S. HRG. 116–390

SUCCESSFUL STATE STEWARDSHIP: A LEGISLATIVE HEARING TO EXAMINE S. 614, THE GRIZZLY BEAR STATE MANAGEMENT ACT

HEARING

BEFORE THE

COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS

UNITED STATES SENATE

ONE HUNDRED SIXTEENTH CONGRESS

SECOND SESSION

SEPTEMBER 9, 2020

Printed for the use of the Committee on Environment and Public Works

Available via the World Wide Web: http://www.govinfo.gov

U.S. GOVERNMENT PUBLISHING OFFICE

42–801 WASHINGTON : 2023

COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS

ONE HUNDRED SIXTEENTH CONGRESS
SECOND SESSION

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SUCCESSFUL STATE STEWARDSHIP: A LEGISLATIVE HEARING TO EXAMINE S. 614, THE GRIZZLY BEAR STATE MANAGEMENT ACT

WEDNESDAY, SEPTEMBER 9, 2020

U.S. SENATE,
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS,
Washington, DC.

The committee, met, pursuant to notice, at 10:05 a.m. in room 406, Dirksen Senate Office Building, Hon. John Barrasso (chairman of the committee) presiding.

Present: Senators Barrasso, Carper, Cardin, Gillibrand, Van Hollen, Inhofe, Cramer, Braun, Boozman, and Ernst.

OPENING STATEMENT OF HON. JOHN BARRASSO, U.S. SENATOR FROM THE STATE OF WYOMING

Senator BARRASSO. Good morning. I call this hearing to order.

Today, we will consider S. 614, the Grizzly Bear State Management Act of 2019. Senator Enzi introduced this legislation at the beginning of the 116th Congress, and Senator Daines, and Risch, and Crapo and I are cosponsors.

The Grizzly Bear State Management Act delists the grizzly bear in the Greater Yellowstone Ecosystem from the list of threatened species under the Endangered Species Act. It directs the Secretary of the Interior to reissue the final rule delisting the grizzly bear that was published on June 30th, 2017. It protects the reissuance of the final rule from judicial review.

The grizzly bear in the Greater Yellowstone Ecosystem is fully recovered. End of story. It is one of the greatest recovery successes since the Endangered Species Act was enacted in 1973. It is a conservation triumph led by the people of Wyoming, Montana, and Idaho. It is a triumph that all Americans should celebrate.

President Bush, President Obama, and President Trump agree. Under each of their administrations, the U.S. Fish and Wildlife Service determined that the grizzly bear is fully recovered and should be delisted. Wyoming, Montana, and Idaho first achieved all the grizzly bear's recovery objectives in 1997, 23 years ago. By 2003, they had met all of its recovery objectives for six consecutive years, the standard required by the 1993 Grizzly Bear Recovery Plan. The States have met or exceeded all of the bear's recovery objectives ever since.

In 2007, the Bush administration recognized the grizzly bear's recovery when it published the final rule delisting the species. That rule was overturned by a liberal Federal judge based on an envi-

ronmental group's claim that a particular food source for the grizzly bear had not been adequately considered during the rulemaking. The importance of that food source was later debunked in a scientific review by the Interagency Grizzly Bear Committee.

In 2016, the Obama administration recognized the grizzly bear's full recovery when it published a proposed rule delisting the grizzly bear. It concluded: "The Yellowstone grizzly bear population has rebounded from as few as 136 bears back in 1995 to an estimated 700 or more today. Grizzly bears have more than doubled their range since the mid–1970's and now occupy more than 22,500 square miles of the ecosystem." This is the Obama administration saying this.

They went on to say: "Stable population numbers for grizzly bears for more than a decade also indicate that the Greater Yellowstone Ecosystem is at or near its carrying capacity for the bears." This from the Obama administration, 2016.

In 2017, the Trump Administration agreed with the Obama administration's findings. It finalized President Obama's proposed rule delisting the grizzly bear. It also credited the States of Wyoming, Montana, and Idaho with adopting necessary post-delisting plans and regulations that ensured that the species remained recovered under State management.

Yet again, a liberal Federal judge overturned the delisting rule. This time, the judge agreed with a claim by environmental groups of other plaintiffs that even more studies were required.

The grizzly bear in the Greater Yellowstone Ecosystem is one of the most studied animals in the world. Since 1980, 40 years ago, the Wyoming Game and Fish Department has spent more than $50 million in grizzly bear recovery. The States of Montana and Idaho and stakeholders throughout the Greater Yellowstone Ecosystem have invested millions more.

This decades-long commitment of time and resources cannot continue if the States' good work is simply ignored by liberal courts. As the grizzly bear has rebounded, conflicts with humans have increased. Members of Wyoming's Upper Green River Cattle Association have lost over 1,000 head of cattle since 1995. In 2018, the Wyoming Game and Fish Department had to capture 53 individual grizzly bears to prevent or resolve conflicts. These bears not only mauled livestock, but tragically killed a Wyoming elk hunting guide and injured his client.

This year, grizzly bear attacks injuring humans are happening at a record rate. By July 1st, seven people were attacked and injured by grizzly bears in the Greater Yellowstone Ecosystem, more than the first 6 months of any other year since data began being collected in 1992. This is a higher total than six of the previous 10 years, an unsettling trend, since over 80 percent of the conflicts generally occur in the second half of the year.

The Grizzly Bear State Management Act will help address this by giving back to States the authority they need and have earned to manage the grizzly bear. It will recognize the full recovery of the grizzly bear and delist it once and for all. It will honor the conservation investment of people throughout Wyoming, Montana, and Idaho, and improve the public safety of our communities.

I would now like to turn to Ranking Member Carper for his opening statement.

OPENING STATEMENT OF HON. THOMAS R. CARPER, U.S. SENATOR FROM THE STATE OF DELAWARE

Senator CARPER. Thanks, Mr. Chairman.

I want to welcome our witnesses here, our colleagues among them, and begin by saying that I share your concerns about this. There are a record number of human-grizzly interactions that have resulted in serious injury. First and foremost, let me just say that I hope and pray that everyone involved in these frightening encounters is either on the mend or fully recovered.

Over the course of the Coronavirus pandemic, more people have been seeking opportunities to enjoy the great outdoors and visit our national parks. My wife and I visited Delaware's national park over the weekend. It stretches from one end of our State to the other.

Yellowstone is no exception; in fact, nearly one million people visited Yellowstone Park just this past July alone. One million people this past July alone, a 2 percent rise in visitors compared to July 2019. While this rise in visitors may have contributed to the increase in human-grizzly conflicts in Yellowstone Park, experts suggest that there is no straightforward explanation for the record number of encounters. Consequently, there is likely no straightforward solution.

As our Chairman knows, I believe, in the words of our mutual friend Rob Wallace, that bipartisan solutions are lasting solutions, and that is why I always try to reach across the aisle in this committee and others to find common ground on issues like this one. For instance, I am proud of the bipartisan legislation to authorize a new Theodore Roosevelt Genius Prize for reducing human-predator conflict, which is included in America's Conservation Enhancement Act, which we call the ACE Act. The ACE Act also authorizes a new program to compensate farmers and ranchers for losses caused by federally protected predatory species, which would include grizzly bears.

Over the last several weeks, our staffs have collaborated with our House colleagues on the ACE Act. My hope is that we will be able to get that bill on the President's desk for his signature sometime this month, and if the ACE Act becomes law, it could help to spur innovation in preventing human-grizzly conflicts and address farmers' and ranchers' concerns regarding grizzly bears.

Having said that, unfortunately, I am not convinced yet that the legislation we are examining today, the Grizzly Bear State Management Act, is the right way or the best way to resolve the many years of debate over whether or not the Greater Yellowstone Ecosystem grizzly bear continues to warrant Endangered Species Act protections.

As the senior Senator for the State of Delaware, I am privileged to serve, and I recognize that grizzly bear management presents unique challenges that much of our Country may not understand. I commend the States, the local governments, the Tribes, and the stakeholders that have faced those challenges and worked diligently over many years to help recover this iconic species.

I believe that many people across America would agree that the Greater Yellowstone Ecosystem grizzly bear is an Endangered Species Act success story in the making. Less than 140 bears were thought to be alive in the ecosystem when this specie was listed as endangered in 1975. Today, experts estimate that there are now hundreds living, I think the Chairman said as many as 700 or more in the Greater Yellowstone Ecosystem alone.

With that said, I do not believe that Congress should intervene in the final determination on the recovery of this specie, or any species, for that matter, at this time.

Judicial review of agency decisions is central to ensuring that the Endangered Species Act is guided by science and informed by public input. For example, in celebrating the recovery of a species, such as the bald eagle or the Delmarva fox squirrel in my own home State, we often look back and reflect on the work that was done to bring that species back from the brink of extinction.

We should also look ahead and take steps to ensure that these species will not require the Endangered Species Act protections again in the future. A delisting rule should consider future threats against a species, like a lack of genetic diversity or climate change, which is already impacting habitats, migration patterns, and food supplies for some species. Judicial review can also help ensure the Federal Government takes future impacts to species into account, and it has done just that in the case of the grizzly bear.

It is also important to note here that the Endangered Species Act protections are only required when State management to protect and recover imperiled species has failed. I have heard from any number of stakeholders who have ongoing concerns about the Greater Yellowstone Ecosystem grizzly bear's ability to fully recover and thrive under some State management plans.

Before closing, I just want to take a moment to elevate the voices of the Tribes who oppose the Grizzly Bear State Management Act. These Tribes have a longstanding, treasured relationship with this particular resource, and their voices deserve to be heard.

While I cannot support the legislation we are considering today, again, I hope our committee will continue to work in a bipartisan way, as we have successfully done in the past, to address human-wildlife conflicts and support species conservation.

Mr. Chairman, those are my prepared remarks. I just want to conclude by noting that the prime sponsor of the legislation before us is our colleague, Mike Enzi, and you have known him forever, former mayor of Gillette, and I have been privileged to serve with him now for almost 20 years.

I remember early in my tenure in the Senate, when we were in the majority, and I was actually presiding over the Senate at the time. I remember Mike Enzi on the floor speaking 1 day, and he was talking about the 80/20 rule.

When he finished speaking, I gave a note to one of our pages, and I asked him to come up to the chair where I was sitting and explain to me what the 80/20 rule was, and he did. He used as an example his partnership with Ted Kennedy, very liberal, one of the most liberal Democrats in the Senate, and partnership with Mike Enzi on the committee, senior Democrat, senior Republican, Mike Enzi, one of the more conservative members of the Senate.

I said, what is the 80/20 rule, Mike? And he said, Ted and I agree on 80 percent of the stuff, and we disagree on about 20 percent. What we decided to do is focus on the 80 percent where we agree. I have never forgotten those words.

Today as we consider this legislation, he and Diana will be packing up and heading home for good in a couple of months. But I just want to say how much, as a colleague, I appreciate him, and the opportunity to serve with him on a number of committees. I wish them well. In the meantime, and he has work to do, and part of that is today.

Thank you so much.

Senator BARRASSO. Thank you, Senator Carper.

As you said, Senator Enzi did introduce S. 614, the Grizzly Bear State Management Act, and I now would like to give Senator Enzi an opportunity to make some remarks.

OPENING STATEMENT OF HON. MICHAEL B. ENZI, U.S. SENATOR FROM THE STATE OF WYOMING

Senator ENZI. Thank you, Mr. Chairman. Thank you for holding this hearing. Thank you for having me here today to discuss this issue that is incredibly important to Wyoming, should be important to this committee, and I know it is important to the West in general.

Wyoming is home to ranchers, stewards of the land, sportsmen, and many others who have worked hard to ensure that the grizzly bears in the Greater Yellowstone Ecosystem continue to thrive while also guaranteeing they are properly managed like any other species. Proper management of grizzly bears is critical to safeguard the species.

It is also critical to protect the species they disproportionately prey on, and people's livelihoods that can fall victim to grizzly bear attacks. Wildlife experts and Federal officials agree that the grizzly bears in Greater Yellowstone Ecosystem have been fully recovered for years. Senseless litigation still continues to hinder the effective State management and protection of the species.

To fix this, I introduced the Grizzly Bear State Management Act. My bill would direct the Department of Interior to reissue its 2017 decision to delist the grizzly bear in the Greater Yellowstone Ecosystem and prohibit the further judicial review of this decision.

As the grizzly bear population has increased in Wyoming, so has the danger these animals pose to livestock, property, and to humans. That is why I believe the authority to manage the species needs to be turned over to the States. I have often found that States are better suited to address these kinds of issues because they are more familiar with the unique needs of their own communities and ecosystem.

We cannot let this be another decision made by out-of-touch courts, carefully chosen courts, rather than science, common sense, and States that have the ability to effectively manage and protect the species, as well as everything that grizzly bears interact with. When these species are listed, the listing should have a recovery plan, complete with numbers or when recovery has been achieved. Had that been done on this, it would have been over a long time ago.

The bar keeps being lifted, and States have some expertise in managing wildlife. There are some court decisions that say that the wildlife actually belongs to the States, at least to Wyoming, that has been tested in the courts a number of times, and I am very proud of my State and our ability to manage animals.

Incidentally, we are the only State that has ever recovered an extinct species. There was a rancher who discovered black—footed ferrets on his property. Now, why he ever reported that, I am sure he wondered, but he did report it. Those were trapped, put in a special facility that Wyoming built in the Seville Canyon, and they were used to get the best crossbreeding for the strongest species.

I am pleased to report that those have been planted out in the wild again, put in prairie dog towns, which is what their main food is. So an extinct species has been brought back.

Wyoming worked to make sure that these tourist attractions, these animals, the grizzly bear, are an ongoing species, and ongoing efforts to delist the grizzly bear have been continuously held hostage by litigation.

That isn't the way to manage wildlife. These decisions to keep the grizzly bear on the endangered species list are concerning, to say the least. They are based on everything but concrete scientific evidence, including healthy recovery numbers that show the grizzly bear is thriving in the Greater Yellowstone Ecosystem.

In reality, the States have been providing most of the management of the species at great cost to the sportsmen, landowners, and citizens during the non-stop litigation. However, without sustainable delisting, the State lacks the decisionmaking authority that is essential for effective management and protection of the species. The Grizzly Bear State Management Act is a better way forward for management of these magnificent animals that makes sense for States, makes sense for local communities, and makes sense for the species itself.

I look forward to the day when grizzlies in the Greater Yellowstone Ecosystem are delisted and being effectively managed and protected by the efforts of States like Wyoming.

Thank you.

[The prepared statement of Senator Enzi follows:]

Testimony of Senator Mike Enzi
Senate Committee on Environment and Public Works
Hearing on S.614 Grizzly Bear State Management Act
September 9, 2020

Mr. Chairman, thank you for having me here today to discuss an issue incredibly important to Wyoming, this Committee, and the west in general. Wyoming is home to ranchers, stewards of the land, sportsmen, and many others that have worked hard to ensure that grizzly bears in the Greater Yellowstone Ecosystem continue to thrive, while also guaranteeing they are properly managed like any other species. Proper management of grizzly bears is critical to safeguard the species. It is also critical to protect the species they disproportionately prey on and people's livelihoods that can fall victim to grizzly bear attacks.

Wildlife experts and federal officials agree that the grizzly bears in Greater Yellowstone Ecosystem have been fully recovered for years. Senseless litigation still continues to hinder effective state management and protection of the species. To fix this, I introduced the Grizzly Bear State Management Act. My bill would direct the Department of the Interior to re-issue its 2017 decision to delist the grizzly bear in the Greater Yellowstone Ecosystem and prohibit further judicial review of this decision.

As the grizzly bear population has increased in Wyoming, so has the danger these animals pose to livestock, property, and humans. That is why I believe the authority to manage the species needs to be turned over to the states. I have often found that states are better suited to address these kinds of issues because they are more familiar with the unique needs of their own communities. We cannot let this be another decision made by out of touch courts rather than science, common sense, and states that have the ability to effectively manage and protect the species, as well as everything that grizzly bears interact with.

Ongoing efforts to delist the grizzly bear have been continuously held hostage by litigation. This is no way to manage wildlife. These decisions to keep the grizzly bear on the endangered species list are concerning to say the least. They are based on everything but concrete scientific evidence, including healthy recovery numbers that show the grizzly bear is thriving in the Greater Yellowstone Ecosystem. In reality, the states have been providing most of the management for the species, at great cost to its sportsmen, landowners, and citizens, during the nonstop litigation. However, without sustainable delisting, the states lacks the decision-making authority that is essential for effective management and protection of the species.

The Grizzly Bear State Management Act is a better way forward for management of these magnificent animals that makes sense for states, local communities, and the species itself. I look forward to the day when grizzlies in the Greater Yellowstone Ecosystem are delisted and being effectively managed and protected by the efforts of states like Wyoming.

Senator BARRASSO. Thank you so much, Senator Enzi.

Senator Daines, you are a cosponsor of the legislation, and I want to thank you for joining us in the hearing room today, and ask you for your comments.

OPENING STATEMENT OF HON. STEVE DAINES, U.S. SENATOR FROM THE STATE OF MONTANA

Senator DAINES. Chairman Barrasso, thank you, and also thanks to Ranking Member Carper, and thank you for the opportunity to provide testimony on the Grizzly Bear State Management Act.

For decades, Montana and Wyoming collaborated on the conservation of the grizzly bear, which led to the successful recovery of the bear in the Greater Yellowstone Ecosystem. I am proud to continue that partnership today as we fight to restore State management of this species.

Let me begin by saying the recovery of the grizzly bear in the Greater Yellowstone Ecosystem is a monumental conservation success story. The grizzly bear population has rebounded from approximately 136 bears in 1975 to over 700 bears today. I remember the days, spending a lot of time in the back country as a kid growing up, you rarely ever saw a grizzly bear, back in the 1970's, because there weren't that many of them.

Today, they are everywhere. Just this spring, my son and I ran into a big boar as we were on horseback around Southwest Montana. Seven hundred bears today is well over the carrying capacity and the minimum population that experts believe are needed to preserve the species.

But instead of celebrating the success, the courts have once again politicized the issue and moved the goalpost for species recovery, replacing wildlife biologist and grizzly bear specialist expertise with their own political and philosophical preferences. During this time, the grizzly bear range has more than doubled.

This means that bears are showing up in places that they haven't seen in decades, which is increasing the rate and risk of human and livestock conflict. Livestock loss to predators has skyrocketed, and the Montana Livestock Loss Compensation Fund is struggling to keep pace. Just last year, 51 livestock fatalities from grizzly bears occurred within the Greater Yellowstone Ecosystem, and human conflicts also are becoming commonplace.

Just this last weekend, a 69-year-old man was mauled by a grizzly bear while hunting near Flat Top Mountain near Big Sky. It appears increasingly unlikely that a high-visibility iconic species like the grizzly bear could ever be removed from the endangered species list due to this politicized, divisive rhetoric. Despite the extensive resources, time, and expertise Montana has devoted to the grizzly bear, the State is being stopped from assuming management responsibility.

We must ask ourselves how situations like this will dissuade future wildlife conservation efforts as States, landowners, and other partners know their efforts may be futile. The constant litigation undermines the Endangered Species Act by eliminating this key incentive to conservation.

That is why I am a proud cosponsor of the Grizzly Bear State Management Act. This bill reissues the science-based decision to

delist the grizzly bear in the Greater Yellowstone Ecosystem and prevents future obstruction and uncertainty for bear management.

Opponents of this bill will lead you to believe that the grizzly bear won't receive any protections when they are delisted. That is flat-out false. Nothing could be further from the truth. No one cares more about Montana wildlife than Montanans.

We have the expertise, the resources, and plans in place to assume management of a healthy grizzly bear population and stand ready to take on that responsibility, which is why later today, I intend on sending a letter to Director Skipwith, inviting her to Montana this fall to discuss grizzly bear management across our State.

Wildlife management should be determined by science, not a court order. The science has long proven that the grizzly bear population in the Greater Yellowstone Ecosystem has fully recovered. Both Montanans and bears suffer as we await action. Delisting the grizzly bear is in the best interest of our communities in terms of public safety, the ecosystem, wildlife, and the grizzly bear itself. Montana has proven it can conserve and manage this species, and it is time to return that management back to the State.

Before I conclude, I would like to take a minute to welcome and introduce a fellow Montanan and a good friend, Mr. Chuck Roady. Chuck is the vice president and general manager of F.H. Stoltze Land and Lumber Company of Columbia Falls, and he is president of the Federal Forest Resource Coalition. He also serves on the Montana Grizzly Bear Advisory Council, and he has been working on this issue for 44 years.

I am most grateful for his work and for his willingness to leave beautiful Montana and come back to Washington, DC. to testify today. Chuck, I look forward to hearing more of your expertise, collaborating on grizzly bear conservation, and how the unchecked population growth has affected your operations.

Chuck, the floor is yours.

[The prepared statement of Senator Daines follows:]

THE GRIZZLY BEAR STATE MANAGEMENT ACT
Testimony before the Senate Committee on Environment & Public Works
Senator Steve Daines
September 9, 2020

Good morning Chairman Barrasso, Ranking Member Carper, and Members of the Committee.

Thank you for the opportunity to provide testimony on the Grizzly Bear State Management Act, which I am honored to co-lead with my colleague from Wyoming, Senator Enzi.

For decades, Montana and Wyoming collaborated in the conservation of the grizzly bear as well as other iconic western wildlife species. This partnership led to the successful recovery of the bear in the Greater Yellowstone Ecosystem and I am proud to continue that partnership today as we battle together to restore state management of this species.

Let me begin by stating unequivocally that the recovery of the grizzly bear in the Greater Yellowstone Ecosystem is a monumental conservation success story. Instead of celebrating this success and commending the Fish and Wildlife Service, states, wildlife partners, and landowners for collaborating on this oftentimes-contentious conservation effort, the courts have once again politicized the issue and moved the goal posts for species recovery, replacing wildlife biologist and grizzly bear specialists' expertise with their own political and philosophical preferences.

In 1975 when the grizzly bear was first listed as an endangered species, there were an estimated 136 bears in the Greater Yellowstone Ecosystem. Thanks to extensive collaborative conservation efforts, the population has rebounded to over 728 bears in 2019—this is almost 100 bears over the ecological carrying capacity and over 200 bears more than what federal biologists consider the minimum population size needed to preserve the species. Population levels have been sustained for two decades and many biologists believe the actual number of bears living in this ecosystem is closer to 1,000.

During this time, the grizzly bear range has more than doubled, now inhabiting over 22,500 square miles in Southwest Montana, Idaho, and Wyoming. This means that bears are showing up in places they haven't in decades, increasing the rate and risk of human and livestock conflict.

Since 2014 the total number of livestock loss due to predators has quadrupled in Montana, the sharpest increase coming grizzly bear kills. Just last year 51 livestock fatalities from grizzly bears occurred within the Greater Yellowstone Ecosystem. The Montana livestock compensation fund is struggling to support the influx in grizzly bear losses.

Despite best efforts by our federal and state wildlife agencies, human conflicts are also becoming common place. Just two months ago, a Fish and Wildlife Service biologist was attacked while working in the Centennial Valley. In fact, just last weekend a grizzly bear mauled a 69-year-old man while hunting near Flattop Mountain. And it was this time last year that federal officials

were investigating whether the same bear was responsible for attacking three different individuals in two separate incidents.

The situation we find ourselves in with grizzly bears in the Greater Yellowstone Ecosystem is not unlike the plight faced by our states in the recovery of the gray wolf. Just like the gray wolf, we have quantifiable, scientific data that the grizzly bear population has recovered that environmental extremists choose to ignore and just like the gray wolf, it is time for management to be restored to the state.

Wildlife management should follow the best available science, not be politicized nor divisive. Despite the extensive resources, time, and expertise Montana has devoted to the grizzly bear, they are prohibited from assuming management responsibility. As the U.S. Fish and Wildlife Service delisting of the bear languishes in the courts, both wildlife and Montanans suffer.

It appears increasingly unlikely that a high-visibility, iconic species like the grizzly bear could ever be removed from the Endangered Species list due to this divisive rhetoric. We must ask ourselves how situations like this will dissuade future wildlife conservation efforts as states, landowners, and other partners know there efforts may be futile. Fringe environmental litigants undermine the Endangered Species Act when they attempt to eliminate these key incentives to conservation.

That is why I am a proud cosponsor of the Grizzly Bear State Management Act. This bill re-issues the science-based decision to delist the grizzly bear in the Greater Yellowstone Ecosystem and prevents future obstruction and uncertainty for bear management.

Opponents of this bill would lead you to believe that the grizzly bear won't receive any protections if they are delisted. That couldn't be further from the truth. No one cares about Montana wildlife like Montanans. We have the expertise, resources, and plan to assume management of a healthy grizzly bear population and stand ready to take on that responsibility.

INTRODUCTION

Before I conclude, I would like to take a minute to welcome and introduce fellow Montanan, Mr. Chuck Roady, who will be joining the next panel of witnesses. Chuck is the Vice President and General Manager of the F.H. Stoltze Land and Lumber Company of Columbia Falls, Montana and President of the Federal Forest Resource Coalition.

Chuck serves on the Montana Grizzly Bear Advisory Council and has been working on grizzly bear related issues for forty-four years. I am grateful for his work over the years and his willingness to testify today. Chuck, I look forward to hearing more of your experience collaborating on grizzly bear conservation over the years and how the unchecked population growth has affected your operations.

Senator BARRASSO. Before we do that, if it is OK with you, Senator Daines, Senator Inhofe has a previous commitment he has to get to.

STATEMENT OF HON. JAMES INHOFE,
U.S. SENATOR FROM THE STATE OF OKLAHOMA

Senator INHOFE. I will make this very, very brief, but it will conclude with a question to Commissioner Crank, though it has equal application to the grizzly bear, because I am going to talk about another endangered species.

Back in 1989, at that time, I was in the House of Representatives, and at that time, the American burying beetle was listed as an endangered species. I was in the House at that time, and when this happened, you stop and think about the fact that it is not quite as big as a grizzly bear, you don't know where it is. Any home builder, any rancher, any farmer, anyone else who is out there trying or exploring for oil and gas, anything else, that was just devastating to them.

So today, they have made a resurgence, not that people really care about it, the American burying beetle, and so it no longer warrants listing. We have been trying to get it off the same as you guys that we just heard from, have been working on their endangered species problem.

So I was very gratified that President Trump's Fish and Wildlife recently took actions to downgrade it to threatened. It actually should be just reversed, but nonetheless, this is going to be very, very helpful.

Now, the thing that Senator Enzi was talking about, I think is very significant here, because with over 1,650 species have been listed, only 47 have been delisted. That is 2 2 percent. There is something wrong with this, and it has not been working.

So the question I have for Commissioner Crank is, will you share why it is important for series to be taken, for a species to be taken off endangered species lists once it has made a recovery? Second, will you speak to the role of the States and the private partners, and what their role is that they play in conserving and recovering at-risk species?

Senator BARRASSO. And since Commissioner Crank hasn't had a chance to testify yet——

Senator INHOFE. Why don't we do this: let's wait and have him address that during his testimony, and in questions afterwards.

Senator BARRASSO. OK, thank you, but I know you have a commitment as Chairman of the Armed Services Committee. But we appreciate your being here and sharing your thoughts, and asking the questions, which we will then allow Commissioner Crank to address. So thanks so much, Senator Inhofe.

We are now going to hear from our witnesses. We have Pat Crank, who is the senior partner at Crank Legal Group, who is joining us remotely from Thermopolis, Wyoming, and I will more formally introduce Mr. Crank in a minute. We have Chuck Roady, who is the vice president and general manager of F.H. Stoltze Land and Lumber, who is here with us in the hearing room and has already been introduced by Senator Daines. And we have John Leshy, who is the distinguished professor emeritus at the Univer-

sity of California, Hastings College of Law, who is joining us remotely from San Francisco, California.

I want to remind the witnesses that your full testimony will be made part of the official hearing, so please keep your statements to 5 minutes, so that we may have time for questions. I look forward to hearing your testimony.

Since Senator Daines is still here, and, I know looking forward to hearing from Mr. Roady, perhaps we could just switch the order of the testimony and we could lead with our witness from Montana, and then go to Mr. Crank, and then to John Leshy.

So if I could ask you, Mr. Roady, to please share your thoughts with us at this time.

STATEMENT OF CHUCK ROADY, VICE PRESIDENT AND GENERAL MANAGER, F.H. STOLTZE LAND AND LUMBER

Mr. ROADY. Good morning. My name is Chuck Roady, and I am the Vice President and General Manager of F.H. Stoltze Land and Lumber Company. We are the oldest private, family owned forest products manufacturer and timberland owner in Montana.

I am a natural resource manager by education; I have B.S. in forest management from the University of Idaho, and I have 44 years of experience working in the forest products industry in the Western U.S. During the course of my career, I have served as a leader on multiple boards all related to the management of natural resources and wildlife. Those boards include two terms on the Softwood Lumber Board, 10 years on the board of the Rocky Mountain Elk Foundation, the last two as chairman.

I was appointed by Idaho Governor Batt in 1995 as the first private, individual, non-government member to the Interagency Grizzly Bear Committee, and I am currently Chairman of the Federal Forest Resource Coalition, and was appointed to the 2019 Montana Governor Bullock's Grizzly Bear Advisory Committee.

