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# PERC REPORTS

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## *Rethinking the* North American Model *of* Wildlife Conservation

# FROM THE EDITOR by Shawn Regan

**In a new study published this spring**, researchers found what by now should be no surprise: Our attitudes toward wildlife are changing. More and more Americans view wildlife as human-like parts of their social network, while fewer believe that wildlife should be managed to benefit people through activities such as hunting and fishing.

The study underscored trends that have long been acknowledged. Interest in hunting and fishing is declining, while wildlife viewing and other non-consumptive activities are on the rise. And 15 percent of Americans are what the researchers describe as "distanced," having little or no interest in wildlife.

These realities present challenges for the North American Model of Wildlife Conservation, which refers to a broad set of principles that have guided wildlife management in the United States and Canada for more than a century. This special issue of *PERC Reports* is devoted to understanding and addressing many of those challenges.

For one, wildlife conservation under the North American Model has historically relied upon hunters and anglers for funding. But as Shane Mahoney explains (p. 10), today's challenges require that we continuously scrutinize the model. "The model cannot become an orthodoxy," Mahoney writes, "nor questioning it a violation." Demographic changes will also test the model's viability in the future, writes Brian Yablonski (p. 18). He suggests that it may require several tweaks, including better integration of property rights and markets into conservation efforts, to remain relevant and effective in the 21st century.

Adding to the challenges, most wildlife is treated as a publicly owned resource, yet much of its habitat is found on private land. James Huffman examines ways that U.S. legal statutes and precedents have provided incentives—or disincentives—for private landowners to conserve public wildlife (p. 40).

Despite such obstacles, there's no denying that the North American Model has helped usher in dramatic recoveries of several prominent species. These successes, however, have created challenges of their own. Jim Sterba (p. 26) describes the difficulties presented by surging numbers of white-tailed deer, which have magnificently adapted to sprawling suburban areas in recent decades. And Tate Watkins (p. 32) explores the ways that trade in hides and meat from nuisance alligators helps manage the abundant reptiles in Florida.

Last fall, PERC hosted a workshop that explored many of the examples and ideas discussed in this issue. The event assembled a wide variety of experts, including legal scholars, biologists, state and federal policymakers, and leading conservation and landowner organizations. Many of the articles in this issue are derived from, or inspired by, the workshop discussion.

In the pages that follow, we explore these challenges and their implications for wildlife management today—with a willingness to rethink earlier approaches and to discuss ideas that are sometimes considered taboo. Along the way, we aim to promote and inspire fresh ideas to enhance wildlife management in the 21st century.

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2048 Analysis Dr., Ste. A
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**Editor**
Shawn Regan

**Managing Editor**
Tate Watkins

**Art Director**
Rachael Hundhausen

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shawn@perc.org










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# The Broken Promise of the Grizzly

## Living in Yellowstone bear country is a privilege

**In the fall, when others** can be found tailgating for football games, you can find our family tailgating for grizzly bears up in the Tom Miner Basin near Yellowstone. The bears come out in the twilight to feed on caraway root on private ranchland. As the bear population has expanded farther north into Montana's rural communities, we've also seen grizzlies on the road to our family cabin in Paradise Valley. And I've been backcountry with Yellowstone National Park's lead bear manager to study and track the park's majestic and charismatic grizzlies, including an occasion where we were charged by a big boar grizzly we awoke from a nap.

All of these awesome experiences confirm what federal, state, and tribal biologists have known for years—the Yellowstone grizzly bear has made a remarkable comeback since being listed under the Endangered Species Act in 1975. Once down to 136 bears, the grizzly population now exceeds 700, 200 more than what federal biologists consider the minimum population size needed to preserve the species. Many biologists involved in the species' recovery believe the population is closer to 1,000, if not higher.

Either way, the Yellowstone grizzly is thriving. "The Greater Yellowstone Ecosystem has reached its carrying capacity for bears," according to Dan Ashe, the former Fish and Wildlife Service director under President Obama—so much so, Ashe says, that the ecosystem is now "exporting bears." Grizzlies are venturing farther into human-dominated landscapes that are less suitable for the bear. Verified grizzly conflicts in Wyoming are at levels not seen in decades, up from an average of 80 annually in the 1990s to 220 annually in the past eight years.

> "If people feel that no matter what they do, nothing's ever going to change, then they won't invest time in helping with recovery."

The recovery of the Yellowstone grizzly is not a partisan issue. The latest grizzly delisting process was started by the Obama administration and completed by the Trump administration in 2017. The affected states—Montana, Wyoming, and Idaho, which are governed by a Democrat and two Republicans—all concurred with the decision to delist the bear. As did the Interagency Grizzly Bear Study Committee, which was formed in 1983 to help recover the bear and is made up of the key federal, state, and tribal wildlife managers in the region.

But to this day, the Yellowstone grizzly remains listed under the Endangered Species Act. Last September, in response to plans by Wyoming and Idaho to go forward with a limited grizzly hunt, a federal district judge put the bear back on the threatened species list. The judge called the decision to delist "arbitrary and capricious," marking the second time in a decade that a federal judge has relisted the Yellowstone grizzly. That decision is now on appeal in the Ninth Circuit.

In May, PERC and the Pacific Legal Foundation filed an amicus brief in the case in which we argued that failure to delist the Yellowstone population threatens "not only the continued conservation of the Greater Yellowstone Ecosystem grizzly but also the recovery and conservation of other imperiled species." That's because keeping a species on the endangered list after it's recovered precludes a return to state management, which would reduce regulatory burdens for landowners. The end result is to undermine many of the incentives for recovery.

Yet even if the bear is ultimately delisted, a new bill introduced in Congress could present obstacles to further recovery efforts. The bill proposes to treat the grizzly as if it will effectively remain endangered in perpetuity, essentially stripping states of their management authority and extending permanent federal control over the bear. At a hearing before the U.S. House Natural Resources Committee in May, PERC research fellow Jonathan Wood testified that by requiring unending federal management, the bill "would

eliminate a key incentive for collaborative efforts to recovery grizzly populations."

The recent judicial relisting and proposed congressional action have as much to do with the grizzly bear as they do with the integrity of the Endangered Species Act. While more than 1,600 domestic species are currently listed, only three dozen species have ever been recovered under the act. Ninety-nine percent of the species listed have been saved from extinction, yet less than 2 percent of listed species have recovered. The grizzly bear was poised to be an Endangered Species Act success story.

The implications make species recovery a challenge. Long-standing recovery goals established by biologists get disregarded. Support from landowners and states, who shoulder most of the financial burden of recovery efforts, are in danger of washing away in a stream of discouragement. In the case of the grizzly, the bears have comfortably exceeded their official recovery criteria for 16 years straight.

Other species will also be affected. Resources will be diverted from those truly in need. And the signal will be that certain species will always remain on the list—that science and biology can easily be displaced by judicial environmentalism. All of these are conservation incentive-busters.

As Chris Servheen, former grizzly bear recovery coordinator for the federal government, recently told NPR: "The future of grizzly bears is in the hands of the people who live, work and recreate in bear habitat. And if those people feel that no matter what they do, nothing's ever going to change, nothing's ever good enough, then they won't invest time in helping with recovery."

The Endangered Species Act was not created to keep species under federal control forever. The goal is to recover threatened and endangered species to a point that management can be turned over to the states. There is even a transitional five-year period of federal oversight to ensure the recovered species carries on.

Under the North American Model of Wildlife Conservation, states are already the lead manager for the vast majority of our nation's wildlife, including wolves, mountain lions, black bears, bighorn sheep, elk, pronghorn, and moose. The three states that would manage the grizzly have entered into an agreement that would keep populations well above the recovery goal. No state wants to see the grizzly return to the endangered species list. In fact, no species taken off the endangered species list has ever returned to the list as a result of state management. As sportsman-naturalist Steven Rinella notes, it's wrong to suggest "states are like teenagers waiting to rebel once their parents leave home."

The beauty of state management for a recovered animal is "conservation federalism." Each state has the ability to experiment to see what works best for its bear populations and stakeholders, especially working landowners who deal firsthand with the cost of recovery. Experimentation for a recovered species should be encouraged, including creative but responsible connectivity of different grizzly bear populations.

As for hunting, even the Montana Wildlife Federation has recognized that tightly regulated hunting is a part of sound wildlife management and that the grizzly should be no exception. Species valued by hunters thrive under the North American Model. In Montana, with hunting allowed, the state manages wolves at five times the federal recovery population goal.

Yet I have no interest in hunting a grizzly bear. The spotting scope is my preferred weapon of capture for this incredible animal. I agree with Enos Mills, the famed naturalist from the turn of the 20th century, when he said, "The imagination will be alive so long as the grizzly lives." A walk in the woods in grizzly country is no casual matter—every snap of a twig or moving shadow provides for a more meaningful experience in nature, a vivid reminder that I am a guest in another's home.

That's why it's important to graduate the grizzly as a "here to stay" beneficiary of the Endangered Species Act, lest we lose support for the bear, or any other species in need of recovery. We should give the North American Wildlife Model of Conservation an opportunity to work in the case of the Yellowstone grizzly bear.

**Brian Yablonski** is the executive director of PERC. In "Frontiers," he describes how PERC seeks to advance creative conservation through incentives, innovation, and cooperation.

© Safari Club International Foundation

**Making a rhino-sized impact.** Since 2016, the Zoological Society of London and various partners have been devising an impact investment to bolster the numbers of wild black rhinos. Private investors fund on-the-ground rhino conservation projects that aspire to achieve clear and measurable outcomes, such as boosting net rhino growth rates in priority populations. If conservation groups meet the objectives, "outcome payers" will reimburse the initial investment, plus a percentage that hinges on the outcomes achieved. With the black rhinoceros population estimated at 5,500 animals today—a plunge of more than 90 percent since 1970—the novel project is a welcome innovation in conservation for the species.

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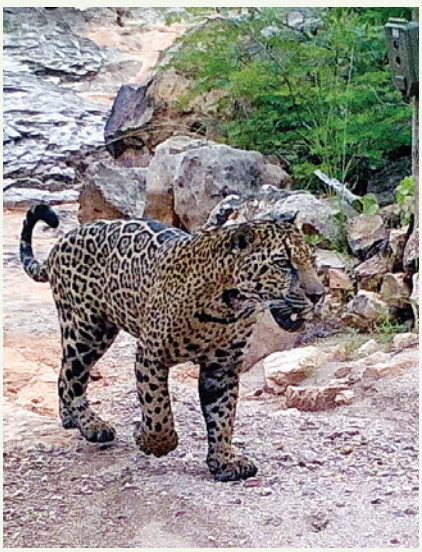
**Who owns the algae?** In Maine, there's been a years-long dispute about who has the legal right to harvest rockweed on private property. The seaweed-like brown algae grows in the intertidal area and fuels a $20 million industry, mostly in fertilizer and animal feed. A marine-products company claimed that harvesting rockweed was a public right as a form of fishing. Last year, PERC and the Pacific Legal Foundation filed an amicus brief in the case in support of coastal landowners and their right to conserve or harvest rockweed as they see fit. In March, the Supreme Judicial Court of Maine sided with property owners, a decision that will avoid a potential tragedy of the commons.

© Foundation for Economic Freedom

**Droning on about property rights.** In the Philippines, only about half of the country's 24 million land parcels are formally titled. The Foundation for Economic Freedom is working with government officials, academic researchers, and drone enthusiasts to try to change that. The group uses aerial photography captured by drones to create maps that define parcel boundaries. Digitized surveys are then submitted to the government to gain title. By turning informal rights into formal ones, land titles encourage stewardship and allow landowners to capitalize on their assets.



© Northern Jaguar Project

**Feline fine in Sonora.** Jaguars were extirpated in the United States long ago after being hunted, trapped, and poisoned by settlers and ranchers, who were encouraged by bounties paid by Southwestern states. Since 2003, the Northern Jaguar Project and its sister organization Naturalia have purchased five private ranches in northern Mexico to conserve habitat for the big cat. The project also pays neighboring ranchers who capture photos of jaguars on their properties—in cash, and on par with the local bounty for a dead cat. The effort has built tolerance with neighbors and effectively expanded the reach of the 55,000-acre reserve in the state of Sonora.

© Jen Goellnitz

**Farming for butterflies.** The monarch butterfly is a cherished insect, yet its population has fallen well below historical levels, and it is being considered for listing under the Endangered Species Act. Milkweed is critical for monarch breeding and feeding, but increased herbicide use in agriculture has meant less milkweed available for monarchs. A new program by the Environmental Defense Fund aims to conserve monarchs by paying farmers to plant milkweed. The Monarch Butterfly Habitat Exchange is creating a market for habitat along the butterfly's cross-country migration paths, benefiting farmers and butterflies alike.

**Saving the forest for the trees.** When Montana proposed a large timber sale near Bozeman, some residents opposed the project. Since the state is mandated to maximize revenues from its trust lands, a local group hatched an innovative strategy: try to outbid logging companies to keep the trees standing. In March, the group Save Our Gallatin Front did just that—raising more than $400,000 to defer timber harvesting in the area for another quarter century. It's the first time a "timber conservation license" has been awarded at such a scale in Montana, an outcome that will generate significant funds for the state while compensating for foregone timber revenues.

© Smudge 9000

**Save a species, win a prize.** The expansive public lands package signed into law in March included a little-known but potentially important tool for wildlife conservation: cash prizes. The Theodore Roosevelt Genius Prizes, administered by the U.S. Fish and Wildlife Service and the National Fish and Wildlife Foundation, will award $100,000 to innovators who devise technological solutions that benefit wildlife. Prize categories include endangered species protection, poaching prevention, invasive species management, wildlife conservation, and human-wildlife conflict management.

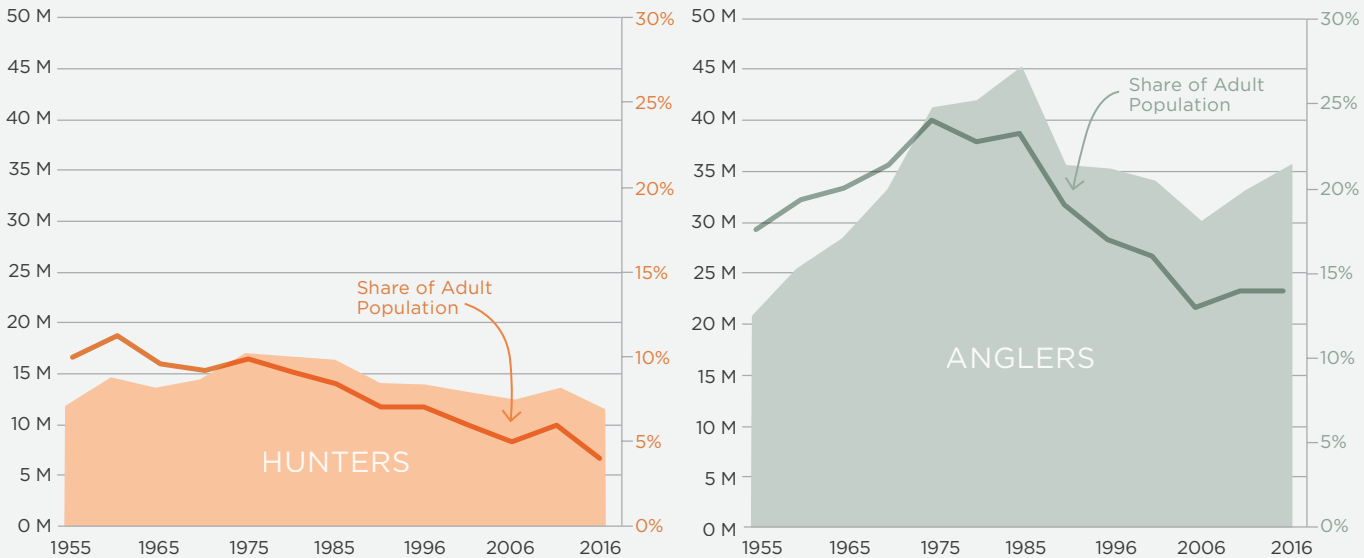
**Insuring a future for elephants.** Conservationists are piloting an insurance scheme in Kenya to manage human-elephant conflicts that plague rural communities and contribute to poaching. The Livelihoods Insurance for Elephants project, an effort of AB Consultants and the International Institute for Environment and Development, aims to develop a scheme with commercial insurers. The initiative will leverage nonprofit support and link payments to the implementation of preventative measures. Project backers hope the insurance will increase community tolerance for elephants who have killed more than 200 people over the past decade.

© Ray in Manila

# Gone Fishing

Hunters and anglers help fund conservation. What happens if they disappear?

## U.S. HUNTING AND FISHING TRENDS




*Source*: Fish and Wildlife Service and Census Bureau National Surveys of Fishing, Hunting, and Wildlife-Associated Recreation

**Under the North American** Model of Wildlife Conservation, states play a major role in wildlife management, and for better or worse, much of their efforts have focused on species that are hunted and fished. So it's no surprise that most of the funding for state conservation efforts is provided by a particular group of people: hunters and anglers.

Today, nearly 60 percent of funding for state fish and wildlife agencies comes from sources related to hunting and fishing. The largest portion is revenues from state hunting and fishing licenses, which combine to equal about $1.6 billion annually nationwide. In addition, revenues from federal excise taxes on firearms, ammunition, fishing tackle, and related items provide roughly $1.1 billion to state agencies each year.

Lately, the reliance on hunting and fishing for state conservation funds has become a cause for concern given the long-term trends of those activities. The share of the adult population that hunts peaked around 1960 at 11 percent. That participation rate had fallen to 4 percent by 2016, or about 11 million hunters, a decrease of more than 2 million hunters over the previous five years. When it comes to fishing, participation peaked in 1975 at nearly one-quarter of the adult population. That rate had fallen to 14 percent by 2016, or about 36 million anglers.

So far, these declines in participation have not been reflected in the relatively stable streams of revenues that come from state licenses and federal excise taxes. One explanation is that states have become more adept at pricing hunting and fishing licenses in ways that have maintained agency revenues—such as charging more for out-of-state licenses and tags. Population growth also helps offset the decline in participation rates, making it easier for states to maintain—if not grow—their license revenues. Likewise, recent increases in excise tax revenues have been driven largely by activities not necessarily related to hunting, including growth in handgun sales, target shooting, and gun collecting.

Regardless, anecdotal evidence from state agencies suggests that long-term declines in hunting and fishing are a worry given the significant amount of funding historically derived from hunters and anglers. Whatever the future structure of the North American Model of Wildlife Conservation looks like, it will have to account for the challenges presented by a funding foundation that could be shifting in the 21st century.

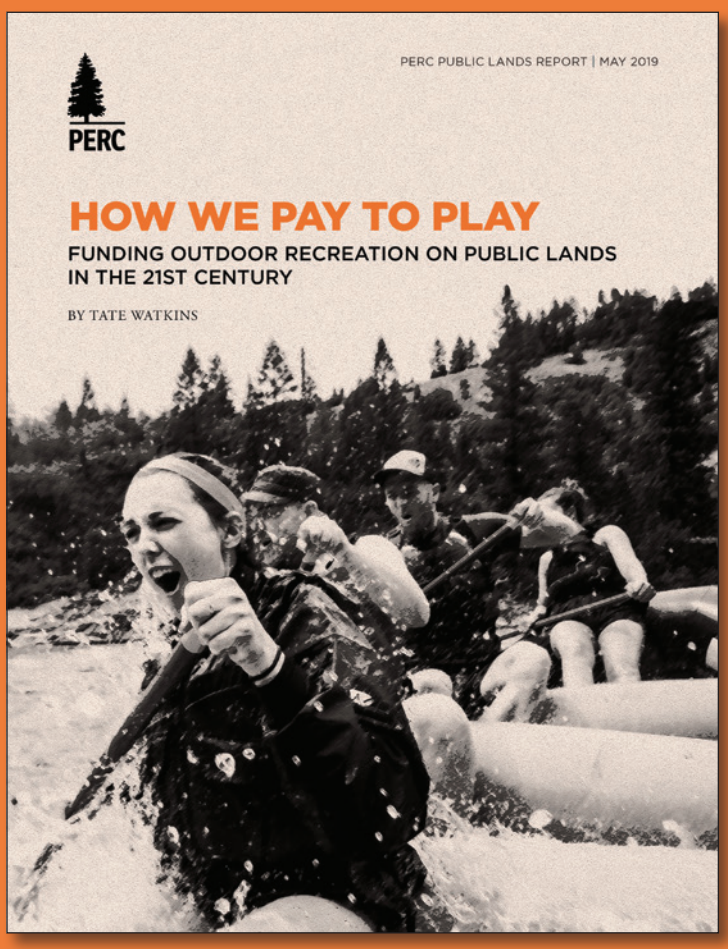
Read more in PERC's new report "How We Pay to Play: Funding Outdoor Recreation on Public Lands in the 21st Century" by Tate Watkins. To read the entire report, visit perc.org/recreation.

**Tate Watkins** is a research fellow at PERC and the managing editor of *PERC Reports*.

# HOW WE PAY TO PLAY

## FUNDING OUTDOOR RECREATION ON PUBLIC LANDS IN THE 21ST CENTURY

*A New Public Lands Report from PERC*

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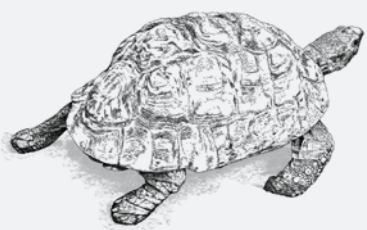
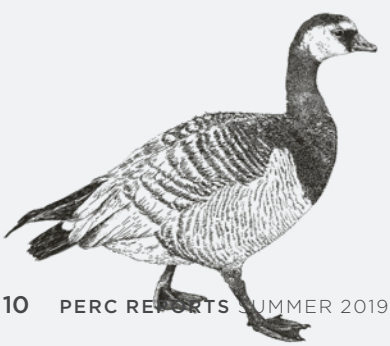




# The North American Model of Wildlife Conservation

## What does it really mean?

BY SHANE MAHONEY

**The North American Model of Wildlife Conservation** is a unique approach that has achieved enormous success in recovering many large vertebrate species from widespread depletion to healthy or abundant populations today. The model is both a historical narrative and a broad set of principles that, collectively applied, has led to what some have called the "form, function, and successes" of wildlife management in the United States and Canada.

From a historical perspective, the North American conservation approach was revolutionary. It freed wildlife from private control so it could be managed by government for the benefit of present and future generations. Sustainable public use became the foundation of management for a plethora of the continent's wild animals, most notably migratory birds, ungulates, and edible freshwater fishes. The model also provided solid conservation funding through innovative laws at all levels of government, promoted international cooperation that established treaties for managing migratory birds and other species, and set legal controls and enforcement for wildlife trade.

These were remarkable achievements, almost all of them innovations for their time. The model's core tenants, many of which were incepted more than a century ago, are best reflected in seven defining principles that were first articulated in the early 1990s by the well-known conservation scientist Valerius Geist:

**1. Wildlife resources are a public trust.** The heart of the model is the concept that wildlife is owned by no one and is managed by government for the collective benefit of present and future generations.

**2. Markets for game are eliminated.** Unregulated exploitation of game animals and migratory birds was replaced with federal, provincial, and state laws that regulated harvests and greatly restricted the sale of meat and parts from these animals.

**3. Allocation of wildlife is by law. Access and use of wildlife is regulated through public laws and rulemaking processes.** These laws and regulations establish the framework and directives regarding which species can and cannot be hunted, which are imperiled and deserve special protection, and other considerations related to public use of wildlife.

**4. Wildlife can only be killed for a legitimate purpose.** Killing wildlife for frivolous reasons is deemed unacceptable under the model. Moreover, many states have "wanton waste" laws requiring hunters to salvage as much meat from legally killed game as possible.

**5. Wildlife is an international resource.** Because many wildlife species migrate across political borders, international cooperation is often crucial for protecting species, particularly those subject to human harvest. The Fur Seal Convention of 1911 and the Migratory Bird Treaty of 1916 are early North American-led examples of such agreements. Many nations have followed in providing for international management of wildlife resources in various parts of the world.

**6. Science is the basis for informed decision-making in wildlife management.** Since the days of Theodore Roosevelt, this principle has been critical to North American wildlife conservation. The approach was further advanced decades later by Aldo Leopold and has led to many advances in the management and conservation of diverse species.

**7. Democracy of hunting is standard.** Every citizen has opportunity, under the law, to hunt and fish in the United States and Canada. Such opportunity is not restricted by social class, gender, color, creed, or landownership.

Yet despite its principled basis and many achievements for hunted species and their habitats, the North American Model requires thoughtful inspection. Why? Because the model serves as both a historical narrative for understanding the origins and gradual development of North American conservation and as the basis for current regulatory practices. It is also a possible prescription for future conservation success. All aspects are of great import because the model and our understanding of it will undeniably influence wildlife conservation in the 21st century.

## MODEL EMERGENCE

Early European settlers perceived North America's wildlife abundance as a "new Eden"—a vast natural bounty, virtually inexhaustible, waiting to be conquered by the willing and

Early European settlers perceived North America's wildlife abundance as a "new Eden"—a vast natural bounty, virtually inexhaustible, waiting to be conquered by the willing and able.

able. Excesses in wildlife harvest occurred first in eastern settlement areas. Then, as people moved in increasing numbers westward to pursue land, gold, and opportunity, markets expanded, and an extensive trade in wildlife meat, furs, and other products emerged. Such trade was significantly enhanced by railway expansion as well as government policies and social attitudes designed to impoverish First Nations peoples and take their lands. In this regrettable context, commercial hunters and their employers became wealthy through unregulated killing of wildlife and destruction of human cultures at a scale never before realized in North America, or perhaps anywhere else in the world to that time.

These efforts devastated many wildlife species across the North American landscape. Many populations, especially of large vertebrates, were unable to survive the scale and efficiency of the settlers' methods. This soon became apparent, first to the Native Americans and settler hunters who witnessed the disappearance of game animals firsthand, and eventually to the wider public. Extirpation and also extinction—surely imagined as "Old World problems"—quickly became New World realities. Wild turkey populations were reduced from approximately 10 million to about 200,000 following the arrival of European settlers, while North American elk populations declined from about 10 million animals to just 100,000 by 1890. The passenger pigeon, once a prized food source with a population estimated in the many billions, was extinct by 1914, and the iconic American bison, which had numbered 30 million or more, teetered on the verge, its numbers decimated in less than two decades by commercial slaughter. Forests and freshwater fishes were also decimated.

Little wonder, then, that by the mid- to late 19th century, North Americans had begun to realize there were limits to the continent's wild abundance and that this had been nearly exhausted. This realization helped provoke a conservation awakening in the United States and Canada. The "citizen-conqueror" was replaced by the "citizen-steward," an advocate for wise and sustainable use of nature. Since its emergence in the latter part of the 19th century, this approach, now known as the North American Model, has helped restore and safeguard many wildlife populations.

The movement was largely led by a rising class of hunters committed to democratic access to wild living resources; rational use of wildlife for personal, not commercial, reasons; and a fair-chase ethic. At the same time, however, a strong advocacy movement for protection of wilderness and natural systems also emerged, giving birth to an appreciation for nature aesthetics that would also have a lasting impact on conservation policies in both countries. Regrettably, the movement would not include the continent's Native American cultures; these were either destroyed or vastly diminished and impoverished by that time.

## CONSERVATION ECONOMICS

The International Union for Conservation of Nature, in its "Policy Statement on Sustainable Use of Wild Living Resources," concludes that "use of living resources, if sustainable, is an important conservation tool because the social and economic benefits derived from such use provide incentives for people to conserve them." As humans, we are inclined to protect and maintain that which has value to us. This linkage between conservation success and benefits deriving to people from the use of wildlife was forged very early as a foundation of the North American system.

The North American Model, therefore, provides a practical example of how incentivizing environmental stewardship can produce positive conservation gains as well as economic benefits. The model's sustainable-use system gave rise to rich

This linkage between conservation success and benefits deriving to people from the use of wildlife was forged very early as a foundation of the North American system.

supporting industries managed by the private sector—such as hunting clubs, guides and outfitters, and clothing, ammunition, and gun manufacturers—while generating substantial wealth and employment across diverse sectors of local economies, often in rural areas. Such economic outcomes further incentivize support for sustainable-use conservation policies and help create constituencies focused on wildlife's future.

Currently, economic incentives do not include the commercial sale of wild meat. Indeed, this practice is not just discouraged by the model as it is formulated today but is generally illegal in American and Canadian jurisdictions as a result. In recent years, however, there have been efforts in both nations to modify existing laws to allow some regulated commercial harvest and sale of wildlife. In Texas, for example, a recent proposal sought to legalize the sale of white-tailed and mule deer venison. Such proposals inevitably provoke intense debate. However, we should not dismiss out of hand the idea that limited and highly regulated commercialization of wild meat could create a wider appreciation of wildlife's value and, therefore, additional incentives for wildlife conservation. The practice could also help in the management of superabundant wildlife populations.

## MODERN REALITIES

As we examine the North American Model and its historical track record, we should recall that while some wildlife species fared well under its prescriptions, others did not. In fact, many species went extinct in the 20th century, even as the recovery of "game" or harvested species proceeded in spectacular fashion. Most that were lost were less visible invertebrates or aquatic species, but terrestrial vertebrates such as the Bachman's Warbler and Eskimo Curlew also disappeared during that time.

The model has strengths and weaknesses. Recognizing both is critical for assessing its relevancy and for ensuring that historical evidence is used effectively, and impartially, to improve future conservation and management efforts. Conservation is never complete. Nor is it ever easy. It is an unyielding problem that encompasses many of the most difficult social enterprises, such as economics, justice, and politics. It requires unyielding effort that inevitably plays out in a dynamic social reality.

Such scrutiny and effort must apply to the North American Model itself. The model cannot become an orthodoxy, nor questioning it a violation. We should ask whether the extinction of the Bachman's Warbler, Eskimo Curlew, and a host of lesser-known species is, in any way, a consequence of the model's focus on a restricted guild of species. Yes, thanks to the efforts and financial support of recreational hunters and anglers, harvested species have generally made remarkable recoveries, and their populations are mostly stable or increasing in size today—though there are some recent exceptions, such as caribou. However, in general, it seems reasonable to question whether the disproportionate attention given to hunted species by state and provincial agencies limited efforts that otherwise could have prevented extinctions of numerous others over the past century.

Indeed, there can be no doubt that the dedicated funding and advocacy by consumptive users has dominated the model's approach. It is not surprising, therefore, that sustainable wildlife management in North America can appear to some as biased and self-serving, where conservation efforts by agencies preferentially target certain species—the ones that "pay their way." This is a critical perspective for assessing the model's ongoing relevance. Groups not traditionally engaged in hunting and angling have often been excluded from wildlife policy development, a reality that simply has to be confronted and responded to effectively. At the same time, however, there must be a dependable funding source in support of this wider

view and the set of responsibilities toward nature that flow from it. Conservation is never free.

Perhaps most regrettably, though, are biases with respect to the model's influence as a historical conservation narrative. The model has never emphasized nor acknowledged the already established systems of wildlife use and habitat management that indigenous peoples had in place long before European colonization. Nor has it acknowledged the deep, experiential knowledge of wildlife these peoples had acquired and applied through millennia of dependency and co-existence with the wild living resources of the continent. The North American Model we recognize today is, of course, a European immigrant construction that was both required and made possible by the destruction of the continent's pre-Columbian wildlife abundance and its extraordinary diversity of human cultures. The ecological views of these peoples and their unique valuation systems toward wild nature were never incorporated within the model, a reality fraught with consequences. Much has been lost in the silence and neglect surrounding this issue.

Today, tension often exists between the continent's indigenous communities and other users of wildlife. From the latter's perspective, indigenous rights to hunt and fish can be viewed as disproportionate or preferential, though indigenous peoples perceive such rights as only natural. This tension is real and deeply felt. It poses challenges legally and from a conservation policy point of view. It has deep implications that cannot be remedied without reference to the historical realities that gave rise to it. In the meantime, it is clear that democratic access to hunting opportunities, one of the key principles of the model, is now confronted by a dichotomy of communities, one indigenous and the other settler-derived, whose legal access to wildlife for harvest and consumption can and do differ, sometimes to dramatic extents.

## THE FUTURE

The North American Model of Wildlife Conservation is currently the subject of considerable debate among diverse stakeholders. Since the inception of its conservation movement more than a century ago, North America has witnessed vast social, cultural, and economic change. This evolving context presents ongoing challenges to conservation policies and approaches. Increased urbanization, decreased personal engagement with animal death, and new insights to animal intelligence and behavior are all leading to substantial changes in society's general attitudes toward animals and our acceptance of using them for human purposes. It is little wonder that these attitudes can alter broad social interpretations of the North American Model and lead to reduced participation in activities long supportive of it, such as recreational hunting and angling.

These shifting values are unlikely to be reversed, predicting increased influence by these movements over time. Their combined effect will be to potentially incite substantive change in the model. Certainly, such social perspectives will predictably lead to increased debate over North America's conservation approach and will determine how relevant the model itself will remain.

The model's ongoing relevancy is also affected by new realities regarding public and private land, especially in the United States, where more than 60 percent of land is privately owned and about three-quarters of endangered species rely on private land for habitat. Despite North America's success in establishing a state-based system of protected areas and the positive extension of land protection by non-governmental organizations, the best available science shows the set-aside of land remains insufficient to address landscape-level requirements for ecological connectivity. Any geographically extensive

Despite some obvious limitations, the model exemplifies the great hope that concern for wildlife's welfare can indeed unite disparate groups in fruitful cooperation.

conservation effort in North America, therefore, must include private land if it is to have any chance to be effective, and new engagement by private landowners as "citizen conservationists" is critical.

There can be little doubt that the North American Model needs to address these challenges and the criticisms arising from them. Conservation approaches must continuously innovate. They must also create institutions capable of assuming long-term leadership responsibility for sectoral issues such as science and scholarship, management, policy, law, and law enforcement, but also for wildlife and nature economics. Above all else, conservation institutions must remain sensitive to the social as well as physical environments in which they operate. In the absence of this, existing approaches that are no longer effective may be inappropriately maintained, ill-conceived alternative approaches may be embraced, and the risk of wildlife extinction may dramatically increase.

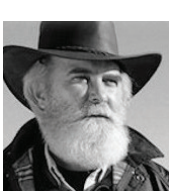
So, what is the future of the North American Model? The model's great conservation success was built on an appeal to the citizenry, which led to the formation of prideful constituencies who defined themselves as conservation advocates. For wildlife to thrive, citizens must continue to be engaged. But, of course, the citizenry is changing, and therein lies the model's greatest challenge: Can it adapt fast enough while securing the basic principles and mechanisms required to retain both public support and wildlife abundance?

Even wider questions remain: Are the existing energies for conservation, regardless of viewpoint, sufficient to its needs? And for whom is wildlife managed and for what purpose? Indeed, will wildlife be managed at all in the future? These are not new questions, of course, nor are the corollaries: Who will care sufficiently to pay for the conservation paradigm of tomorrow? Can we be united in our human affection for nature and wildlife, even if we differ in our views of how best to protect it? Or is conservation to be an ideology, exercised at the expense of that for which it was conceived?

## THE GREAT HOPE

The North American Model of Wildlife Conservation represents a singular achievement. It has demonstrated that it is possible to reverse declines in natural diversity and abundance across vast geographic areas while maintaining multiple uses and public access to wild, renewable resources. Globally, the model's importance lies in its demonstration that use of wildlife, where sustainable, can indeed contribute to human needs while maintaining thriving wildlife populations. Conservation need not be an either/or proposition.

Of equal importance, the model has shown that these broad principles of conservation can be applied across great cultural and political divides. Through its example, we discover that human diversity and social complexity are not insurmountable barriers to conservation success. This, too, is a vital lesson for the world. Despite some obvious limitations, the model exemplifies the great hope that concern for wildlife's welfare can indeed unite disparate groups in fruitful cooperation. Such a reality closely approaches the holy grail for the conservation prospector today and is of certain value to the international conservation community as it pursues solutions to global conservation challenges.



**Shane Mahoney** is president of Conservation Visions, deputy chair of IUCN's Sustainable Use and Livelihoods Specialist Group, international liaison for The Wildlife Society, and executive director of the High Lonesome Institute. His new book, *The North American Model of Wildlife Conservation*, co-edited with Valerius Geist, will be published in September.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# Rethinking the North American Wildlife Model

New challenges require new solutions for wildlife management

BY BRIAN YABLONSKI

**For anyone who has heard** the ghostly gobble of a wild turkey in the pine woods, listened to the seductive bugle of a bull elk in early autumn, witnessed an elusive bighorn sheep navigate an impossibly steep mountainside, or watched a bounding pronghorn seemingly float above the plains, you can thank a little-known conservation playbook called the North American Model of Wildlife Conservation.

As a former state wildlife commissioner, the model was orthodoxy—a set of principles with roots going back 100 years that are used by wildlife professionals to manage species and habitat. It has been the basis for responsible regulation married with conservation law enforcement and science-based management married with a conservation ethic. And the hunter-led model has provided its share of success stories, with rebounding game and non-game populations, reliable funding sources for conservation, and extensive habitat protection.

But the Nostradamus in me says that as wildlife management and our demography continue to evolve, we will see the model's adaptability tested in new ways. To my eye, three great challenges face the North American Wildlife Model in the 21st century: 1) managing for growing wildlife numbers, 2) accounting for the interplay between public wildlife and private habitat, and 3) developing more hunter-conservationists while being more inclusive of non-hunting conservationists. If we want our wildlife conservation efforts to succeed over the next century, we will have to meet these challenges.

## THREE GREAT CHALLENGES

The North American Model of Wildlife Conservation was born out of wildlife scarcity, but in the 21st century, we have a new challenge: wildlife abundance. Today, North America is home to 30 million whitetail deer, 8 million turkeys, 6 million wild-hogs, 6 million geese, 5 million alligators, 5 million beavers, and half a million black bears. Given the monumental growth of these species after their near decimation, wildlife conflict has become the new sign of success. Expanding grizzly populations are encountering ranchers' cows for the first time ever, and abundant deer are meeting automobiles with dire results. When wildlife becomes a liability to people rather than a benefit, how do we keep Americans from viewing them as pests, vermin, and nuisances?

Secondly, while wildlife is publicly owned, most wildlife habitat is private. The things that motivate a private landowner may not be the same as those that motivate society at large. Altruism has its limits, so shouldn't the North American Model recognize who actually owns ecosystems, and appeal to them? Because private ownership provides incentives to take care of resources, it only makes sense to explore ways to harness those incentives.

Three great challenges face the North American Wildlife Model in the 21st century. If we want our wildlife conservation efforts to succeed over the next century, we will have to meet these challenges.

When it comes to the third challenge, let me do a little Florida math. My old home state has 21 million residents, and only about 240,000 are hunters—roughly 1 percent. Assume, based on surveys, a full 20 percent are opposed to any kind of hunting. That means that approximately 79 percent of Floridians neither hunt nor are anti-hunting—these 79 percent are the swing voters. How do we make the North American Model relevant to them? Are hunters like me, the 1 percent, focusing on what matters to the 79 percent swing voters, or are we simply preaching to the 1 percent who are already converted? And Florida is just one example. In terms of ongoing demographic changes, your state is more likely to start looking like Florida today than Florida will start to look like yours.

## ECONOMIC INSIGHTS

Is the North American Model, as currently built, ready to take on these challenges of tomorrow? And what does economics have to say about the model?

Private ownership and free markets can be forces of good, and profits can be a powerful incentive. In 1908, President Theodore Roosevelt convened the White House Conference of Governors at the nation's first conservation conference. The gathering featured luminaries including Oliver Wendell Holmes, Gifford Pinchot, C. Hart Merriam, Andrew Carnegie, Samuel Gompers, and William Jennings Bryan. Each governor was allowed to bring three guests from the field of natural resources.

At the conference, T.R. launched into a spirited defense of public conservation policies. Among Roosevelt's remarks, however, the transcript contains a nugget related to the powerful incentives that private ownership can provide: "We want to see a man own his farm rather than rent it, because we want to see it an object to him to transfer in better order to his children."

At its very roots, economics is the study of trade-offs and how human beings make choices in response to incentives. And Roosevelt seized on the power of economic incentives. In his farm example, ownership creates incentives to protect and improve

the farm. When it comes to wildlife management, markets, ownership, and profit can often provide the best incentives for conservation, leading to positive outcomes for both owners and the environment.

The North American Model, however, essentially outlawed the use of economic incentives. Market hunting, commercialization, and private ownership are all considered taboo under the model.

But today gives us new opportunity. We have perhaps reached a point where can take a fresh look at economics, markets, and private-ownership incentives and examine whether it's possible to use them as tools for better wildlife management. What if in some cases free markets, profits, and private ownership bring not only a private benefit to landowners but also a significant public benefit to wildlife and natural resources? In the 21st century, market-based incentives can play various roles in the North American Model—and in fact, some already are.

## CHALLENGE 1: MANAGING FOR WILDLIFE SUCCESS

When it comes to managing for growth, some species have proliferated to such an extent that they have spawned new problems.

Yellowstone's bison, for instance, have reached a population of nearly 5,000 animals in the national park. These are some of the only genetically pure bison in the United States, meaning they contain no cattle genes, which makes them particularly valuable to some people. But given their population growth, some of these migratory bison seek forage outside of the park into Montana during the winter. This has made brucellosis, a disease that could potentially be transmitted from bison to cattle, a threat to livestock.

Almost a decade ago, state and federal agencies quarantined 87 of these spilled-over Yellowstone bison to ensure they were brucellosis-free. The state could have simply slaughtered them, as it often does, but it wanted to use the bison to seed new herds across the state. There was one problem: The state had no place to put them for the required five-year quarantine because no facility was ready to take them.

This is where Ted Turner came in. He offered to maintain and care for them on his nearby private ranch—at no charge to the government. All he asked for in exchange was ownership of 75 percent of the offspring born over the five-year period. Turner had a private incentive to have more genetically pure bison among his own herd—that was important to him.

At the outset, some environmental organizations protested this so-called "commercialization of wildlife." Some cried, "Free the Yellowstone 87!" But in 2014, with the state's approval, 145 bison cared for by Turner were transferred to the Fort Peck Indian Reservation to grow another herd. Despite the early protests, it was a great conservation success—and it cost the federal government nothing.

To take another example, in Florida there are nuisance alligators—some of which find their way into backyard swimming pools or consume small dogs—meaning that Florida also has nuisance alligator trappers. As Tate Watkins explores in these pages (see p. 32), nuisance trappers are paid primarily not by government but by allowing the trappers to sell alligator hides and meat on the market. This sort of commercialization may run counter to how most wildlife are managed in the United States, but it could be a model for other abundant species. In fact, there may not be enough traditional hunters to fix some of the management issues we have, or will have in the future, with some wild animals. As Jim Sterba notes in this issue (see p. 26), in the name of population management, we may need to create some sort of system of hunter-harvesters for overabundant whitetail deer. Such a system would bring game products to market, rather than having to give the meat away or allow it to go to waste.

## CHALLENGE 2: MAKING HABITAT WORTHWHILE FOR LANDOWNERS

Aldo Leopold is known as a conservationist, but did you know that he was a capitalist too? In his 1934 paper "Conservation Economics," Leopold wrote, "Conservation will ultimately boil down to rewarding the private landowner who conserves the public interest." In a collection of Leopold essays, editors Susan Flader and J. Baird Callicott noted that Leopold recognized "the geography of conservation is such that most of the best land will always be privately held . . . The bulk of responsibility for conservation thus necessarily devolves upon the private custodian." So how do we reward private landowners in ways that serve the public interest? Our next frontier is to make it worthwhile for the private landowner to protect and restore wildlife habitat. We must make public wildlife a valuable asset, not a liability, to owners of habitat.

To take one example, a few years ago Florida initiated a program called the Private Lands Deer Management Program. Landowners with at least 5,000 contiguous acres who manage their lands for wildlife stewardship agree to furnish data on deer populations and also provide opportunities to get youth involved in hunting. If an owner enters the program, then they can receive greater flexibility on the hunting season dates they can offer and the method of legal take. For example, they might be allowed to choose to use rifles during bow season.

Our next frontier is to make it worthwhile for the private landowner to protect and restore wildlife habitat. We must make public wildlife a valuable asset, not a liability, to owners of habitat.


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The program makes the landowners' hunting leases more valuable, meaning more profits in exchange for more conservation—a clear public benefit. A similar program in Colorado, known as Ranching for Wildlife, has provided incentives for landowners to open up public access to more than 1 million acres of private land for hunting.

A second example comes from Florida's gopher-tortoise economy. It's true—for a long time, property owners and developers in the state buried gopher tortoises. Burying creatures alive is very bad policy, to say the least. But in those old days, the state would take money from developers building a home or community and allow them to bury a tortoise that had been found living on the land to be developed. They would then use the money to buy upland tortoise habitat as the penance. But that didn't help the tortoise, and many other species, that died.

Under a new market-based program, developers instead pay willing landowners to relocate tortoises that are in harm's way, and those landowners protect them in perpetuity on their own property. In this way, Florida has created a private market—a true gopher-tortoise economy—based on the rate of impact to existing tortoise habitat. A conservation-minded landowner today who adopts one relocated tortoise is paid $800 to $1,500 by the developer.

Over the 20-year life of the old program—killing tortoises and taking the blood money—about 20,000 acres were conserved. In only the first seven years of the new market-based program, and during an upside-down economy with limited development activity, Florida conserved more than 22,000 acres of upland tortoise habitat. Markets can work.

In both the hunting and tortoise examples, wildlife was transformed from a liability into something of value. Paying people who own the habitat and are in the best positions to manage it gives them incentives to conserve. That's economics.

## **CHALLENGE 3:** USING MARKETS TO GROW HUNTER-CONSERVATIONISTS

While hunter-conservationists have led the way on wildlife conservation, our numbers continue to decline. The latest survey by the U.S. Fish and Wildlife Service indicates that the number of hunters dropped by 2.2 million between 2011 and 2016, a decline of 16 percent. The North American Model needs to do a better job of not only growing the next generation of hunters but bringing non-hunters to the table. If hunting is conservation, which it is, then the model should reflect an "all hands on deck" approach.

That should include using all tools, including markets. How might we use markets to recruit and retain hunters or to get more Americans interested in hunting or the model, even if they never pick up a bow or a gun?

Today, we are going through an unprecedented foodie movement that goes by many different labels—slow foods, organic foods, sustainable foods, the locavore movement, farm-to-table. It all essentially means the same thing: There is a growing cultural shift by many Americans to be close to their food, to

know what they eat, and to make their food experiences authentic. And the majority of them are not hunters.

Hunters were well ahead of this trend. We were the original Whole Foods. Food that is hunted is sustainable, organic, hormone-free, antibiotic-free, and it usually comes with a hell of a good story.

Montana conservationist Steven Rinella, host of the *Meateater* television show and podcast, has tapped the convergence of hunting and its culinary benefits while reaching out to our non-hunting brothers and sisters. Shane Mahoney, one of the leading experts on the model and who's also featured in this issue (see p. 10), is engaged in a multi-year study on the numerous benefits—economic, nutritional, environmental—of wild-harvested protein, something that a limited market could promote.

But while there is demand for authentic wild game meat, our community, following the North American Model, has dug in for obvious historic reasons against providing a supply, even when it would include conservation benefits in managing abundant game populations such as whitetails. We have also dug in while allowing for notable exceptions, such as proven, regulated, sustainable markets for furs from fur-bearing animals such as mink, fisher, marten, and foxes.

At the same time, there is a market for wild fisheries, and in that case the market is allowed to grant a supply. It's enough to confuse a guy like me who once managed both fish and wildlife: Are wild-harvested animals and wild-harvested fish really so different?

In Florida, there is a big "Fresh from Florida" movement to market wild seafood—shrimp, stone crab, oysters, grouper, snapper. There is even a Gulf Wild program that tracks who harvested your fish and where it came from in the Gulf. Given the tremendous success of such programs specifically and the farm-to-table movement generally, should we be considering a "woods-to-table" movement? Perhaps a limited and highly regulated form of selling wild meat at farmers markets or to restaurants? Or will we choose to limit the people who can experience wildlife as a delicacy only to those of us who are fortunate enough to have the time, resources, ability, family and friends, and access to hunt?

This could be our chance to educate and connect "the 79 percent" to the benefits of hunting. We could excite them about hunters and their many contributions to conservation and connect them to the fruits of the North American Model. We may end up encouraging them to take up hunting, as Facebook CEO Mark Zuckerberg did several years ago. This may also be the chance to make hunting "conservation-cool" for millennials and Generation Z.

There is a growing cultural shift by many Americans to be close to their food, to know what they eat, and to make their food experiences authentic. And the majority of them are not hunters.

## BULLY FOR YOU

If your reaction to all of this is to recoil, to show a little righteous indignation, or maybe even to show some disgust, then that is a good thing. It shows that our conservation ethic is strong. It shows we have a great appreciation for our wildlife history. It shows we've learned lessons from that history. "Bully for you!" T.R. would likely say.

But thanks to the North American Wildlife Model, the world of conservation has grown up. We are much more sophisticated about conservation today than we were 100 years ago. We have a federal wildlife management apparatus. We have 50 state wildlife commissions that work together. We have science-based management. We have regulations galore and well-trained law enforcement. We have the vigilance of our stakeholders, the hunter-conservationists, and their many organizations. And we have a strong conservation ethic—these are our guardrails.

As wildlife managers, we are charged with managing the public trust, and part of that solemn obligation is to use all the tools that can most effectively bring about public benefits. If there are ways to leverage capitalism, markets, and profits to bring benefits to society, then we owe it to the conservationists of today and the past to explore and embrace them where appropriate.

We should not be afraid to try new things, to experiment, nor should we cling to dogma and belief systems simply because they worked in the past. The wildlife management challenges of today are unique and different from what they were 100 years ago—they have evolved. If we are to have success with a North American Wildlife Model during the 21st century, then our solutions must evolve too.

**Brian Yablonski** is the executive director of PERC and the former chairman of the Florida Fish and Wildlife Conservation Commission.

For outdoor enthusiasts, there is little better than a fresh powder day skiing, a weekend exploring backcountry trails, or a morning fishing a favorite honey hole. As conservationists, we also recognize that humans play an important role in shaping the natural environment.

It's something that I'm lucky to see from a unique perspective when I fly across the country as the director of development at PERC.

My alternate office at 30,000 feet lets me see our continuous interactions with the landscape. From the parks and gardens of Manhattan, across the farms and ranches of the Great Plains, to the lush shores of the Pacific Northwest and California coast, we are in constant contact with the land.

This is something we understand at PERC: Conservation means engaging with our environment and stewarding it for the betterment of nature and our enjoyment.

From protecting migration corridors and managing forests to reduce wildfire risk to emphasizing the critical role of working lands, as sportsmen and outdoor recreationists, we seek real-world conservation success. But we also know that more must be done.

By joining us with an investment in PERC, you will reap rewards for conservation and help us grow a coalition of innovative conservationists. We are improving outcomes, building trust between land users, and, most importantly, achieving real conservation success.

