneath a golden eagle on her right biceps. The tattoos might make her look tough, but it becomes clear as she talks that she's anything but when it comes to birds. She doesn't name the animals she rehabilitates because that would make it even harder to let them go. As it is, she can't help but to get to know the animals, especially those that she performs physical therapy on. Every species has a different personality. Crows, for instance, are mocking. They're also smart. The young crows Tanner is housing elicit a jubilant chorus of squawks when she arrives home to feed them dinner.

The fledging crows are healthy and fun to be around. Sick and injured birds wear more heavily on Tanner. They get depressed. They sulk. And the rescue calls keep coming.

•Photo by Chad Harder
Brooke Tanner knew in the sixth grade that she wanted to rehabilitate animals.

Rehabilitation success is far from a given. Knowing the animals makes it very difficult to euthanize them—that's the hardest part of the job, she says. "You can't save them all. It just doesn't happen."

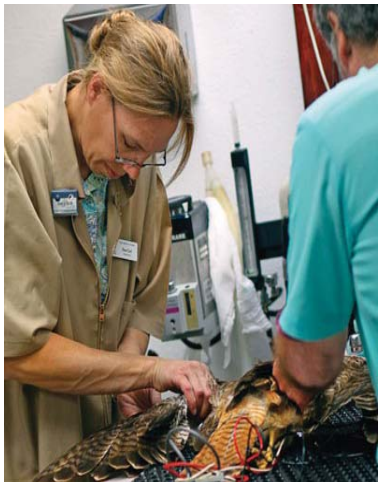
'Raptors have always been maligned.'

American Indian religious tradition holds that eagles take prayers to God. The wide-winged raptor also plays prominently in creation stories among indigenous people across North and South America. The animal's plumage is considered a conduit of sacred energy.

The American Eagle Foundation estimates that when European settlers first came to North America, at the dawn of the 17th century, 100,000 bald eagles dotted the continent. Other estimates run higher. In 1776, Benjamin Franklin, John Adams, and Thomas Jefferson set about finding a suitable animal to represent the fledgling country. Adams thought the eagle admirable. Jefferson saw it as a "free spirit, high soaring, and courageous." Franklin, however, thought his peers bad judges of character, at least in this instance. The eagle, Franklin told them, is a coward. He's a scavenger and a thief. Franklin made a case for the wild turkey instead. In 1782, Congress adopted the eagle as the official emblem of the United States.

As a child, Rob Domenech learned about the bald eagle's place in American culture, as a symbol of the country's fierce strength and courage. He also grew to understand that Americans have always had a love-hate relationship with birds of prey. Raptors are predators. Because of that, people who worked the land—and the sea—persecuted them to protect their interests. European arrivals in North America shot the birds. Bounty programs offered by governments provided additional incentive to kill raptors. The Alaska Territorial Legislature in 1917 placed a bounty on the bald eagle in response to concerns about its impact on salmon. At least 128,000 eagles were killed under the Alaska program between 1917 and 1952.

"Raptors have always been maligned historically," Domenech says. "Big birds that kill things, particularly if they're killing things that we keep, whether that be chickens or fancy pigeons or sheep—if you're a golden eagle, there's a hysteria I think."



•Photo by Chad Harder
Dr. Shoni Card of Pruyn Veterinary Hospital tries to fix a red-tailed hawk's dislocated elbow.

In the 20th century, Congress passed laws to protect birds from the cumulative effects of deforestation, the feather trade and aggression, among other threats. The Lacey Act, The Migratory Bird Treaty Act of 1918 and the Bald and Golden Eagle Protection Act expressly forbid pursuing, hunting, buying or selling raptors. Those found guilty of molesting or killing any migratory bird face misdemeanor charges punishable by a fine of up to $500 and six months in jail. Selling or bartering is a felony; those found guilty face fines of up to $2,000 and two years in jail.

Despite increasing federal protections, American raptor populations in the mid 20th century continued to decline. The pesticide DDT, used widely in the Unites States between 1940 and 1972, further decimated the birds. Bald eagles were especially hard hit: By 1963, barely 400 nesting pairs remained in the continental U.S. On July 4, 1976, the bald eagle was listed on the federal threatened and endangered species list. The population has recovered since then. The federal government estimated that 10,000 bald eagle nesting pairs lived across the continental U.S. when it was delisted in 2007.

While bald eagle populations are clearly healthier now then they were in the 1960s, Domenech and wildlife biologists are seeing a steady decline in the number of golden eagles migrating through Montana en route to northern nesting grounds. There's no proof the population is waning; the birds may be simply changing their behavior. Or there could be a darker cause. "Exact causes of the decline, that's up for debate," Domenech says. "Could lead be contributing to that? I would say it certainly could possibly be contributing to that."

How bad is a little lead?

Lynn Vaught is worried about a golden eagle she took in several weeks ago. It was found lying on a deer carcass near Whitefish Lake. Though right on top of a ready-made meal, the animal was too weak to feed.