The subject of grizzly bear management is an emotionally charged issue, especially in the States of Idaho, Montana, and Wyoming that encompass the Greater Yellowstone Ecosystem. Everyone has their own opinion on how they believe grizzly bears should be managed. Much of that opinion is based on where you live, if you are a rancher, if you are a farmer, a timberland owner, a sportsman, or an outfitter, or just a recreational user of our Federal lands.

As a natural resource manager of private lands and purchaser of government contracts, I have to deal with the balance of managing grizzly bears and other wildlife species with the other uses on our lands and resources. That management balance is a difficult line to walk, and always controversial, but has taught me and convinced me beyond any doubt that grizzly bears must be managed, just like all other wildlife species.

There is absolutely no question in my mind that the grizzly bear in the Yellowstone Ecosystem deserves and needs to be delisted from the endangered species list, and the sooner the better. I adamantly disagree with the decisions of the Federal District Court, and more recently, that of the Ninth Circuit Court in keeping the bear listed under the ESA. This is another sad case of judicial re-

view by philosophically biased judges not heeding the work of years of research and recommendations by our trained biologists.

We as a society and citizens of the U.S. and those respective States of the GYE need to recognize and celebrate the successful implementation of the ESA and the work of these hundreds of experts to achieve that success. The litigation halting the delisting process in the GYE is having a negative implication on the Northern Continental Divide Ecosystem in central and northern Montana, as well. The NCDE also needs to be delisting the bears. It has an incredibly high number of grizzlies and an ever-expanding population far beyond the recovery areas.

We must enthusiastically illustrate to the American people that the efforts and the work of the agency biologists, our land managers, the ranchers, the wildlife groups, and the sportsmen have all culminated in a success story of recovering the grizzly bears in the GYE. Both for the benefits of humans and our society and the grizzly bear, it needs to be delisted and managed by the States and follow the North American Wildlife Model.

The delisting process and the handing over of the management of species to the States does not happen in a vacuum. The States have a significant number of experienced biologists and wildlife managers at their disposal to manage grizzly bears and the other large predator species. The success story of management following delisting is demonstrated as a classic example in the gray wolf. We have more wolves today in far more habitats that when it was delisted, all under now management of the State.

I have worked, hiked, camped, hunted for many years in Wyoming, Idaho, Montana, and Alaska, and I can tell you there are very few experiences more intimidating than that of a confrontation with a grizzly bear when you are walking through the forest or thick brush.

I can also attest without question there is generally a very distinctive difference in the reaction of bears and other predators in an area where hunting is an integral part of the management of wildlife. I have been very fortunate over the years to have not had a bad experience with a grizzly bear that resulted in anything more than having the crap scared out of me and having my plans for the entire day altered.

In my experience, those bears that are regularly accustomed to being around humans without a hunting component, such as in Yellowstone and Glacier Parks, behave very differently than bears that are in areas where they are subjected to hunting. A closely regulated and continuously monitored hunting season for grizzly bears has proven to be a very manageable tool.

I worry every single day about the safety of our foresters and the contractors who work for my company on a regular basis while they are out in the forest, which is effectively now all grizzly bear habitat. I am equally concerned for the safety and the liability for the members of the general public who recreate on our lands: the hunters, the outfitters, the berry-pickers, the firewood, the list goes on.

I am not naive enough for a second to believe if we delist the grizzly bear, that these interactions will be alleviated. But I do believe that if we delist the grizzly bear, that these interactions will

be managed and should be greatly reduced in number. Implementing a more hands-on management by State predator managers will allow a regulated hunting season and most certainly would help mitigate and provide more opportunities to avoid many of these conflicts.

The farmers and ranchers who live and work in these livestock areas where grizzly bears roam and continue to expand their range suffer tremendous economic losses due to depredation from grizzly bears. Hearing the stories from the ranchers who participated with me on the Montana Grizzly Bear Advisory Council was quite real and definitely shocking.

The concerns of these landowners range from losing 25 percent of their current year of calf or lamb crop and having the grizzles trample into their grain fields, eat out of their grain storage bins, and even several families that were afraid to let their kids play outside.

Senator BARRASSO. Could I ask you to kind of summarize now, since you are well over the time?

Mr. ROADY. Yes. The United States needs to delist the grizzly bear and recognize our success in recovering the species, while managing the other wildlife species. We will gain far greater support for the provisions of the Endangered Species Act from those of us that reside there and make our living there and raise our families there, as well as the other areas in the West where the grizzly bears roam.

We, the residents, live, work, and play here because we like it here. Grizzly bears are part of that equation. They appeal to us, but they must be managed in a reasonable and prudent manner. The first step is delisting the species.

Thanks.

[The prepared statement of Mr. Roady follows:]

TESTIMONY TO SENATE ENVIRONMENT AND PUBLIC WORKS COMMITTEE

"THE GREATER YELLOWSTONE ECOSYSTEM GRIZZLY BEAR: A HALTED SUCCESS STORY UNDER THE ENDANGERED SPECIES ACT"

September 9, 2020

Good morning, my name is Chuck Roady and I am the Vice President & General Manager of F.H. Stoltze Land & Lumber Company in Columbia Falls, Montana. We are the oldest private family owned forest products manufacturer and timberland owner in Montana. Mr. Stoltze, our founder, came west with the building of the Great Northern Railroad in the 1890's and incorporated Stoltze Land & Lumber in 1912. I am a natural resource manager by education, with a BS Forest Management in 1975 from the University of Idaho and I have over 44 years of working in the forest products industry in the western US. During the course of my career I have served as a leader on multiple boards all related to the management of natural resources and wildlife. These board roles include two terms on the Softwood Lumber Board, ten years on the board and committees of the Rocky Mountain Elk Foundation, [the last two years as Board Chairman], I was appointed by Idaho Governor Batt in 1995 as the first private industry / non-government member of the Interagency Grizzly Bear Committee, I'm the current Chairman of the Federal Forest Resource Coalition, and appointed in 2019 to Montana Governor Bullock's Grizzly Bear Advisory Council.

The subject of Grizzly Bear management is an emotionally charged issue, especially in the states of Idaho, Montana, and Wyoming that encompass the Greater Yellowstone Ecosystem. Everyone has their own opinions on how they believe grizzly bears should be managed, much of that opinion is based on where you live and if you are a rancher, farmer, timberland owner, a sportsman, an outfitter, or a recreational user of public lands. As a natural resource manager of private lands and purchaser of many government forest management contracts I have had to deal with the balance of managing grizzly bears and other wildlife species with the sustainable multiple uses of our lands and resources throughout my career. That management balance is often a difficult line to walk and always controversial, but has taught and convinced me beyond any doubt that grizzly bears must be managed just as are our other wildlife species.

There is absolutely no question in my mind that the Grizzly Bear in the Greater Yellowstone Ecosystem (GYE) deserves and needs to be delisted from the Endangered Species List, and the sooner the better. I adamantly disagree with the decisions of the Federal District Court and more recently that of the 9th Circuit Court of Appeals of keeping the bear listed under the ESA. This is another sad case of judicial review by philosophically biased judges not heeding the work, years of research, and recommendations of trained biologists. We as a society and citizens of the US and the respective States of the GYE need to recognize and celebrate the successful implementation of the Endangered Species Act (ESA) and the work of hundreds of experts to achieve that success! The litigation halting the delisting process in the GYE is having a negative implication on the Northern Continental Divide Ecosystem (NCDE) in central and northern Montana. The NCDE also needs to be delisting the grizzly bear as it has an incredibly high number of grizzlies and an ever-expanding population far beyond the recovery area boundaries.

We must enthusiastically illustrate to the American people that the efforts and work of agency biologists, land managers, farmers, ranchers, wildlife conservation groups, and sportsmen has culminated in a success story of recovering the grizzly bear to the GYE. Both for the benefit of humans, our society, and for the grizzly bear, the grizzly needs to be delisted and managed by the states and follow the successful North American Wildlife Model management system. The delisting process and the handing over the management of a species to the States does not happen in a vacuum. The states have a significant number of very experienced biologists and wildlife managers at their disposal to manage grizzly bears and all the other native large predator species. The success story of state management following delisting is demonstrated in the classic example of the gray wolf. We have more wolves today and in far more habitats than when it was delisted, all under management by the respective states.

I have worked cruising timber, hiked, camped, and hunted for many years in Wyoming, Montana, Idaho, and Alaska and I can tell you that there are very few experiences more intimidating than that of a confrontation with a grizzly bear when walking through the forest, thick brush, or grasslands. I can also attest without question there is generally a very distinctive difference in the reaction of bears and other predators in areas where hunting is an integral part of the management of the wildlife. I have been very fortunate over the years to have not had an experience with a grizzly bear that resulted than anything more than having the crap scared out of me and having my plans for the entire day altered. In my experience those bears that are regularly accustomed to being around humans without a hunting component, such as in Yellowstone National Park, behave very differently than bears that are in areas where they are subjected to hunting. A closely regulated and continuously monitored hunting season for grizzly bears has been proven to be a very valuable management tool.

Every single day I worry about the safety of the foresters and contractors whom work for our company on a regular basis while they are out in the forest, which is effectively now all grizzly bear habitat. There was a forest worker killed by a grizzly bear in September 2014 near Dubois, Wyoming and the list continues to grow of similar instances of woods workers - grizzly bear conflicts. I am equally concerned for the safety and the liability for the members of the general public who recreate on these lands, the hunters, the outfitters, the berry pickers, the firewood cutters, and the list goes on of the users of the forest lands. Many of you are aware of the fatality of a hunting guide killed by a grizzly in northwest Wyoming in September of 2018, these cases of grizzly – human interactions are becoming all too common. I am not naïve enough for a second to believe if we delist the grizzly bear that these interactions will be alleviated, but I do believe that if the bear is delisted and actively managed by the States that the number and frequency of these incidents could be greatly reduced. Implementing a more hands-on management by state predator managers while allowing a regulated hunting season will most certainly help mitigate and provide more opportunities to avoid many of these conflicts.

The ranchers and farmers whom live and work their livestock in areas where grizzly bears roam and continue to expand their range suffer tremendous economic losses due to depredation by grizzly bears. Hearing the stories from the ranchers whom participated with me on the Montana Grizzly Bear Advisory Council was quite real and definitely shocking. The concerns of these landowners ranged from losing 25% of the current year calf or lamb crop, having grizzlies trample their grain fields and eat out of their storage bins, to even several families being afraid to let their kids play outside in the yard. Again, delisting the bear will not eliminate these problems and economic losses, but it is sure as heck a step in the right direction to minimizing them by having the states more proactively manage the bear.

The United States needs to delist the grizzly bear from the ESA and recognize our success in recovering the species, while managing it just as we do other wildlife species. We will gain far greater support for the provisions of the Endangered Species Act from those of us who reside here, make our living, raise our families, and recreate in and around the Greater Yellowstone Ecosystem as well as the other areas in the West where grizzly bears roam. We, the residents all live, work, and play here because we like it here and grizzly bears are part of that equation that appeals to us, but they must be managed in a reasonable and prudent manner. The first step to being managed is delisting.

Thank you for your time and attention to listen to my testimony. I would welcome any questions from the Committee.

Senate Committee on Environment and Public Works
Hearing entitled, *"Successful State Stewardship: A legislative hearing to examine S.614, the Grizzly Bear State Management Act."*
September 9, 2020
Questions for the Record for Chuck Roady

Chairman Barrasso:

1. Has the litigation and the resulting court decisions delaying the delisting of the grizzly bear in the Greater Yellowstone Ecosystem had a detrimental effect on the delisting of the grizzly bear in the Northern Continental Divide Ecosystem? Absolutely ! While the delisting of the grizzly in the GYE has been delayed in the courts the NCDE grizzly populations, distributions, and problems with livestock owners, ranchers, and farmers continues to increase at an incredible pace. There are many government agencies which now wished that the NCDE had been petitioned to be delisted first.

2. Can you discuss how implementation of the Endangered Species Act may discourage, rather than encourage, forestry, ranchers, farmers, and other stakeholders from contributing to a listed species' recovery? How does this apply to the Greater Yellowstone Ecosystem population of grizzly bears? In both the GYE and the NCDE the ranchers, farmers, private landowners, forestry entities, and stakeholders that have to deal on a daily basis with the implementation of the ESA listing of the grizzly bear become totally frustrated as the populations of the bear continues to increase yet they are limited at what control measures they can do while the bear is listed. The affected parties become reluctant to constantly inform the agencies that they are having continuous problems with the bears as they fear they will get in legal trouble when they have to take control measures. Consequently, the numbers of bears and the associated problems are far greater than what is officially reported.

3. As grizzly populations expand so do encounters with livestock. In one area of Wyoming alone, members of the Upper Green River Cattle Association have lost over 1,000 heads of cattle since 1995.

    a. Can you please describe recent changes in grizzly bear-human conflict as concurrent with the grizzly's recovery? As the grizzly bear numbers and their geographical distribution continues to increase the number of bear-human conflicts also continues to increase at an exponential pace.

    b. Can you please outline the financial burden depredation poses to landowners? The livestock owners not only suffer the loss of the animals killed by the bears, but it costs them significant dollars in the lack of weight gain in their other animals as a result of the stress of the bears moving the herd out of their traditional pasture areas. There is an increased administrative cost as well with the hiring of additional cowboys and range riders to monitor the livestock to try and prevent the depredation by grizzly bears.

4. Can you share some grizzly-conflict anecdotes that you've learned about as a forester or hunter, as a member of the Grizzly Bear Advisory Council or the Interagency Grizzly Bear Committee, or as a leader in other organizations, that illustrate the consequences of inadequately managed grizzly bears in the Greater Yellowstone Ecosystem? As the grizzly bear populations continue to increase it becomes almost impossible for the bear specialists of the different government agencies to respond to all the problems and interactions with humans as they are reported or more

importantly, they don't have the time for any proactive programs to try and prevent such conflicts. Prime examples are late summer during the huckleberry season when both people and bears are in the same areas harvesting berries or in the Fall during the hunting seasons, again when humans and bears are in the exact same locations, conflicts are bound to occur and increase.

5. Why do you believe that hunting will improve the management of the grizzly bear–not just for people but for the benefit of the species itself? Grizzly bears are not stupid, they are intelligent animals that have the ability to learn and associate experiences with consequences. If grizzly bears are hunted on a very regulated basis, they will learn to associate the consequences of those experiences and many will develop some hesitation and fear of humans. Currently, without a hunting component the grizzly bears have little to no fear of humans. There are many examples in Alaska and Canada where there is legal hunting of grizzlies where most of those bears develop a fear of the sight, smell, and sound of humans. Hence, fewer human -bear conflicts will result in fewer bears that will have to be euthanized or transported to other areas in an attempt to avoid that contact, benefiting both bears and humans.

Senator Carper:

6. You have extensive experience working with your state on the development of grizzly bear management plans.

    a. Would you elaborate on how your state considered the perspectives of Tribes in the development of grizzly bear management plans? The Montana Grizzly Bear Advisory Council appointed members from the Blackfoot and Confederated Salish & Kootenai Tribes so that we could incorporate both their cultural and farmer/rancher perspectives into our grizzly bear management recommendations to the Governor. It was very interesting to learn and understand their experiences with grizzly bears and how they struggled with their personal conflicts between dealing with the culture of their tribal history and their businesses as dairy farmer and cattle rancher that impacted their financial incomes.

7. In 2017, the U.S. Fish and Wildlife Service released a report that indicates that hunting has decreased while wildlife watching and ecotourism have increased nationwide. In the 2016 Yellowstone National Park Visitor Use Study, 75 percent of respondents said that bears were either an "extremely important" or "very important" resource to them.

    a. How have these trends informed state wildlife management plans for bears? The State governments of Idaho, Montana, and Wyoming that encompass the GYE are very aware of the recent reports and surveys of the increase in tourists and wildlife watching. However, hunting interest in these three states has not decreased in numbers of hunters, because a high percentage of residents in the states of the GYE, live or move here for the opportunity to be able to hunt. As our nation's population continues to grow and become a more urban / suburban society, then those people whom hunt are a lower percentage nationwide.

8. While bear spray is not 100% effective, research shows that it is the most effective method of deterring a negative interaction between a human and a grizzly bear. In fact, the Grand Teton National Park requires elk hunters to carry bear spray. Yet, the Greater

Yellowstone Ecosystem states have declined to develop bear spray requirements for hunters or backcountry hikers and contend that education is more important.

a. Would you elaborate on your state's concerns with making bear spray mandatory? This was a major point of discussion within our Grizzly Bear Advisory Council. In the end, the majority of the Council members determined that the attitude of the general public to look favorably at the ESA listings with voluntarily recommending bear spray, was more critical than making and forcing people to use bear spray.

b. Is there a downside to requiring bear spray and promoting education? The downside to the mandatory requirement of bear spray is the negativity of the local residents being told they have to carry bear spray, which in turn these residents then blame the ESA listing of the bear as decreasing their freedoms for the very reason they live in the states of ID, MT, & WY. Plus, the huge detriment to mandatory bear spray use is how do you enforce it and in what areas would it be required to be used? Example: Would you have to make people using or walking through city parks such as in Whitefish or West Yellowstone carry bear spray?

c. What else should states and federal agencies be doing to better educate hunters and hikers on reducing conflicts with bears? Have major displays, information kiosks, and bear spray for purchase in airports that serve as access points to tourists coming to visit the Greater Yellowstone (GYE) and Glacier Park (NCDE) areas. Teach about the effective use of bear spray in the local schools that are located in grizzly bear habitat.

9. Your testimony acknowledges that delisting the grizzly bear will not alleviate all human-grizzly interactions. Your testimony also suggests that state predator managers should implement a more hands-on management approach.

a. Would you elaborate on that idea? If the respective State predator specialists had the flexibility to react more quickly on human-bear conflicts without going through a dichotomy of notifying and getting approval of various federal officials then they would be able to possibly move and transport bears to various locations away from the conflict site. Again, if hunting was a management tool in their tool box then some of the bear-human conflicts may have been avoided initially.

b. Specifically, do you have ideas for non-lethal proactive management techniques? More flexibility and identified protocol to allow the bear managers to translocate the troubled bears to remote areas.

10. Your testimony advocates for a grizzly bear hunting season as a management tool that could help reduce conflicts with grizzlies. However, it seems nearly impossible to direct hunters to kill conflict-prone bears. Research in British Columbia, where grizzly hunting was once allowed and is no longer, has shown no connection between trophy hunting and reducing conflict. Furthermore, there is a well-established management framework to

"lethally take" problematic bears, even when they are protected by the Endangered Species Act.

a. Assuming the grizzly bear is ultimately delisted and returned to state management, why would a hunting season be more effective in reducing conflicts with grizzlies than the states maintaining a more targeted approach of removing problematic bears? Please do not misunderstand my recommendation to utilize hunting as a management tool to target problem or conflict bears. It would be difficult to administer, time consuming for predator managers, and quite frankly too late to try and target hunters towards removing problem bears. Hunting can and should be used as a "proactive" management tool to help control grizzly bear numbers as a whole to match their habitat sustainability and to help develop and instill more fear of humans in the bears, so they "don't become problem bears".

11. You state in your testimony that there is "without question . . . a very distinctive difference in the reaction of bears and other predators in areas where hunting" is allowed.

a. On what do you base this claim and is there any supporting scientific evidence? Please provide citations. [see answer to #12]

12. In your testimony, you state, "hunting season for grizzly bears has proven to be a very valuable management tool."

a. What scientific evidence do you base that on? Please provide citations. Please allow me to answer both questions 11 & 12 together as they are closely related. Grizzlies and other species of bears have been sustainably hunted for many years in Alaska and western Canada, as well as in other bear populations around the world. Regulated hunting of bears serves multiple purposes as a management tool in controlling numbers and affecting the bears behavior instincts towards humans. Virtually every bear biologist will tell you that habitat and food sources are far more critical to maintaining healthy bear populations than regulated hunting. I would suggest contacting Dr. Larry Van Daele with the Alaska Board of Game as one of the premier experts and widely respected biologist on bears and studies of how bears and people can and do co-exist. Dr. Van Daele has conducted and authored numerous publications on the interactions of bears and people and I'm sure would be willing to share both his expertise and copies of his studies. His contact info is: larry.vandaele@alaska.gov & 907-654-8822.

Senator BARRASSO. Well, thanks so much for your very thoughtful and passionate testimony. We look forward to having a chance to ask questions in a few moments.

We would now like to hear from additional witnesses who are here today. I want to introduce Pat Crank. He is joining us from Thermopolis today. He is from Cheyenne, Wyoming, and spent a lot of time in Casper, as well. He is a senior partner with Crank Legal Group in Cheyenne.

He has been a commissioner on the Wyoming Game and Fish Commission since 2014. He has also served as Wyoming Attorney General from 2002 to 2007 under then Democrat Governor, Dave Freudenthal. I am so happy to have him joining us today. He received both his undergraduate degree and his law degree from the University of Wyoming.

It is a privilege to welcome such a distinguished witness as Mr. Crank before the Environment and Public Works Committee today. Pat, thanks so much for joining us from Thermopolis, and I understand that a Game and Fish meeting is occurring there today, which you are attending and have stepped out of a meeting to join us at this hearing.

STATEMENT OF PATRICK CRANK, VICE PRESIDENT, WYOMING GAME AND FISH COMMISSION, AND ATTORNEY, CRANK LEGAL GROUP, P.C.

Mr. CRANK. Thank you. Good morning, Chairman Barrasso, Ranking Member Carper, members of the Senate Environment and Public Works Committee, and Senator Enzi.

Thank you for the opportunity to offer my perspective today on the stunning and amazing recovery of the Yellowstone Grizzly Bears, the significant failures that have occurred with regard to judicial review of the delisting decisions made by the Fish and Wildlife Service, the significant erosion of public support that occurs when a species has been recovered and then the courts block the removal of that species from the endangered species list, and to offer my support for Senate Bill 614.

My testimony is based on having served on the Game and Fish Commission for approximately five and a half years. It is based on my experience as the Wyoming Attorney General for five-plus years. It is based on my experience as a lifetime sportsman and lifetime resident of Wyoming, and 35 years of legal practice.

The grizzly bears, in 1972, we had approximately 100 bears left in the Greater Yellowstone Ecosystem. By 2020, we have a very conservative estimate of at least 700 to 800 bears. I think you would be hard-pressed to find any scientist involved with grizzly bear recovery that would disagree with the statement that we likely have 1,000 to 1,200 bears in the Greater Yellowstone Ecosystem.

We know more about this species than any other species of wildlife on the face of the Earth. They have been intimately and exquisitely studied since being placed on the endangered species list in the 1970's. The world's best large carnivore biologists have studied and managed and recovered this species, and it is an amazing success story under the ESA.

This year, in Wyoming, we surpassed the 1,000th bear that we have captured and fitted with radio-telemetry equipment. We are

closely, well, in the very near future, we will have over one million GPS monitor coordinates from grizzly bears that are collared with GPS monitor collars. In one 2.5-hour hour flight in 2020, our personnel observed 82 grizzly bears.

As of 2019, grizzly bears occupy over 42,000 square miles. That is an area larger than the State of West Virginia. As of 2020, grizzly bears occupy virtually every square inch of suitable habitat in the Greater Yellowstone Ecosystem. Grizzly bears have exceeded all federally mandated and biologically determined recovery criteria since at least 2003, and in reality, clear back to 1997, as mentioned by Chairman Barrasso.

The ESA is an amazing piece of legislation, and it has resulted in this incredible success story where we recovered an iconic and amazing wildlife species to levels far surpassing recovery criteria.

The premise of the ESA is quite simple: if an animal is suffering, they are placed on the Endangered Species Act list, given Federal protection, and then State and Federal wildlife managers study that species, figure out what makes them tick, what they need to survive, and what recovery criteria should be set to ensure they remain in the environment for the foreseeable future.

Once that species reaches recovery, the Federal and State wildlife experts, via the Fish and Wildlife Service, and the delisting process propose a rule delisting the species and setting forth what will occur, what State management will occur. Those are written plans. They are quite precise, and the species should then be removed from the list.

After that, State wildlife managers, who are truly the experts on managing these species, because they are the ones that day in and day out, do the work to recover the species, understand the species, and ensure they exist in perpetuity. Environmental groups, unfortunately, file endless lawsuits to prevent delisting at all costs.

The Yellowstone grizzly bears are a great example. No one can argue that we have met recovery criteria, that we have a robust population of grizzly bears, that this species will exist for the foreseeable future under State management. These lawsuits that they file generate millions of dollars in contributions and membership contributions.

Everyone, environmentalists, hunters, fishermen, sportsmen, are passionate about wildlife. That passion combined with frequent misinformation regarding what will happen once a species is removed from the endangered species list generates millions of dollars of revenue for environmental groups. Then if they are successful in Endangered Species Act litigation, all their attorneys' fees get paid.

I have been informed that, with regard to the most recent action with regard to the 2017 delisting rule which was struck down by a judge in Montana, the environmental groups have already requested over $1.4 million dollars in attorneys' fees with regard to that litigation.

The tragic thing is, under the Endangered Species Act, environmental groups can form shop and pick the judge that they believe will be most likely to strike down a delisting rule. I have been a litigator, and I spend the bulk of my time doing personal injury

cases. I would love to be able to select the judge that will hear my client's case.

Under the Endangered Species Act, environmental groups get to form shop, pick the judge that they think will be most likely to be politically unbiased in their favor and strike down the rule. These judges and courts, unfortunately, who are, I believe, in direct violation of the Endangered Species Act, ignore the findings of the experts.

Those experts within the Fish and Wildlife Service, within State wildlife management agencies, and the judges substitute their political decisions with regard to delisting proposals for the actual experts who understand and, in the case of Yellowstone grizzlies, have managed and recovered this species for over the last 50 years.

Senator BARRASSO. Since we have another witness to testify, we want to have time for questions. Pat, if you can just very quickly make any final statement. We need to get to our third witness and then have time for questions.

Mr. CRANK. Thank you, Mr. Chairman.

I would just sum up that, better to remove a species once it is been recovered seriously erodes public support for that species, and it is a tragedy with regard to this species that endless litigation and Federal courts substituting their political and uneducated judgment for the scientists' have prevented statewide wildlife biologists and experts from managing grizzly bears in the States of Wyoming, Montana, and Idaho.

Thank you.

[The prepared statement of Mr. Crank follows:]

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TESTIMONY OF PATRICK CRANK
VICE PRESIDENT
WYOMING GAME AND FISH COMMISSION

BEFORE THE
SENATE COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS ON
A DISCUSSION DRAFT BILL TO DELIST THE GREATER YELLOWSTONE
ECOSYSTEM POPULATION OF THE GRIZZLY BEAR UNDER THE ENDANGERED
SPECIES ACT

SEPTEMBER 9, 2020

Good morning Chairman Barrasso, Ranking Member Carper, and members of the Committee. I am Pat Crank, Vice President of the Wyoming Game and Fish Commission. I appreciate the opportunity to be here today to provide some perspectives on grizzly bear management and the need to delist the Greater Yellowstone (GYE) population of grizzly bear under the Endangered Species Act (ESA). The testimony provided herein is based on my experience and knowledge of the GYE population of grizzly bears. I am a lifelong resident of Wyoming and have worked and recreated all over the state. I previously served as Wyoming's Attorney General under Governor Dave Freudenthal and have practiced law as a prosecutor and in private practice for over 35 years. I was appointed to the Wyoming Game and Fish Commission by Governor Matt Mead in 2015 and now hold the position of Vice President of the Commission.

In the lower 48 states, there are five identified populations of grizzly bear: The Greater Yellowstone, the Northern Continental Divide, the Bitterroot, the Northern Cascade and the Selkirk/Cabinet-Yaak (*see* Fig. 1). All of the specific scientific information I will talk about today relate to recovery, management, and the current population status of the GYE population only. My testimony reflects my opinion as to why a delisted and state managed grizzly bear population is the most efficient and effective path forward for grizzly bears and the people who live, work, and recreate in Wyoming and the Greater Yellowstone Ecosystem.

Thoughts regarding Endangered Species Act ("ESA")

The ESA is an amazing piece of landmark legislation. That being recognized, this historic act no longer fulfills its original altruistic and noble purpose and the ESA is being used for purposes inconsistent with the intent of the legislation.

At its core and in its true intent, the ESA insures that wildlife species that are endangered will be provided federal protection from reductions in number and protection of the habitat necessary for recovery. Once the population has recovered based on the opinion of expert wildlife managers and scientists using the best science available at the time, the species is removed from the ESA list and

managed by state wildlife experts. State wildlife agencies have the resources, on the ground experience, and knowledge of the species, to scientifically and carefully manage recovered species. The ESA provides an amazing frame work to protect and recover endangered species if allowed to work as originally crafted and envisioned.

However, the ESA, as it functionally works today is horribly broken. Environmental groups and environmentally minded judges have, via endless litigation on ESA listings or delistings, thwarted and ignored the very purpose of the ESA.

The long and tortured history of the ESA listing and recovery of GYE grizzly bears is a tragic example of the broken ESA.