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With gratitude,

Rupert Munro
Director of Development

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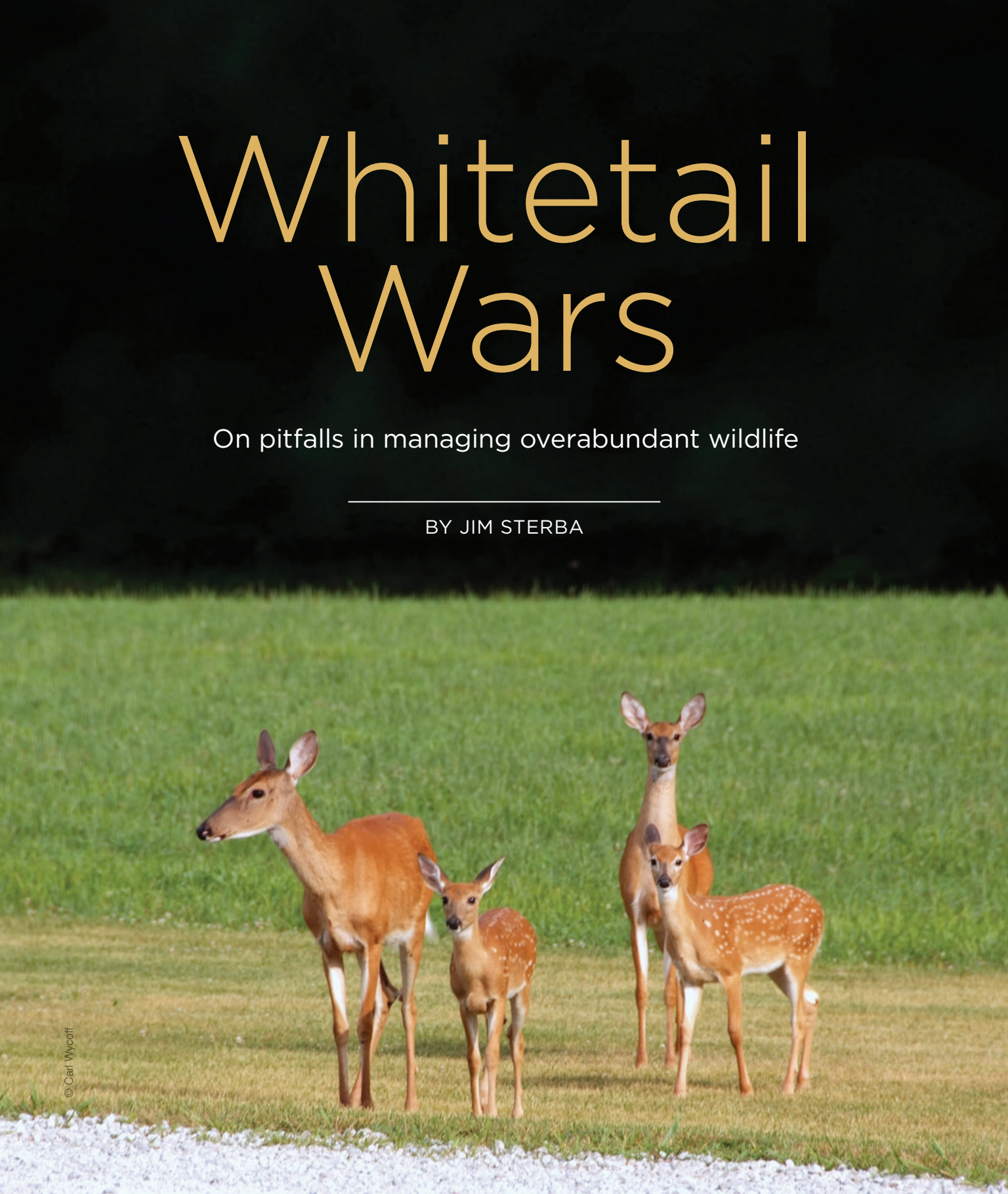
# Whitetail Wars

## On pitfalls in managing overabundant wildlife

BY JIM STERBA



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**In the four centuries after the arrival** of Columbus, explorers, traders, and settlers, abetted by Native Americans, pillaged the North American landscape of its wild animal and bird populations for food, fur, feathers, and fun. One of their favorite targets was the white-tailed deer. European bankers who staked trans-Atlantic settler migrations were often paid back with deer hides and beaver pelts. As immigrants poured in, wild venison was cheap protein for pioneer-family pots. Commercial deer hunters sold venison to butchers, restaurants, railroad crews, and lumber camps. By 1890, a pre-Columbian deer population thought to number more than 30 million had been reduced to an estimated 350,000. Many states—Illinois, Indiana, Ohio, Pennsylvania, and Vermont among them—had no whitetails left at all.

Fast forward to the end of the 20th century and, after one of America's great wildlife comeback stories, white-tailed deer had become seriously overabundant across much of their historic range, inflicting mounting damage on people, crops, and forests. By the 1980s, whitetail populations started to explode, especially in suburban, exurban, and rural-sprawl areas where more people were living and where hunting was highly restricted.

Hunting had long been the primary management tool for deer, yet even in many areas where it was allowed, hunters had become unable to stabilize, let alone reduce, whitetail numbers. New control methods were slow to be tried. Instead of five to 15 deer per square mile, as was common in rural areas, sprawl was accommodating 40, 80, or even in excess of 100 deer per square mile. Such places provided plenty of forest edges for hiding, feeding, watering, and bedding. They also contained lots of people against hunting. As the National Zoo's William J. McShea put it, sprawl became "deer nirvana."

By 2000, American drivers were hitting 3,000 to 4,000 deer *per day*. Whitetails themselves were also a mass transit system for ticks carrying Lyme disease and other bacterial infections. Their browsing habits were causing billions of dollars in damage to crops and landscaping. They were cleaning out the understories of forests—eating away tree seedlings to the point of stopping forest regeneration in some areas. When forest ground plants are eaten away, insects that baby birds depend on become scarce. With native plants gone, invasive species move in.

Tom Rawinski, a U.S. Forest Service botanist in the Northeast, calls overabundant whitetails "the greatest conservation challenge of our time." In the 2018 summer newsletter of the New York Flora Association, he described the predicament thusly:

> This one keystone species, the white-tailed deer, [has] placed millions of forest acres at risk. It has been called the greatest mistake in the history of wildlife conservation … once beautiful forests have become ecological slums with crumbling infrastructures. Forests are no longer resilient. Forests are disintegrating. Sustainable forestry is totally out of the question.

In a 1997 book, *The Science of Overabundance: Deer Ecology and Population Management*, 42 wildlife scientists listed four criteria for determining when a habitat had too many deer: 1) the population threatens human life or livelihood; 2) it depresses densities of favored species, such as songbirds; 3) it becomes too populous for its own good; 4) its numbers cause ecosystem dysfunction. Whitetails fit the criteria.

Deer had become demonized as a scourge, called long-legged rats in some places and mountain maggots in others. "Forgive us if you are among the millions of gardeners, farmers, bird-watchers, drivers, fence builders, claims adjusters, body-shop operators, roadkill scrapers, 911 dispatchers, physical therapists, and chiropractors who know this already," began a 2005 editorial in *The New York Times.* "White-tailed deer are a plague."

## CERVINE SPRAWL

If deer have become a plague, then decades of human decisions about how to manage them are responsible for helping spread the epidemic. By the early 20th century, court rulings, new laws, and principles handed down over time propelled a budding conservation movement. The tenets that developed became known collectively as the North American Model of Wildlife Conservation. Commercial hunting was outlawed. Wildlife became a public trust available to all citizens under rules set by governments. Deer hunting was confined to strict seasons and bag limits. So-called "buck laws" mandated that does be spared to reproduce. The goal was to rebuild the herd. It worked. Healthy whitetail populations slowly returned. By buying licenses, hunters paid states for the right to do what wildlife biologists wanted done: manage the herds at sustainable levels that hunters liked and others accepted.

But society-level transitions were slowly changing many circumstances: where people lived, how they lived, what they thought about wildlife and nature, and how they perceived animal welfare. All of these factors helped create a catalyst for whitetail overabundance.

Demographic changes were significant. Early conservationists didn't envision sprawl. Until the end of World War II, the idea that people would abandon their towns and quit their farms for a home in a cul-de-sac off some exit ramp or on a rural road didn't make much sense. Never in history had people lived this way. But from the post-war Levittowns on the edges of cities, people moved farther and farther out on improved roads in affordable cars burning cheap gasoline. By 1960, we were about evenly split: one-third urban, one-third rural, and one-third suburban. By the 2000 Census, more than half the population—an absolute majority for the first time—lived not in cities or on working farms but in this vast middle muddle called sprawl. Which is not a bad place to live if you're a person, or a deer.

Society-level transitions were slowly changing many circumstances: where people lived, how they lived, what they thought about wildlife and nature, and how they perceived animal welfare. All of these factors helped create a catalyst for whitetail overabundance.

By sprawling out, we encroached on wildlife habitat—but that's only half the story. As wildlife populations multiply and spread, many wild creatures encroach right back. The reason is simple: Our habitat is often better than theirs. We offer up plenty of food and water. We plant grass, trees, shrubs, and gardens. We put in ponds and put out birdseed, mulch, and garbage. We fill up dumpsters. All of this amounts to a giant buffet for all sorts of critters. And it's the reason that sprawl's biological carrying capacity—that is, the population limit the food and habitat can sustain—is far greater than in an unpeopled rural area.

Sprawl Man offers wildlife ample shelter and protection, too. While much of the privately owned American landscape is papered with "No Trespassing" and "No Hunting" signs, in the sprawl they are ubiquitous. Suburban towns, townships, and even whole counties have adopted firearms and hunting restrictions. For example, in Massachusetts, which is the third most densely populated state, it's not legal to discharge a firearm within 150 feet of a hard-surfaced road or within 500 feet of an occupied building without the owner's written permission—which isn't easy to get in the burbs. These two restrictions alone put almost two-thirds of the Bay State effectively off-limits to hunting. And almost half of the state's 351 municipalities impose further prohibitions and restrictions, including on bow-and-arrow hunting. Lots of states have rules like this. They create huge patchworks of deer sanctuaries.

Many of these restrictions came along before deer populations ballooned. Public safety was the aim. But hunters are relatively safe. These days, while firearms kill more than 40,000 people a year in

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this country, hunters kill only about 50—usually each other, in cases of mistaken identity. Deer-vehicle collisions kill upwards of 300 people and hospitalize nearly 30,000 more annually.

Research suggests that the biggest predator of deer since the end of the last Ice Age has been man; Paleoamericans and Native Americans probably killed more deer than all other predators combined, including cougars and wolves. What this means is that restrictions imposed on human predators in just the last few decades have for the first time in 11,000 years put giant swaths of the whitetail's historical range off-limits to its primary predator.

Where allowed in the United States, some 11 million hunters kill about 6 million deer annually—not nearly enough to stabilize, let alone dent, populations. The rule of thumb is that just to keep an area deer population stable, two-thirds of the females have to die annually. Even if you count deer that die of other causes—such as vehicle collisions, disease, and predators—it is clear that many more deer must die to actually reduce the population.

But whitetail reduction is made even more difficult by today's conflicting attitudes about wildlife and animal welfare. Many people simply don't believe there are too many deer. They like seeing these elegant ungulates around. They are often against killing them. They sometimes argue that deer problems are really people problems that can be solved by driving carefully, fencing off landscaping, checking for ticks, and so on. They often campaign to save deer from hunters more vigorously than those who want to save forests, crops, and gardens from deer.

At any one time, literally hundreds of communities are divided and fighting over whether they have too many deer, and, if so, what to do—or not do—about it. These fights usually take several years, during which time the deer damage worsens. The first question communities confront is: Is there a problem? That question alone can stall action for a long time. One side will ask: How many deer do we have? It's a good question—but is it worth spending thousands of tax dollars doing surveys, including helicopter infrared flights, to determine numbers? After that, some people will inevitably question the validity and accuracy of the surveys. Any argument that stops or postpones the prospect of deer control is used. Lawsuits are threatened, and sometimes filed. It takes only a few people using these tactics to put off dealing with the problem by denying it exists.

Even after a community decides it has too many deer, residents divide over lethal versus non-lethal control. Contraception always comes up because it holds the promise of sparing animal lives. (There's no easier way to raise money in this country than to tell donors you can save animals from human harm.) In any case, deer contraception is a humane alternative to killing—if only it worked. It may be tomorrow's silver bullet. But practical and affordable deer contraception was "just around the corner" 30 years ago. It still is.

You can surgically sterilize does—that is, put them on an operating table and remove their ovaries—like they're doing in East Hampton on New York's Long Island. That costs around $1,200 per animal. All you need is deep pockets. Likewise, New York City is funding a $3.3 million first-in-the-nation experiment to perform vasectomies over three years on every one of the more than 1,000 bucks on Staten Island.

Hunter groups are often not much help. Hunters like seeing lots of deer—especially on the opening morning of hunting season. Measures to reduce overall deer populations irk some. Keeping hunters happy is important because the money they spend on licenses is a significant source of state wildlife management funding. And that money is declining as baby-boomer hunters die off and their kids don't take up the sport.

Many communities eventually decide that the lethal control option is the only feasible course, and they think

that all they have to do is allow hunting and their deer problems will disappear. Not so, says Anthony J. DeNicola, president of White Buffalo, a nonprofit organization that specializes in all types of deer reduction, including culling and sterilization.

The problem, DeNicola says, is that hunters see "a recreational opportunity and not a management solution." This can result in bad management, he says, adding: "Hunters are so spoiled now that any herd reduction below 40 to 50 deer [per square mile] is unacceptable." Whitetails are so plentiful these days that very little real "hunting" is required to bag one. As a result, hunting skills have lapsed. Only serious hunters—say, those after a particular wily buck—need them. State wildlife managers have tried various measures to increase hunter deer harvests, such as lengthening the hunting season and increasing bag limits, with limited success. In some states, a hunter can kill a deer a day for more than 100 days. But why would they? Once a hunter's freezer is full and a neighbor befriended with a gift deer, killing more deer seems gratuitous. You can donate deer to Hunters for the Hungry or other such programs, but money for butchering costs is in short supply.

Depredation permits, issued to reduce deer damage to crops and landscaping, are on the rise. But more drastic measures, such as offering deer bounties, have not been raised—at least not yet.

## EXCEPTIONAL SALES

More than a century after the North American Model of Wildlife Management came to the fore, there seems to be one clear incentive that could keep hunters hunting and help communities pay for the costs of hiring sharpshooters: once again allow commercial sale of wild venison.

Vermont permits this to a very limited degree. A little-known provision in a 1953 state law grants the following: "A person shall not buy or sell a wild deer within the state *except during the open season and for twenty days thereafter*" (emphasis mine).

Suffice to say, Vermont still does not have a booming market for venison even after the law has been on the books for more than half a century. Limited commercial-sale experiments have been proposed in other states but have met strong resistance.

Perhaps the lack of progress on the commercialization front is why culling by sharpshooters is an increasingly common, but expensive, use of taxpayer dollars—at around $300 per deer. It usually involves teams of specially trained shooters using rifles, often .223 caliber, equipped with night-vision scopes and silencers. Groups like White Buffalo carry out such culls, as does the U.S. Agriculture Department's Wildlife Services branch. Besides culling costs, communities must also pay butchers to process the dead deer so that the venison can be donated to food pantries.

But what if that venison could be produced by trained residents and then sold at local farmers markets? Suppose a town hires sharpshooters to conduct an initial culling and at the same time trains local residents—police, firemen, hunters, and others familiar with firearms—to conduct future culls. The first year, perhaps, the locals would observe and learn techniques. The second year, the locals would set up the cull under professional supervision. The third year, the locals would be on their own.

Culling costs would gradually go down, and selling the venison locally would further offset costs by tapping into its locavore appeal. As celebrated hunter and writer Steve Rinella put it in "Locavore, Get Your Gun," a 2007 column in *The New York Times*, such venison could accurately be labeled "free-range, grass-fed, organic, locally produced, locally harvested, sustainable, native, low-stress, humanely slaughtered meat."

A great irony is that an estimated 85 percent of the venison sold in restaurants and at meat counters in the United States is imported from red deer farms

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State wildlife managers have tried various measures to increase hunter deer harvests, such as lengthening the hunting season and increasing bag limits, with limited success. In some states, a hunter can kill a deer a day for more than 100 days. But why would they?

in New Zealand. And it isn't cheap—the ground variety sells for three to four times the price of ground chuck.

Why not substitute local American wild venison for the New Zealand imports? Because doing so would violate a key tenet of the North American Model, which eliminated commercial markets for wild game, especially meat. The model has seeped into the DNA of state and federal wildlife managers and scientists, and for many, altering it in any way would be akin to rewriting the Ten Commandments: "*Thou shalt not kill, except in certain circumstances* …" At national conventions, just bringing up the idea of commercial sale was long considered to be so heretical that proposed forums were squelched.

Of course, this tenet of the model is rife with exceptions already. Fur bearers can be bought and sold. Ditto for deer parts—antlers, skulls, and hides. Deer urine is sold. Wild fish are commercially traded.

In 2011, the *Wildlife Society Bulletin*, a peer-reviewed scientific quarterly, published a forward-looking article: "Regulated Commercial Harvest to Manage Overabundant White-Tailed Deer: An Idea to Consider." Its authors were seven academic and government wildlife scientists. They urged pilot projects, carefully circumscribed, to see if commercialization might be a useful new tool in the deer-management toolbox. The silent reaction was deafening.

The subject did not even get on the agenda at the Wildlife Society annual meeting until 2013. So nervous were its organizers that a professional facilitator was hired to maintain decorum. Not necessary, as it turned out. About 70 attendees talked and listened for four hours—many open to the idea, albeit with reservations.

Yet virtually nothing has come of the idea in the last five years. To implement even minor experiments in commercialization would require the cooperation of state fish and wildlife departments, government food safety agencies, legislatures, governors, hunter groups, and local communities—all of whom are divided within and without. Here and there efforts have been made, proposals put forward, even legislative bills introduced. Still, nothing.

There is a general reluctance to get out in front on the commercialization issue, as if doing so signals a betrayal of the entire North American Model of Wildlife Conservation. But we must face the fact that other incentives to get people to kill more deer haven't worked. A failure to try commercialization year after year as deer problems continue to escalate amounts to kicking the can down the road—inaction that's not going to benefit the future of wildlife management in America nor the landscapes and communities that live with these wild species.

**Jim Sterba** is the author of *Nature Wars: The Incredible Story of How Wildlife Comebacks Turned Backyards into Battlegrounds*. He was a foreign correspondent and national reporter for four decades, first for *The New York Times* and then for *The Wall Street Journal*.

# The Gator Traders

**Markets help manage alligators in Florida. What can they teach us about managing other abundant species?**

BY TATE WATKINS

A nuisance alligator snared during a demonstration by the Florida Fish and Wildlife Conservation Comission has its jaw and legs secured with tape. © Tim Donovan/FWC

"**I was a roofer for 30 years,**" Broderick Vaughn says. "I still have my license, but hope I never have to use it again." We were riding in his lime green Dodge pickup truck about 20 miles northeast of Tallahassee, Florida. A few days prior, Vaughn had gotten a call from a small quail plantation owner on Old Magnolia Road, which turns to dirt, then back to pavement, and then back to dirt as you drive north, a giant live oak forming a roundabout in the middle of the red clay road at one point. Vaughn, who lives just a couple of miles away, was putting to use the other license he holds—the one that makes him a nuisance alligator trapper for the state of Florida.

Today, there are approximately 1.3 million alligators in Florida alone, and residents routinely call nuisance trappers like Vaughn to remove gators from swimming pools, neighborhood lagoons, and pretty much any other body of water they find their way into.

The owners had called the "SNAP line"—short for the Statewide Nuisance Alligator Program hotline—to request the removal of several small alligators from a pond in front of their house. Small gators aren't usually a threat to people, but the owners called because they were concerned for their pets. As we approached, Vaughn spotted a gator in the middle of the pond.

He pulled out a bluetooth speaker, set it on the bank, and started to play a recording of hatchling alligators making their typical high-pitched, muffled squeak. The juvenile gator immediately turned and started to swim right at Vaughn. Alligators are opportunistic feeders, and their most dangerous predators are often other alligators—hatchlings make an ideal meal for a juvenile gator. Vaughn reared back with his spinning rod, cast, and then reeled his line in right on top of the gator, snagging it with the treble hook dangling on the end of the line. The gator thrashed a few times and wriggled loose.

It took Vaughn another 20 minutes and a few more casts, but he eventually pulled the alligator onto the bank, where he secured its snout and legs with black electrical tape. It measured 3 feet, 9 inches. Nuisance trappers can keep the gators they capture and sell the hides and meat, but only if the animals measure 4 feet or longer, so later that day, he would take a ride on an airboat to release the juvenile into nearby Lake Miccosukee. His only compensation for his afternoon of work would be the $30 stipend that the Florida Fish and Wildlife Conservation Commission pays for each nuisance gator captured—at least, that should have been his compensation, but the agency had already exhausted its annual pot of money for that purpose, as it tends to do during the fourth quarter of the program year.

Vaughn grew up hunting hogs and deer in North Florida, and now that he's hung up his roofing tool belt, he processes wild game at a facility behind his house, in addition to responding to gator complaints. He says he wishes the program were better funded, but, given how much he enjoys what he does and the fact that he's providing a service to residents in need of help, he's not too bothered by the afternoon of work without pay.

"I went from never harvesting a gator to getting my first one that was 10-foot-4," he says, referencing his first alligator hunt, a few years before he became a trapper. "The second one was 11-foot-4, and then I was hooked." In 2018, the 110 nuisance alligator trappers in Florida harvested 8,139 nuisance alligators from more than 14,000 complaints.

Pictured from left: Broderick Vaughn reels in a small alligator; the captured gator; hooks set by Vaughn in response to a nuisance alligator complaint are baited with raw chicken legs and monitored by a remote camera; a tanned gator skin lays on a table in Vaughn's processing facility.

The laws and policies that allow gator skins and parts to be sold is an exception to how most game species are treated under the North American Model of Wildlife Conservation, which forbids sales of most wild-animal products. But the market-based system seems to be working in Florida, and it could be informative for other wildlife management challenges in the 21st century—especially ones having to do with too much, rather than too little, wildlife.

## ENDANGERED TO ABUNDANT

About half a century ago, the American alligator became one of the original endangered species. Today, there are approximately 1.3 million in Florida alone, and residents routinely call nuisance trappers like Vaughn to remove gators from swimming pools, neighborhood lagoons, and pretty much any other body of water they find their way into. For the nuisance trappers across the state, markets and commercialization are part of the foundation that helps manage this now-abundant species. So how did alligators go from endangered to nuisance status?

"The value of that hide has always been regarded as something exceptional," says Harry Dutton, leader of the hunting and game management division of the Florida Fish and Wildlife Conservation Commission. Dutton, a wildlife biologist, explains that because those valuable hides can be used to fashion items like luxury handbags, belts, and wallets, poachers had decimated alligators by the mid–20th century. Florida outlawed gator hunting in 1961 due to the decline, and other states followed with their own bans. Later, a 1967 federal regulation deemed the species to be "threatened with extinction." But it's widely recognized that illegal hunting wasn't truly curbed until 1970. That's when the Lacey Act, which prohibits trade in wildlife products taken or transported illegally, was amended to extend its protections to reptiles.

Soon after, poachers were convicted in several high-profile cases. With trade in reptile products stymied, the alligator population rebounded rapidly—extremely rapidly, in fact, at least in Florida. The recovery was so quick that Dutton says biologists today mostly share a consensus that there was always a strong core population of alligators in Florida, even when the species was listed as endangered. As he tells it, poachers would kill gators in easy-to-reach swamps and lakes, but the majority of wetlands were inaccessible and therefore sustained healthy and strong populations all along.

As the species recovered, its protections were gradually reduced throughout its geographic range. It was downlisted in Florida and in coastal areas of several other states in 1977. In 1987, it was declared fully recovered everywhere.

Once the species was downlisted in Florida in 1977, the state established a nuisance program to control problem gators. Subsequent changes at the federal level authorized the sale of alligator meat and export of hides, and in 1981, the state instituted experimental and limited hunts. By 1988, the year after the species was declared fully recovered, Florida authorized statewide alligator hunting. The alligator population was thriving, and the state needed to manage the numbers. With more than a million gators spread across the state today, that's still the reality.

"My biggest fear isn't that we don't have enough gators," says Fish and Wildlife Conservation Commission executive

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director Eric Sutton, "it's that we don't have enough nuisance trappers." Capturing ornery alligators that average nearly 7 feet long is a specialized skill, to say the least. Sutton describes the state's contracted nuisance trappers, who have to pass a background check and participate in regular reviews, as a "tremendous asset" and "an extension of the workforce" of the wildlife commission. (He notes that he considers hunters, who play an important role in helping manage wildlife, to be a similar extension of the workforce as well.)

"There are two habitats for gators in our state," Sutton says. "Where they should be, which encompasses a lot of our landscape, and where they shouldn't be." A 9-foot gator in a stormwater pond in the middle of an apartment complex is a recipe for disaster, he says. "That type of incident can turn public favor against alligator conservation, which is one of our primary responsibilities."

The nuisance program, therefore, plays a crucial part in managing the species. But with an annual budget of $210,000 for compensating trappers, and a $30 stipend per nuisance gator, the funding runs out before the alligator complaints do. That means that late in the program year, proceeds from hides, meat, and other gator parts are the only compensation trappers get—a proposition that's largely tied to swings in the hide market. And in any event, the stipend may only cover gas money for a trapper to respond to a call, if even that.

The economic realities of these gator-trapping gigs are made clear in the state's application: "Trappers may need to have additional employment, because being a nuisance alligator trapper may not provide sufficient income to support an individual or family." That's one reason the program includes an eclectic group of people. When it began back in the '70s, some of the first nuisance trappers were reformed gator poachers, good-ole-boys who decided to go straight and narrow—and might have been missing a digit or two from their poaching days. Today, the cohort includes retired engineers and other professionals, as well as those who turned a gator-hunting hobby into a side gig.

Lane Stephens is one of the latter. A lobbyist who works a few blocks away from the state capitol in downtown Tallahassee, Stephens has the mounted head of a 14-foot gator he trapped in 2012 sitting on an end table beside his desk. He says he was hooked after going on an alligator hunt with a client more than a decade ago. He applied for the Gadsden County nuisance trapper job when it came open in 2010 thinking he would trap a couple dozen gators a year. Two years later, he ended up capturing 72 nuisance gators—including the 14-footer, the biggest he's ever caught and not far off the state record.

"The market is horrible right now," says Stephens, referencing the hide market. "If it weren't for the meat sales my market

## MANAGING FOR ABUNDANCE

Florida in 2018

**1.3 MILLION** ALLIGATORS

**14,739** COMPLAINTS

**8,139** NUISANCE GATORS REMOVED

Source: Florida Fish and Wildlife Conservation Commission

"My biggest fear isn't that we don't have enough gators," says Fish and Wildlife Conservation Commission executive director Eric Sutton, "it's that we don't have enough nuisance trappers."

would have dried up." An expanding global supply from alligator farms in Louisiana and crocodile farms in Australia has put downward pressure on hide prices. These days, the high-end buyers like Gucci and Louis Vuitton that drive much of the market prefer farmed skins, which have fewer blemishes. Wild skins harvested by nuisance trappers or hunters generally require more time, attention, and craftsmanship to transform from tanned leather into finished products.

A few decades ago, when the market was booming, Florida wild gator hides reportedly sold for up to $35 a linear foot. Now, trappers hope their skins might fetch $7 a foot if they're fortunate. (Stephens, who has been a nuisance trapper for less than a decade, says he once sold hides for $28.50 a linear foot but now can hardly find a bulk buyer.) Plus, Stephens explains, he and others in the sector fight the perception that "you trappers are getting rich off the hides," as he says a state politician put it to him once. He showed the legislator his mileage logs for nuisance calls. At a cost of nearly $200 per gator, Stephens says he was much closer to breaking even than getting rich from trapping.

Alongside the nuisance alligator program is a statewide gator hunt, which is designed to help manage the population but also generates real revenue for the state. The wildlife commission issued more than 6,000 harvest permits in 2017, when roughly 6,200 alligators were killed. (Each permit allows a hunter to take two gators.) A resident permit currently costs $272 (out of state permits run to $1,022), and the statewide hunt generated about $1.8 million last year. Perhaps more of that funding could go toward compensating trappers, although any change to the stipend amount paid to trappers would be up to the state legislature, not the Fish and Wildlife Conservation Commission.

"Ten years ago when I started this," Stephens says, "it was to help provide a needed service and have a little fun. When it becomes a job, it makes it a lot harder to get up at five or six in the morning to go get gators. If I can't recoup my expenses selling my hides, then I might have to think about giving this up."

### MODEL MANAGEMENT

Nuisance trappers face their share of challenges with the alligator market, but the fact that trappers can sell their catch at all is an exception in the world of game animals. When Europeans first arrived to North America, they encountered a thickly forested continent teeming with wildlife. Settlers treated game like an open-access resource, with predictable results. By the 19th century, market hunting and trapping had compounded habitat loss from clearing land for agriculture and development to decimate species ranging from bison to passenger pigeons to beavers. With game populations in decline, the North American Model of Wildlife Conservation emerged with a distinct

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In a 21st-century context of abundance, some have started to question whether, from a wildlife management perspective, it still makes sense to shun markets.

pillar: eliminating markets for game and wildlife products. (See Shane Mahoney on p. 10 for more background on the model.)

Early conservationists and sportsmen played an influential role in developing the model. A 2012 report published by the Wildlife Society and the Boone and Crockett Club, for instance, describes actions taken by members of the New York Sportsmen's Club: "At a time when there was limited or no government oversight on wildlife, they drafted, led efforts to enact, and enforced the first game laws directed against market hunting." States eventually established hunting licenses, seasons, and bag limits in recognition that treating wildlife as an open-access resource was sure to lead to extirpations, if not outright extinctions. In 1900, the last known wild passenger pigeon was shot in Ohio. That was the same year that Congress passed the Lacey Act, which "effectively made market hunting illegal nationwide and remains the most powerful legal tool to combat this activity," as the report put it.

Over the next century, the model helped recover many wildlife populations—but in some cases it might have been too successful. The deer population in North America has skyrocketed from a few hundred thousand at the beginning of the 20th century to perhaps 30 million today. (See Jim Sterba's essay on p. 26 exploring the many challenges presented by this trend.)

In a 21st-century context of abundance, some have started to question whether, from a wildlife management perspective, it still makes sense to shun markets. After all, there have always been salient exceptions to the no-commercialization tenet—notably when it comes to fur-bearing species such as beavers and mink. Historically, the model has permitted trappers to commercialize the valuable furs of such species.

"If the modern system of regulations and law enforcement is enough to guarantee that fur can be taken sustainably," Chris Madson, retired from the Wyoming Game and Fish Department, has written, "then I struggle to understand why it can't regulate the market in other wild animals." Even the Wildlife Society report acknowledges that "where overabundant game species such as white-tailed deer and Canada geese result in human-wildlife conflicts, and where the opportunities afforded sport hunters have proven inadequate to meet population goals," regulated markets could provide incentives for "implementing population control and mitigating conflicts."

That's basically the approach that Australia has taken to manage its estimated 50 million kangaroos, which damage crops, forage pastures, and destroy fairways across much of the country. Licensed cullers are permitted to hunt 'roos and sell their game products to processors and distributors. In recent years, the kangaroo market has evolved and broadened, as *National Geographic* recently reported: "Global brands such as Nike, Puma, and Adidas buy strong, supple 'k-leather' to make athletic gear. And kangaroo meat, once sold mainly as pet food, is finding its way into more and more grocery stores and high-end restaurants." Australia sells kangaroo products to more than 50 countries and earned $29 million in exports from the animal products in 2017.

In a 2012 article in the *Wildlife Society Bulletin*, seven wildlife researchers proposed using "commercial deer harvest licenses" to help manage out-of-control herds in the United States. "Regulated commercial harvest would help state wildlife agencies manage overabundant populations of white-tailed deer and allow hunters to sell all or parts of harvested deer," the researchers wrote. That's not so different to the approach taken with kangaroos in Australia, or to alligators in Florida given that hunters can market the meat and parts from their quarry. Vaughn, the nuisance trapper and game processor, has felt the effects of a down hide market, but he also does brisk business selling alligator meat to restaurants and other buyers. Last fall, he even sold a few hundred pounds of gator sausages to Florida State University's football stadium before the rivalry game—against the Florida Gators, naturally.

Sutton, the wildlife commission director, notes that the North American Model emerged during a different era—a time when bison were being slaughtered indiscriminately on the plains. "At some point," he says, "when an animal has gone from protected to virtually nuisance, then the rules should change." In Florida in the 1980s, it was clear that had to happen with alligators. Once they had recovered and been removed from the endangered species list, everyone could see that something would have to be done to control nuisance gators and manage the population. Today, perhaps wildlife managers could benefit from more experiments to help wrangle other abundant species, whether whitetail deer, geese, wild hogs, or anything else. If markets can work for alligators, kangaroos, and fur-bearing species, then surely there are other opportunities for them to improve wildlife management in the 21st century.

**Tate Watkins** is a research fellow at PERC and the managing editor of *PERC Reports*.


# The Limits of the Public Trust Doctrine

## Does the public trust doctrine apply to wildlife conservation?

BY JAMES L. HUFFMAN

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**Among the many ambitions** for a revived and expanded public trust doctrine has been a call for its application to wildlife and wildlife habitat. A 2010 report published by the Wildlife Society, titled "The Public Trust Doctrine: Implications for Wildlife Management and Conservation in the United States and Canada," is illustrative. The first sentence asserts: "The Public Trust Doctrine, with its origin in Roman civil law, is an essential element of North American wildlife law."

But asserting something does not make it so. With rare exceptions, courts have declined to extend the public trust doctrine to upland wildlife and their habitat. As a matter of law, a major challenge for those advocating application of the doctrine to wildlife (beyond fish in navigable waters) is overcoming the narrow precedent of the much more limited common law precedent.

Applying the public trust doctrine to wildlife or its habitat would have major implications. For one, it would effectively create a public easement on private property in the same way the common law recognizes a public easement over and on privately owned submerged and riparian lands on navigable waters. Such a shift in the law would upset long-settled expectations, result in a massive taking of private property, and create a powerful disincentive for private wildlife conservation initiatives.

### THE PUBLIC TRUST DOCTRINE

The public trust doctrine has its origins in English law and was later applied in the North American colonies as well as part of the common law by the individual states after the American Revolution. Historically, the public trust doctrine guaranteed a public right to commercial navigation and fishing on navigable waters. Over the past few decades, however, courts in several states have expanded the doctrine beyond its historical reach. But despite frequent proposals to apply the doctrine to upland resources, including wildlife, those expansions have been limited to public uses of waters.

The rights guaranteed by the public trust doctrine are understood to have existed from time immemorial. As a result, judicial expansions of the doctrine have the effect of curtailing vested private property rights. Takings claims under the Fifth

Amendment to the U.S. Constitution (and under similar provisions in every state constitution) are thus circumvented because the private rights are, by definition, subject to the theoretically preexisting public rights.

Broadening the set of preexisting public rights protected by the doctrine dramatically expands the scope of regulation. What might have been considered a regulatory taking—in which the value of someone's property is diminished as a result of regulation—is rendered a case in which the property owner never possessed the right claimed to be taken. If property owners never had a right to exclude those seeking access to such resources, for example, there can be no taking when the government enforces that public right.

In addition, an expanded public trust doctrine would impose affirmative duties on government to act for the purpose of protecting public rights. Failure of governments to meet such duties can, in turn, result in enforcement actions in the courts. Thus, an expanded public trust doctrine increases the power of the courts and puts courts in the position of overriding the actions of the legislative and executive branches of government.

For advocates of a broader government role in the conservation and management of wildlife, the public trust doctrine thus holds great promise—as long the historic doctrine can be expanded beyond what legal scholar Joseph Sax called its "historical shackles." It expands the power of government, imposes duties of government to exercise those powers, and eliminates the costs of defending against or compensating for takings claims.

## THE MYTH OF STATE OWNERSHIP

But, in fact, the assertion that the public trust doctrine applies—or should apply—to wildlife rests on shaky legal ground. A familiar argument in favor of applying the public trust doctrine to wildlife has been that states own wildlife on behalf of the public. But the argument is founded on a mistaken understanding of the law relating to ownership of wildlife. Under the common law, wildlife is considered *res nullius*—meaning it is unowned until it is captured and reduced to private possession. Thus, living wildlife species are neither owned by the state nor by private individuals.

The concept of state ownership emerged from several state statutory and constitutional declarations of public or state ownership. It was encouraged by dicta in the 1896 U.S. Supreme Court case of *Geer v. Connecticut* but later dismissed in 1948 in *Toomer v. Witsell* "as but a fiction expressive in legal shorthand of the importance to its people that a State have power to preserve and regulate the exploitation of an important resource." In 1979,

Over the past few decades, courts in several states have expanded the doctrine beyond its historical reach. But those expansions have been limited to public uses of waters.

the Supreme Court overruled *Geer* in *Hughes v. Oklahoma*, stating that "the general rule we adopt in this case makes ample allowance for preserving . . . the legitimate state concerns for conservation and protection of wild animals underlying the 19th-century legal fiction of state ownership."

Thus, the states' authority with respect to wildlife derives from their police power, not ownership, and is therefore limited by the constitutional enumeration of federal powers and the constitutional protections of private property. Clearly, states can regulate the hunting of wildlife, including on private lands, but they cannot impose regulations that would result in an unconstitutional taking of those lands. Correspondingly, private landowners can prohibit and permit access to their lands by hunters, just as they can control access for any other purpose, with very narrow exceptions.

Thus, the concept of the "public trust" imbued in the North American Model of Wildlife Conservation is only tangentially related to the common law public trust doctrine. Both have to do with the public's interest in the use and conservation of natural resources. But in the case of wildlife, the public merely "trusts" that its interests in wildlife conservation will be advanced, like all other democratically declared interests, by a responsible and accountable government; whereas the public trust doctrine recognizes public rights in the form of easements on navigable waters and their associated submerged lands. The public trust of wildlife conservation is enforceable only at the ballot box. The public rights guaranteed by the public trust doctrine are enforceable in the courts.

## PUBLIC VS. PRIVATE MANAGEMENT

The usual case for expanding the public trust doctrine to include upland wildlife and habitat is based not on an assertion of state wildlife ownership, but rather on a presumption in favor of public management of those resources. But even assuming that public wildlife managers have all the best knowledge and tools, a purely public management approach is destined to fall short in a nation in which 60 percent of the land is privately owned

A negative consequence of the Montana Supreme Court's ruling in the Mitchell Slough case was that the landowners had less of an incentive to invest in maintenance of the fishery and wildlife habitat.

(ranging from 98.5 percent in Rhode Island to 4.2 percent in Alaska). Private lands provide vast areas of wildlife habitat and have the capacity to provide much more if they are provided the right incentives to do so. A presumption of exclusive public management and a public trust doctrine that implies unlimited state authority to regulate on private lands has the opposite effect—it gets the incentives for private landowners wrong.

Take the case of the Mitchell Slough, located adjacent to the Bitterroot River in western Montana. For a century, private owners of the lands on which the slough is located invested in various improvements to create a reliable supply of water during the irrigation season. No one questioned that the private landowners had exclusive access to the slough's waters and could exclude others from their lands. Beginning around the turn of the 21st century, some of the farms on the slough were acquired as vacation properties, and the new owners continued to invest in maintaining and improving the flow through the slough—but now for the purpose of providing habitat for fish and other wildlife. As the fishery in the slough improved, members of the public ventured off the Bitterroot and onto the slough in pursuit of better fishing. When the slough's owners sought to exclude the public as trespassers on their private land, controversy over access to the waters eventually led to a 2008 case in the Montana Supreme Court.

In *Bitterroot River Protective Association v. Bitterroot Conservation District*, the Montana court ruled that the public does have a right of access to the Mitchell Slough. Although the ruling held that the Mitchell Slough is a "natural body of water" under the state's Stream Access Law of 1985, the outcome was firmly rooted in the Montana Supreme Court's earlier decision in *Montana Coalition for Stream Access v. Curran*. That decision held that "under the public trust doctrine and the 1972 Montana Constitution, any surface waters that are capable of recreational use may be so used by the public without regard to streambed ownership or navigability for nonrecreational purposes." The ruling constituted a massive expansion of the historic common law doctrine, in terms of both waters and lands affected and uses to which the public has a right.

An obvious negative consequence of the Montana Supreme Court's ruling in the Mitchell Slough case was that the landowners had much less of an incentive to invest in maintenance and improvement of the fishery and wildlife habitat. Although they could still exclude the public from accessing the slough across their lands, they could not preclude access from the Bitterroot River nor manage fishing practices, even though they continue to own the lands underlying and adjacent to the slough. The landowners would have no more incentive to invest in a fishery freely available to the public than to invest in crops and livestock that could be harvested by any passerby. Of course, a cruel irony in this result is that the privately financed improvement of the Mitchell Slough benefitted the fishery in the Bitterroot River, to which the slough is connected and to which the public always had a right of access under the historic public trust doctrine.

## JUDGE-MADE LAW?

It is well settled that state governments, exercising their police powers, and the federal government, within its constitutionally enumerated powers, have authority to regulate the taking of wildlife on private lands. These powers are exercised at the discretion of state legislatures and Congress, subject to the limitations imposed by state and federal constitutional guarantees of due process, equal protection, and just compensation for takings of private property. To the extent laws enacted pursuant to these regulatory powers are thought to be inadequate—because of either political or constitutional obstacles—some wildlife-conservation interests have advanced theories that would circumvent both politics and the Constitution. An extension of the public trust doctrine to upland wildlife would establish senior public rights and thus render takings objections moot—the government cannot take what the individual does not own. An expanded public trust doctrine also circumvents political opposition by shifting decisions from legislatures to the courts.

The usual justification for judicial expansion of the public trust doctrine is that common law courts have always had authority to adapt the law to changing circumstances and evolving public values and priorities. The common law is often referred to as judge-made law. But the common law has never been judge-made law in the same sense that statutory law is made by legislatures. Legislatures have authority to pass, amend, or repeal whatever laws a majority supports—in other words, to

Bitteroot River near Victor, Montana



make public policy. Common law courts do not have authority to make public policy. Rather they are in the business of translating the customs and practices of society into concrete rules for application in particular cases, subject to the authority of the legislature to limit, repeal, or replace those rules. As social customs and practices change over time, common law courts have adapted their earlier precedents accordingly. But with rare exceptions, common law courts have not purported to have the authority to amend the law on the grounds of their or others' policy preferences.

This historic distinction between the legislative and judicial roles is particularly important where a constitutional separation of powers exists. Even if the English common law courts occasionally took it upon themselves to enact new laws from whole cloth, American state and federal courts are constrained by the constitutions under which they were created. Although there is not always a clear line between judicial lawmaking and judicial adaptation of the law to shifting custom and practice, there can be little argument that application of the public trust doctrine to wildlife constitutes judicial lawmaking in violation of the separation of powers. It also constitutes an affront to representative democracy, particularly in the federal system and in those states where judges are not elected. Surely elected legislatures have better authority than courts to speak for the public and declare what constitutes the public interest.

Putting aside these principled, constitutional objections to judicial expansion of the public trust doctrine, an activist, lawmaking judiciary undercuts the rule of law and thereby upsets the legitimate expectations of those regulated by the law. Property owners have only the law and the goodwill of their neighbors to rely upon in making investments, including investments in wildlife conservation. As the Mitchell Slough case makes clear, judicial expansion of public rights in the name of the public trust doctrine upsets expectations based on preexisting rules and can discourage future investments in wildlife habitat improvement and protection—a prospect that should unsettle wildlife advocates of all persuasions.

**James L. Huffman** is dean emeritus of the Lewis & Clark Law School and author of the books *Private Property and State Power* and *Private Property and the Constitution*.

# A Lesson from Africa

## How Namibia is a lens for thinking about local control of wildlife

BY TODD WILKINSON

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**Last winter, two renowned** conservationists from Namibia—Garth Owen-Smith and Dr. Margaret Jacobsohn—came to Montana and offered a perspective that left some Americans believing they were speaking heresy.

The message: Public wildlife in southwestern Africa was rescued from the brink of decimation by removing federal controls over animal and plant management and ceding it over to the authority of local tribal entities.

Achieved through the creation of "communal conservancies," the bold strategy, endorsed even by World Wildlife Fund, allows rural communities adjacent to federal protected areas to more directly capitalize on wildlife by selling lucrative sport hunts, partnering with eco-tourism companies that cater to non-consumptive viewing of animals, and permitting harvest for purposes of daily subsistence.

As Jacobsohn told an audience at the Museum of the Rockies in Bozeman, unless people who co-exist with animals every day regard them as valuable assets, not liabilities, the survival of wildlife will always be in jeopardy.

For many in the Greater Yellowstone Ecosystem accustomed to seeing conservation victories achieved only through strict federal regulation and government agencies forcefully playing a role in stewardship, it seemed counterintuitive.

A decade earlier, Christopher Joyce, a reporter with National Public Radio, traveled to Namibia and looked into the pioneering paradigm Owen-Smith and Jacobsohn were instrumental in bringing to Namibia called Integrated Rural Development and Nature Conservation. Joyce interviewed a cattle herder named Elias Neftali who for years had battled lions, cheetahs, and other predators preying on his livestock. He realized that he and his neighbors could prosper more by carefully monetizing wildlife.

"There are others like Neftali, people who have left raising livestock to participate in a radical experiment in Namibia: helping wildlife survive by putting their fate in the hands of the

people who share their lands," Joyce observed. "It's as though the U.S. government said to the people who live around Yellowstone National Park, 'You know what? All those wild animals in the park—the grizzlies, the bison, the wolves—they belong to you.'"

Now, decades into the program, the arrangement is far from perfect and is highly controversial for some, but the statistics speak for themselves, Owen-Smith said.

Elephant numbers have risen in Namibia from about 7,500 in 1995 to an estimated 23,000 in 2018. Today, Namibia is also home to the largest free-ranging numbers of critically endangered black rhino, which in 1980 were on the verge of extinction in the wild. Rhinos are under constant threat by poachers, yet when they are regarded as village assets, their gauntlet of home-grown game-guard protectors has proven to be more effective than just relying on government rangers.

Namibia became a country in 1990. It is, like all nations located in the wildlife-rich southern horn of Africa, reeling from the after effects of European colonization, which resulted in political boundaries and jurisdictions of nation states that do not conform to original tribal homelands.

"In the 1970s, the plague of poaching became an epidemic, and by the 1980s there was very little wildlife left," Owen-Smith says.

Namibian community conservation has produced "the greatest modern conservation story in Africa," some observers say. While systems of federal protected areas have arisen to safeguard iconic species, local communities situated adjacent to parks often did not reap the benefits of international eco-tourism dollars flowing into the region.

Over the past 25 years, nearly 100 communal conservancies have sprung up, bringing a different way of approaching conservation to nearly a quarter of Namibia's land mass and making rural people stakeholders.

In 1982, populations of oryx, springboks, and zebras were reduced to a few hundred in the Kunene region—home to the Himba ethnic group and herding culture. Today, oryx number in the tens of thousands, springboks in non-drought years at upwards of 200,000, and zebras at more than 15,000. In turn, they support healthier populations of lions, leopards, and cheetahs.

Mike Sutton today oversees the Goldman Environmental Prize—considered the Nobel of global wildlife conservation—which was awarded to Owen-Smith and Jacobson in 1993. Sutton previously worked in Africa as a senior strategist for World Wildlife Fund, worked on anti-poaching investigations for the U.S. Fish and Wildlife Service, and served on the California Fish and Game Commission.

He knows that trophy hunting is increasingly a controversial topic, with western animal rights activists condemning it as immoral and anachronistic in the 21st century. However, Sutton says, under the community conservation model in Namibia, it's generated millions of dollars for local economies and provided incentives for locals to protect wildlife.

"Without trophy hunting there would be no wildlife. But trophy hunting is just one of several different ways to put a financial value on wildlife in areas where photo-tourism is insufficient to make a difference," Owen-Smith told me.

Tourism needs to generate income for people who live with or near wildlife, and importantly, to cover the costs of living with wild animals, Owen-Smith said. "What wild animals need most of all is land. In some instances, in several parts of Africa, trophy hunting is all that prevents wild habitat from being used for farming or mining," he noted. "So yes, at this stage we need trophy hunting. Wildlife has to be valuable to rural people, not just financially, but also socially and culturally."

Owen-Smith and Jacobsohn refrained from weighing into the topic of whether Greater Yellowstone grizzly bears should be sport hunted once they are removed from federal protection.

With non-consumptive wildlife viewing of bruins and wolves in Yellowstone and Grand Teton national parks contributing to an estimated $1.3 billion in annual nature-tourism revenue for the region, he believes Greater Yellowstone is leading the way in showing that those species are worth more alive than dead.

Still, on the private lands surrounding the park, the challenge remains how to promote habitat protection for elk, deer, pronghorn, and other species and to engender tolerance for bears and wolves.

What Owen-Smith, Jacobsohn, and others have done is forced proponents of conventional wildlife protection and the North American Model of Wildlife Conservation to broaden their thinking, Sutton says. "The United States may have given the world the idea of national parks like Yellowstone," Sutton noted. "But what Garth and Margie fostered in Namibia has since been carried out all over the world and is sorely needed in rural America today—that is landowners realizing economic benefits and being rewarded when environmental stewardship is carried out."

**Todd Wilkinson** is a journalist based in Bozeman, Montana. He is the author of *Last Stand: Ted Turner's Quest to Save a Troubled Planet* and *Grizzlies of Pilgrim Creek, An Intimate Portrait of 399, the Most Famous Bear of Greater Yellowstone.*

# The Vegetarian's Dilemma

## Can the North American Model incorporate more non-hunters, like me?

BY JONATHAN WOOD

**I have a confession to make**. I'm one of the challenges to the continued success of the North American Model of Wildlife Conservation that you've been reading about in these pages. The grandson of an avid hunter and son of a lifelong fisherman, I'm an urban-dwelling vegetarian with no interest in either activity. To put it bluntly, I'm not even one of the "swing voters" that Brian Yablonski appeals to (p. 18) earlier in this issue.

Yet there's an inherent irony to being a non-hunting conservationist. The benefits I receive from viewing wildlife—or simply knowing wild animals exist—are due, in significant part, to conservation efforts undertaken or funded by hunters and anglers.

Hunting has been critical to the North American Wildlife Model, as both a management tool and source for conservation funding. As the number of hunters continues to shrink, as it has for decades, how will we continue to pay for the wildlife you and I enjoy?

Fortunately, the decline in hunting does not reflect a decline in our interest in wildlife. The same U.S. Fish and Wildlife Service survey that found the ranks of hunters has declined by 16 percent from 2011 to 2016 also found a 20 percent increase in the number of people engaged in wildlife watching. Can these and other non-hunting conservationists be incorporated into the model?

One obvious difficulty is that we non-hunters cannot be excluded from the wildlife benefits we enjoy as easily as hunters can. By requiring hunters and anglers to purchase a license or permit, sportsmen can't hunt or fish without paying into the conservation coffer.

But how do you effectively exclude people from observing wildlife in their own neighborhoods or in public spaces? Or, to make the challenge even harder, how do you reach people who primarily enjoy wildlife for its existence value—the joy of simply knowing that there are wild bears and caribou in Alaska even though they may never see them?

> Markets can help incorporate conservationists like me into the model by empowering us to express our values while also contributing directly to conservation.

Assigning a value to these non-use benefits is difficult, but we can be reasonably confident that it is a large number. In 2016, Americans spent $75 billion on wildlife watching, compared to just $26 billion that was spent on hunting. But, due to license fees and taxes levied on hunting equipment, the latter contributed more to conservation.

Markets can help incorporate conservationists like me into the model by empowering us to express our values while also contributing directly to conservation. Consider the response to Wyoming's planned grizzly hunt after the Greater Yellowstone Ecosystem grizzly was declared recovered under the Endangered Species Act—a determination which is the subject of ongoing litigation. Outraged, non-hunting conservationists from the "Shoot 'em With a Camera—Not a Gun" campaign sought hunting tags with no intention of using them. Their aim, instead, was to block someone else from harvesting a bear.

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The rallying cry for this effort was that grizzlies are worth more alive than as trophies. I tend to agree, but the true test would be to allow hunters and non-hunters to bid against each other. Competitive bidding would not only reveal these values but would also generate revenue to fund additional conservation efforts.

It would also allow more of us to contribute to management efforts that could reduce the unintended side effects of abundant wildlife populations. As Jim Sterba (p. 26) and Tate Watkins (p. 32) describe elsewhere in these pages, the North American Wildlife Model has been so successful that many formerly depleted species are now abundant, perhaps overly so. This has consequences not only for the environments these animals occupy but also for surrounding communities.

Most would probably agree that an alligator in an apartment pool is a dangerous nuisance that should be avoided. But the foxes that roam my neighborhood and the deer that may roam yours can be more difficult to assess.

Living near abundant wildlife holds great appeal, as demonstrated by the dramatic increase in people living in the wildland-urban interface. By one estimate, 60 percent of all new homes built since 1990 have gone up in such areas. But abundant wildlife comes with a cost, whether it's altering ecosystems in ways we'd prefer to avoid, damaging property, or spurring negative human-wildlife interactions. If all of us who enjoy the benefits of wildlife also felt these costs, we would have greater incentives to support effective management measures, including hunting.

PERC has long explored the possibility of expanding the pay-to-play concept to outdoor recreation. As much as folks like me have enjoyed the free ride sportsmen have given us, we have a lot to gain from bearing more of the cost of managing wildlife. If hunters pitch in through taxes on their equipment, why shouldn't the proceeds from our backpacks, binoculars, and other gear also contribute? (Outdoor industry groups so far have resisted such efforts.)

More of us giving our fair share for the benefits we enjoy will help preserve the wildlife and ecosystems we cherish. It could also improve the incentives to conserve a more diverse array of species, including non-game species.

The modern conservation community is diverse. Yet conservation is largely dependent on a subset of us: sportsmen. To build on the success of the 20th century's North American Wildlife Model, we should build a 21st century version that asks more of us to contribute to advancing the wildlife values we all share.

**Jonathan Wood** is a research fellow at PERC and an attorney at the Pacific Legal Foundation.

PERC
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