"His lead levels were the highest I've ever seen," says Vaught, who through her nonprofit, Wildlife Return, rehabilitates everything from songbirds to mammals.

Vaught typically treats one or two birds with acute lead poisoning per year. The Center for Biological Diversity estimates that more than 10 million birds and other animals die in the United States annually from lead poisoning. Rehabbers treat the toxicity with chelation therapy, using a chemical that binds with lead. It helps the body flush the metal out.

Vaught's golden eagle responded well to treatment, but just as the bird appeared to be recuperating, all of its feathers fell out. Vaught, a 35-year-rehabbing veteran, believes lead poisoning from eating contaminated gut piles caused what she calls the "traumatic molt."

•Photo by Chad Harder
The bandages come off.

Because of the impacts of lead on wildlife, scientists are working to identify whether lead-harvested game meat could make people sick, too. Based on concerns about the metal's effect on humans, the CDC in 2008 conducted a study to gauge lead levels among people in North Dakota that ate lead-harvested game.

The CDC tested blood from 736 people in six North Dakota cities, evaluating how much lead-harvested wild game study participants ate and whether those tested could have been exposed to the metal through other means, via, for instance, occupational hazards, hobbies, or in the home. The CDC found that people who reported eating lead-shot game meat averaged lead levels of 1.27 microgram per deciliter, significantly higher than the 0.84 microgram-per-deciliter average among those who ate no lead-shot game.

Scientists know that lead affects people, specifically children, at levels lower than the CDC's 10 micrograms per deciliter threshold of concern, says Dr. Shahed Iqbal, the

lead researcher on the North Dakota study. He cites studies that show cognitive changes in kids with lead levels in the 2 microgram-per-deciliter range. "There is no safe level of lead in the human body."

Still, Iqbal says it's too early to discern if game meat poses a threat to people. The CDC's North Dakota study did not examine health effects. "What we have identified from this study," he says, "is the consumption of wild game can serve as an added source (of lead). How it operates is a different question."

•Photo by Chad Harder
Brooke Tanner holds an anesthetized bird.

Based on concerns about lead poisoning in birds, the federal Fish and Wildlife Service in 1991 banned lead ammo in waterfowl hunting. In 2008, California prohibited lead ammunition use in areas of the state inhabited by the California condor, a federally recognized endangered species that, like the eagle, suffered a significant population loss from DDT. In Montana, FWP administrators proposed limiting lead shot in wildlife management areas statewide, but opposition from hunters put the kibosh on the idea, says FWP spokeswoman Vivica Crowser. "Overwhelmingly, (public comment) was not supportive of making that change." In 2010, the FWP commission, by a 3-2 vote, nixed a proposal to limit the use of lead shot on certain state-owned lands.

Similarly, acting National Park Service Director Dan Wenk in 2009 proposed phasing out lead fishing tackle and ammunition in national parks by the end of 2010. Wenk said in a release dated March 10, 2009, "The reduction and eventual removal of lead on Park Service lands will benefit humans, wildlife, and ecosystems inside and outside park boundaries and continue our legacy of resource stewardship."

Gun rights advocates argued the Park Service gave them no notice and mobilized quickly. Eight days after Wenk made his "Get the Lead Out" announcement, the agency backpedaled. "In the future, we will look at the potential for transitioning to non-lead ammunition and non-lead fishing tackle for recreational use by working with our policy office and appropriate stakeholders/groups," the Park Service said.

The debate is far from over. The EPA last year denied a petition submitted by the Center for Biological Diversity that sought to "ban the manufacture, processing and distribution in commerce of lead shot, bullets, and fishing sinkers." The agency said that Congress has not authorized it to regulate lead ammunition. Undeterred, the Center for Biological Diversity, Public Employees for Environmental Responsibility and a group of hunters that call themselves "Project Gutpile" sued the EPA in November 2010. They're asking a U.S. District Court judge to overrule the EPA's decision.

Sen. Tester's bill aims to end this legal wrangling by permanently exempting lead ammunition from federal regulation. Tester's camp says passing the bill is necessary to protect hunters, recreationalists and gun owners. "Even the EPA agrees it doesn't have the authority to ban lead in hunting ammo and fishing tackle," says Tester spokesman Aaron Murphy. "Rather than use the courts as a bully pulpit and sticking taxpayers with the bill, Jon believes in using a common sense approach that balances healthy wildlife with our outdoor traditions."

There are more arguments. Learning to hold a rifle steady and tracking a herd of elk across a mountain range is a rite of passage for many Montanans. The National Shooting Sports Foundation says the center for Biological Diversity's lawsuit threatens that way of life. "The guy who goes to the range with his kid would not be able to do that anymore," says Larry Keane, Senior Vice President and General Counsel for the National Shooting Sports Foundation, the firearms industry trade association.

And lead is significantly cheaper then comparable metals such as copper. That's why Keane and other gun rights advocates worry that limiting or banning lead could price out low-income hunters. Besides, only 30 percent of ammunition sold in the United States is used in hunting, Keane says; law enforcement, the military, and target shooters account for the lion's share. Plus, if demand for ammunition wanes, he says, the whole $27.8 billion-a-year firearms industry would take a hit. "That would reduce jobs."

If the firearms industry takes a blow, then the conservation community, too, will feel the pain, Keane says. An 11-percent excise tax tacked onto ammunition sales by the federal government is a significant source of conservation funding in the U.S. According to the Shooting Sports Foundation, the tax generated more than $450 million last year. If ammunition becomes more expensive and hunters hang up their guns, conservationists will be shooting themselves in the foot, Keane says. "The conservation dollars that are generated from the sale of the ammunition some groups like the Center for Biological Diversity seek to demonize is what pays for conservation in the United States."

•Photo by Chad Harder
Sen. Jon Tester has proposed legislation to forbid the federal government from regulating the use of lead ammunition
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As for the health impacts, Keane maintains there's no evidence that humans are harmed by lead from ingesting ammunition fragments. Still, lead poisoning in humans can damage the nervous and reproductive systems and the kidneys, and cause high blood pressure and anemia. Children are especially susceptible to lead. According to the CDC, exposure adversely impacts their learning and behavioral development.

The Shooting Sports Foundation points to the fact that, according to the CDC, the mean lead level among U.S. adults above the age of 20 is 1.4 micrograms per deciliter—higher, that is, than the 1.27-microgram-per-deciliter average CDC found among people who ate game meat harvested with lead in the North Dakota study. "There's never been a single case of anybody in the United States having elevated lead levels as a result of eating game harvested with traditional ammunition," Keane says. "There's certainly no human health risk. That is a total lie."

Additionally, Keane points to the 2007 delisting of the bald eagle as proof that American raptor populations are sound. Don't forget that lead ammunition was used during the years leading up to bald eagle recovery, he says, yet "the eagle populations in the United States are soaring."

And even if lead did adversely impact a small percentage of animals, wildlife biologists are charged to manage populations, not to serve as nursemaids for individual animals, Keane says. "If wildlife biology becomes about managing harm...to individual animals, then you've just made the argument to ban hunting."

Bears get all the attention

As a child growing up in the shadow of the Swan Mountains, Ken Wolff watched hawks, falcons, and eagles make their way south during their annual migrations. Wolff's Vietnam War service instilled in him an unwavering appreciation for all life. When in 1983 he found a great horned owl that had been shot and was lying on the side of the highway, he took it home and patched it up. That rescue sparked what would become Wolff's passion. In the mid 1980s, he formed the Grounded Eagle Foundation, which grew to be the largest rehabilitation facility in the country. Wolff estimates the Foundation cared for roughly 20,000 birds from 130 species, including hundreds of eagles.

For Wolff, rehabbing was always a moral imperative. "Most injuries are human-related," he says. "I believe we've got an obligation to deal with that. Fair is fair, you know?"

As evidenced by DDT contamination, birds can be a bellwether for the health of the environment. They also maintain ecological balances. For example, hawks and owls keep rodent populations from exploding.

•Photo by Chad Harder

Too few people pay attention to avian life, Wolff says. Like Domenech, Wolff is a fan of the underdog. "Elk, grizzly bears, wolves—they get all the attention, research, money, photography, movies," he says. "How many movies have you seen focused on robins? Not many, right? And how many on grizzly bears? Libraries full of them. There's more to wildlife than grizzly bears."

Birds seem to be everywhere—which may be why it's easy for some to take them for granted, says Wolff, who since shuttering the Grounded Eagle Foundation in 2009 has moved to Darby. On a recent warm afternoon, he sits on his deck overlooking the Bitterroot Mountain Range, watching yellow-bellied western kingbirds, Lewis' woodpeckers, swallows and magpies.

Wolff, who is 63, doesn't do rehab work anymore. He misses saving animals, he says. He misses feeling like he's making a difference. But he doesn't miss the lows.

“I don’t miss crying about it. You get to feel after a while like you’re bipolar. You have such a great high when you cut one loose. Here comes a bird, say an eagle, that just got run over by a truck, got hit by a train, and half its bones are broken. You pour your guts into putting him back together. I remember picking a golden eagle out of a guy’s pickup... and I could feel the bird’s heartbeat, and it just stopped as I was carrying it.”

Wolff is frustrated that birds are still dying from the same ailment that’s plagued them for hundreds of years: lead poisoning. Spending decades working to heal the wounds humans inflict on the rest of nature has left him pessimistic, if not misanthropic.

“I have great faith that the human species is a short-lived species,” he says. “Owls have been here in North America for 50 to 60 million years. Birds themselves have been here for about 100 million years. There’s no way humans are going to be here that long. We’ve only been here for a million years, and how much have we trashed it?”