The United States Fish and Wildlife Service (USFWS) has constantly changed the target population for delisting GYE grizzly bears. In, 1982, the USFWS declared that delisting would occur when 300 bears existed in the GYE. By 1993, the USFWS demanded that at least 500 bears needed to occupy the GYE for delisting to occur. In 2017, at least 600 bears needed to exist for delisting to occur. In 2020, pursuant to the "recalibration" concept as discussed herein, the number of bears required for delisting is closer to 1000 bears.

This ever moving target, perpetuated by USFWS and environmental groups, with the enormous power of sympathetic and politically motivated federal judges, completely ignores all concepts of carrying capacity. There is only so much wilderness that exists in the GYE where grizzly bears can exist. Because of the outstanding work of amazing scientists and $50 million dollars of license fees from Wyoming hunters and anglers, grizzly bears now inhabit nearly every square inch of suitable habitat in the GYE. The ever increasing population is spilling over into areas well outside of areas where grizzly bears can exist, causing loss of human life, damage to livestock, and seriously eroding public support for the recovery and existence of this iconic and wonderful creature.

Environmental groups use the ESA, and the ability to obtain favorable rulings from politically motivated federal judges, as a sword to prevent delisting at all costs. In doing so, they ignore the remarkable recovery of GYE grizzlies. They ignore that over 1000 bears exist in the GYE today as compared to 100 to 300 bears in 1972.

Environmental groups use the ESA, and challenges to decisions under the ESA, as incredibly effective fundraising tools for their entities. They challenge any delisting of the GYE grizzly for reasons that ignore the amazing success story of the GYE bear recovery. Every challenge leads to millions of dollars pouring into their coffers.

The intent of the ESA and other federal environmental regulations are centered around the very logical concept that an entity like the USFWS would expertly and honestly analyze decisions under the ESA and reach a sound decision based on the best science available. In other words, the USFWS along with state wildlife managers, are the experts on ESA listing/delisting decisions and their decision should control the outcome. In the ESA world of 2020, environmental groups are allowed to forum shop and file challenges to USFWS ESA decisions in the most favorable judicial district in the country. This allows them to maximize the chance that a judge will ignore the expert conclusions of USFWS and state wildlife experts and substitute the judge's non expert and

frequently political judgment for that of state and federal wildlife managers who have worked decades to recover a species and who possess intimate scientific knowledge of the species.

The record of listing/delisting decisions regarding GYE grizzlies contains glaring evidence of this misuse of the ESA. The 2007 Rule delisting GYE grizzlies was struck down by a favored U.S. District Judge in Montana for failure to consider global warming and its effect on white bark pine trees. The environmentalists argued white bark pine cones were an incredibly important food source for GYE grizzlies. Based on this ruling, GYE grizzlies remained listed while scientists studied the relationship between White Bark Pine Trees and Grizzly bears. Further scientific and peer reviewed study showed that this grizzlies used this as a food source, but that because they are able to utilize hundreds of different food sources based on availability, White Bark Pine wasn't a limiting factor in maintaining a recovered population. Furthermore, the same study showed the GYE population was near or at its carrying capacity.

With that argument off the table, environmental groups challenged the 2017 Rule delisting GYE grizzlies for a plethora of reasons. Five of Six lawsuits challenging the 2017 Delisting Rule were filed in the same judicial district in Montana where the district judge presided that had struck down the 2007 Delisting Rule over white bark pine concerns. Conveniently, the same court reversed the 2017 Delisting Rule for three different problems with the rule including "recalibration" as discussed below. The undisputed fact that nearly all of the environmental groups who challenged the 2017 Delisting Rule did so in the same judicial district where the 2007 rule was struck down, clearly shows that at least in the eyes of environmental groups, justice is not blind.

These facts also show that the ESA, as a whole, is not working as intended. Parties who want to keep an endangered species on the ESA list forever, need only build some innocuous technicality or even false claim into the record of decision and find a judge who is favorable to their political and social ideas. A delisting rule and the thousands of man hours, sweat equity, and tens of millions of dollars of scientific study are tossed out. The central tenant of the ESA- that state and federal wildlife managers are the only entities with the expertise and knowledge to make decisions under the ESA, is being ignored by the court system.

Figure 1. Map depicting locations of grizzly bear populations in the lower 48 states
Source-Interagency Grizzly Bear Committee website

ESA Treatment of GYE Grizzly Bears

The successful recovery of the GYE grizzly bear population is in my opinion the most significant conservation success story in the history of wildlife conservation in North America and a shining example of the power of the ESA to conserve this nation's treasured wildlife resources. Listing the grizzly bear as a threatened species in 1975 triggered a full court press of scientific research and natural resource policy development. Today, we know more about the GYE grizzly bear than any other wildlife species on the face of the earth. Constant observation, monitoring and study of these bears since 1975 by many of the world's best scientists have given us a level of scientific knowledge of these bears that is unparalleled with regard to any other species.

Wyoming is proud to have paid for, and taken a leadership role in, grizzly bear recovery and management over the last four decades. Those who purchase hunting and fishing licenses in Wyoming have financed the Wyoming Game and Fish Department's (Department) $50 million investment in grizzly bear recovery. The fruit of this investment is evident in a recovered population showing steady growth from an estimated 100-300 bears in the GYE when first listed to at least 700 to 1,000 in the ecosystem today. In addition to the significant financial investment, Wyoming people have changed the way they work, live, and recreate in grizzly bear country providing further assurance the species' future is safe.

While the majority of GYE grizzly bears are in Wyoming, Idaho and Montana have an ever-growing number of bears in their portions of the ecosystem. Along with Wyoming, these states contribute significantly to the recovery of this population. The recovery of the GYE grizzly bear epitomizes the cooperation and consultation the creators of the ESA envisioned between state and federal partners.

The ultimate goal of the ESA is to recover species and allow state wildlife management agencies, who are best suited to manage their wildlife resources, the ability to exercise the state's general governmental powers. The localized experience and expertise of state wildlife experts provide

proper context in how to manage wildlife populations using the most current techniques and best available science. In the case of the GYE, the states of Wyoming, Montana and Idaho have taken lead roles in data collection, public education, conflict management, law enforcement and research during the decades long listing.

Changing Goalposts for Recovery

The State of Wyoming has been frustrated in the non-biologically based efforts of environmental litigants to raise the established recovery bar higher and higher each time population benchmarks are reached and exceeded. Attachment I to this testimony provides a detailed account of recovery criteria changes through time for GYE grizzly bears. To date, there have been four iterations of recovery plans and associated recovery criteria for the GYE population. In 1982, the USFWS released the first recovery plan for grizzly bears in the lower 48 states. The 1982 plan set the level of a recovered GYE grizzly population at 229 to 301 bears.

In 1993, the Service updated the original 1982 recovery plan. The updated recovery criteria established a minimum number of females with cubs seen annually, identified a metric for distribution of family groups and set a limit on human-caused mortality. The 1993 recovery threshold required at least 15 females with cubs for at least six years. These females with cubs had to be geographically spaced over 18 bear management units comprising the GYE and an additional buffer area surrounding the GYE. Strict mortality limits on females further limited when GYE grizzlies could be deemed to be recovered.

In 2007, the recovery criteria were once again changed as a result of additional analyses related to GYE grizzly bears. There were formerly three demographic criteria in the 1993 Grizzly Bear Recovery Plan. The second criterion pertaining to the distribution of females with offspring remained unchanged. However, the first and third criteria pertaining to the minimum allowable number of females with cubs of the year and sustainable mortality limits were revised and updated to reflect current methods. The 2007 threshold still required geographic spacing of females with cubs over the expansive bear management units. The number of females with cubs necessary to determine the population was recovered was increased from 15 to 48. This requirement of 48 sows with cubs geographically spaced over the huge GYE ecosystem would guarantee that at least 500 grizzlies (as compared to 300 in 1982) would forever exist in the GYE. Strict limits on mortality for both male bears and female bears were included in the 2007 recovery benchmark.

The Recovery Plan in 2017 codified the use of the Demographic Monitoring Area (DMA) and attributed estimates of population size and mortality specific to bears within the DMA. The USFWS updated portions of demographic recovery criteria 1 and 3 for the GYE grizzly bear population based on new scientific analyses and information. The second criterion pertaining to the distribution of females with offspring (Demographic Recovery Criterion 2) remained unchanged. Demographic Recovery Criterion 1 is essentially the same as it was in 2017, however rather than using the number of females with cubs of the year it used this and a population estimate of 500 bears as a minimum threshold. The 2017 Recovery Plan States:

- *"The biological intent of this revision is identical to the 2007 criterion: to maintain a minimum population size of at least 500 animals, which exceeds the genetic recommendations of Miller and Waits (2003). The only change is that this criterion no*

longer specifies which scientific method must be used to assess the criterion. The current method (2016) used to estimate population size is the model-averaged Chao2 population estimator and this method will continue to be used until another scientifically valid method is developed. We eliminated the criterion's dependence on a specific method (e.g., Chao2) so that the IGBST can rapidly implement improved scientific methods as they become available in the peer reviewed literature. Methods used to estimate population size will be available online for review in the Application Protocol posted on the IGBST's website (http://nrmsc.usgs.gov/research/igbst/research). The number 500 is not a population goal nor is there any intention to manage down to 500 bears. The number 500 represents a minimum population size necessary to assure no short-term negative effects of loss of genetic diversity."

- Demographic Recovery Criterion 1—Maintain a minimum population size of 500 grizzly bears and at least 48 females with cubs-of-the-year within the Demographic Monitoring Area (DMA), as indicated by methods established in published, peer-reviewed scientific literature and calculated by the Interagency Grizzly Bear Study Team (IGBST) using the most updated Application Protocol, as posted on their website. If the estimate of total population size drops below 500 in any year or below 48 females with cubs-of-the-year in 3 consecutive years, this criterion will not be met…

The primary change in the 2017 update to the GYE Grizzly Bear Recovery plan occurred in Recovery Criterion 3 in relation to the evaluation of mortality and calculation of mortality thresholds for the population. In 2017, recovery adjustments to mortality limits essentially raised the number of bears necessary to have a recovered bear population to 600 bears.

In essence we have seen the Federal goals for minimum population sizes to document recovery go from roughly 300 bears, to 400 bears for genetic health, to 500 bears for a conservative buffer, to 600 bears based on currents rates and ratios used to calculate population size. The target for a "recovered population" has been ever increasing.

Current Status of the GYE Population

The GYE grizzly bear population is fully recovered as measured by all federally developed biologically based recovery criteria. It has exceeded recovery criteria since at least 2003. Those recovery criteria again are:

- At least 500 individual grizzly bears to ensure genetic diversity
- Reproducing females across the entire ecosystem (at least 16 of 18 bear management units occupied by reproducing females)
- Mortality limits below established limits by age and gender class and at least 600 individual grizzly bears in the demographic monitoring area (DMA) (see below for more DMA details).

Based on all biological data collected and the analysis of the Interagency Grizzly Bear Study Team, this population has reached biological carrying capacity within the area identified as suitable habitat (*see* Fig. 2). The DMA was identified as a large enough tract of contiguous habitat to maintain GYE grizzly bears in perpetuity. However, because the core of the population has achieved density

dependence, grizzly bear distribution has extended far beyond suitable habitats. Grizzly bear populations have expanded their range beyond habitat considered suitable by the USFWS. In 2018, 20,041 km^2 (7,738 mi^2) of occupied grizzly bear range was outside the DMA. This amount of occupied range is roughly the same size as the land mass of the state of New Jersey.

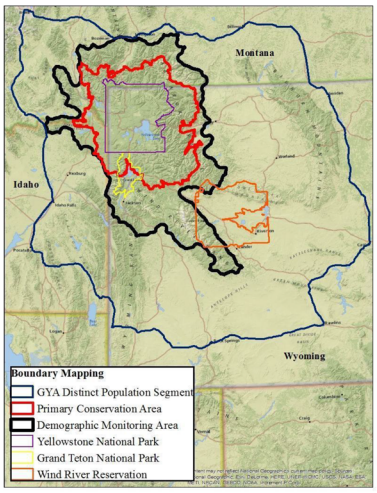


Figure 2. Map depicting the major legal, political and biological boundaries for the GYE

Recovery in Relation to the Idea of "Recalibration"

The idea that changes in the methods to count bears in the population should somehow force a change in how recovery is defined has been a point of disagreement between the states, the USFWS and some environmental litigants only since about 2014. It also became the pivotal issue in court challenges striking down the 2017 Rule removing grizzly bears from ESA protection.

Grizzly bears are impossible to physically count. They spend their lives in incredibly wild timbered country. They are not a pack animal where radio collaring could give us an accurate estimate. They do not spend winters on winter range where aerial observations could give us an accurate count. Accordingly, the amazing scientists studying these bears have developed statistical models that provide an accurate estimate of the number of bears in the GYE. The statistical model is known as Chao2.

The Chao2 model has been revised a number of times over the years as our knowledge of these bears has grown. There is no dispute from any scientists involved that Chao2 is a very conservative method to estimate the number of bears in the GYE. Said another way, Chao2 *underestimates* the number of bears in the GYE each year. Wyoming grizzly bear experts believe there are approximately 40% more bears in the GYE than the number of bears calculated by Chao2 in any given year.

During the 2017 delisting process, the scientists considered that some future statistical model might more accurately estimate grizzly numbers. All scientists agree that this future unknown model would show that the GYE has more grizzlies than currently estimated by Chao2. Questions then arose about what occurs if the new, future, and currently non-existent model shows that there are 1000 bears in the GYE rather than the 600 to 700 currently estimated via Chao2? Wyoming, Idaho, and Montana pointed out that the ESA requires that the best science available drives listing or delisting under the ESA and that speculation regarding a new counting method could not and should not control or affect recovery criteria. Recovery criteria are nothing more than the identification of factors, i.e. healthy number of female bears with cubs, appropriate genetic diversity, and geographic occupation over areas of suitable habitat, to insure that grizzlies remain in the GYE for the foreseeable future.

Environmental groups, and the USFWS, under former director Dan Ash, saw this future, speculative, and currently non-existent improved population estimator as a useful tool to increase the ever increasing minimum number of bears necessary for delisting and as a tool to strike down a future delisting in its entirety. Several emails, inaccurately representing Wyoming, Montana, and Idaho's objections regarding "recalibration" were included in the record of the 2017 Delisting Rule. The District Court in Montana, that had previously ruled the 2007 rule was fatally flawed, seized on these emails to support striking down the 2017 rule. The court asserted that the USFWS didn't include an adequate future description of a process to recalibrate and that they did so for political reasons. I am flabbergasted how the potential development of some future statistical model to estimate number of GYE bears could be used to reverse a delisting decision regarding one of the greatest wildlife recoveries under the ESA.

There are biologically based problems in the potential requirement to conduct a strict back calculation in order to update population objectives when using new techniques for estimation.

First, it requires significant speculation on what some future method may look like. It also requires a new model to be anchored to identical biological criteria. The current model is based solely on a count of observed unique females with cubs born in the same year. Should IGBST or others develop a completely new methodology to accurately estimate population size using the newest and best available science that is based in genetic analysis or another biological metric that is not directly linked to current methodologies, it would be extremely difficult or impossible to go back in time to align old metrics with new ones. Additionally, as currently written, there are mortality thresholds in place that are required regardless of the population size. A population of 10,000 grizzly bears would still have annual mortality thresholds for independent aged females (10%) and independent aged males (22%), so regardless of the techniques or updates to accuracy of population estimates there are safeguards and regulatory mechanisms in place to ensure a recovered population.

From a policy perspective, the notion of recalibration is inherently flawed. The ESA requires the USFWS to use science to determine metrics that indicate whether a listed population is recovered or not (recovery criteria). The ESA does not require or authorize the USFWS to establish delisting criteria that provide for perpetual federal management long after the species is recovered. The ESA does not require the USFWS to establish management objectives, but rather the minimum requirements to establish a population is biologically recovered and faces little chance of extinction in the foreseeable future. The space between minimum recovery and the level the population is managed at is the responsibility of the states. Recalibration in the context described by recent court decisions would provide for a change in management objectives into the future based on some hypothetical and speculative new way to count bears. It discourages states from looking for new science to more accurately estimate bear populations because any changes would require changes to state management objectives. Recovery criteria were developed to allow for flexibility and regional management of populations by states and tribes so long as the population is maintained at or above recovery goals. This was the goal and intent of the ESA when it was created. States could decide to manage for more or less grizzly bears based on population status, annual data collection and public input, and follow the North American Model of Wildlife Conservation.

Grizzly Bear Expansion and Human Conflict

Because the GYE population has reached is carrying capacity, bears are expanding into new areas that are not biologically and/or socially suitable habitats. This expansion is far outside of the scientifically established primary conservation area (PCA) that was established in early recovery plans. The expansion is also outside of the current DMA or the area where recovery is managed. Currently population estimates do not include bears in the areas outside of the DMA.

This expansion in range into unsuitable habitats has created significant challenges for all states involved because of the ever-increasing rise in human/bear conflicts (*see* Figs. 3, 4, 5). Dangerous encounters with humans, destruction of private property, and bear occupancy in human dominated landscapes are all the reality of an expanding population. The areas of expansion are primarily rural and agricultural communities. People working, living and recreating in these areas were previously assured grizzly bears would not be allowed to establish residency by the state and federal entities involved in recovery. Occupancy in these human-dominated areas, far from

biologically suitable habitats, is not a realistic scenario for success from a human or bear perspective. Since GYE grizzly bears were initially delisted in 2007 to now, the population has increased its distribution by nearly 800 square miles annually. Using the methods developed by Wyoming Game and Fish and the Interagency Grizzly Bear Study Team, grizzly bear range in the GYE has increased steadily, from 23,000 km^2 during 1976-1990, to over 68,000 km^2 during 2004-2018 (*see* Fig. 3). This overall increase in distribution represents a nearly 3-fold increase in occupied range. The amount of private lands within the estimated occupied range has increased considerably over the same period, from 600 km^2 to nearly 12,000 km^2 today (*see* Fig. 5).

When evaluating verified grizzly bear conflicts in Wyoming, we have documented a widespread increase in conflicts associated with the increased distribution of grizzly bears. The conflict potential has been exacerbated as bears have expanded beyond habitats suitable for their long-term viability. From 1990-1999, we averaged 79 conflicts annually. From 2000-2009, that number jumped to 150 annual verified conflicts, and from 2010-2018 we averaged approximately 221 verified grizzly bear conflicts (*see* Figs. 6 and 7). The number of conflicts resulting in human fatality and injury, self-defense killing of bears and lethal bear removal have grown significantly. In the past two years, 50 grizzly bears were removed from the population by Wyoming Game and Fish managers to address conflict situations (human safety, chronic livestock depredation, food conditioned behavior), and many grizzly bears were killed in self-defense.

Since 2010, there have been seven human fatalities in the GYE caused by grizzly bear attacks. From the mid-1980's to 2010, there were none. These unfortunate events are the result of more bears and bears expanding into new areas. We are documenting increased occurrences of humans injured by grizzly bears. Grizzly bears are showing up in places they have not existed for hundreds of years which is another testament of a healthy and recovered population. Since grizzly bears emerged from their dens in the spring of 2020, we have had seven people injured by grizzly bears in the GYE.

People who live, work and recreate in grizzly bear occupied habitats have changed their lifestyles and made sacrifices to reduce conflict potential. Landowners and residents have incurred costs to create bear proof storage for trash, livestock feed, and other attractants. Working with Wyoming Game and Fish, many ranches and residences have erected bear proof infrastructure with electric fencing or other deterrents and complete revamping of landscapes to reduce conflict potential. In the core of the ecosystem, conflicts have not increased proportionally to the growth of the bear population. However, at the fringe of the ecosystem, where grizzly populations are expanding into previously unoccupied and unsuitable habitat, the number of conflicts is increasing.

The Wyoming Game and Fish Department (Department) has created educational/outreach programs (e.g. Bear Wise Wyoming) to reduce conflict potential and incentivize actions to secure attractants and alter human behavior when recreating, living and working in grizzly bear country. In an effort to reach the widest audience possible, we have created interactive materials on our website and use all venues and forums to disseminate information. We have documented a decrease in conflicts associated with property damage and bears acquiring anthropogenic foods. Unfortunately, as alluded to earlier, we are witnessing increases in human injuries, site conflicts, and a wide scale shift toward livestock depredation as bears continue to expand outside of the suitable habitat well beyond the DMA. Securing attractants and reducing conflict potential is much more difficult in the rural, exurban, and agricultural landscapes where grizzly bears have expanded.

Annual mortality thresholds for male, female, and dependent young grizzly bears throughout the GYE remain below agreed upon annual mortality limits. Since 2002, the long-term average estimated mortality rate of 7.0% for independent female grizzly bears within the DMA is below the mortality threshold of 7.6% required to maintain a stable to increasing population. The estimate for total mortality includes an estimate of unknown and unreported mortality. In addition, the population estimate derived from counts of unique females with cubs is known to be very conservative and the actual mortality rate since 2002 is likely much lower than 7.0%. These mortality rates have allowed for continued population growth and range expansion of the GYE bear population in areas outside the DMA. The long-term average mortality rate for independent males is 9.6% of the annual population estimate, which is also well below the established mortality limit for males.

Human-caused mortality has always be the leading cause of mortality of grizzly bears, but mitigation measures have been adopted and adapted over multiple decades to reduce instances of human-caused mortality proportionally. These have proven effective in many instances. In discussions and hyperbole regarding "record levels of mortality" the overall metrics of population ecology are usually omitted. Annual mortality is only part of the equation for overall population demographics. Higher reproduction is occurring to a level that there are more bears recruited into the population each year than the number that are dying from all causes. The unfortunate reality of being beyond recovery is an increased potential for dangerous encounters between grizzly bears and humans, with negative outcomes for both species.

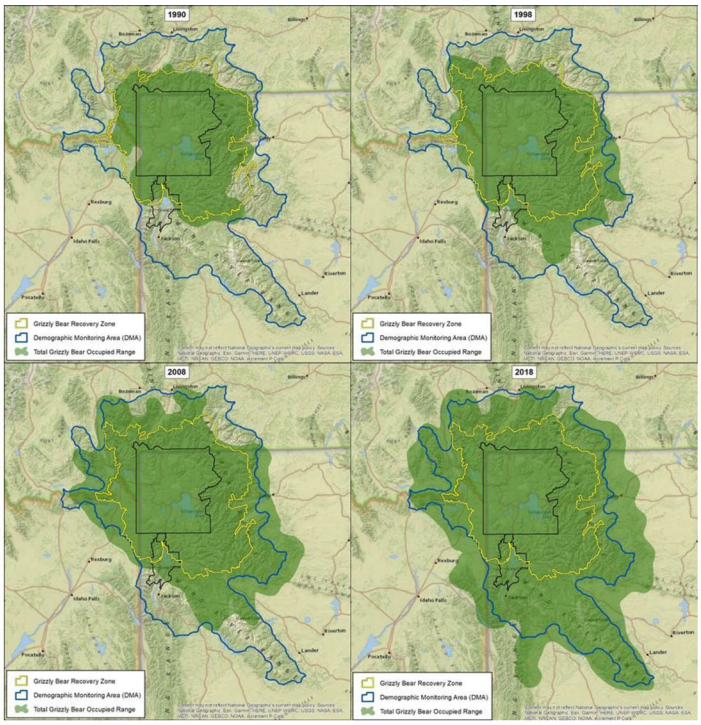


Figure 3. Map depicting increase grizzly bear occupancy in the GYE.

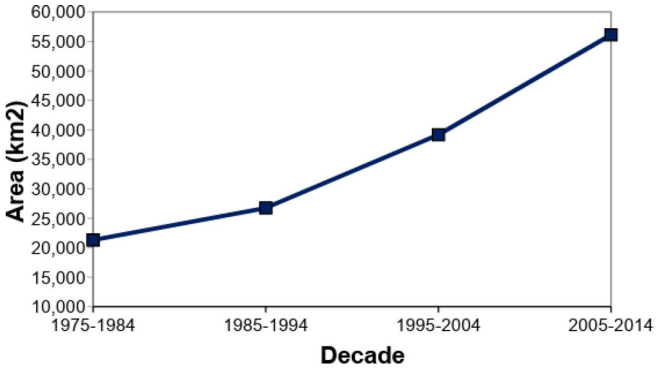


Figure 4. Rate of geographic expansion over time

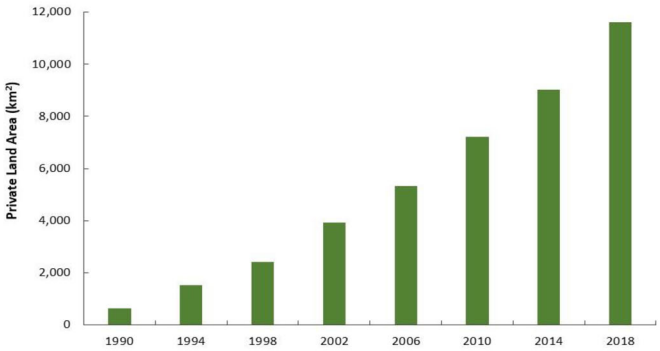


Figure 5. Increasing amount of private land considered to be occupied by grizzly bears in the GYE.

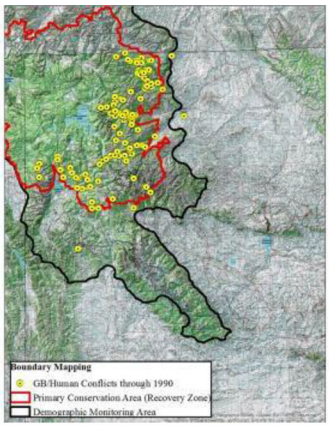


Figure 6. Map depicting grizzly bear/human conflicts through 1990

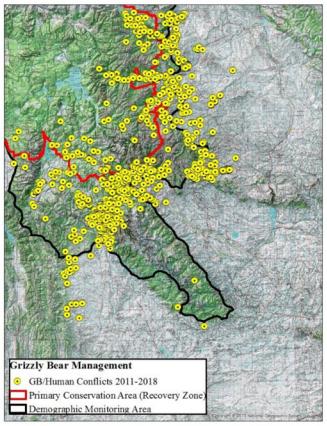


Figure 7. Map depicting grizzly bear/human conflicts 2011-2018.

State Management Capacity and Capability

The states of Wyoming, Montana, and Idaho are fully capable of assuming management of the GYE grizzly population. The three states have been handling on the ground grizzly bear management activities throughout their respective jurisdictions under the federal oversight of the Service for nearly 45 years. Litigation, not science, has prevented the states from assuming the ability to manage this fully recovered population.

Wyoming has a Commission and USFWS-approved Grizzly Bear Management Plan. Additionally, a signed conservation strategy, updated in 2017, documenting commitments by all involved state and federal agencies for post-delisting management remains in place. The states of Wyoming, Montana, and Idaho entered into a three-state memorandum of agreement (MOA) to provide assurances regarding the post-delisting allocation of discretionary mortality. Upon gaining management authority for grizzly bears most recently, Wyoming Game and Fish personnel traveled around the state to seek insight into how people wanted grizzly bears managed, specifically asking for input regarding monitoring, research, conflict management, outreach/education, and hunting. The discussions and comments were used to update the Grizzly Bear Management plan and codified in Game and Fish Commission Regulations. These efforts modeled a transparent approach reflective of the manner in which the Department manages all species. This approach was a prelude to how grizzly bear management and conservation would occur into the future with involvement by all stakeholders. These commitments are all above and beyond requirements of the ESA. The courts have concluded adequate regulatory mechanisms are in place.

The Department currently manages other species of large carnivores including Black Bear, Gray Wolf, and Mountain Lion. All three of these species are managed under a science based, comprehensive and adaptive management plan. These populations are thriving, healthy, and viable under state management. The state is able to provide necessary management through the use of research, data collection, conflict management, information and education, and hunting. There are as many or more opportunities now than in the past to see or photograph these animals in their natural environment and the recovery efforts of Montana, Idaho, and Wyoming have created a thriving ecotourism industry centered on grizzly bears.

The Department created a dedicated team of large carnivore experts to manage grizzly bears and other large predators in a science-based framework that considers public comment while also providing an immediate response to conflicts between carnivores and humans. The majority of work by this section in collaboration with regional Department personnel is devoted to grizzly bear monitoring, outreach/education, and conflict management.

Financial Investments and Costs of Grizzly Bear Management

Since the GYE population was first listed under the ESA, the State of Wyoming has invested over $50 million in recovering and managing this population. Since 1990, Wyoming has expended $35 million on grizzly bear recovery outside National Park Service lands and the Wind River Reservation. Currently, the Department spends approximately $1-2 million annually. The Wyoming Game and Fish Department recovers less than $100,000 of this amount annually from the Service and the remainder is provided by fishing and hunting license revenues (*see* Fig. 8 and 9). The money expended is a further demonstration of our commitment to grizzly bear

conservation and management.

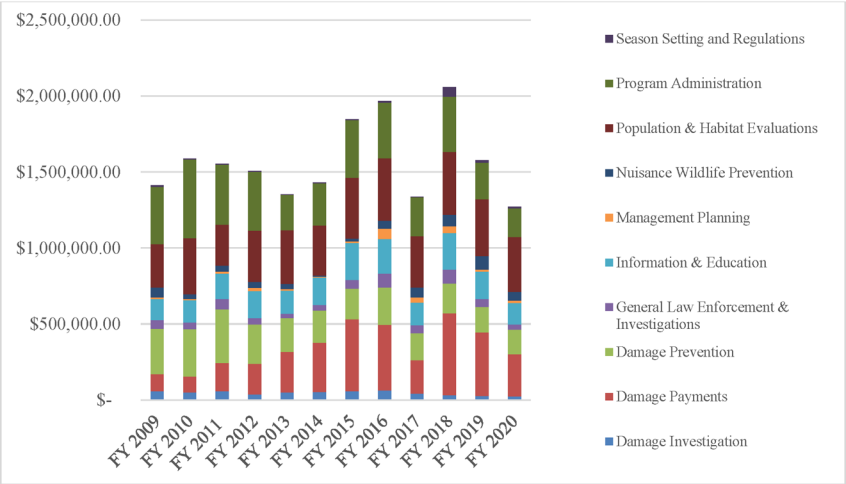


Figure 8. Costs by type associated with the GYE grizzly bear population by fiscal year

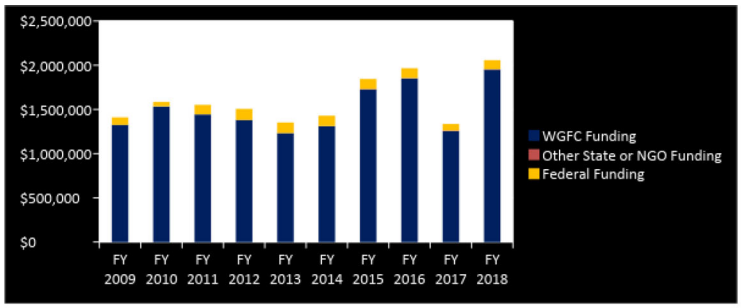


Figure 9. State versus federal funding for GYE grizzly bear management by fiscal year

It is an inherently unfair policy that the cost of grizzly bear management is carried on the backs of sportsmen. If Wyoming is denied the discretion to manage this species, the cost of future management should be borne by the federal government whose actions, and inactions, over the years have prevented Wyoming from assuming managements of GYE grizzly bears.

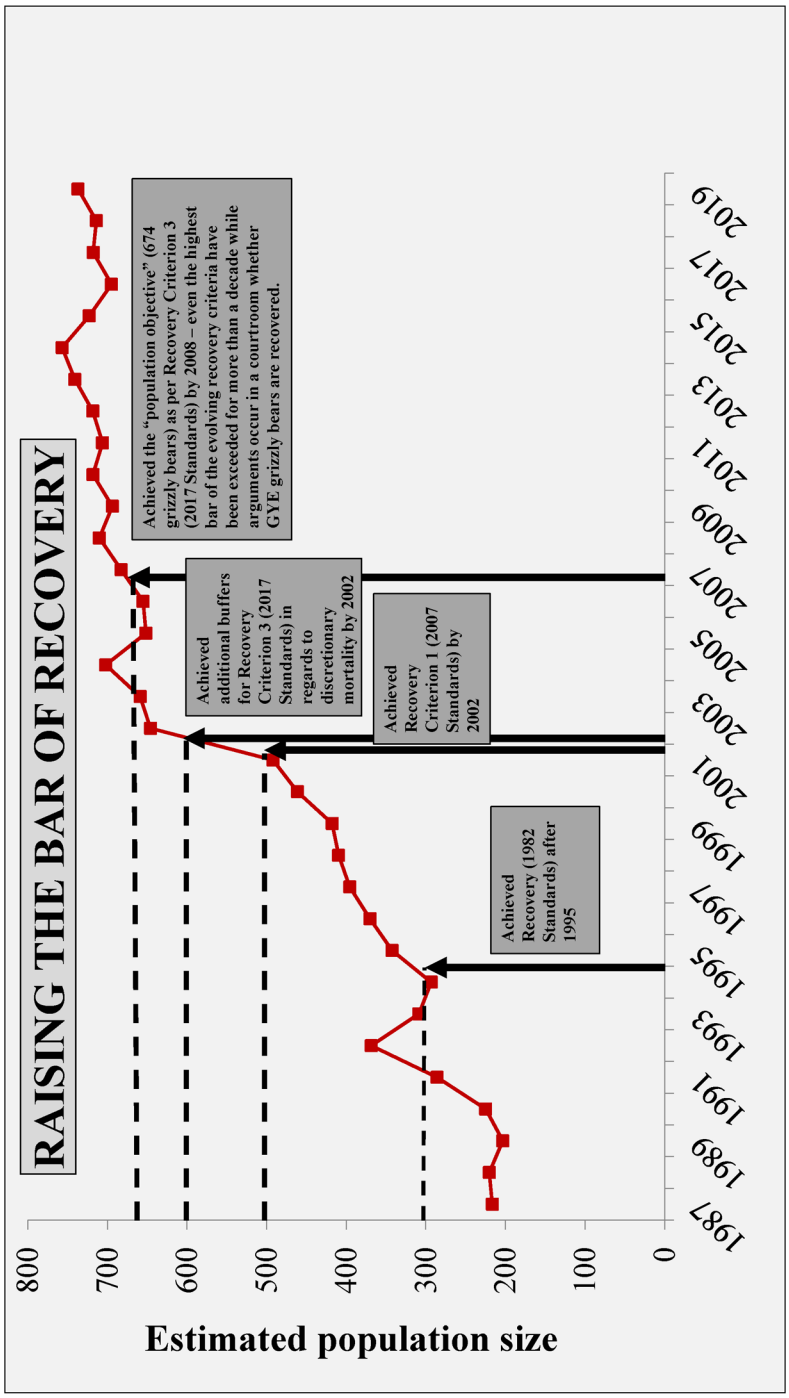
If GYE grizzly bears remain listed as a threatened population under the ESA, the cost of grizzly bear management has the potential to continue to rise commensurate with the expansion and increase of the grizzly bear population. This expansion is occurring in areas deemed unsuitable for grizzly bears and the burden of addressing conflict in these human dominated landscapes is increasing significantly. Since 2012, approximately 30% of all conflicts verified and addressed by the Department occurred outside the DMA. Grizzly bear caused livestock depredation and subsequent damage payments in Wyoming have continued to increase due to a recovered and increasing population, from Fiscal Year 2007 through Fiscal Year 2018 a total of $2,946,355 was paid in damage compensation for grizzly bear depredation (an annual average of $245,530 with an overall increasing trend in payment and depredations).

Effects of Perpetual Listed Status of Grizzly Bears and Other Species/Populations

More important than direct monetary costs, keeping an animal such as the grizzly bear listed is seriously eroding public support for grizzly recovery. Sportsmen and sportswomen whose license fees have provided the $50 million to recover the bear, have fewer ungulates to hunt and fear to hunt in areas they have used for years. The intent of the ESA is to provide the necessary protections for a species or population to recover on the landscape, with the ultimate goal of removing them from threatened or endangered status. The perpetual litigation surrounding grizzly bears is a fund-raising tactic of litigants. I have noted a waning tolerance for grizzly bears, especially along the expanding front of grizzly bear range throughout Northwest Wyoming. As tolerance and acceptance of this iconic animal decreases, support for maintaining grizzly bears

outside the DMA becomes more difficult. In the case of the GYE grizzly bear, the ESA is no longer serving its purpose to recover and delist the species and turn management over to the respective state wildlife agencies. While the ESA is widely regarded as landmark conservation legislation, its support is waning due to the Service's inability to provide a durable delisting rule for a fully recovered species that has been the benefactor of the ESA. The prescribed protections of the ESA are ineffective and cumbersome when a population has moved beyond recovery. Removal of ESA listed status does not strip protections, but rather places the management authority in the hands of the proper jurisdiction of those that have been managing grizzly bears for decades and are responsible for their current recovered status. A state managed population would allow professional wildlife managers to employ all the tools necessary to maintain grizzly bears in perpetuity, resolve conflicts, conduct valuable research and properly serve the people of Wyoming and those who visit our state.

Thank you for the opportunity to provide this testimony and to share some perspective regarding grizzly bear conservation in Wyoming.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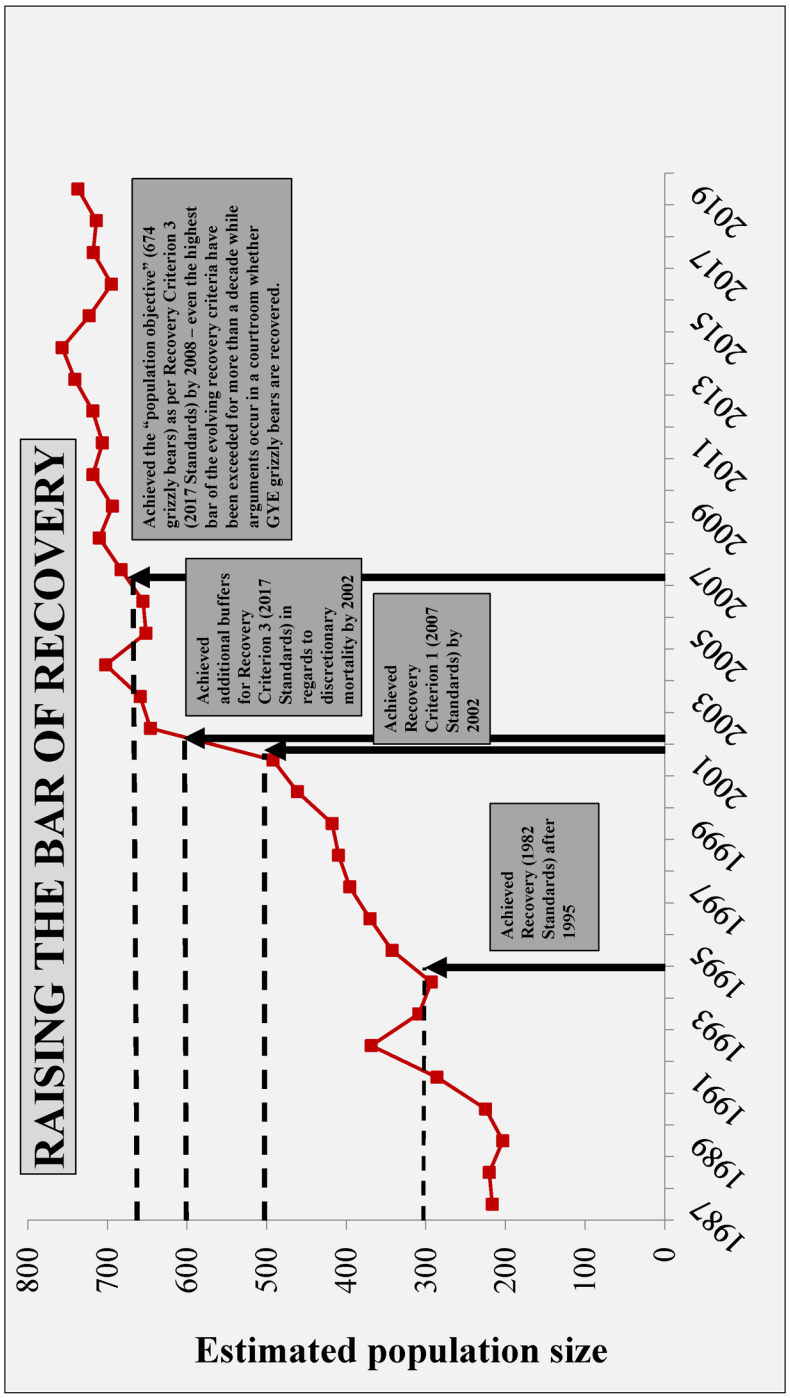
Achieved Recovery (1982 Standards) after 1995
Achieved Recovery Criterion 1 (2007 Standards) by 2002
Achieved additional buffers for Recovery Criterion 3 (2017 Standards) in regards to discretionary mortality by 2002
Achieved the "population objective" (674 grizzly bears) as per Recovery Criterion 3 (2017 Standards) by 2008 – even the highest bar of the evolving recovery criteria have been exceeded for more than a decade while arguments occur in a courtroom whether GYE grizzly bears are recovered.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Senate Committee on Environment and Public Works
Hearing entitled, *"Successful State Stewardship: A legislative hearing to examine S.614, the Grizzly Bear State Management Act."*
September 9, 2020
Questions for the Record for Patrick Crank

Chairman Barrasso:

1. On two occasions, under the leadership of both Democrat and Republican Administrations, the United States Fish and Wildlife Service de-listed the Greater Yellowstone Ecosystem population of grizzly bears from the Endangered Species Act. Despite this, repeated court overreach has upended these science-based decisions. The Grizzly Bear State Management Act will re-issue the 2017 rule delisting the grizzly bear. It will prohibit activist judges from overturning the delisting in court.

    a. Do you think this is important, and why?

    Answer: The recovery of the GYE grizzly bears is likely the greatest success story under the Endangered Species Act. The failure to delist the bears when they are far beyond all recovery criteria has seriously eroded support for the species. Hunters, recreationists, livestock producers, and the public have had to change how they live their lives, recreate, and operate their businesses to accommodate the recovery. GYE grizzly bears have exceeded the carrying capacity of the GYE and continue to move into unsuitable habitat which leads to more frequent human and livestock conflict. The failure to allow state management greatly harms the recovery of the bear. Courts have now twice refused to recognize the expertise of state and federal wildlife managers and allow delisting. Activist courts should not be allowed to substitute their judgment for expert wildlife managers. Having failed twice, it is important to remove court review of this delisting decision to allow bears to be removed from the ESA and be properly managed by expert state wildlife managers.

2. Wyoming has invested more than $50 million in innovative approaches to conserve and recover grizzly bear populations. Many of these approaches involve close relationships between state wildlife officials and local landowners.

    a. Can you highlight some examples where local input helped inform management of grizzly populations in the state?

    Answer: The greatest example of local input informing grizzly management is likely the depredation compensation program operated by the Wyoming Game and Fish Department. As noted above, grizzlies have far exceeded their carrying capacity in the GYE. This has led to a dramatic increase in livestock and human conflict. The Wyoming Game and Fish department investigates livestock losses and fairly compensates livestock producers for grizzly and wolf related livestock losses. This compensation program funded solely by the Game and Fish with

sportsmen dollars has greatly increased tolerance and support for grizzly bears by landowners and others. Without this fair and efficient compensation program, such tolerance would not exist.

A second example clearly illustrating the state's interest, intent and capacity to involve those who live closest to this population in their management occurred following the 2018 delisting. The Wyoming Game and Fish Department embarked in extensive public outreach across the entire state to solicit feedback from Wyoming citizens. Additionally, the Department conducted a virtual presentation allowing anyone interested in grizzly management to provide their perspectives. Participants represented diverse perspectives and stakeholder groups and were provided the opportunity to discuss grizzly bear management with other stakeholders with differing views. State grizzly bear managers facilitated the discussions and provided scientific expertise for all to consider. The outcome of these meetings was a prioritized list of ideas and objectives provided by attendees focused on grizzly bear management under the authority of the state. All of these ideas were presented to the Wyoming Game and Fish Commission and many were recommended for implementation. Efforts to implement these ideas were halted following the state's loss of management authority when the court relisted the GYE population.

3. As grizzly populations expand so do encounters with livestock. In one area of Wyoming alone, members of the Upper Green River Cattle Association have lost over 1,000 heads of cattle since 1995.

    a. Can you please describe recent changes in grizzly bear-human conflict as concurrent with the grizzly's recovery, and outline the financial burden depredation poses to landowners?

    Answer: As grizzly bears have moved into unsuitable habitat because their numbers have exceeded the carrying capacity of the GYE, both human and livestock conflict has dramatically increased. The number of human fatalities and injuries have increased. The number of livestock killed by grizzlies has increased. The loss of human life and injuries is tragic and inexcusable. The financial impact to livestock producers cannot be sustained by livestock producers in the long term. An analogy is appropriate to show this point. If a person owned a store and every year, 25% of their inventory was stolen by shoplifters and their insurance company only compensated them for 50% of the stolen inventory, each year the store would lose 12.5% of their income. In the long term, the store would go out of business. This is the situation that the Upper Green River Cattle Association finds itself in because they can only be compensated for livestock losses that can be verified as having been killed by a grizzly bear. The Department pays producers a multiplier in an attempt to compensate producers for some of their unconfirmed losses. Despite best efforts, it is exceedingly difficult to confirm what killed hundreds of livestock in the area where the Upper Green Association operates and to account for intangible losses associated with grizzly

bear influences on cattle herds. No business should be forced to lose 12.5% of their profit each year and no business can be successful with that type of unnecessary loss year after year.

Senator Carper:

4. You have extensive experience working with your state on the development of grizzly bear management plans.

    a. Would you elaborate on how your state considered the perspectives of Tribes in the development of grizzly bear management plans?

    Answer: In Wyoming, tribes have exclusive authority and jurisdiction over game management on tribal lands within the boundaries of the Wind River Reservation. With delisting planning and management for both gray wolves and grizzly bears, tribal authorities have had a seat at the table and equal footing with regard to the planning, adoption, and creation of delisting management plans. Currently, the tribes have full and exclusive management of gray wolves on tribal land post delisting. Additionally, these tribes have the opportunity hold a seat on the Yellowstone Ecosystem Subcommittee of the Interagency Grizzle Bear Committee. These committees developed the conservation strategy charting post-delisting management. The same will occur if the Grizzly is ever delisted.

5. In 2017, the U.S. Fish and Wildlife Service released a report that indicates that hunting has decreased while wildlife watching and ecotourism have increased nationwide. In the 2016 Yellowstone National Park Visitor Use Study, 75 percent of respondents said that bears were either an "extremely important" or "very important" resource to them.

    a. How have these trends informed state wildlife management plans for bears?

    Answer: The recovery of grizzlies in Wyoming has always been of paramount importance to the Wyoming Game and Fish Department and the state as a whole. The maintenance of a healthy and robust grizzly population is still a top priority today and in the future. The idea that hunting and ecotourism and wildlife watching cannot coexist is a totally false narrative. The idea that the Wyoming Game and Fish Department and Wyoming citizens want to, or will, exterminate the grizzly bear if given management authority is an out and out lie. Ecotourism and wildlife watching can exist with hunting and have since Wyoming became a state. Ecotourism and wildlife watching have occurred during the recovery of the grizzly population and will continue even with grizzly bear hunting. This is particularly true in Wyoming where grizzly bears will be totally protected within Yellowstone and Grand Teton National Parks which collectively have millions of acres of the most suitable grizzly habitat.

    Currently, the states and tribes have the authority to manage gray wolves, black bears and mountain lions. State management plans incorporate hunting as a

component of management and have for decades. Opportunities to hunt or view these species are as good or better now than they have ever been.

6. Your testimony states that "state wildlife agencies have the resources to scientifically and carefully manage recovered species." In 2016, Governor Freudenthal chaired the Blue Ribbon Panel on Sustaining America's Wildlife. The conclusion of that panel, which included executives from conservation groups and industry organizations, was that a new, sustainable funding model is necessary to ensure healthy wildlife and fish populations for future generations. In other words, states actually do not have the financial resources they need to fully implement State Wildlife Action Plans.

   a. Were you aware of this conclusion by the Blue Ribbon Panel?

      Answer: I am aware of the finding of that panel. With all due respect, the conclusion that you draw from that finding (states do not have the resources to fully implement wildlife action plans) is not related to the finding and is false. Wyoming has spent over $50 Million dollars of sportsman license fees to recover the grizzly bear. Wyoming continues to spend over $2 million dollars each year to manage grizzly bears. Wyoming receives approximately $100,000 from the USFWS on any given year to manage grizzly bears. Wyoming has the resources to manage a sustainable grizzly population for the future and will continue to spend the resources necessary to achieve that goal.

   b. Do you agree that states need additional funding to prevent new species from becoming imperiled and to effectively manage those that are delisted, beyond just the grizzly bear?

      Answer: The Blue-Ribbon Panel studied wildlife funding for all species, not just endangered species. Those species would include both game and non-game species including moose, waterfowl, deer, bats, eagles, hawks, bighorn sheep, etc., and endangered species like the grizzly bear. We have those species in the United States in very large part because of the North American Model of Wildlife Management which uses license fees to protect and manage not only game species, but all species within a state's borders. Without those license fees there would be few elk, deer, or antelope today. We would likely have an extinct population of grizzly bears in Yellowstone. Said another way, those who do not participate in hunting or fishing have greatly benefitted from the billions of dollars spent by hunters and fishermen who have funded all efforts to support and preserve all wildlife in this country. There is a critical need to find alternative sources of funding to preserve all wildlife in this country, not just endangered species. In Wyoming, the number of folks who hunt and fish is growing. That does not appear to be the case nationwide. The United States needs to either dedicate general fund revenue for the states to manage wildlife or the non-consumptive users (ecotourists and wildlife watchers) need to join the sportsmen and contribute financial resources to protect and preserve our amazing wildlife.

7. While bear spray is not 100% effective, research shows that it is the most effective method of deterring a negative interaction between a human and a grizzly bear. In fact, the Grand Teton National Park requires elk hunters to carry bear spray. Yet, the Greater Yellowstone Ecosystem states have declined to develop bear spray requirements for hunters or backcountry hikers and contend that education is more important.

    a. Would you elaborate on your states' concerns with making bear spray mandatory?

    b. Is there a downside to requiring bear spray and promoting education?

    Answer to Questions A and B:

    I am opposed to mandating that hunters carry bear spray in Wyoming for several reasons. Those reasons include that Wyoming has no jurisdiction or legal authority to require all recreationists to carry bear spray. It would be silly to mandate that a hunter spend $50 to have a can of bear spray when a photographer hiking in the same area has no obligation to do so. Second, as I mentioned above, the failure to delist an obviously and scientifically proven recovered population of grizzly bears is seriously eroding public support for this iconic species. Taking action to require all hunters to carry bear spray with the threat of criminal prosecution if they do not do so would dramatically contribute to that erosion of their critical support for the recovery. We have burdened sportsmen enough by using $50 million of their license fees to recover grizzly bears which because of their overpopulation, dangerous propensities and activist courts thwarting delisting rules, limit the number of animals that sportsmen can hunt and dramatically limit the areas in Wyoming where they can hunt without fear of being mauled by a grizzly bear. Requiring bear spray creates far more problems than it solves during a time when conflicts have increased, the number of bears killed in human conflict or euthanized due to human conflict have increased. Despite this increase in bear removals, their population has continued to increase. Simply stated, removal of bears due to conflict has not negatively impacted the population. Requiring bear spray would not help the bear population. It is already at or above carrying capacity. In any event, the Wyoming Game and Fish Department strongly encourages anyone recreating in grizzly county to carry bear spray, a firearm or both.

    c. What else should states and federal agencies be doing to better educate hunters and hikers on reducing conflicts with bears?

    Answer: Wyoming has a model program called "Bearwise Wyoming" which should be a model program for any state occupied by either black or grizzly bears. Wyoming dedicates significant personnel and financial resources into this program each year to educate the public on bear safety.

8. In your criticism of the 9th Circuit Court of Appeals' decision on "recalibration," you make several references to "future unknown models."

a. Isn't it true that there is a very well-known model — the Mark-Recapture model — that exists today, and most experts believe it more accurately measures the Greater Yellowstone Ecosystem grizzly bear population?

Answer: I do not believe this statement is accurate. My understanding based on briefings from grizzly biologists in the Department is that scientists with the Interagency Grizzly Bear Study Team (IGBST) have not adopted the Mark/Resight estimator because it is too variable. The IGBST instead has focused on revising the current Chao2 population estimator to make it more accurate based on what they have learned over the last 50 years of studying this population. The IGBST also continues to look at an integrated population model as a potential future model, however it is not developed and tested to an appropriate level yet.

b. Isn't it true that the Interagency Grizzly Bear Committee is working on a new Integrated Population Model?

Answer: Yes, but as stated above, it is not tested to a level that would allow grizzly managers to use it reliably.

c. If yes, would you elaborate on why you do not believe the U.S. Fish and Wildlife Service could address the recalibration deficiency identified by the 9th Circuit Court of Appeals?

Answer: The problem with "recalibration" is severalfold. First and foremost, speculation regarding some future speculate and nonexistent statistical model to estimate the number of grizzly bears in the GYE should not and cannot be a factor under a delisting decision under the ESA. Listing decisions must, according to the law, be based on the best science available at the time the delisting decision is made. The Ninth Circuit decision is totally contrary to how the ESA must work and was designed to work. Second, the whole concept of "recalibration" ignores the irrefutable fact that grizzlies in the GYE have reached carrying capacity. No scientist will dispute that fact. The increased numbers of human and livestock conflicts and geographic dispersion of grizzly bears substantiate that fact. The number of bears that have to be removed from unsuitable areas like residential subdivisions supports that fact. The "pot" of the GYE is full of grizzly bears. In fact, there are too many grizzly bears in the "pot", and they are spilling over the "pot" into areas where they cannot successfully exist. Using a "new and improved" population estimator to recognize that the GYE likely has 2000 grizzlies versus the highly conservative Chao2 estimate of less than a thousand bears cannot be used to allow the environmental groups to demand that Wyoming manage for 2000 bears. The most knowledgeable scientists in the world who know more about this species than any other species of wildlife in the world have determined that 500 grizzly bears is the appropriate population based recovery criteria and what is necessary for a sustainable population in perpetuity. The

question under the ESA is whether we have at least 500 bears and whether the plans will allow us to sustain 500 bears. If a new statistical model shows we have 2000 bears that is a good thing, but it should not be used to thwart state management of these bears. To allow environmental groups and the USFWS to require Wyoming and the other states to have to manage for 2000 bears is a recipe for failure. Using 2000 bears as the recovery criteria and to guide management actions will result in continued loss of human life and injuries and continued livestock conflicts and further erode public support for the species. Carrying capacity is carrying capacity no matter what statistical model is used to estimate the number of bears.

9. At several points in your testimony, you claim that federal judges that have ruled on the Greater Yellowstone Ecosystem grizzly bear delisting are motivated by politics.

    a. Do you have any specific evidence of this? If so, please provide it.

    Answer: There can be no dispute that environment groups are able to forum shop to try and have the judge they believe is most favorable to their position decide these important ESA questions. Judge Christensen, the Judge who struck down this most recent delisting rule, has historically provided rulings in favor of environmental groups and against the USFWS on other ESA questions. The fact that the large majority of environmental groups who sought to challenge this delisting decision all filed in this district, where Judge Christensen and Judge Malloy who struck down the 2017 delisting rule preside, is solid evidence that the environmental groups believe that judges will take action for political reasons or biases they may possess. There is no other logical explanation for their actions. I have watched ESA litigation closely since 2002. The environmental groups have continually filed challenges in this district in Montana, a district in Idaho where Judge Windmill presides, and in the DC Circuit. One cannot ignore the proven fact that the environmental groups have sought favorable judges to decide the issues they raised. Wyoming contains the largest segment of the GYE grizzly population but they did not challenge the delisting rule in the most appropriate forum, They challenged the delisting rule in a Montana circuit where two judges preside that have historically issued decisions consistent with the environmental groups political perspectives. In addition, any appeal from a decision of a district court in Montana must be appealed to the Ninth Circuit Court of Appeals. An appeal of a Wyoming decision would be heard by the Tenth Circuit Court of Appeals. It cannot be disputed that historically the Ninth Circuit has been far more liberal and environmentally leaning than any other Circuit in the United States. It defies all logic and common sense to believe that appointment to the federal bench magically erases all biases and prejudices a judge may have. If that were true, there would be no controversy over President Trump's recent nomination for the Supreme Court. History has show that environmental groups have sought out judges who are most likely to not follow the law and rule in a manner to thwart ESA delisting decisions made by the USFWS. That fact cannot be denied.

10. You state that every legal challenge to a Greater Yellowstone Ecosystem grizzly delisting "leads to millions of dollars pouring into [environmental group] coffers."
    a. Do you have any specific evidence of this? If so, please provide it.

    Answer: I have watched environmental groups "rally their troops" over delisting decisions with grizzly bears and gray wolves since 2002. Their websites inform their members of some upcoming or issued decision and solicit contributions to fight the extinction of grizzly bears or wolves, or whatever the species is that they have chosen to use to fund raise. I am fairly certain that there are also mailers to the same effect. I have found that many times their fund-raising appeals have little or no basis in fact and misinform the people they are soliciting. The messages are deliberately chosen to inflame the largest group of people to gain political advantage and raise funds. I have no ability to quantify the exact amount of money received via these appeals. When I have sought the exact accounting of these contributions, grants, and donations in other litigation, the environmental groups have always refused to provide a direct accounting. With all due respect, it cannot be disputed that environmental groups raise millions of dollars from challenging ESA decisions. Their public websites conclusively prove that. I routinely receive form objection letters from people in foreign countries complaining about plans to delist species or establish hunting seasons for grizzly bears. This proves to me that there is a concerted effort to raise funds and involve people as far away as New Zealand on endangered species litigation. The only way to quantify the magnitude of this fundraising would be to demand the environmental groups to produce an accurate accounting for the Senate. I urge you to make this request of those environmental groups to finally answer this question. I believe the magnitude of funds raised over preventing delisting of species would be shockingly large.

    b. And if that were the case, wouldn't it prove how deeply the American public cares about the long-term conservation of this species?

    Answer: One of the things I quickly learned early on in my time on the Wyoming Game and Fish Commission was that most everyone you meet is very passionate about wildlife. That is an amazing thing, and it will lead to the maintenance of our amazing wildlife. I also learned that because of that passion, most everyone has an opinion on almost every wildlife issue. I have found some opinions are well reasoned and informed. I have found some opinions are illogical and even ignorant. Recognizing that passion, it is wrong for environmental groups to abuse that passion to perpetrate an entities existence by challenging a decision to delist the grizzly bear at all cost and in direct contravention of the scientists that know more about this species than any other wildlife species on the face of the earth. It is wrong for any judge to ignore the law and interject his or her political bias into these important decisions under the ESA. I understand their passion for this amazing species, and I share that passion,

but their actions are greatly harming the future existence of this amazing bear. Every action under the ESA must, if the ESA works as intended, lead to a delisting. To thwart that intent to raise funds is very wrong.

Senator BARRASSO. Thank you, and we will be back with questions in a moment.

We are going to turn to Mr. John Leshy, who is the distinguished professor emeritus at the University of California, Hastings College of Law, and he is joining us remotely from San Francisco, California.

Professor Leshy, please proceed.

STATEMENT OF JOHN LESHY, DISTINGUISHED PROFESSOR EMERITUS, UNIVERSITY OF CALIFORNIA, HASTINGS COLLEGE OF THE LAW

Mr. LESHY. Thank you very much, Mr. Chairman, Ranking Member Carper, members of the committee, and Senator Enzi. I am Professor Emeritus at the University of California, Hastings College of the Law.

I appreciate your invitation to testify today. The ESA is a cornerstone of national policy protecting the web of life on Earth, our creation. Congress enacted it essentially in its current form nearly a half a century ago with broad bipartisan support; indeed, almost no dissenting votes.

President Nixon said when he signed it into law, that "Nothing is more priceless and more worthy of preservation that the rich array of animal life with which our Country has been blessed. It forms a vital part of the heritage we all share as Americans."

One component Congress took pains to build into the act was that courts should review agency decisions implementing it. Indeed, Congress affirmatively encouraged this judicial review by authorizing what the act calls citizen suits, making it clear that the courts have an important role to play to ensure that Congress's intent is fairly carried out by the executive branch.

I have worked on ESA issues for more than four decades, including nearly a dozen years in the Interior Department, where I had some responsibility for overseeing its implementation. I know firsthand that judicial review can be a pain in the neck to agencies who are usually trying their best to implement the act, often in challenging circumstances.

I know the frustration that comes when a court rules, in effect, you didn't follow the correct procedure, or, you considered something that you shouldn't have, or, you failed to consider something that you should have, and , therefore we are setting aside your action and sending the matter back to you. That frustration can be particularly acute where, as here, as many have noted, the ESA has been producing benefits. Indeed, the Greater Yellowstone grizzly is an ESA success story in progress.

Judicial review, let me emphasize, is a policy-neutral tool. It is available to all interests, those who are regulated under the act, as well as those who advocate for preserving the species. My considered judgment, based on my long experience in environmental regulation, is that courts generally have played a constructive role in the act's implementation, and that the benefits of judicial review clearly outweigh its costs. Court decisions have helped clarify ambiguities and reconcile disparate provisions in this complex statute, have promoted fair processes, including ensuring that all affected interests are heard, and have curbed agency excesses, all the while

working to enforce and fulfill the intent of Congress in enacting the statute in the first place.

Given the importance that Congress has attached to judicial review, it seems to me that rarely, if ever, is there justification for doing away with it, as S. 614 proposes to do. Short-circuiting judicial review can have real costs. I have given one example in my written statement involving the Trans-Alaska Pipeline. There are many others. As it shows, judicial review of agency action can and often does produce better long-run outcomes for all interests.

Finally, let me underscore that even assuming there is strong sentiment in the Congress that the Greater Yellowstone Ecosystem grizzly ought to be delisted, it is not at all clear that congressional action is needed to achieve that result. Although I take no position on whether the grizzly should be delisted here, it appears to me that the Fish and Wildlife Service could readily, even easily, correct the three defects that the Ninth Circuit Court of Appeals identified in its decision in July. I have explained why in my written statement.

It also seems obvious that whether or not the grizzly is delisted, the need will remain for both the Fish and Wildlife Service and the pertinent States to carefully manage the bears for the sake of all humans and bears alike.

Again, I appreciate the opportunity to testify, and am happy to answer any questions you might have.

[The prepared statement of Mr. Leshy follows:]

Statement of John D. Leshy
before the
Senate Committee on the Environment and Public Works
Hearing on S. 614
September 9, 2020

Mr. Chairman, Ranking Member Carper, members of the Committee,

I am John D. Leshy, Professor Emeritus at the University of California, Hastings College of the Law. I have worked on ESA issues for more than four decades, including extensive experience in the executive branch. I appreciate your invitation to testify today on the important question raised by this bill, which would delist the Greater Yellowstone Ecosystem (GYE) grizzly bear and insulate the delisting from judicial review.

The ESA is a cornerstone of national policy protecting our environment and natural resources. It was designed to combat what the eminent biologist Edward O. Wilson has called the "folly our descendants are least likely to forgive us"—namely, the "loss of genetic and species diversity" from human causes.

It was enacted in essentially its current form in 1973 with broad bipartisan support; indeed, there were almost no dissenting votes. President Nixon said, in signing the ESA into law:

> "nothing is more priceless and more worthy of preservation than the rich array of animal life with which our country has been blessed. It is a many-faceted treasure, of value to scholars, scientists, and nature lovers alike, and it forms a vital part of the heritage we all share as Americans. I congratulate the 93d Congress for taking this important step toward protecting a heritage which we hold in trust to countless future generations of our fellow citizens. Their lives will be richer, and America will be more beautiful in the years ahead, thanks to the measure that I have the pleasure of signing into law today."

The earth's web of life, or creation, is complex. It is no surprise, then, that the ESA is itself somewhat complicated, and decisions in its implementation can be difficult. The Act's regulatory core is the decision to list (or delist) species. Congress specifically instructed the executive to make listing determinations "solely on the basis of the best scientific and commercial data available," after taking into account any efforts being made to protect such species. 16 U.S.C. §1533(b)(1)(A).

Congress built into the ESA's regulatory process an important component; namely, judicial review of executive branch agency decisions that implement the Act. But Congress went beyond merely acknowledging the possibility of judicial review—it affirmatively encouraged it through what it called "citizen suits." 16 U.S.C. §1540(g). This section makes clear Congress's expectation that the courts have an important role to play to ensure that Congress's intent is fairly carried out by the executive.

I worked for nearly a dozen years in the Interior Department, where I bore some responsibility for overseeing implementation of the ESA. I know firsthand that judicial review can be a pain in the neck to agencies who are usually doing their best to implement complicated congressional enactments in what are often challenging circumstances. I know the frustration that comes when a court rules, in effect, "you didn't follow the correct procedure," or "you considered something you shouldn't have," or "you failed to consider something you should have," and "therefore we are setting your action aside and sending the matter back to you for correction."

The frustration can be particularly acute where, as here, the ESA has already been working to produce a tangible benefit. Indeed, the GYE grizzly is, from all appearances, an ESA success story in progress, for its population has rebounded substantially since the grizzly was listed under the Act in 1975.

Nevertheless, the Ninth Circuit Court of Appeals recently mostly affirmed a Montana federal district court decision setting aside the delisting decision of U.S. Fish & Wildlife Service (FWS) and remanding the matter to the FWS for further action. *Crow Indian Tribe v. State of Wyoming* (9th Cir., July 8, 2020), affirming 343 F. Supp. 3d 999 (D. Mont. 2018).

There is little doubt that Congress has the constitutional authority to override this court decision and insulate its action from further judicial review, like S. 614 proposes to do.

But that is not to say that Congress should take this step, for it is important to keep the bigger picture in mind, and especially the constructive role the courts can play and have played in the Act's overall implementation.

Judicial review is a policy-neutral tool. It is available to all interests who share the objective of ensuring that the executive branch carries out the law as Congress has written it. Congress provided that "any person" can sue, and the Supreme Court has encouraged the use of citizen suits by those who are regulated under the Act.

Specifically, in *Bennett v. Spear*, 520 U.S. 154, 176-77 (1997), the Court held that ranchers and irrigation districts had standing to challenge a biological opinion issued by FWS that was threatening to reduce their water supply, on the ground the opinion failed to conform to the Act's requirements. Congress's intent in the ESA, Justice Scalia wrote for a unanimous Court, was not just to protect species, but also to avoid "needless economic dislocation produced by agency officials zealously but unintelligently pursing their environmental objectives." Numerous federal court decisions show that those regulated by the Act have used judicial review with some success.

It is also worth noting that plaintiffs in the GYE grizzly delisting litigation included several Indian Tribes, tribal members and Indian organizations, who believed their concerns had not been sufficiently addressed by FWS.

My considered judgment, based on my long experience in environmental regulation, is that, overall, the benefits of judicial review clearly outweigh its costs. Court decisions have helped clarify ambiguities, reconcile disparate provisions in complex statutes like the ESA, promote fair processes (including insuring that all affected interests are heard), and curb agency excesses—all the while working to fulfill the intent of Congress.

That judgment leads me to the conclusion that it is rarely, if ever, appropriate for Congress to consider short-circuiting judicial review. When Congress does that, it can have real costs.

Let me offer a concrete example. In 1973, the U.S. Court of Appeals for the D.C. Circuit ruled that the Interior Department's approval of the Trans-Alaska Pipeline violated the National Environmental Policy Act (NEPA) because it failed adequately to consider the alternative of an all-Canadian land route. That route would have conveyed Alaska North Slope oil to the Midwest, where demand and refinery capacity were greatest. It would also have avoided the need to transport the oil on tankers through the potentially hazardous waters of Prince William Sound in the northern Gulf of Alaska. *Wilderness Society v. Morton*, 479 F.2d 842 (D.C. Cir.) (en banc), cert. denied, 411 U.S. 917 (1973). Not long afterward, the Congress voted to overturn that court decision, prevent further consideration of that alternative, and insulate the Department's NEPA compliance and its decision to approve the pipeline from further judicial review. (In the Senate, it took a vote by Vice-President Agnew to break a tie.) The pipeline was completed in 1977 and the rest, as they say, is history. A few years later, the Exxon Valdez ran aground in Prince William Sound, spilling eleven million gallons of crude oil, which fouled some thirteen hundred

miles of coastline. The costs to the environment, to fishermen and others whose livelihood depended upon it, and to Exxon's bottom line and its reputation, were huge.

I would not claim that a congressional decision to delist the GYE grizzly bear and insulate the matter from further judicial review would have such major consequences, even though the species is an iconic one in American culture. But the lesson of the Trans-Alaska Pipeline is that judicial review can and often does produce better long-run outcomes for all interests.

Finally, even assuming there is a strong sentiment in the Congress that the GYE grizzly ought to be delisted, it is not at all clear that congressional action is needed to achieve it. Indeed, it appears to me the FWS could readily, even easily, correct the three defects the 9th Circuit identified in its delisting decision.

First, the Court required the FWS to determine whether, if the GYE grizzly were delisted, a "sufficiently distinct and protectable remnant population" of grizzlies would likely remain. The Court noted the FWS seemed to agree that further review along this line should be undertaken (and my understanding is that FWS is currently doing this). The Court also noted that FWS had raised what the appellate court called "legitimate concerns" about the overbroad scope of the trial court's order, and so it cautioned that "extensive analysis" (as the district court seemed to have in mind) was *not* needed. Instead, FWS need only determine whether delisting the GYE grizzly would "render the remnant population no longer viable." Because the grizzly is, generally speaking, a well-studied species, this should not be difficult.

The second shortcoming the Court identified grew out of the conservation strategy the FWS had adopted in its 2007 de-listing decision, which recommended that FWS should take specific steps to protect the genetic diversity of the GYE grizzly population if natural connectivity with other grizzly populations was not established. In its 2017 delisting decision, the FWS abandoned this recommendation, concluding that genetic concerns did not pose a threat, and making a vague promise to consider "possible future action" if they did. Both the trial court and the court of appeals found this new FWS conclusion was contradicted by the best available science (thus violating 16 U.S.C. §1533(b)(1)(A)), because numerous studies indicated genetic health remained a concern. Therefore, the Court ruled, if the FWS was to delist, it needed to have in place "concrete, enforceable mechanisms" that would "ensure long-term genetic health of" the GYC grizzly. Because the FWS has had the question of protecting genetic diversity before it for so long, it seems to me correcting this defect can readily be done in a new delisting decision.

The third defect was the FWS's failure, in its delisting decision, to commit to revisit, and if necessary to recalibrate, its conservation strategy based on new population estimates as they are made. The FWS delisting conservation strategy initially included such a commitment. It was dropped in the final version at the urging of affected states, it even though the record indicated FWS officials thought this would result in a "biologically and legally indefensible" delisting. The FWS did not appeal this portion of the district court decision but affected states and other intervenors did. The 9th Circuit upheld the district court's conclusion that the failure to commit to recalibration was error. Because FWS already had already been moving to do this, it certainly appears this too can readily be done in a new delisting decision.

I take no position on whether the GYE grizzly should be delisted. From my vantage point at 30,000 feet, so long as FWS paid attention to the best available science and followed the correct process, it would seem the decision could go either way. It also seems to me that, whether or not the GYE is delisted, the need will remain for both the FWS and the pertinent states to carefully manage the bears for the sake of all, humans and bears alike.

Again, I appreciate the opportunity to testify, and am happy to answer any questions you might have.

Senate Committee on Environment and Public Works
Hearing entitled, *"Successful State Stewardship: A legislative hearing to examine S.614, the Grizzly Bear State Management Act."*
September 9, 2020

Questions for the Record for John D. Leshy and his Answers
October 5, 2020

Senator Carper:

1. The Trump administration has spent more than three years determined to suppress and deny inconvenient science. Specifically, this administration has proposed Secretarial Orders and rules that could limit the use of certain types of science at the EPA and Department of the Interior. The administration has reassigned Senior Executive Service employees with climate and other scientific expertise, creating a culture of fear within the agencies. Furthermore, this administration has made it more difficult for agencies to consider the impacts of climate change in decision-making. Each of these actions could negatively impact implementation of the Endangered Species Act, which must be based upon best-available science.

   All of that said, would you elaborate on the important connections between judicial review and upholding best available science in federal decision-making?

Answer of John Leshy:

In the ESA, Congress specifically required that listing and delisting decisions be made "solely on the basis of the best scientific and commercial data available," after reviewing the status of the species and taking into account efforts being made to conserve it. 16 U.S.C. § 1533(b)(1)(A). This requirement was added in 1982 by an amendment that President Reagan signed into law. 96 Stat. 1411 (1982). As I recall, the Congress (including the Republican-controlled Senate as well as the Democratic-controlled House) enacted this and related reforms to the listing process in 1982 in direct response to efforts by then-Interior Secretary James Watt to hold up decisions on listing new species while the economic impact of listing decisions could be considered. The 1982 legislation countermanded that effort, in part by inviting the courts to play a larger role in policing the listing process.

On top of this requirement in the specific context of ESA listing decisions, for nearly three-quarters of a century Congress has required all agencies of the executive branch to avoid making decisions that are "arbitrary, capricious, [or] an abuse of [their] discretion." Administrative Procedure Act of 1946, 5 U.S.C. § 706(2)(A). This means that if the teachings of science are relevant to their decisions, they cannot ignore that science, whether the question is, for example, the safety of drugs or consumer products being considered for approval, or how much pollution industries are allowed to emit.

The Covid pandemic and the increasing intensity of wildfires and storms remind us every day that we ignore the teachings of science at our peril. Congress's demand that science be taken into account in government decision-making, and Congress's enlisting the help of

the courts in enforcing that requirement against the executive branch, have never been more important to the quality of our lives and those of future generations.

A major reason why Congress has enlisted the help of the judicial branch is because it recognizes that it cannot realistically police the large number of decisions executive branch agencies make, exercising the significant authority Congress has bestowed on them. If judicial review were not available, the realities of economic and political influence would give those agencies large incentive to ignore pertinent science. If that happened, we would all, especially future generations, be left worse off.

As your question indicates, the Trump Administration has from the beginning consistently worked to suppress and deny inconvenient science. It has used many different tactics to that end, and its efforts extend far beyond the Endangered Species Act. In many pending cases, the courts are being asked to apply the laws Congress has enacted to determine whether agency decisions pay sufficient attention to science.

There is a long history of judicial enforcement of the ESA's science mandate. Nearly a third of a century ago, for example, a court in Seattle ruled that the U.S. Fish & Wildlife Service (FWS) "disregarded all the expert opinion" on whether the northern spotted owl was facing extinction, and failed to provide any "expert analysis supporting its conclusion" that the owl not be listed. It found the agency's failure to "establish a rational connection between the evidence presented and [its] decision," to be legal error. *Northern Spotted Owl v. Hodel*, 716 F. Supp. 479 (W.D. Wash. 1988). (The U.S. did not appeal this decision.)

The record is also clear, however, that where the FWS makes a serious effort to engage the pertinent science, and to take into account its teachings, the courts generally defer to the agency's decision when challenged. A useful review of the performance of the courts in this area is Holly Doremus, *The Purposes, Effects, and Future of the Endangered Species Act's Best Available Science Mandate*, 34 Envtl. L. 397 (2004).

It deserves emphasis that judicial review is available to all interests who share the objective of ensuring that the executive branch carries out the law as Congress has written it. Congress provided that "any person" can sue, and the Supreme Court has encouraged the use of citizen suits by those who are regulated by the Act. In *Bennett v. Spear*, 520 U.S. 154, 176-77 (1997), the Court held that ranchers and irrigation districts had standing to challenge a biological opinion issued by FWS that was threatening to reduce their water supply, on the ground the opinion failed to conform to the Act's requirements. Congress's intent in the ESA, Justice Scalia wrote for a unanimous Court, was not just to protect species, but also to avoid "needless economic dislocation produced by agency officials zealously but unintelligently pursing their environmental objectives."

Numerous reported decisions show that those regulated by the Act have had success in the courts. For example, the Supreme Court has unanimously rejected FWS's argument that its determination to designate thousands of acres of private land as "critical habitat" for a listed species was insulated from scrutiny by the courts. *Weyerhaeuser v. U.S. Fish & Wildlife Service*, 139 S. Ct. 361 (2018). The parties settled the case not long thereafter by removing the Weyerhaeuser property from the critical habitat designation.

To enforce Congress's requirement that administrative agencies take science into account when it is relevant to their decision-making, it is crucial that that the courts continue to play an important role.

Senator Cardin:

2. In Maryland, the recovery of the Delmarva Fox Squirrel demonstrates the effectiveness of the Endangered Species Act in bringing species back from the brink of extinction. The species was placed on the endangered list by the U.S. Fish and Wildlife Service in 1967. After a comprehensive ESA-directed habitat recovery plan that allowed for state and landowner collaboration, it was delisted in 2015. Loss of habitat is believed to be the major reason for the Delmarva fox squirrel's near demise. Much of the habitat now occupied by the Delmarva fox squirrel remains on private property. The species' continued success rests heavily on the willingness of landowners to provide for the squirrels, the commitment of loggers and developers to maintaining mature forest, and the ability of the Maryland Department of Natural Resources to continue to ensure appropriate habitat is maintained.

    a. Would it be a durable solution to support tolerance and efforts from wildlife managers and ranchers in the Mountain-Prairie Region to reduce conflict between humans and grizzly bears?

    b. How else can this Committee best apply the lessons learned to facilitate species' recovery?

Answer of John Leshy:

Supporting tolerance and efforts from wildlife managers and ranchers to reduce bear-human conflicts would certainly help maintain a healthy population of GYE grizzlies, whether or not it is delisted. Whether that alone would provide a "durable solution" is difficult for me to say, and I would defer heavily to expert opinion on that subject.

Although I am not intimately familiar with the details, I understand that environmental organizations like Defenders of Wildlife actively promote efforts by private landowners to co-exist with listed species like the GYE grizzly, including providing financial incentives for such cooperation.

While I'm not familiar with the remarkable recovery of the Delmarva Fox Squirrel, its success does highlight ingredients that are usually crucial to achieving such successes.

Privately-owned land is the primary habitat of many species listed as threatened or endangered under the ESA. The Supreme Court has made clear that the ESA can require regulation of activities on private land that "adversely modify" habitat of listed species, because that can amount to a "take" of listed species that would violate Section 9 of the

ESA. See *Babbitt v. Sweet Home Chapter*, 515 U.S. 687 (1995). Such regulation does not, generally speaking, unconstitutionally infringe on the property rights of the landowner under applicable Supreme Court decisions like *Penn Central Transp. Co. v. New York City*, 438 U.S. 104 (1978) and *Lucas v. South Carolina Coastal Council*, 505 U.S. 1003 (1992).

Nevertheless, just about everyone agrees that enlisting the cooperation of private landowners, rather than simply regulating them, is much preferred as a course of action. And the good news is that many landowners are motivated to do just that, being just as inspired as the rest of us by the diversity of creation. To that end, many programs have been put in place under both federal and state law to incentivize such cooperation, such as providing generous tax benefits for putting a conservation easement on one's land.

The ESA has often furnished important incentives for state and federal land and wildlife management agencies to coordinate their work across jurisdictional lines. See, e.g., Robert B. Keiter, Toward a National Conservation Network Act, 42 Harv. Envtl. L.Rev. 61, 113 (2018).

Finally, I would note that incentive-based and other voluntary programs to encourage bear-human coexistence could be undermined if the GYE were de-listed and the pertinent states adopted very aggressive programs to hunt grizzlies and federal land managers did little or nothing to ensure viable populations are preserved on public lands. All this is simply to say that, here as in many other areas of life, efforts to cooperate generally prove more effective in the long run than more confrontational tactics.

Senator Cardin:

3. Does the Grizzly Bear State Management Act hold the U.S. Fish and Wildlife Service accountable to the procedures mandated by the Administrative Procedures Act and the Endangered Species Act's "best available science standard?" If not, why is this a concern?

Answer of John Leshy:

S. 614 directs the Interior Secretary to de-list the GYE grizzly "without regard to" any law, including the Administrative Procedure Act and the Endangered Species Act, that would ordinarily apply to such a decision. If enacted, it would make the "best available science" on the de-listing issue irrelevant, carving an exemption from the requirement Congress specifically added to the ESA in 1982.

S. 614 goes on to specify that the de-listing action "shall not be subject to judicial review." By preventing the courts from reviewing Interior's action, S. 614 would remove an important mechanism Congress had previously put in place for ensuring that Interior not be arbitrary or capricious in its actions. Judicial review has, as I have previously indicated, generally added value to the administration of the ESA.

Senator BARRASSO. Well, we appreciate your testimony, and thank you for your thoughts on this.

Let's proceed to a series of questions. I will start with a question for Commissioner Crank. If the Grizzly Bear State Management Act is enacted, and the grizzly bear population subsequently, say, fails to meet recovery criteria, what mechanisms would remain in place to provide potential remedies for the recovery of the species?

Mr. CRANK. Chairman Barrasso, the biggest remedy is that any time a species is delisted, the Fish and Wildlife Service has at least a 5-year monitoring period to ensure that the delisted species remains viable and that the plan to delist the species is working. So ultimately, if the grizzly bear was delisted and the population failed, the grizzly bear could go right back on the endangered species list.

I think most importantly is the fact that Wyoming, as you mentioned, has spent $50 million of sportsmen-generated fees to understand, recover, and know what is important to a grizzly bear population. So you have the world's best wildlife managers in Wyoming, Montana, and Idaho that will continue to monitor, protect, and preserve this iconic species.

The idea that any State management, wildlife management agency would take steps that would allow a recovered species to go back on the list is just kind of preposterous to me. You would not want to ask to have cancer twice, Chairman Barrasso, in the vernacular.

Senator BARRASSO. So, following up with that answer, I think Wyoming has a very impressive track record when it comes to wildlife conservation, and not just with grizzly bears. Could you maybe discuss conservation status of other major carnivores in Wyoming? Because this is not just a one-species situation.

Mr. CRANK. Chairman Barrasso, I can. The best example I can give you would be the management of gray wolves after they were removed from the endangered species list, after a tortuous path, consistent with what we have experienced with regard to attempts to delist the grizzly bear. We were ultimately given management authority.

We have been managing those for over 5 years, now. We have maintained the population objectives and our conservation strategies. Gray wolves, having been removed from the Endangered Species Act, are doing quite well under our management authority, and will continue to do quite well into the foreseeable future.

Senator BARRASSO. Thank you.

Mr. Roady, I have a question for you, in terms of stakeholders whose operations bring them into frequent contact with wildlife are often those most heavily invested in conservation, as you said in your opening statement. Your company was incorporated in 1912. Can you please outline what measures your company and industry have taken to contribute to the recovery of the grizzly bear populations, and why you feel a sense of responsibility to protect and conserve grizzly bear populations?

Mr. ROADY. Yes, Mr. Chairman. Like I said in my statement, we all live there because we like it. We love it there. We live and work there, we raise our families there, and the grizzly bear is part of that. Just like all the other species, not only is it part of the law

to recover it, but we want it recovered, but even more reason to manage it.

What we do within our company and a lot of the other landowners is we work with the States and the Federal Government to, sometimes we manage the access; we manage the time of year that we do a lot of our work, and a lot of our timber harvest, we do in the winter when the grizzly bear is hibernated. We only work on roads at certain times.

We do all kinds of mitigating measures to help, and not just the grizzly bear, there is a whole litany of species that we work with. And our management, written right into our own management plans on our company lands as the Federal and the State school trust lands.

So we work constantly to mitigate any of those things. We want it to succeed, and it is a success. That is why I say we need to be celebrating it.

Senator BARRASSO. Senator Carper.

Senator CARPER. Thanks, Mr. Chairman.

Again, we welcome all of our witnesses in person and remotely, as well, as far away as California. I want to start off, if I could, with a question for all witnesses, and this is drawn from Mr. Leshy, by something you said right at the end of your testimony. I would ask all three witnesses to respond to this, we will start off with Mr. Roady and Mr. Crank, and conclude with Mr. Leshy.

Here is the question: how difficult do you think it would be for the U.S. Fish and Wildlife Service to correct the deficiencies that the courts have identified in the 2017 delisting rule for the Greater Yellowstone Ecosystem grizzly bear?

As I said, Mr. Leshy, I think you included some information in your written statement, and you mentioned it briefly at the end of your statement. But if I could ask Mr. Roady and Mr. Crank just to start off and respond to that question. How difficult do you think it would be for the U.S. Fish and Wildlife Service to correct the deficiencies that the courts have identified in the 2017 delisting rule for the grizzly bear?

Mr. Roady, do you want to kick us off, please? Then we will conclude with Mr. Leshy, please, and I ask you be fairly brief, please.

Mr. ROADY. OK. I can start. But they have already started, the Fish and Wildlife Service. They have been working on it since the day of the court decision, and most of those, they have been very aggressive at proceeding. There are a number of things, as you may be aware, that the courts listed, some in their counting procedure, some in their habitats, some in their connectivity to other ecosystems.

So I don't think it is be difficult at all, because most of those have already been met, and those of us that live there know that. And there are a lot of bears, especially in their genetics and their connectivity, that are already traveling between those areas. So they are working very aggressively, is the answer.

Senator CARPER. Thank you. Same question, if I could, for Mr. Crank, how difficult do you think it would be for the U.S. Fish and Wildlife Service to correct the deficiencies that the courts have identified in the 2017 delisting rule?

Mr. CRANK. Ranking Member Carper, I think two of the issues would be very easy to correct. One issue is a significant and major problem. So, the easy issues are the issue of genetic interchange. That is one or two sentences in the delisting rule saying that, basically, if we don't have the genetic diversity we need within the Yellowstone population, we will truck some bears from Glacier National Park. The distinct population segment found to justify the striking down of the rule is further study by the Fish and Wildlife Service, and I think they can fix that problem fairly easily.

The issue of recalibration is, in my mind, a huge issue that will not be able to be solved by the Fish and Wildlife Service. They attempted to do it in the original 2017 rule, didn't do it appropriately. Recalibration is an issue that is not even consistent with the Endangered Species Act, in my mind. Recalibration is a misnomer; it is essentially, you can't go out and physically count grizzly bears, so you have to develop statistical and scientific models to estimate the number of bears on the landscape.

The judge in Montana ruled that those three States, Wyoming, Montana, and Idaho, had rejected recalibration for political reasons. That is absolutely wrong. We rejected the idea of recalibration, which is what happens if some new statistical model shows that there are a greater number of bears in the ecosystem than we currently estimate? Our model right now is——

Senator CARPER. Mr. Crank, I have to leave some time for Mr. Leshy to answer this, as well. Can you just wrap up in one more sentence? I apologize, but they don't give me unlimited time here.

Mr. CRANK. Ranking Member Carper, the issue of recalibration cannot be solved quickly or easily, and it is a direct intrusion into State management authority, and it is inconsistent with the Endangered Species Act itself.

Senator CARPER. OK, thank you sir.

Mr. Leshy, I will give you the last word on this question, please, and I have one more short question. Go ahead, Mr. Leshy. Please be brief.

Mr. LESHY. Thank you, Senator Carper. I certainly agree with the other witnesses that the first two issues are easily solved.

I should point out that the Court of Appeals actually, here, sort of reined in the District Court a little bit, and said to the extent the District Court was requiring extensive analysis to make a new decision, it was wrong. So it sort of curbed the District Court decision.

On the third issue about recalibration, there are basically two basic formulas for estimating grizzly populations. They are kind of well-known, and the Fish and Wildlife Service basically said in its initial decision that if the second formula is used to estimate populations, then the conservation strategy needs to be recalibrated.

The Fish and Wildlife Service is actually moving to do that in its 2017 listing decision, when it was asked to sort of hold off by the States. The Court of Appeals basically said, that was a mistake, and that you need to make a commitment to recalibrate if you use this second population estimate.

Since the Fish and Wildlife Service was already moving to do that, it seems to me that it is really not difficult on remand to simply make that commitment. They were about to make the commit-

ment, and they held off. So I don't think there is a lot of magic here, and I think this is a problem that is easily solved, if you give the courts a chance to do it.

Senator CARPER. All right, thank you. Thank you all for your response to that question.

I have several other questions that I will ask for the record. I do want to mention one of them right now to Mr. Crank and Mr. Roady. I won't ask you to respond right now, but the question which would be among the questions for the record that you will receive from us later, but you both have extensive experience working with your States on the development of grizzly bear management plans.

The question I will ask you to answer for the record is, would you elaborate on how your respective States consider the perspective of Tribes in the development of grizzly bear management plans?

Again, we appreciate your joining us today, and thank you so much. Thank you.

Thanks, Mr. Chairman.

Senator BARRASSO. Senator Cramer.

Senator CRAMER. Thank you, Mr. Chairman, thank you Senator Carper. Thank you to all of the witnesses for sharing your expertise with us today, whether you be here in person or virtually, it is working very well.

Mr. Chairman, it seems to me there are a couple of constitutional principles that are at stake here, beyond even just the grizzly bear. It may not surprise anybody to know that there aren't any grizzly bears outside of zoos in North Dakota, however, our western friends have a real big issue on their hands.

So, the issue isn't just grizzly bears to me. It is not even just the Endangered Species Act, which by the way, I think requires a review in and of itself. I happen to chair the subcommittee that has jurisdiction. We need to look at how is it possible there could be 1,600 plants and species listed on the ESA, and only just a little more than 1 percent of them have been delisted. That is not a success story to me, that is a failure.

Now, the greater principles in my mind are these: one is, of course, the role of cooperative federalism. That is to say, the role of the States to manage their States, not in competition with, but rather in concert with, in collaboration and cooperation with, our Federal friends, our partners.

The second one is even greater, and that is what exactly is the role of, what I consider the superior of the three supposedly co-equal branches of government. I don't think that the three branches are co-equal. It is the legislative branch, the Congress of the United States, that passed the law that created the Endangered Species Act.

As we do with many authorities, too often, we look back, and we think, hmm, there is some lazy legislating going on that turned this much power over to a bureaucracy and a judiciary that is not prepared to do it or doesn't reflect the will of the people that elected the Congress of the United States. I think we need to restore some of that.

I think this hearing today illustrates that as well or better than any. The idea that somehow, the Federal bureaucracy could come up with all of these rules that seem to be more than adequate, and the oversight that seems to be more than adequate, is confounding enough.

But the idea that activist judges, in cooperation with friendly litigants, could come up with things like recalibration as a means of counting when the experts on the ground know better, is just completely, it is an abuse of power, is what it is. It is an abuse of one of the other branches of government.

But the bureaucracy is the bureaucracy. It is our job, as the Congress of the United States, to set policy, Mr. Chairman, we need to do it more proscriptively, and then to correct bad behavior by the enforcers of policy, especially over the course of decades, when a lot of things have changed.

With that, I have one question, really, for all three of you to take a shot at. Going back to my first point, if there are 1,600 plants and species listed under the Endangered Species Act, why is it that fewer than 2 percent have been successfully delisted? What is the problem?

We will start with our friend Mr. Roady, who is actually in the room.

Mr. ROADY. Thank you, Senator Cramer. I might tell you, just have a little bit of patience, and you might get grizzly bears in North Dakota. They are coming across the prairie in Montana faster than you can imagine.

Senator CRAMER. We didn't have mountain lions not that long ago, and we have lots of them now.

Mr. ROADY. They are coming. So, would you repeat your question?

Senator CRAMER. The question is, why has the Endangered Species Act been so unsuccessful in getting critters delisted?

Mr. ROADY. I think a lot of attention is paid to iconic species, i.e., the grizzly bear, and the wolf, and the black—footed ferret. I think a lot of attention goes to those iconic species, and some of the others don't happen. But that doesn't mean people aren't out there trying all the time. I certainly agree with your big-picture view of the whole concept of the three branches of government.

It is a pet peeve of mine that the Judiciary Branch is making biological decisions, and that is just not right. That is part of the equation of trying to get these delisted. There is a lot of stuff we are trying to do out there on the ground that isn't getting done because they are half-paranoid about the judicial branch being litigated.

Senator CRAMER. Mr. Crank, do you have a different answer?

Mr. CRANK. Senator Cramer, I have a consistent answer. I think the answer to your question is threefold. Environmental groups can generate incredible funds by challenging any delisting decision, no matter what the facts are, and Yellowstone grizzly bears are a great example. They are recovered; they should be delisted.

You reward those efforts to challenge delisting decisions with the award of attorney's fees under the Endangered Species Act. That might be something you want to look at possibly changing.

Third, the environmental groups have the ability to essentially hand-pick the judge that will handle their appeal, so that leads to very few delisting decisions being upheld by the court, and the judge substitutes his political judgment for those of the scientists who have studied and recovered the species, and that is wrong.

Senator CRAMER. Yes. I realize I am a little over. I would still like to hear from Mr. Leshy if the Chairman would oblige.

Mr. LESHY. Thank you. I will be very brief. I think any of the scientists that look at this problem would say one thing in particular about delisting: most species do not make it on the list unless they are very close to blinking out after a long decline. In other words, species are really, really in peril already before they ever make the list, and then once they make the list, they are protected.

Actually, the Endangered Species Act has been quite successful in that almost no species that ever makes it on the list actually goes extinct. But by the time they get there, they are so much in peril that it takes an enormous amount of effort. There has been an enormous amount of effort to keep them alive and to make them flourish to come off the list is a challenge, and it takes time, and that is the basic reason why so few species have been delisted.

Senator CRAMER. I thank you all, and I assure you, if we get grizzly bears in North Dakota, you will be able to count them face-to-face because they are rather easy to see on the prairies.

Thank you, Mr. Chairman.

[Laughter.]

Senator BARRASSO. Thank you, Senator Cramer.

Senator Carper.

Senator CARPER. Mr. Chairman, I ask unanimous consent to enter into the record letters and materials from stakeholders who oppose the Grizzly Bear State Management Act, including letters from Montana Wildlife Federation, Defenders of Wildlife, National Parks Conservation Associations, and several Tribes.

In addition to that, Mr. Chairman, I asked my staff to give me just a quick timeline, a rundown of the timeline of the litigation. I am not a lawyer, as you know, but in August 2017, environmental groups and Tribes filed suit in district court in Montana to retain ESA protection for Yellowstone grizzlies with a single judge making that decision. In May 2019, the Trump Administration appealed to the Montana District Court decision to the Ninth Circuit Court in California. And on July the 8th of this year, the Ninth Circuit Court of Appeals unanimously upheld the Montana decision, three to nothing. But I understand that the Trump Administration still may appeal its decision to the full Ninth Circuit Court if they choose to do, but I am told that they have not chosen to do that yet.

I regret that I did not get to ask a question about bear spray, and that was an issue we spent a lot of time talking about, and it seems a shame to let this hearing end without at least mentioning those words. Thank you.

[The referenced information was not submitted at the time of print.]

[Laughter.]

Senator BARRASSO. Thank you.

Well, going back to the Senator Enzi who is the original cosponsor and author of this, and then the 80/20 rule that my colleague, Senator Carper, mentioned at the beginning of this, you would think that if there was something that President Bush and then President Obama and Vice President Biden from Delaware, as well as President Trump all agree on, that would be that the grizzly bear is fully recovered and should be delisted entirely. That ought to fit into that 80 percent category of things that we agree on, on both sides of the aisle, and could get to a solution to.

So I want to thank all of the witnesses for being here today. Thank you so much for your thoughts.

I know Senator Inhofe had a question for Mr. Crank that I think, Pat, you will be able to respond to in writing. So the hearing record will remain open for 2 weeks.

I really do want to thank you for your time and your testimony, and with that, the hearing is adjourned.

[Whereupon, at 11:17 a.m., the hearing was adjourned.]

[Additional material submitted for the record follows:]

CENTER for BIOLOGICAL DIVERSITY Because life is good.

September 9, 2020

The Honorable John Barrasso
Chairman
Environment and Public Works Committee
United States Senate
Washington, DC 20510

The Honorable Tom Carper
Ranking Member
Environment and Public Works Committee
United States Senate
Washington, DC 20510

Dear Chairman Barrasso and Ranking Member Carper,

On behalf of our organization and its millions of members and supporters, we write to express our strong opposition to S. 614, the Grizzly Bear State Management Act, which would legislatively delist the Greater Yellowstone Ecosystem (GYE) population of grizzly bears under the Endangered Species Act. If passed, S. 614 will likely cause irreparable harm to this isolated population of roughly 700 bears and will make it much more difficult to recover other grizzly populations in the conterminous United States.

After the U.S. Fish and Wildlife Service removed Endangered Species Act protections for the GYE grizzly bear population in 2017, Wyoming and Idaho — for the first time in more than 40 years — announced grizzly hunts that would have allowed for up to 23 bears to be killed outside of Yellowstone National Park. In 2018, a Montana federal court blocked those hunts, ruling that the Trump administration illegally stripped protections for the GYE grizzlies. As the court noted in its order:

> The policy implications of the Greater Yellowstone grizzly delisting are significant, but they cannot affect the Court's disposition. Although this Order may have impacts throughout grizzly country and beyond, this case is not about the ethics of hunting, and it is not about solving human- or livestock-grizzly conflicts as a practical or philosophical matter. These issues are not before the Court. This Court's review, constrained by the Constitution and the laws enacted by Congress, is limited to answering a yes-or-no question: Did the United States Fish and Wildlife Service (hereinafter "Service") exceed its legal authority when it delisted the Greater Yellowstone grizzly bear?[1]

The court went on to note that "by delisting the Greater Yellowstone grizzly without analyzing how delisting would affect the remaining members of the lower-48 grizzly designation, the Service failed to consider how reduced protections in the Greater Yellowstone Ecosystem would impact the other grizzly populations."[2] For instance, the Service failed to consider how delisting the GYE population of grizzlies would affect two populations of grizzly bears in the mountains of northern Idaho, which are struggling with just a few dozen there total, the few bears that are

[1] Crow Indian Tribe v. United States, 343 F. Supp. 3d 999 (D. Montana 2018).
[2] *Id.* at 1004.

thought to inhabit the North Cascades, and the Selway-Bitterroot area, listed as one of six necessary recovery zones, that has no current bear population. Despite having recovery plans on the books to recover grizzly bears in these regions, the Service has not acted on them, and if the Yellowstone population is delisted in isolation, it decreases the likelihood of bears recovering elsewhere.

The 2018 ruling confirmed the illegality of the Service's fragmented approach to recovery that fails to meet the goal of the Act to recover species across significant portions of their range. "The Service's approach…does not square with the ESA as a matter of statutory interpretation or policy…The ESA does not permit the Service to use the distinct population segment designation to circumvent analysis of a species' overall well-being."[3] The court goes on to explain that:

> When a species is already listed, the Service cannot review a single segment with blinders on, ignoring the continuing status of the species' remnant. The statute requires a comprehensive review of the entire listed species and its continuing status. Having started the process, the Service cannot call it quits upon finding a single distinct population segment.[4]

In July 2020, the 9th Circuit Court of Appeals upheld the decision, requiring the Service to "determine…whether there is a sufficiently distinct and protectable remnant population, so that the delisting of the [distinct population segment] will not further threaten the existence of the remnant."[5] The 9th Circuit—describing the grizzly bear as an "iconic symbol of the Rocky Mountain west"[6]—also pointed to the lack of "concrete, enforceable mechanisms" to "ensure long-term genetic health of the Yellowstone grizzly,"[7] and that a "commitment to increase population size" is "required to ensure long-term viability."[8]

For decades, the courts have repeatedly slammed the Service for prematurely removing federal protections for GYE grizzly bears. If the Service had simply followeds the clear mandates of the Endangered Species Act, and the instructions set forth in these decisions by considering the impacts of delisting on the remnant population of bears, the agency could move forward with delisting the GYE grizzly bears in a manner that is consistent with Congress' clear intent in passing the Act. But this means the Service must consider and address the impacts of delisting on grizzly bears elsewhere in the lower 48 states.

Perhaps most importantly, however, if passed, S. 614 would cynically bypass any judicial review of delisting the GYE grizzly bears. Restricting access to the courts undermines g the

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[3] *Id.* at 1008-09.
[4] *Id.* (quoting *Humane Soc'y of the U.S. v. Zinke*, 865 F.3d 585, 601 (D.C. Cir. 2017)).
[5] Crow Indian Tribe v. United States, No. 18-36030 at 41 (9th Cir. 2020).
[6] *Id.* at 23.
[7] *Id.* at 19
[8] *Id.* at 45.

ability of ordinary Americans, to hold federal agencies accountable to the law whenever the agencies abuse their authority or overstep the clear limits that Congress has placed upon them.

Citizen suits are commonly used by individuals and organizations from across the political spectrum that act as watchdogs against government abuse. The citizen suit is a tool that derives its power directly from the principles of the Constitution to petition our government for a redress of grievances, ensures our civil rights are protected, and ensure equal justice under the law for all parties. Restricting judicial review is inherently undemocratic and sets a terrible precedent regarding access to the courts.

For these reasons, we urge you to oppose S. 614.

Sincerely,

Stephanie Kurose

Stephanie Kurose
Senior Endangered Species Policy Specialist
Center for Biological Diversity

Petition for a Recovery Plan for the Grizzly Bear (*Ursus arctos horribilis*) Across Its Native Range in the Conterminous United States

PETITIONER

CENTER FOR BIOLOGICAL DIVERSITY

"There seems to be a tacit assumption that if grizzlies survive in Canada and Alaska, that is good enough. It is not good enough for me.... Relegating grizzlies to Alaska is about like relegating happiness to heaven; one may never get there." Aldo Leopold, *A Sand County Almanac*.

Photo: Terry Tollefsbol, U.S. Fish and Wildlife Service

June 18, 2014

The Honorable Sally Jewell
Secretary
Department of the Interior
1849 C Street, NW
Washington, D.C. 20240

The Honorable Dan Ashe
Director
U.S. Fish and Wildlife Service
1849 C Street, NW
Washington, D.C. 20240

Re: Petition to the U.S. Department of Interior and U.S. Fish and Wildlife Service, for Development of a Recovery Plan for the Grizzly Bear (*Ursus arctos horribilis*) across its Native Range in the Conterminous United States.

Dear Secretary Jewell and Director Ashe:

Pursuant to 16 U.S.C. § 1533(f) of the Endangered Species Act and section 5 U.S.C. § 553(e) of the Administrative Procedure Act, the Center for Biological Diversity ("Center") hereby petitions the U.S. Department of the Interior ("DOI"), by and through the U.S. Fish and Wildlife Service ("Service"), to meet its mandatory duty to develop a recovery plan for the grizzly bear, 16 U.S.C. § 1533(f) by revising and updating its 1993 recovery plan for the grizzly bear (*Ursus arctos horribilis*) for the populations that were identified at the time the species was listed, and by identifying all additional geographic areas where recovery strategies are needed, to ensure full recovery of the species across its native range in the United States.

Since the grizzly bear was listed as a threatened species under the Endangered Species Act (ESA) in 1975, the Service has pursued a fragmented approach to grizzly bear recovery that does not adhere to the law's intention that listed species be recovered in all significant portions of their range. Instead, the Service has developed recovery strategies for six populations occupying a relatively small portion of the grizzly bear's historic range, including the Greater Yellowstone Ecosystem (GYE), the Northern Continental Divide Ecosystem (NCDE), the Cabinet-Yaak Ecosystem (CYE), the Selkirk Ecosystem (SE), North Cascades Ecosystem (NCE) and Selway-Bitterroot Ecosystem (SBE), and has, for the most part, only enacted protections or carried out on-the-ground recovery efforts for the first four.

The Service has failed to develop recovery strategies for ecosystems that still contain substantial and sufficient suitable habitat, which is not only an abdication of the Service's responsibilities under the Endangered Species Act as a legal matter, but leaves grizzly bears endangered across significant portions of their range as a biological fact. Hence, we hereby petition the Service to finally meet the full scope of its obligations under section 4 of the ESA by revising its 1993 recovery plan to include all significant remaining areas of suitable habitat across the grizzly bear's native range in the western U.S., in addition to those populations that are already covered in the 1993 plan, including at least the Gila/Mogollon complex in Arizona and New Mexico, the Grand Canyon in Arizona, the Sierra Nevada in California, the Uinta Mountains in Utah, and areas of southern Utah.

The Service's failure to develop a plan for recovery and conservation of the grizzly bear in other significant portions of the species' range ignores the important ecological role that grizzly bears played in numerous ecosystems across the western United States. This failure ignores the fundamental principles of conservation biology — the preservation of a species and its ecosystems over the long term depends upon numerous connected populations that can function as a larger meta-population across the landscape.

A comprehensive grizzly bear recovery plan would incorporate and guide species-recovery efforts at the proper landscape scale, would ensure that recovery targets are set at numeric levels that are sufficiently robust to sustain the species across its historic range, and would protect grizzly bear habitat in a holistic manner that would benefit grizzly bears, other endangered species, and ecosystem integrity. It would ensure a precautionary approach and the evolutionary potential of grizzly bears in a world that is rapidly changing due to climate change, nonnative species and human population growth. And it would maximize the potential to protect and restore diverse grizzly bear behaviors across a wider variety of ecosystems. In short, a comprehensive grizzly bear recovery plan is required to ensure the species has sufficient representation, resiliency and redundancy to persist for hundreds of years to come.

Precedents for development by the Service of successful recovery plans that include the entire range of species in the U.S. include plans for the bald eagle, brown pelican and peregrine falcon.[1] In these and other recovery plans, regional targets for numbers of animals combine to form a meta-population that better ensures a resilient, recovered distribution of the species as a whole.

The Center for Biological Diversity ("Center") is a non-profit conservation organization dedicated to the protection of native species and their habitats through science, policy and environmental law. The Center has more than 775,000 members and online activists dedicated to the protection and restoration of endangered species and wild places. The Center has worked for many years to protect imperiled plants and wildlife — including grizzly bears — as well as open space, air and water quality, and overall quality of life.

The Center and its members are "interested persons" within the meaning of the APA, and hence petition the Service for a comprehensive recovery strategy for the grizzly bear pursuant to the APA and in accordance with the ESA. *See* 5 U.S.C. § 553(e) (granting any "interested person the right to petition for the issuance, amendment, or repeal of a rule"); *id*. § 551(4) (a "rule" is "the whole or a part of an agency statement of general or particular applicability and future effect designed to implement, interpret, or prescribe law or policy"). For all of the reasons set forth in this petition and as a matter of law, the Service is required to respond to this petition by updating and completing the 1993 Grizzly Bear Recovery Plan to incorporate new recovery strategies throughout the grizzly bear's historic range. *See* 16 U.S.C. § 1533(f).

Should it fail to comply with these mandatory obligations, the Center may pursue relief from a federal district court. 5 U.S.C. § 702 ("A person suffering legal wrong because of agency action, or adversely affected or aggrieved by agency action within the meaning of a relevant statute, is entitled to judicial review thereof."); *id*. § 551(13) ("agency action" includes "the whole or a part of an agency rule, ... or the equivalent or denial thereof, or failure to act"); *id*. § 706(1) and (2)(A) (granting a reviewing court the authority to "compel agency action unlawfully withheld or unreasonably delayed" and/or to "hold unlawful and set aside agency action ... found to be ... arbitrary, capricious, an abuse of discretion"); *see also* 16 U.S.C. § 1540(g)(1)(C) ("any person may commence a civil suit on his own behalf" "against the Secretary where there is alleged a failure of the Secretary to perform any act or duty under section 4 which is not discretionary with the Secretary").

Accordingly, we ask you to respond to this petition expeditiously to inform us that you are commencing a process to complete the recovery plan for the entire grizzly bear species, and moreover, that you include a timeline by which you will conduct and complete this process and commence implementation of all necessary recovery strategies for the grizzly bear species with all deliberate speed.

Sincerely,

Noah Greenwald
Endangered Species Director
Center for Biological Diversity

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Executive Summary

Grizzly bears once ranged throughout most of western North America, from the high Arctic to the Sierra Madre Occidental of Mexico, and from the coast of California across most of the Great Plains. On the West Coast, this adaptable omnivore likely fed alongside California condors on salmon and marine mammal carcasses, while on the Great Plains they fed on the great herds of plains bison. No one knows how many grizzly bears used to live in North America, but an estimated 50,000 to 100,000 likely roamed the American West prior to European settlement.[2] Within 200 years, excessive killing had reduced grizzly bear populations to perhaps several hundred bears, mostly found in Yellowstone National Park in Wyoming and the northern Rocky Mountains of Montana and Idaho. As a result of its precipitous decline, the grizzly bear was listed as a threatened species under the Endangered Species Act in 1975.

Today there are only 1,500 to 1,800 grizzly bears left in the lower 48 states — around 700 bears in the isolated Greater Yellowstone Ecosystem (GYE); approximately 800 bears in the Northern Continental Divide Ecosystem (NCDE); perhaps 25 to 50 bears in the Selkirk Ecosystem (SE) of Washington and Idaho; about 45 bears in the Cabinet-Yaak Ecosystem (CYE) of Montana and Idaho; and possibly a couple of bears in the North Cascades Ecosystem (NCE) of Washington. The current population represents less than 4 percent of the historic abundance of grizzly bears in the western United States. More importantly, outside of the GYE and NCDE, very little progress has been made recovering grizzly bears. At best, the populations in the Selkirk and Cabinet-Yaak Ecosystems have remained stable. Grizzly bears have been functionally extirpated from the North Cascades, and are now extirpated from the Selway-Bitterroot and San Juan Mountains. The two areas where bears have seen considerable recovery, the GYE and NCDE, include an area that is a mere 4 percent of the bear's historic range and 22 percent of potentially suitable habitat identified through modeling.

To determine recovery potential for grizzly bears, we compiled information from all available studies of grizzly bear habitat within their historic range in the western conterminous U.S., and determined that there is roughly 110,000 square miles of additional habitat that could support recovery of the grizzly bear, which is more than triple the habitat found in the GYE and NCDE. The Mogollon Rim and Gila Wilderness complex in Arizona and New Mexico, Sierra Nevada in California, Grand Canyon in Arizona, Uinta Mountains in northern Utah and potentially other areas appear to harbor sufficiently large blocks of habitat to anchor grizzly bear recovery areas, and warrant further analysis by the U.S. Fish and Wildlife Service.

This additional habitat has the potential to greatly increase grizzly bear numbers and thereby ensure the species' long-term survival. Studies show that additional habitat in the northern Rockies and North Cascades alone could support another 1,500 bears, nearly doubling the population. There are not estimates for how many bears might be able to live in the several other areas in the western U.S. that have the potential to support populations, but given that the total area of available habitat is greater than the GYE and NCDE combined, it is likely that

there is habitat for a substantial number of bears. Based on available habitat and studies of population viability, we recommend an overall recovery goal of 4,000 to 6,000 bears spread across recovery areas with sufficient habitat to support populations. Such a goal would restore these magnificent animals to a closer proximity of their historic range in the western conterminous U.S.

This petition requests that the U.S. Fish and Wildlife Service revise the 1993 Grizzly Bear Recovery Plan to consider the entire historic range of the species. The petition echoes most of the recommendations in the Service's own status review for the grizzly bear that was completed in 2011, which concluded that the 1993 Recovery Plan "no longer reflects the best available and most up-to-date information on the biology of the species and its habitat."[3] Such a revision would satisfy the Service's mandatory obligation to develop and implement a plan for the recovery and conservation of the grizzly bear as a threatened species. 16 U.S.C. § 1533(f). A revised recovery plan should:

1. Develop recovery strategies for all significant remaining areas of suitable habitat across the grizzly bear's native range in the western U.S., including those populations that are already covered in the 1993 plan, as well as the Mogollon Rim and Gila Wilderness complex in Arizona and New Mexico, Sierra Nevada in California, Grand Canyon in Arizona, Uinta Mountains in northern Utah and potentially other areas.

2. Develop population targets for each recovery area that ensure population viability with a goal of obtaining a total population of at least 4,000 to 6,000 bears in a meta-population of interconnected habitat.

3. Develop recovery criteria to secure and restore grizzly bear habitat and to address the full spectrum of threats to bears, particularly on public lands.

4. Develop recovery criteria to reduce human-caused mortality across the species' range.

If included in a revised recovery plan, the population and recovery area recommendations included in this petition meet the requirements of the Endangered Species Act to recover endangered species in all significant portions of range and to follow best available science, are precautionary, which is especially important for addressing climate change and increasing human intrusions on grizzly bear habitat, and will recover bears to a representative spectrum of the unique historic habitats they once occupied, helping maintain their adaptability and ability to weather the changing world we live in.

I. Introduction

With one of the largest home ranges of any mammal species and a strong dependence on wild, unfragmented landscapes, the grizzly bear is an excellent "umbrella species" for intact ecosystems in the western United States.[4] Moreover, grizzly bears are considered a strongly interacting species that exert a substantial influence on the ecosystems they occupy.[5] The conservation and recovery of the grizzly bear would thus benefit ecosystems across the western United States, as well as the many plant and animal species that depend on these ecosystems. Accordingly, this petition seeks the recovery of grizzly bears to remaining suitable habitat in their native range in the conterminous U.S.

The Endangered Species Act is broadly purposed "to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved." In accordance with this expansive purpose, Congress, in passing the Endangered Species Act, added a novel geographic aspect to conserving species that was not present in precursor laws, requiring that a species be protected in each "significant portion of its range," even if the species was secure in other portions of its range. This makes clear that the Act is about more than merely preventing extinction, but rather about recovering species to as much of their historic range as possible. Indeed, Congress explained that the change marked "a significant shift" in how the Fish and Wildlife Services should evaluate whether a species is threatened or endangered.[6] For the first time, a species like the grizzly bear, although common in Alaska and Canada, could receive protections based solely on its status in the lower 48 States.

The need to revise the recovery plan was recently recognized by the Service itself in a 2011 five-year review, which recommended: "Revise the recovery plan for grizzly bears in the lower 48 States so that it reflects the best scientific and commercial information available."[7] The 2011 review and this petition make abundantly clear that the 1993 plan is no longer supported by the best-available science or the most current research in the field of conservation

The Grizzly Bear in Ancient Cultures

Grizzly bears have fascinated humans wherever their paths crossed. The grizzly bear — known to many Native Americans as the Great Bear — is an animal with many human-like traits. Grizzly bears are resourceful, intelligent, they can eat a wide variety of foods, stand on their hind legs, and nurture their young for long periods. By hibernating, the grizzly bear is also a symbol of transformation – seeming to die in winter, and then emerging with new life.

There are countless mythical stories of bears changing into humans and humans into bears. And, since bears have the unique ability to hibernate and bear young in the den, they have long symbolized transformation – the alchemical process of bringing forth new life out of seeming death. With ancient remains found of carved cave bear bones in caves in Europe over 30,000 years ago, it is surmised that worship of bears may predate Christian beliefs of life after death.

Grizzly bears have been seen as healers, physicians and guides. The grizzly bears' ferocity and danger to man also added to its power; the Kutenai tribe in the Northern Rockies, for example, had rituals that attempted to utilize the malevolent aspects of grizzly bears towards its enemies through the use of magic. One of the most widespread ancient bear ceremonies reflect the bear's role as healer, probably through the result of human observations of bears' picking and choosing which plants to eat, and in some cases, using plants and mud as poultices.

biology, especially regarding the need to rescue populations that are on the verge of extirpation and to maintain a meta-population that is viable over the long term. A vast amount of science has been assembled since 1993 that has not been incorporated into the existing grizzly bear management and recovery actions. For all of these reasons and more, we call on the Service to develop a new recovery plan for the grizzly bear within its native range in the conterminous U.S.

II. The Grizzly Bear Can and Should be Restored to More of Its Historic Range

A. The Decline of Grizzly Bears in the Western U.S.

Grizzly bears have proven to be particularly vulnerable to human persecution. Between 1800 and 1975 grizzly bear populations in the lower 48 States declined from an estimated 50,000 to 100,000 to perhaps fewer than 1,000 bears.[8] As the mountainous areas of the western U.S. were settled, the burgeoning mining and logging industries contributed to the increase in human-caused mortality of grizzly bears. Livestock depredation control, habitat deterioration, commercial trapping, unregulated hunting, and protection of human life were leading causes of decline.[9] Professional hunters/trappers hired by federal and state agencies also greatly contributed to grizzly bear population exterminations as a matter of formal government policy.[10]

By 1922 only about 37 populations of grizzly bears remained in the lower 48 States (Figure 1).[11] Between the 1920s and 1970s, grizzly bears tended to survive only where human densities were low and in mountainous areas where rough terrain and widely distributed food resources tended to keep bears out of harm's way.[12] Where food sources overlapped with human settlements, bears tended to disappear more quickly than in remote areas, in which high-elevation foods such as whitebark pine seeds kept bears away from people.

Populations of grizzly bears in the lower 48 states are currently relegated to areas of much lower human densities than typifies the joint distribution of brown bears and humans in Eurasia, largely as an artifact of levels of lethal control by people between 1850 and 1950 in the U.S.[13] And indeed, people can coexist with grizzly bears, using proven successful measures to reduce conflicts. Good sanitation practices that make human food sources less attractive to bears is of foremost importance.[14] Careful management of human-bear interactions, especially in national parks, allows bears to be consistently much closer to people without harmful consequences.[15] Deterrents such as bear pepper spray have been shown to be a viable alternative to firearms for protection during close encounters with bears.[16] Finally, proven management of agricultural attractants such as dead livestock, sheep and cow calves can substantially reduce conflicts.[17]

At the time of passage of the ESA and the listing of the grizzly bear as a threatened species in 1975, bears were known to still be present in Montana, Idaho and Wyoming.[18] Small numbers of grizzly bears may also have been present in remote areas of the North Cascades, and there are continued reports up to the present time that grizzly bears occasionally disperse from the Canadian side of the Cascades into the U.S. A grizzly bear was shot in the San Juan National Forest in Colorado in 1979, but none have been found in that ecosystem since then. No resident grizzly bears have been found in the Selway-Bitterroot ecosystem since the time of listing, although the Service considers it to be one of the seven populations where bears persisted and could be recovered.

Figure 1. Historic grizzly bear range *circa* 1850 (light green), remaining range *circa* 1920 (dark green), and approximate dates of local extirpations, where known. (*D. Mattson, unpublished data.)*

B. Current distribution and population status of grizzly bears and opportunities for additional recovery

As noted above, grizzly bears survive in just five areas. These areas harbor at most between 1,500 and 1,800 bears, occupying roughly 93,000 square miles or less than 1 percent of the species' historic range in the conterminous U.S. (Table 1, Figure 1). The vast majority of remaining bears are confined to the Greater Yellowstone and North Continental Divide Ecosystems. Yet the other recovery areas identified in the 1993 recovery plan are 50 percent larger than Greater Yellowstone and North Continental Divide combined, and at least across the northern Rockies have the potential to create an interconnected meta-population that provides greater security for the species as a whole and a buffer against the projected adverse effects of climate change and nonnative species.

Table 1. Modeled area of suitable habitat and estimated grizzly populations for the grizzly bear recovery areas identified by the 1993 recovery plan.

Recovery Zone	States	Habitat Area (sq mi)	Abundance	Trend Since Listing
Greater Yellowstone	MT, WY, ID	27,599	718 (640-797)[19]	Increased
North Continental Divide	MT	8,836	765 (715-831)[20]	Increased
Selkirk Mountains	ID, WA	1,739	30-50	Unchanged
Cabinet-Yaak	ID, MT	2,747	38-48	Unchanged
North Cascades	WA	8,638	~6	Unchanged
Selway-Bitterroot	ID, MT	41,403	0	Unchanged

A number of studies confirm extensive recovery potential in recovery zones other than Greater Yellowstone and the North Continental Divide. Recent research shows the North Cascades has the potential to support a population of over 700 grizzly bears.[21] There is similarly extensive potential in the Selway Bitterroot with several rigorous studies showing the area could support a robust population ranging from 300 to more than 600 bears, depending on the extent of the area considered.[22] The smaller Cabinet-Yaak could support roughly an additional 100 bears[23], and the Selkirks could support roughly an additional 80 to 90 bears, including the portion of the recovery zone in Canada.[24] In sum, these studies indicate that even just considering those areas where the Service has developed recovery strategies, grizzly bear numbers could be nearly doubled. Clearly, this is but a small part of the potential for recovering grizzly bears within the conterminous U.S.

C. Additional Potential Grizzly Bear Recovery Areas within Their Historic Range

In 1975, the grizzly bear was protected under the Endangered Species Act across its entire range in the "conterminous United States." It remains protected across this range today. Yet, the Service has never assessed recovery potential within this range. The need to assess the

potential for additional recovery areas was recently acknowledged by the Service in a 2011 status review of the grizzly bear, in which the agency identified a need to conduct studies of habitat suitability in Colorado, New Mexico, Arizona, Utah, California, Nevada, Oregon and southern Washington.[25] To facilitate such an assessment, we have compiled all available studies of suitable grizzly bear habitat and compiled them into a single map (Figure 2). [26]

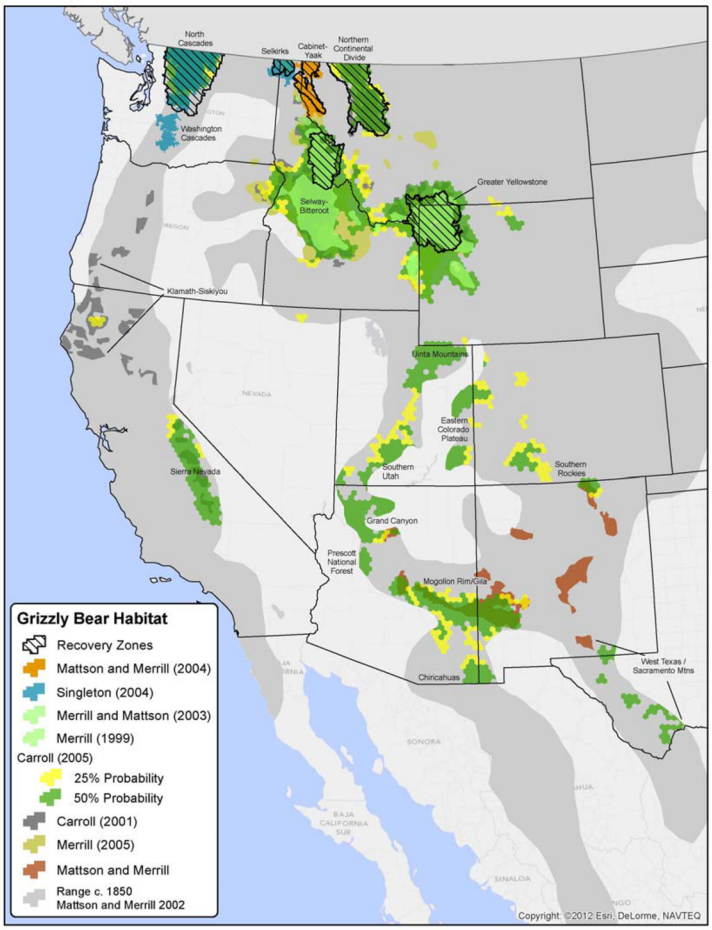

Figure 2. Compilation of analyses of potential grizzly bear habitat in the lower 48 States within the historic range of the grizzly bear.[27]

Based on available studies, there are several areas that have a high likelihood of having sufficient suitable habitat to act as grizzly bear recovery areas, including the Mogollon Rim and Gila Wilderness complex, Sierra Nevada, Grand Canyon and Uinta Mountains (Table 2). All of these areas have more modeled suitable habitat than both the Cabinet-Yaak and Selkirk recovery zones and appear to contain habitat that is remote enough and productive enough to support a grizzly bear population. In addition, several of the areas have large blocks of suitable habitat nearby that with management of linkage areas could provide additional space for bears and further buttress populations. Those areas include portions of the Prescott National Forest south of the Grand Canyon, the Chiricahua and surrounding Sky Islands south of the Mogollon Rim and Gila Complex, and the Washington Cascades just south of the North Cascades.

Table 2. Potential grizzly bear recovery areas according to available studies.

High Likelihood Recovery Areas	**States**	**Habitat Area (sq mi)**
Mogollon Rim and Gila Complex	AZ, NM	14,488
Sierra Nevada	CA	7,747
Grand Canyon	AZ	6,180
Uinta Mountains	UT	6,067

In addition to the above potential core recovery areas, there are several areas of smaller blocks of habitat that considered together may have the potential to support grizzly bear populations, including the Klamath-Siskiyou, southern Rocky Mountains and the eastern Colorado Plateau on the Utah and Colorado border (Table 3). A revised recovery plan should further evaluate the recovery potential of all of these areas.

Table 3. Additional potential grizzly bear recovery areas pending further study.

Additional Potential Recovery Areas	**States**	**Habitat Area (sq mi)**
Klamath-Siskiyou	CA, OR	6,861
Southern Rocky Mountains	CO, NM	4,004
Eastern Colorado Plateau	UT, CO	3,856
Southern Utah	UT	3,028

In order to ensure the grizzly bear is recovered to all significant portions of its range, this petition requests that the Service move expeditiously to revise the 1993 recovery plan to include recovery strategies for all additional areas that are found to support sufficient core habitat to support a population. Greater Yellowstone and North Continental Divide – the two areas where substantial recovery has occurred and where removal of protections are being considered – represent a mere 22 percent of the suitable habitat identified in available studies and less than 4 percent of the species' historic range, meaning the bear is not yet recovered.

Restoring grizzly bears to additional areas would restore diverse behaviors that have been lost and increase opportunities for the overall adaptability of the species to the changing world we now live in. It would also benefit the many ecosystems that once harbored these great animals.

E. The Role of Grizzly Bears in the Ecosystem

Grizzly bears are both an umbrella species for the ecosystems in which they are found and a strongly interacting species that can impact the composition and abundance of other species within the ecosystem.[28] Grizzly bears can play a central role in the function of ecosystem through a complex web of ecological relations.[29] Figure 3 depicts a simplified version of such an ecosystem food web in the Greater Yellowstone ecosystem, wherein energy flows from diverse sources to, and through, bears. Through their activities they can enhance and regulate ecosystem function.

Grizzlies accelerate geomorphic processes, enrich soils, enhance biodiversity, regulate prey populations and transport nutrients from marine to terrestrial systems.[30] A large body of research has established the key role that grizzly bears play in enriching upland environments through extraction of salmon from spawning streams and the re-deposition of salmon biomass in the form of carcasses and bear feces.[31] Bear excavations of roots and rodents have been shown to increase the diversity of plant communities and elevate soil nitrogen levels.[32] Grizzly bear predation on calves also regulates, and even limits, boreal moose populations, and has the potential to do the same with interior elk populations.[33]

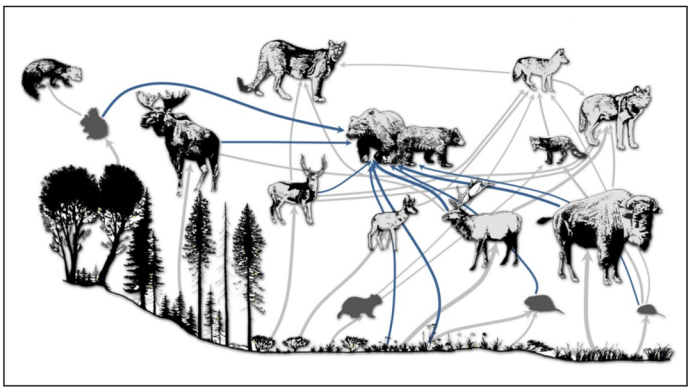

Figure 3. A simplified representation of energy flows from vegetation to herbivores to carnivores in the Yellowstone ecosystem. Flows to grizzly and black bears are shown by blue arrows. (*D. Mattson, unpublished.)*

The implications of this ecological uniqueness are clear for grizzly bear conservation. First and foremost, the role of grizzlies in ecosystems and the related services they provide are a benefit that should be recognized and considered in conservation planning.[34] Second, ecologically functional and otherwise healthy grizzly bear populations need to be a part of conservation goals.[35] Finally, grizzlies can provide extraordinary amounts of information about the overall health of ecosystems. Because of the important roles grizzlies play and their grandeur, we should continue to work to recover grizzlies to more of their former range in the lower 48 States.

III. The Need for a Revised Recovery Plan

As demonstrated above, recovery efforts, to date, have focused on just two small portions of the grizzly bear's range centered on Yellowstone and Glacier National Parks. Little action has been taken to recover either the other identified recovery areas, where the status of bears has remained virtually unchanged, or additional areas identified by the Service as potential targets for recovery in Arizona, California, Colorado, New Mexico, Oregon or Utah. As such, the grizzly bear remains unrecovered over significant portions of its range. This, alone, necessitates a new recovery plan that seeks to recover the bear across suitable portions of its historic range. Additional support for a new recovery plan is provided by failings in the existing recovery plan, new science concerning the conservation of grizzly bears – which is presented throughout the petition – and new threats that were not considered in 1993, namely climate change, nonnative species and an ever-growing human population.

A. Existing efforts have not successfully recovered grizzly bears

Grizzly bear recovery efforts in the lower 48 States have had mixed results. The most significant gains have been made by protecting the grizzly bear under the Endangered Species Act and thereby reducing human-caused mortalities.[36] One of the primary reasons grizzly bears were protected under the Act was due to excessive killing that extirpated the species from most of its range and continued high levels of human-caused mortality in its remaining range in Idaho, Montana and Wyoming. Human-caused mortality came from hunting, poaching, conflicts with livestock and hunters, and conflicts from poor garbage storage practices resulting in bears being attracted to human developments.

Legal protection ended sport hunting, established penalties for poaching, provided a management framework that reduced conditioning of grizzly bears to human foods and attractants, and reduced other forms of conflict on public lands.[37] With endangered species protection, significant resources were appropriated to federal and state agencies that helped to address threats and resulted in significant conservation gains in parts of the species' range in the northern Rocky Mountains.

These recovery gains, however, have primarily been limited to the Greater Yellowstone and North Continental Divide ecosystems, where grizzly bears were most abundant at the time of listing in 1975. Substantially less effort has been dedicated to the other five areas identified in the 1993 recovery plan as having potential for recovery, and no effort has been made to assess the potential for recovery in additional areas or to develop recovery strategies for any areas identified.

By failing to step back and consider the needs of the species as a whole and pursuing a piecemeal approach the Service has failed to develop a recovery plan that fully restores grizzly bears to the wider landscapes of the western United States. For example, even though the Service recognized the importance of a meta-population approach to recovery and stated in the 1993 plan that it would complete an assessment of linkage zones between ecosystems within five years of plan finalization, this has never occurred.[38] Similarly, despite the known negative impacts of increasing roads density on grizzly bear populations, the Forest Service has adopted substantially different standards for managing roads in different grizzly bear ecosystems across the northern Rocky Mountains. The lack of a coordinated and unified recovery strategy has also hindered efforts to address major connectivity barriers such as highways, which are currently mitigated only in a haphazard manner by state, federal and tribal agencies.

The lack of a range-wide recovery plan has also reduced the effectiveness of strategies to address continuing sources of human-caused mortality. While significant improvements in sanitation practices have been made in Glacier, Yellowstone and Grand Teton national parks, efforts to address sanitation standards in communities on the periphery of these ecosystems has been haphazard. Inconsistent management approaches have limited expansion of grizzly bears into suitable habitat beyond the core areas of these ecosystems and has resulted in nearly complete isolation of remaining grizzly bear populations. A comprehensive assessment of human-caused mortalities would enhance efforts to reduce conflicts and improve prospects for connectivity.

How Yellowstone Park Resolved Problems with Grizzly Bears

Yellowstone National Park forms the core of Greater Yellowstone grizzly bear's population. At more than 2 million acres of largely wild country, Yellowstone provides an essential sanctuary for one of the largest remaining populations in the lower 48.

But Yellowstone was historically a center of human-bear conflicts as well. Human attractants were once abundant, and property damage and injuries were common prior to the institution of more rigorous regulations and bear management, especially after grizzly bears were listed under the Endangered Species Act.

Following abrupt closure of garbage dumps in 1969 in the park, where viewing bears feeding had been a popular tourist attraction, hundreds of habituated grizzly bears were killed – so many that the future of Yellowstone's grizzly bears was in doubt. (There was a fierce debate over whether a wiser course would have been to close the dumps more gradually). The Park Service also initiated new rules to reduce the influence of human foods on grizzly bears and return the population to a more natural diet. It made enforcement of, and public education about, keeping food out of the bear's reach a top priority. And, it placed greater emphasis on habitat protection, closing about 18 percent of the park to overnight camping.

Since the time the bear management programs were initiated, the number of human injuries caused by bears has plummeted from an average of 45 per year to far less than 1 per year. Conflicts today are rare occurrences, despite continuing increases in human visitation to over 3 million people per year.

Today, Yellowstone Park is a shining example of effective management of people in the interest of recovering the grizzly bear.

There is an immediate need to augment existing populations in the Selkirks and North Cascades, to continue augmenting the Cabinet-Yaak population, and to begin the process of creating new populations in the Selway-Bitterroot and elsewhere. To date, efforts in this regard have been sporadic. The Cabinet–Yaak is the only one of these populations to have received any augmentation of bears with the translocation of 13 grizzly bears from the NCDE since the early 1990's.[39] Many of the grizzly bears known from this ecosystem are descendants from one of these reintroduced females. Without these translocated grizzly bears, the population would likely have been extirpated during the last several decades.[40]

In 2000, a final environmental impact statement and a proposed 10(j) rule were issued to reintroduce bears to the Selway-Bitterroot, but the proposed rule was never finalized and the Service failed to move forward with reintroduction.[41] The Preferred Alternative set forth a program to reintroduce a minimum of 25 grizzly bears of both sexes over a 5-year period to the Bitterroot ecosystem. The Service anticipated that a grizzly bear population could reach the tentative recovery goal of 280 grizzly bears occupying all suitable habitat within 50 years (assuming an optimal 4 percent growth rate); but more realistically this process would probably take closer to 110 years (2 percent growth rate).[42] Other experts maintain that a population of 300 to 600 bears could be sustained if the definition of "suitable" habitat were based on biological factors rather than political/societal factors.[43] Following the change of presidential administrations in 2001, the Service published a notice of intent to reevaluate the reintroduction and published a proposed rule to remove the existing nonessential experimental rule.[44] This regulation and the associated nonessential experimental rule putatively remain in effect as the proposed reevaluation and associated removal were never finalized. Thus, even though the final regulations remain in effect, they were never implemented.

The Service completed a revised grizzly bear recovery strategy for the North Cascades in 1997.[45] The plan called for completing an environmental impact statement on augmentation of the very small, existing grizzly bear population with bears from Canada. Despite this plan, to date the Service has not completed an environmental analysis to conduct much-needed augmentation of the population. This failure is despite the fact that substantial outreach to educate the public about grizzly bear recovery in the area has been completed and that this effective outreach is reflected in significant public support for grizzly bear recovery.[46]

The other immediate action that is needed to further grizzly bear recovery is to protect habitats for existing and potential populations, particularly in the Cabinet-Yaak, Selkirks and Selway-Bitterroot. The greatest needs are to protect remaining secure habitat by limiting road densities, making existing roads more permeable for bears, and ensuring proper storage of trash, all to avoid conflicts between people and bears. In the North Continental Divide, restrictions on road densities adopted on the Flathead National Forest and construction of wildlife underpasses and overpasses on highway U.S. 93 have improved habitat security and connectivity for grizzly bears and other wildlife, demonstrating that such actions can work.[47] Similar action is needed to ameliorate the negative impacts of U.S. highways 3 and 95 and other

highways as shown in Figure 4 below, which is limiting connectivity between populations in the northern Rockies.[48]

The Cabinet-Yaak population is also threatened by isolation, human attractants on the periphery of the ecosystem, high road densities and two proposed hard rock mines.[49] The lethality of people in this ecosystem is much higher relative to human population size of any population in the lower 48 states.[50] Similarly, the Selkirk population is threatened with imminent extinction by high densities of roads and fragmentation, small population size and isolation. For either of these populations to recover immediate action is needed to address these issues.

Even in Greater Yellowstone, where there has been extensive effort toward recovery, several habitat management measures are still needed. Habitat protections do not extend outside of an outdated recovery zone boundary, drawn when bears were at all time low numbers, even though grizzly bears use about 1.7 million acres of additional habitat, 75 percent of which is vulnerable to development.[51] And the population has remained isolated from all other grizzly bear populations. This isolation is not surprising given that the nearest grizzly bear recovery area is 240 miles away in central Idaho where restoration of grizzlies has not yet occurred. Isolation is confirmed by a lack of genetic interchange with any other grizzly bear population during the last 100 years.[52] As a result, GYE grizzly bears have the lowest genetic heterozygosity of any continental population yet investigated.[53] Addressing this problem will require restoring and ensuring linkages to other populations.

The Miracle of Hibernation

Grizzly bears survive the cold winter months, when foods are scarce, by hibernating in dens. During this time, they do not eat, drink, urinate or defecate. Amazingly, they also do not lose bone or muscle mass, or kidney function. Iin January, the females bear young – usually a single cub or twins. At less than a pound in weight at birth, a bear cub is the smallest of any mammalian young compared to its size as an adult (400 to 700 pounds or so). In a groggy state, the mother nurses her young until they emerge together in the springtime. Family groups move considerable distances from high, snow-covered elevations to lower landscapes to reach palatable, emerging vegetation, or to feed on winter-killed or weakened big game on foothill winter ranges.

In preparation for hibernation, grizzly bears increase their food intake dramatically during hyperphagia, during which excess food is stored as fat. Grizzly bears must have access to foods rich in protein and carbohydrates in order to build up sufficient fat reserves to survive denning and postdenning periods. Bears can eat 50,000 calories or more a day during hyperphagia.

Grizzly bears have been the subject of intense interest among medical researchers, because of their ability to survive such long periods without eating or eliminating waste.

In addition to habitat loss and isolation, killing of grizzly bears by people continues to be a serious threat to the survival and recovery of grizzly bears, with roughly 80 percent of all mortality of adult bears caused by people.[54] The rate at which humans kill grizzlies can be usefully understood as a function of how often bears encounter people (i.e., frequency of contact) and the likelihood, given an encounter, that the bear will be killed (i.e., lethality of encounter).[55] Some degree of intractable conflict follows from the fact that grizzly bears are large carnivores that pose a threat to human safety and to domesticated animals and

agricultural crops.[56] Because of that, the successful conservation of grizzly bears will always depend on wild areas with limited human activity and access. This unavoidable reality requires that restrictions on human access and activity be an integral part of grizzly bear management, including management of backcountry human travel and limits on density of open roads on public lands.[57] Numerous studies have shown that mortality risk for grizzly bears is dramatically higher near roads or, more generally, in areas with greater road access.[58] The extent of restrictions on human activity and access will necessarily be determined in part by the tolerance of involved people.[59]

In sum, recovery efforts, to date, have been limited in extent and have failed to recover grizzly bears to the majority of areas where recovery potential has been identified. There is an immediate need to take action to recover additional populations through reintroduction, augmentation and protection, restoration of habitat, and reduction of human-caused mortalities.

B. New threats to grizzly bears have arisen since 1993

Climate Change

Like most recovery plans developed in the 1990s, the recovery plan for the grizzly bear did not consider or mitigate for the potential impacts of climate change.[60] There is little doubt that dramatic climate change is happening at a rapid pace, largely due to anthropogenic forcing.[61] Increases in temperature have accelerated during the last 40 years and are projected to increase in virtually all regions globally. Projections regarding precipitation, especially at a regional level, have remained more uncertain than projections regarding temperatures. Nonetheless, regional climate models have proliferated and improved to the point where researchers have been able to reach increasingly robust conclusions about not only precipitation, but also drought and related effects on vegetation. In North America much of this advance has been driven by the North American Regional Climate Change Assessment Program (NARCCAP) consortium.[62]

Of great relevance to grizzly bears in the conterminous U.S. is the fact that regional models are in consensus that summertime temperatures will increase substantially in the northern Rocky Mountains over the next 100 years.[63] Moreover, even though projections of growing season (June-August) precipitation vary, there is consensus about the incidence of drought, largely driven by increases in growing season temperatures and earlier snow-melt. Recent multi-model forecasts project a substantial increase in drought frequency and severity throughout the northern Rockies,[64] with demonstrable and projected effects on productivity and ecosystems accentuated by potentially dramatic changes in fire, insect and disease regimes affecting already drought-stressed vegetation.[65]

The effects of climate change are already being seen in the Greater Yellowstone Ecosystem, where one of the grizzly bear's most important foods, whitebark pine seeds, have seen

catastrophic declines.[66] An estimated 80 percent to 90 percent of current whitebark pine range is expected to be lost over the next 100 years due to climate change, with further losses catalyzed by disease, insects, fire and failed recruitment.[67] Whitebark pine forests have already undergone major declines during the last decade due primarily to an unprecedented climate-driven outbreak of native mountain pine beetles,[68] exacerbated by an on-going warming-enhanced epidemic of a non-native fungal pathogen called white pine blister rust.[69] These two agents synergistically contribute to tree mortality, with blister rust more immediately lethal to small trees and beetles lethal to trees greater than 6 inches in diameter.[70] Loss of whitebark pine is consequential because of its demonstrable effects on the reproduction and survival of Yellowstone grizzly bears. Female bears eat twice as many pine seeds as do males,[71] and produce more cubs following good, compared to poor, whitebark pine seed crops.[72] All bears also tend to survive at a higher rate during good seed crops because they are less exposed to human-related risks while exploiting this food, which occurs in remote high-elevation areas.[73]

In the wake of loss of whitebark pine and other food sources, GYE bears have been turning to eating more meat, including both livestock and elk, leading to increased human conflicts and mortalities.[74] There is some evidence to suggest that the same phenomena occurred in NCDE in eastern parts of this ecosystem after whitebark pine was decimated by blister rust during the 1980s and 1990s.[75] There are potentially effective responses to this problem,[76] but additional resources and skilled agency personnel are needed.

There is little doubt that grizzly bears in the northern Rocky Mountains will be subjected to increasing warming and drying during the next century, with concomitant declines in overall productivity, and that we are seeing just the beginning of climate impacts on grizzly bears and their habitat. The question is not whether grizzly bear densities will decline, but to what extent, which increases the imperative to establish and maintain many large connected populations as a buffer against these climate-forced changes. A new recovery plan would provide a path forward for a viable bear population in a warming world.

Expanded Human Population

Since 1993, when the recovery plan for grizzly bears was developed, the human population of the western United States has seen extensive growth. In Montana, for example, the population grew from 799,065 people in 1990 to 1,015,165 in 2013, a 27 percent increase. Every other western state in the grizzly bear's range has seen similar growth. Such population growth is a substantial impediment to grizzly bear recovery, but it can be addressed by recovery actions like building wildlife-friendly road crossings, improving sanitation measures around core recovery areas and linkage zones, and generally building greater tolerance of bears and understanding of bear needs. Areas of particular concern are Island Park/Henry's Lake in the GYE, the Flathead Valley in the NCDE, and the CYE and SE.

IV. Recommendations for a Revised Range-Wide Recovery Plan

As previously noted, the Service itself identified a need to update the recovery plan for the grizzly bear in their 2011 five-year review of the species, concluding that the 1993 plan "no longer reflects the best-available and most up-to-date information on the biology of the species and its habitat." We echo the call for an updated recovery plan and in so doing recommend the following revised recovery criteria, all of which are necessary to ensure a comprehensive and unified framework for achieving recovery.

Revised Recovery Criterion 1: Develop recovery strategies for all significant areas of suitable habitat in the grizzly bear's historic range

The Service should develop a revised recovery plan that includes recovery strategies for additional areas that are found to contain sufficient habitat to support populations, such as the Mogollon Rim and Gila Wilderness Complex, Sierra Nevada, Uinta Mountains and elsewhere, to ensure the grizzly bear is recovered to all significant portions of range. Such an approach is consistent with the Service's own recovery planning guidance, which calls for using the conservation biology principles of representation, resilience and redundancy.[77] Representation requires the protection of populations across the full range of ecological settings of a species' range. Resiliency encompasses population-specific attributes that increase long-term persistence and integrity in the face of disturbance. And redundancy requires establishing multiple populations in each ecological setting to spread extinction risk and increase species' viability.

Reducing Grizzly Bear Conflicts Along the Rocky Mountain Front

The foothills grasslands of the Rocky Mountain Front east of Glacier National Park is the last remaining place in the lower 48 states where grizzly bears have continuously occupied prairie grasslands. Under the protection of the Endangered Species Act, grizzly bears have expanded their use of this habitat to the east, roaming today as far as 80 miles east of the front. This expansion has been facilitated by a concerted effort among livestock operators, managers and local landowners to reduce human-bear conflicts. Most of these conflicts have been livestock oriented, and focused in areas of concentrated attractants, such as boneyards, calving and lambing areas, beehives, and riparian areas, especially in the spring and fall.

Conflicts between grizzly bears and residents increased in the 1980's and peaked in the late 1990's. Recovery of the bear in this agricultural area was, for years, highly controversial. With the leadership of the state of Montana, the cooperation among livestock operators, and the efforts of a graduate student named Seth Wilson, a redoubled effort was initiated in the late 1990s to improve the practice of coexistence with grizzly bears. The effort started with in-person interviews and GIS technology to map specific attractants. The state shared its data on conflicts and locations.
Through this collaboration, a model was developed that quantified patterns of conflicts and identified landscape locations that were at highest risk of experiencing conflicts. A productive local discussion ensued about these patterns and what might be done to reduce conflicts. Through extensive dialogue, a local watershed group began to utilize this information; it raised funds for fencing calving and riparian areas, reducing boneyards, developing off site water sources using solar pumps, and placing electric fencing around beehives.

The process built trust and social capital among participants. It improved awareness of the causes and locations of conflicts, which in turn led to solutions. Political support for grizzly bears improved, as agriculturalists found common ground to reduce conflicts and benefit their livelihood. Because of improved local tolerance and fewer conflicts, grizzly bears have considerably expanded their range since the time of listing. The Rocky Mountain Front is an example of what can be done proactively to conserve grizzly bears while maintaining local ways of life.

Recovering grizzly bears to additional habitat areas will clearly meet the goals of these principles. Restoring grizzly bears to the Southwest, for example, would increase representation by reintroducing bears into an area where they forage on Gambell's oak acorns and pinyon pine seeds. Overall, recovery to additional areas would increase redundancy by creating more populations and foster greater resilience by buffering grizzly bears against the uncertainties posed by climate change, invasive species and human population growth.

As previously discussed, reintroductions of grizzly bears from other ecosystems will be needed for all of these additional areas. Any reintroduction efforts must entail introducing enough bears to achieve reasonable prospects of achieving recovery. The Service must take special precautions to prevent poaching and other human-caused mortality, which have plagued recovery efforts in the CYE.

To that end, the Service should work with the states and Forest Service to reduce attractants and other sources of potential conflict. And it must undertake an extensive outreach effort such has been done in the NCE. It is critical for the public to be sufficiently supportive to limit mortality. As was done with wolves prior to reintroduction, bringing in people from occupied grizzly bear habitat to meet with landowners and others in an area where reintroduction is being proposed can be an effective means of raising awareness about what it is like to live in the company of grizzly bears and how to avoid conflicts. There is enormous opportunity to build on the skill, experience and tools that have proven effective in reducing bear-human conflicts in areas suitable for grizzly recovery.

Revised Recovery Criterion 2: Develop Population Goals for all Grizzly Bear Populations and for the Species Across its Range

In developing a revised recovery plan, the Service should develop population goals for all of the individual recovery areas, as well as for the entire population across its range, in order to ensure the resiliency of the species. Population goals for individual recovery areas will depend on the size and productivity of habitat and proximity to other populations, but as a general rule a minimum goal of 200 to 500 grizzly bears per population should buffer against inbreeding depression and demographic and environmental stochasticity, particularly if populations are interconnected.[78]

For an overall population goal, we recommend the Service set a minimum goal of 4,000 to 6,000 bears and to the maximum extent practical ensure these bears occur in an interconnected meta-population. Two comprehensive reviews of minimum viable populations found that populations within this range across a broad range of species, including grizzly bears, have a high likelihood of long-term persistence.[79] In an analysis of 102 species, including the grizzly bear, Reed et al., (2003) estimated a mean and median minimum viable population of 7,316 and 5,816 individuals, respectively. Likewise, Traill et al., (2007) combined results from

studies on 212 species, including the grizzly bear, finding that the median minimum viable population was 4,169 individuals. These studies strongly suggest that an interconnected meta-population of 4,000 to 6,000 grizzly bears will have a high likelihood of survival.

We are recommending a meta-population approach in which populations across the historic range of grizzly bears are interconnected, where possible, through habitat linkages because numerous studies have determined that this is the best way to ensure the long-term survival of species, including the grizzly bear.[80] To date, existing populations remain largely isolated. In particular, the GYE grizzly bear population is totally isolated from all other populations. The three other main surviving populations are also largely isolated. There have been just a few grizzly bears known to disperse from the NCDE to other grizzly bear areas, including the Cabinet-Yaak and Selway-Bitterroot. Thus, any revised recovery plan should seek to address connectivity between both existing and any newly created populations.

The Service has embraced a meta-population approach before for recovery planning. For example, in devising a recovery plan for the Sierra Nevada Distinct Segment (DPS) of Bighorn Sheep, the Service developed a range-wide delisting criterion of 750 individuals across nine geographic regions that comprised the Sierra Nevada DPS meta-population.[81] This meta-population approach recognized that each of the nine sub-populations may increase or decrease over short periods of time, but that the overall meta-population would fluctuate between 600 and 1,000 sheep, while averaging about 750 sheep, or approximately 75 percent of estimated carrying capacity. Importantly, this criterion was separate from demographic delisting criterion that applied to each of the nine geographic sub-units.

As the Service explained for the Sierra Nevada DPS, the meta-population approach is "an important biological principle for long-term survival of bighorn sheep populations, it is equally important as a management concept that prioritizes regional coordination ... and habitat management." The same is true for grizzly bears. A meta-population recovery criterion is an important biological goal for the long-term persistence of grizzly bears in the lower 48 states. Recovering a meta-population across all of the identified grizzly bear ecosystems and beyond will require improved land-management practices across millions of acres of public lands; this in turn will benefit numerous other species.

Revised Recovery Criterion 3: Protect, maintain and restore grizzly bear habitat across the species' range by limiting new development and road densities in existing suitable habitat and restoring degraded habitat.

In order to recover the grizzly bear to significant portions of its historic range such that it is secure from extinction and fulfilling its ecological role the Service will need to protect secure habitat by limiting road densities and other development. Grizzly bears do best in large, relatively road-free landscapes. Indeed, road density is a key variable in models of grizzly bear habitat.[82] Existing roadless areas, however, are not sufficient to support a recovered grizzly bear population and thus bears have no choice but to live in areas with roads and people.

To ensure the recovery of the grizzly bear, a revised recovery plan must develop consistent road density standards for public lands, and restore degraded lands through closing and decommissioning roads. Indeed, in the 1993 plan, the Service stated that roads were the biggest threat facing grizzly bears today.

There is an enormous body of scientific information on the amount of secure habitat that is needed at the scale of a bear's home range and the limits that are required on roads and access. Yet, this information has been applied haphazardly. And there is new research on roads since the 1993 when the recovery plan was developed that should be incorporated in a revised plan.

Revised Recovery Criterion 4: Protect habitat in areas that link grizzly bear recovery areas.

The Service must identify areas that link recovery areas and develop habitat standards to protect these areas. Since 1993 scientific research and management practice have amply demonstrated that new techniques make it possible to reconnect grizzly bear recovery areas, with prospects of establishing connected populations large enough to ensure demographic and evolutionary resilience.

Given the slow dispersal rates and philopatry of female grizzly bears, linkage habitat should not be thought of as a corridor, but more as contiguous occupied habitat. Addressing the problem of fragmentation associated with highways and the continued human development of low-elevation areas is important. Major highway-related fracture zones between grizzly bear recovery areas in the northern Rockies have been identified (Figure 4),[83] but little systematic work on a comprehensive scale has been done with this information to improve prospects for bear movement across highways.

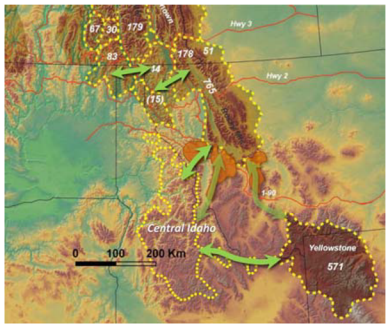

Figure 4. Grizzly bear population fragments identified by Proctor et al. (2012) and potential linkages shown in green together with potential grizzly bear habitat in central Idaho.

There are however, a number of individual projects that have enhanced connectivity. For example, along U.S. 93 north of Missoula, Mont., a collaboration that began in 2001 has resulted in the construction of numerous highway-crossing structures that facilitate east-west movement by grizzly bears and other wildlife within the NCDE. The Confederated Kootenai Salish tribes, Montana Department of Transportation and Federal Highway Administration have been working together to improve opportunities for grizzly bears and other wildlife to cross the highway. Today, there are 40 underpasses and one overpass designed to allow safe wildlife passage. Using remote cameras, sand track beds placed near the highway, and road kill data, researchers identified the places used most heavily by wildlife, including grizzly bears. They used this information to locate the crossing structures, which have reduced road-killed wildlife by 40 percent, and are being used by bears.

In addition, new federal funding is available for highway road projects designed to increase connectivity. Section 1103(a)(13) of the Moving Ahead for Progress in the 21st Century Act allows for federal funding of environmental mitigation activities designed to "reduce vehicle-caused wildlife mortality or to restore and maintain connectivity among terrestrial or aquatic habitats."[84] This provides additional means whereby land management agencies and the Department of Transportation can work together to address grizzly bear connectivity during road construction projects.

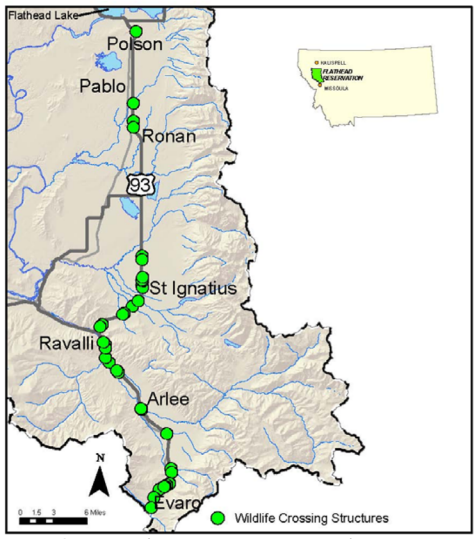

Figure 5. Highway 93 crossing structure locations.
Courtesy of CSKT,MDT, and WTI-MSU

A recovery criterion to address habitat linkages and barriers to connectivity is the best approach to addressing the recommendations in the 2011 status review which identified the following key steps to overcoming connectivity barriers:

- Identify key linkage areas using a data-based approach using GPS collars and modeling.
- Deliver effective linkage conservation in the Northern Rockies on public and private lands found in intervening valleys, and major transportation routes.
- Conserve private lands using easements and acquisitions, sanitation assistance to landowners, and intensive outreach in order for animals to live within, and pass through, areas of low human densities.
- Develop partnerships with the Federal Highway Administration to construct approximately 28 high-priority highway underpasses and appropriate wildlife fencing at crossing areas to guide animals to these underpasses across all seven paved highways between the Canadian border and the GYA.

Figure 6. Grizzly Bear using underpass on Highway 93 north of Missoula

Revised Recovery Criterion 5: Integrated climate change mitigation and adaptation strategy for grizzly bears

The effect of climate change on grizzly bears was not considered in the 1993 recovery plan despite reasonably foreseeable adverse effects on grizzly bear populations. To address these challenges, the Service must work with and provide guidance to federal land-management agencies in developing integrated mitigation strategies (i.e., actions that reduce causes of stress) and adaptation strategies (i.e., actions that help ecosystems accommodate change).

Again, a policy that improves prospects for maintaining larger, connected ecosystems enhances the ability of grizzly bear to adapt to climate change and invasive species and disease.

A comprehensive and integrated climate adaptation and mitigation approach would be consistent with the Service's National Climate Adaptation Strategy and the best scientific information relating to adaptation strategies for wildlife management.[85] The Great Northern Landscape Cooperative, a partnership of agencies involved in assessing and mitigating the effects of climate change, could also be called upon to address the impacts of climate change, as is being done with sage grouse.[86] Adopting a criterion that evaluates and institutionalizes climate change adaptation mechanisms would help to ensure that there are adequate regulatory mechanisms on the landscape that will protect the grizzly bear over the next several centuries as climate change intensifies and worsens.

Revised Criteria Criterion 6: Strategies for reducing human-caused mortality

The 1993 Recovery Plan does not explicitly nor comprehensively address the proximal drivers of human-caused mortality. This is a critically important omission because humans have been, and continue to be, the primary cause of premature death for adult grizzly bears. More than anything else, assurance of grizzly bear recovery comes down to decreasing the odds that bears are killed by people, either as a function of how often grizzly bears and people encounter each other or, given that an encounter has happened, the odds that the person will kill the bear. And the problem of human-caused mortality will very likely get worse before it gets better as climate warming affects bear distribution and behavior, especially if bears range more widely and spend more time in habitats near people.[87]

Although the Service has developed some standards that address habitat management — habitat security in particular — little has been done to develop standards or protocols that address specific human behaviors known to increase the risks of fatal conflicts. And much is known about human behaviors leading to conflicts with grizzly bears. Hunter-killed ungulate carcasses, unsecured human-associated attractants, high-risk livestock husbandry practices, and risky backcountry behaviors are all problematic. These human behaviors are all amenable to being changed in ways that can considerably reduce conflicts and related risks of bears dying. But to do so requires well-thought-out, well-resourced and well-tested programs of outreach, education and engagement targeting the people most directly involved in risky situations and behaviors.

The Recovery Plan did identify and describe some people-focused measures to promote recovery, including certain outreach activities. However, the coverage of this issue was far from complete and lacked strategic context or guidance. Given its resources and authority, there is an imperative for the Service to play a much larger role in managing human behaviors that directly drive conflicts, including establishing standards, providing comprehensive strategic planning, partnering with people and organizations that have expertise in outreach and education, and providing resources for costly projects.

Much is known about how to prevent conflicts between grizzly bears and people. There is a large body of experience with bear-proofing communities, enacting food storage orders, building the infrastructure needed to reduce availability of attractants on national forest lands, changing husbandry practices, using electric fencing around beehives and calving areas, and deploying livestock guard dogs.[88] Furthermore, much has been written about the components of successful community-based efforts which could be replicated and scaled up.[89]

Just as the Service must develop uniform habitat standards, the revised recovery plan must develop standards for addressing human behaviors that drive conflict with grizzly bears. As a first step, the Service must analyze the types, locations, trends and proximal causes of conflicts.[90] The Service has all of the data needed for such an undertaking. In the revised plan, the Service can then provide a comprehensive assessment of conflicts and mortalities and outline specific strategies and related standards needed to address the human-related drivers of conflict.

Conclusion

The Center hereby petitions the Service to revise its 1993 Grizzly Bear Recovery Plan and develop recovery strategies for all significant portions of the species' historic range that still contain sufficient suitable habitat, including but not limited to the Mogollon Rim and Gila Wilderness complex, Sierra Nevada, Grand Canyon and Uinta Mountains. Such a recovery plan must include revised recovery criteria for population size and distribution, habitat quality and connectivity, and regulatory mechanisms for all identified recovery areas.

Restoring grizzly bears in additional areas across their native range in the western U.S. meets the Endangered Species Act's mandate to recover threatened or endangered species throughout all significant portions of their ranges and to conserve the ecosystems upon which they depend. And it would also allow for additional grizzly bear conservation efforts by states and other partners to further recover the species in suitable areas of the western United States, Canada and Mexico where the species has been extirpated. Only with robust populations occupying protected and connected landscapes across the species' historic range can recovery be achieved in the face of the adverse effects of climate change and other human pressures.

Endnotes

[1] See Appendix 1 hereafter for scientific names of taxa mentioned by common name in the text.
[2] U.S. Fish and Wildlife Service 1993
[3] U.S. Fish and Wildlife Service 2011
[4] Noss et al. 1996, Carroll et al. 2001
[5] Berger et al. 2001, Soulé et al. 2005
[6] (H.R. Rep. No. 412, 93rd Cong., 1 Sess. (1973))
[7] U.S. Fish and Wildlife Service 2011
[8] Servheen et al. 1999, Mattson and Merrill 2002
[9] Storer and Tevis 1955
[10] Brown 1985, Robinson 2005
[11] Merriam 1922
[12] Mattson and Merrill 2002
[13] Mattson 1990
[14] Herrero 1985, Elfström et al. 2014
[15] Herrero et al. 2005, Gunther and Wyman 2008, Haroldson and Gunther 2013
[16] Smith et al. 2008
[17] Gunther et al. 2004, Wilson et al. 2006, Wilson and Clark 2007
[18] U.S. Fish and Wildlife Service 1993
[19] IGBST 2012
[20] Kendall et al. 2009
[21] Mowat et al. 2013
[22] Merrill et al. 1999, Boyce and Waller 2003, Mowat et al. 2013
[23] Mattson and Merrill 2004
[24] Mowat et al. 2013
[25] U.S. Fish and Wildlife Service 2011
[26] Mattson and Merrill 2004, Merrill and Mattson 2003, Merrill et al. 1999, Singleton et al. 2004, Carroll et al. 2001, Carroll 2005 (unpublished)
[27] Mattson and Merrill 2004, Merrill and Mattson 2003, Merrill et al. 1999, Singleton et al. 2004, Carroll et al. 2001.
[28] Paine (1969, 1980), Jones et al. (1994), Lambeck (1997), Soulé et al. (2005)
[29] Simberloff (1999), Linnell et al (2000), Berger et al (2001), Carroll et al (2001), Soule et al (2005), Nawaz et al (2008)
[30] Butler (1992, 2012), Hall & Lamont (2003)
[31] Hilderbrand et al. (1999c), Naiman et al. (2002), Moore & Schindler (2004), Winder et al. (2005), Helfield & Naiman (2006), Holtgreive et al. (2009), Quinn et al. (2009)
[32] Tardiff & Standford (1998), Doak & Loso (2003)
[33] Ballard et al. (1981), Gasaway et al. (1992), Messier (1994), Crête & Manseau (1996), Orians et al. (1997), Smith & Anderson (1996, 1998), Singer et al. (1997), Lubow & Smith (2004), Raithel et al. (2007), Barber-Meyer et al. (2008), White et al. (2010), Griffin et al. (2011), Middleton et al. (2013a, 2013b)
[34] Pyare & Berger (2003), Soulé et al. (2003)
[35] Conner (1988), Pyare & Berger (2003), Soulé et al. (2003)
[36] Mattson and Merrill 2002
[37] U.S. Fish and Wildlife Service 2011
[38] U.S. Fish and Wildlife Service 1993
[39] Kasworm, Wayne, pers comm., 1/13/14
[40] Interagency Grizzly Bear Subcommittee for Cabinet Yaak Ecosystem, 2013
[41] U.S. Fish and Wildlife Service 2000a
[42] U.S. Fish and Wildlife Service 2000b
[43] Merrill 2005, Mowat et al. 2013
[44] U.S. Fish and Wildlife Service 2001

[45] U.S. Fish and Wildlife Service 1997
[46] Morgan et al. 2004
[47] U.S. Forest Service 1995, Peoples way 2014
[48] Proctor et al. 2012
[49] Primm and Wilson 2004
[50] U.S. Fish and Wildlife Service mortality data, 1997-2012, U.S. Census data, 2010.
[51] Langer, Jonathan 2004
[52] Miller and Waits 2003, Haroldson et al. 2010
[53] Paetkau et al. 1998, Miller and Waits 2003
[54] Mattson et al. 1996*a*, McLellan et al. 1999
[55] Mattson et al. 1996*a*, 1996*b*; Mattson 2004
[56] Mattson 1997, 2004
[57] U.S. Fish and Wildlife Service 1993, 2007a, Coleman et al. 2013Gibeau et al. 2001, Nielsen et al. 2006, Graham et al. 2010, Roever et al. 2010
[58] Mattson et al. 1996a, Benn and Herrero 2002, Johnson et al. 2004, Nielsen et al. 2004, Schwartz et al. 2010
[59] Mattson et al. 1996*b*
[60] Povilitis and Suckling 2010
[61] Marcott et al. 2013, Oreskes 2013, PAGES 2K Consortium 2013, Shi et al. 2013, Trouet et al. 2013
[62] http://www.narccap.ucar.edu/
[63] Meehl et al. 2007, Mearns et al. 2013
[64] Burke et al. 2006, Prudomme et al. 2013
[65] Ciais et al. 2005, Rehfeldt et al. 2006, 2012Bentz et al. 2010, Westerling et al. 2011, Liu et al. 2013, Weed et al. 2013
[66] Mattson et al. 2004, Felicetti et al. 2003
[67] Romme and Turner 1991, Bartlein et al. 1997, Warwell et al. 2007, Chang et al. 2013
[68] Macfarlane et al. 2013
[69] Koteen 2002
[70] Six and Adams 2007, Bockino and Tinker 2012, Larson 2011
[71] Mattson 2000
[72] Mattson 2000, Schwartz et al. 2006
[73] Pease and Mattson 1999, Schwartz et al. 2006, Blanchard and Knight 1991, Mattson et al. 1992
[74] IGBST annual reports
[75] Keane and Amo 1993, Keane et al. 1994, U.S. Fish and Wildlife Service grizzly bear mortality data.
[76] IGBST 2009
[77] NMFS and FWS 2010, (Shaffer and Stein 2000)
[78] Lande 1995, Shaffer 1981
[79] Reed et al. 2003, Trail et al. 2007
[80] Shaffer 1992, Bader 2000, Allendorf and Ryman 2002, Reed et al. 2003, Traill et al. 2010
[81] FWS 2008
[82] Mattson and Merrill 2004, Mattson and Merrill 2003, Merrill et al. 1999, Singleton 2004, Carroll 2001
[83] Proctor et al. 2012
[84] Public Law 112-114 (July 6, 2012)
[85] Mawdsley et al. 2009
[86] Finn, S., Personnal Communication, Jan. 13, 2014
[87] Schwartz et al 2012
[88] Gehring et al 2010, Gehring et al 2011, Smith et al 2000
[89] Primm and Wilson 2004, Primm and Clark 1996
[90] Gunther et al 2004

Literature Cited

Allendorf, F.W., & N. Ryman (2002). The role of genetic in population viability analysis. Pages 50-85 *in* S.R. Beissinger and S.R. McCullough (ed). *Population viability analysis*. University of Chicago Press, Chicago, Illinois.

Bader, M. (2000). Distribution of grizzly bears in the U.S. Northern Rockies. *Northwest Science* 74: 325-334.

Ballard, W.B., T.H. Spraker, & K.P. Taylor (1981). Causes of neonatal moose calf mortality in south central Alaska. *Journal of Wildlife Management* 45: 335-342.

Barber-Meyer, S.M., L.D. Mech, & P.J. White (2008). Elk calf survival and mortality following wolf restoration to Yellowstone National Park. *Wildlife Monographs* 169: 1-30.

Bartlein, P.J., C. Whitlock, & S.L. Shafer (1997). Future climate in the Yellowstone National Park region and its potential impact on vegetation. *Conservation Biology* 11: 782-792.

Benn, B., & S. Herrero (2002). Grizzly bear mortality and human access in Banff and Yoho National Parks, 1971-98. *Ursus* X: 213-221.

Bentz, B.J., J. Régnière, C.J. Fettig, E.M. Hansen, J.L. Hayes, J.A. Hicke, R.G. Kelsey, J.F. Negrón, & S.J. Seybold (2010). Climate change and bark beetles of the western United States and Canada: Direct and indirect effects. *BioScience* 60: 602-613.

Berger J., P.B. Stacey, L. Bellis, & M.P. Johnson (2001). A mammalian predator–prey imbalance: Grizzly bear and wolf extinction affect avian Neotropical migrants. *Ecological Applications* 11: 947–960.

Blanchard, B.M., & R.R. Knight (1991). Movements of Yellowstone grizzly bears. *Biological Conservation* 58: 41–67.

Bockino, N.K., & D.B. Tinker (2012). Interactions of white pine blister rust and mountain pine beetle in whitebark pine ecosystems in the southern Greater Yellowstone Area. *Natural Areas Journal* 32: 31-40.

Boyce, M.S., & J.S. Waller (2003). Grizzly bears for the Bitterroot: predicting potential abundance and distribution. *Wildlife Society Bulletin* 31: 670–683.

Brown, D.E. (1985). *The grizzly in the southwest*. University of Oklahoma Press, Norman.

Burke, E.J., S.J. Brown, & N. Christidis (2006). Modeling the recent evolution of global drought and projections for the Twenty-First Century with the Hadley Centre Climate Model. *Journal of Hydrometeorology* 7: 1113-1125.

Butler, D.R. (1992). The grizzly bear as an erosional agent in mountainous terrain. *Zeitschrift fur Geomorphologie* 36: 179-189.

Butler, D.R. (2012). The impact of climate change on patterns of zoogeomorphical influence: Examples from the Rocky Mountains of the western U.S.A. *Geomorphology* 64: 183-191.

Carroll, C., R.F. Noss, & P.C. Paquet (2001). Carnivores as focal species for conservation planning in the Rocky Mountain region. Ecological applications 11: 961-980.

Carroll, C. (2005 unpublished). Priority areas for grizzly bear conservation in western North America: an analysis of habitat and population viability. Klamath Center for Conservation Research, Orleans, CA. Revised February 2014. Available: http://www.klamathconservation.org/docs/Carroll_GRIZZLY_BEAR_PVA.pdf.

Chang, T., A. Hansen, N. Piekielek, & T. Olliff (2013). Whitebark pine distribution models under projected future climates in the GYA. Presentation at *Challenges of Whitebark Pine Restoration Meeting*, Bozeman, Montana, 20 September 2013.

Ciais, Ph., M. Reichstein, N. Viovy, A. Granier, J. Oge´e, V. Allard, M. Aubinet, N. Buchmann, Chr. Bernhofer, A. Carrara, F. Chevallier, N. De Noblet, A. D. Friend, P. Friedlingstein, T. Grünwald, B. Heinesch, P. Keronen, A. Knohl, G. Krinner, D. Loustau, G. Manca, G. Matteucci, F. Miglietta, J. M. Ourcival, D. Papale, K. Pilegaard, S. Rambal, G. Seufert, J. F. Soussana, M. J. Sanz, E. D. Schulze, T. Vesala & R. Valentini. 2005. Europe-wide reduction in primary productivity caused by the heat and drought in 2003. Nature 437: 529-533.

Coleman, T.H., C.C. Schwartz, K.A. Gunther, & S. Creel (2013). Grizzly bear and human interaction in Yellowstone National Park: An Evaluation of Bear Management Areas. *Journal of Wildlife Management* 77: 1311-1320.

Conner, R.N. (1988). Wildlife populations: Minimally viable or ecologically functional? *Wildlife Society Bulletin* 16: 80-84.

Crête, M., & M. Manseau (1996). Natural regulation of cervidae along a 1000 km latitudinal gradient: change in trophic dominance. *Evolutionary Ecology* 11:51–62.

Doak, D.F., & M.G. Loso (2003). Effects pf grizzly bear digging on alpine plant community structure. *Arctic, Antarctic, and Alpine Research* 35: 421-428.

Elfström, M., A. Zedrosser, O.-G. Støen, & J.E. Swenson (2014). Ultimate and proximate mechanisms underlying the occurrence of bears close to human settlements: Review and management implications. *Mammal Review*: In press.

Felicetti, L.A., C.C. Schwartz, R.O. Rye, M.A. Haroldson, K.A. Gunther, D.L. Phillips, & C.T. Robbins (2003). Use of sulfur and nitrogen stable isotopes to determine the importance of whitebark pine nuts to Yellowstone grizzly bears. *Canadian Journal of Zoology* 81: 763-770.

Gasaway, W.C., R.D. Boertje, D.V. Grangaard, D.G. Kelleyhouse, R.O. Stephenson, & D.G. Larsen (1992). The role of predation in limiting moose at low densities in Alaska and Yukon and implications for conservation. *Wildlife Monographs* 20: 1-59.

Gerhing, T.M., K.C. VerCauteren, & J. Landry (2010).Livstock protection dogs in the 21st century: is an ancient tool relevant for modern conservation challenges? *Bioscience* 60(4):299-308

Gerhing, T.M., K.C. VerCauteren, & A.C. Cellar (2011). Good fences make good neighbors: implementation of electric fencing for establishing effective livestock protection dogs. *Human-Wildlife Interactions* (5):106-111.

Gibeau, M.L., S. Herrero, B.N. McLellan, & J.G. Woods (2001). Managing for grizzly bear security areas in Banff National Park and the central Canadian Rocky Mountains. *Ursus* 12: 121-130.

Graham, K., J. Boulanger, J. Duval, & G. Stenhouse (2010). Spatial and temporal use of roads by grizzly bears in west-central Alberta. *Ursus* 21: 43-56.

Griffin, K.A., M. Hebblewhite, H.S. Robinson, P. Zager, S.M. Barber-Meyer, D. Christianson, D., S. Creel, N.C. Harris, M.A. Hurley, D.H. Jackson, B.K. Smith, W.L. Myers, J.D. Rathel, M. Schlegel, B.L. Smith, C. White, & P.J. White (2011). