**The Grizzly Beat**

 **Episode 17**

 **Transcription**

 **Dr. Adrian Treves**

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Louisa Willcox: Welcome to the Grizzly Beat. This is Louisa WIllcox and we're here today with Dr. Adrian Treves, who’s an Associate Professor of Environmental Studies at the University of Madison in Wisconsin. His research focuses on finding a balance between human needs and those of large carnivores. He’s an investigator whose research includes attitudes and behaviors of people who live alongside large carnivores. And thank you for being with us today.

Adrian Treves: Thanks Louisa. It’s a pleasure.

L: So Adrian, maybe you can start a bit about how you became interested in large carnivores -- and maybe before that, even monkeys and other primates, which you’ve worked on.

A: Yeah, so I started out fascinated with predator-prey interactions among monkeys and apes and human ancestry. And that took me to an interdisciplinary program in my years and then graduate school. And when I came to University of Wisconsin at Madison, I was lucky enough to find myself working on a wolf project and never really looked back. I found my training in predator-prey ecology translated really well to understanding interactions between wolves and livestock, and my training in some anthropology also helped me understand the human dimensions of wolf conservation.

L: Great. So you’ve done some interesting recent research -- and I’d like you to talk about a paper that you did with a couple of your colleagues on the effectiveness of conflict reduction methods for large carnivores -- finding some surprising results that most techniques to reduce livestock depredations by species like wolves and mountain lions have not been rigorously evaluated. At least the lethal ones, some sponsored by the federal government, actually wastes resources and makes conflicts worse. Can you explain what you found, and what some of the implications are for managers?

A: Sure thing, Louisa. So my colleagues Miha Krofel and Jeanine McManus and I published a paper on September 1 in the Journal "Frontiers in Ecology and the Environment. We looked at all of the research published in peer reviewed journals from North America and Europe ever since such studies began to be published, so going back over 40 years -- and we were actually quite surprised at the fairly low level of standards of scientific evidence that had been published, and were therefore being used when governments promoted certain kinds of predator control methods.

So, just to be clear, we didn’t find that many studies that used what we’d call “gold standard” or “silver standard” research experiments. "Gold standard" means that they randomly assigned the treatment that is the predator control method, and they randomly assigned the control or the placebo. Very few studies used those methods and very few survived our rigorous screening for flaws in research design.

In fact, over all those years across two continents we only found two studies that met that "gold standard." Both were studies of non-lethal methods. One of livestock guarding dogs, and one of a visual deterrent called "fladry," which consists of hanging flags at regular intervals across a fence line. Both of those studies used "gold standard" experiments with random assignments for control and treatment, and both found those non-lethal methods to be effective.

So another thing that surprised us was that we did not find any "gold standard" experiments on lethal methods that met our screening criteria. All the ones that have been published had serious flaws in the design that prevented us from making a strong inference about the effectiveness of the lethal methods they tested. So, one of the take-home conclusion of our study is that the scientific community and governments really need to step up, and meet the standards that are accepted worldwide for good experiment design for accepting the evidence from experiments.

We just borrowed what lessons had been learned from the bio-medical research community. When they do clinical trials on a new medicine, it’s absolutely essential that those clinical trials include that "gold standard" of random assignment to the placebo or to treatment. Otherwise the experiments are subject to bias and confounding variables.

So, since we only found two of these gold standard experiments, we relaxed our standards a little bit and accepted what we called silver standard experiments, which are before and after comparisons. So for instance, a livestock herd before any kind of intervention occurs is then compared to that same livestock herd after the intervention occurs -- and the intervention could be a non-lethal method or it could be a lethal method.

When we relaxed our standards a little bit and accepted the "silver standard" of those before and after comparisons, we actually found ten studies that met our rigorous criteria. Seven of them were lethal methods and three were non-lethal methods. And that’s when the second surprise result came out. The take home message being that all seven of those lethal methods were only "silver standard," that means they’re a weaker inference -- we can only draw weaker inferences from them -- and the majority of those recent studies of lethal methods found no effect or a counter productive effect of increasing livestock loss. That led me and my authors to recommend a moratorium or a suspension of lethal methods until the "gold standard" experiments are completed.

And that’s because lethal methods are not just costly for taxpayers, but they may be wasting the livestock owner’s time and needlessly causing harm to carnivores and to livestock. That’s a concern because obviously livestock owners deserve methods that are proven to be effective. And secondly, wildlife belong to all of the people and to future generations of U.S. citizens and the same goes for Canadian citizens. That’s a principle of the Public Trust Doctrine in the U.S. that wildlife belong to all of the public and to future generations. So lethal methods are actually costing taxpayers money and costing us the wildlife that belong to all of us.

L: So Adrian, on that point about the public trust, you have written a lot on the topic with a focus on large carnivores and the government's responsibilities to protect the interest of all of its beneficiaries, including those who are not born yet. And you’ve written that "future trustees will never prevail against narrow powerful undemocratic interests." Can you explain what you mean by this and more broadly your concerns about the public trust?

A: Yeah, I think Louisa, I meant to add to that phrase that future trustees need the support of all of the branches of government if they wish to prevail against narrow and powerful special interest groups -- those that are moneyed or influential will always try to sway the political process in their favor. And when it comes to wildlife and large carnivores, that would mean that a narrow interest group view and opinions and preferences would dominate those of the nation as a whole and of future generations. And that’s simply undemocratic and unjust. And therefore it’s really prudent for legitimate trustees of the future, they are going to need the help of all branches of government stepping up to the plate and serving their constitutional duties to uphold the public trust for current and future generations. That’s what I meant by that phrase.

L: Well, thank you. Adrian you’ve also done a lot of work on social tolerance related to predators, including jaguars and wolves and bears and such, resulting in a challenge to the conventional view that intolerance of predators was the result of threats to livelihoods. Rather, you found tolerance was more related to social factors, like peer group norms and government sanctioned predator killing. Maybe you can explain your views on that.

A: In 2014, Jeremy Bruskotter of the Ohio State University and I published a piece in *Science* examining the evidence for what causes tolerance for large carnivores of all kinds like you said jaguars, wolves, bears, lions, what have you, even coyotes. And what we found was that the evidence was not very strong that economic concerns dictated peoples' tolerance for those animals. What we found instead was evidence that the social, the peer group pressures -- whether they are positive or negative towards carnivores -- influenced individual tolerances, and that government policies could even more than the individual experiences of living with those carnivores.

So what does that mean in common English terms? It means that a lot of the people we surveyed, and other researchers have surveyed, actually report liking or disliking carnivores in ways that’s not predicted well by their individual experience or their economic status, their livelihoods, but is rather predicted by which identity group they associate with, their social context, or the government policies in which they’re embedded.

L: So hunting of large carnivores is a big topic these days and a controversial one. And it’s believed by some to prevent property damage and other conflicts with people, yet few studies have tested if hunting actually has that effect. And one study that you did on whether hunting of black bears in Wisconsin affected agricultural damage. And you concluded that hunting did not significantly reduce complaints. Perhaps you can explain what you found.

A: Yeah, so this ties into the previous study on predator control. I feel confident in saying that there is zero evidence currently that hunting carnivores will reduce predation on livestock. And by hunting, I mean permitted public and regulated hunting and trapping seasons that we see in North America and Europe. Those campaigns for public hunting and trapping do not appear to prevent livestock loss. And in many cases, they can increase it.

What we found in black bears in Wisconsin was slightly different because we were looking at those agricultural damages and nuisance complaints, and we found again no evidence that public hunting of bears in Wisconsin was not associated with a decline in those complaints or agricultural damages the following year, and in fact there was a tendency possibly for an increase in those damages and complaints in the following year.

A similar study of black bears in Ontario suggested the same pattern. So we need, again, "gold standard" tests and "silver standard" tests of these ideas across the world to be sure that this applies to agriculture and nuisance complaints. But it suggests right now that hunting carnivores is serving kind of a narrow interest group. A preference for sport and recreation and trophies that isn’t shared by broader society in Canada and the U.S.A. and that governments should not be promoting that as a way to manage conflicts with people, conflicts between large carnivores and people. That it should be managed very strictly and in a much smaller scale as one particular user group, private interest in the use of carnivores -- not as a public service, because we’re not finding evidence that it protects farmers in any of the ways that have been proposed.

L: So speaking perhaps a bit more about your work on human-wildlife conflict reduction success, successes you’ve had in reducing conflicts or you’ve measured. You’ve done extensive work in South America and Africa and the U.S., what do you think are some of the key ingredients of successes?

A: I think government plays a key role in sending out messages and policy signals that indicate it’s a priority for society to preserve these very important species like large carnivores -- whether it’s wolves in Wisconsin or lions in East Africa. It’s super important that the government is sending a positive signal about the role these organisms play in ecosystems and the many positive benefits that members of society derive from the existence of these animals, even if they never see them in the wild. We need people to value knowing that they exist. There are many people who find spiritual or aesthetic value. We all forget the non-consumptive tourism value and benefits, as well as all the traditional benefits wildlife users have enjoyed from the presence of these organisms.

So, once governments send the right positive signal, I think you’re going to find a lot of successes in local conservation. When local groups partner with landowners and with residents and visitors to areas, that can maximize the benefits people are gaining from the presence of large carnivores on the landscape.

And if I could expand on one of the topics we’ve been talking about Louisa, sometimes government missteps and sends a negative signal about carnivores. And for instance, what happened here in the Great Lakes and Wisconsin and the neighboring states Michigan and Minnesota was that pretty much undiluted negative messaging about wolves was being spread by the government and by the media. And what we saw as a consequence, or what we think is a consequence of that, is that tolerance for wolves in the general public declined. We surveyed over 2,500 residents of Wisconsin over the years and just saw steady decline in tolerance for wolves over time. Even though the government was culling wolves and saying that culling wolves would increase tolerance, we saw the opposite.

And then in 2012, the state of Wisconsin declared the first-ever public hunting and trapping season. There were permits on the wolves, and so we measured tolerance again because public hunting is supposed to increase tolerance for wolves and grizzly bears, because supposedly hunters in local communities will feel, they’ll have a dividend, they’ll have a stake in the success of the game species. But in Wisconsin at least, we found tolerance for wolves continued to decline especially among males who had familiarity with hunting and lived in Wisconsin’s wolf range.

So right now we’re recommending against killing as a means of increasing tolerance and that particular result further enhanced by a study I did with Guillaume Chapron of the Swedish Uppsala University, where we looked at the population growth of wolves when the government had authority to cull wolves and when it didn’t, in order to test this proposal that the government made in federal court in 2006.

In 2006, the Fish and Wildlife Service argued in federal court that they needed to be able to issue permits so the state containing wolves, so the states could kill those wolves when they were implicated in livestock losses. And the Fish and Wildlife Service argued that without that permit to kill wolves, poaching would increase and populations would suffer. So we tested that idea and we found no evidence in support of it. In fact we found some evidence that poaching would actually increase and further slow population growth.

So right now in conclusion were suggesting a complete overhaul of these long held and untested assumptions about killing carnivores. They don’t seem to work the way we think and have thought for years, and it’s time to take stock of the best available scientific evidence and adjust policies accordingly.

L: Absolutely. So you’ve touched on the government’s role in these debates, but you’ve also focused in your work on citizens' role and the engagement in government processes related to large carnivores. Maybe you could talk a little bit about what successful engagement looks like in your view.

A: Successful engagement by the public and by citizen groups takes many forms depending on local conditions. In some cases, one has the go to litigation in courts, because every other avenues been explored and exhausted and hasn’t yielded the protections for wildlife that’s demanded by the U.S. Public Trust Doctrine. So there’s certain groups in the status quo that think litigation is a "poison pill" but in fact it’s an arm of our democratic government, the balance of powers between the three branches of our government. The judiciary is sometimes the final defender of the constitution and defends minority interests against tyranny of the majority, so that’s one way that public and civilian action can manifest to help protect carnivores.

But there’s also the many, many local efforts to work closely with governments, to support them through citizen science projects, to support researchers -- independent researchers like myself, working in universities, who are trying to be transparent for the public benefit. And in many ways the public can help by speaking out -- first of all by voting in elections. And second, by supporting ballot initiatives, referenda, supporting candidates who are pro-environment and pro-preservation of wildlife.

L: Adrian at the end of the day, are you hopeful for the future of large carnivores among us and the broader public interest?

A: I am. I am hopeful. I’m optimist generally. And I think we’re seeing a slow revolution, a transition from about a century of one style of wildlife management that is fine for things like elk and deer and ducks, but did not treat our predators properly, did not preserve that public trust, the assets of the future. And we’re seeing a slow revolution, a slow change to a more progressive way of conserving the biodiversity in North America that’s going to live up to the standards of the Public Trust Doctrine as I see it.

L: Well thank you very much. Thank you Adrian, you’re listening to the Grizzly Beat with Dr. Adrian Treves. Appreciate you being here today.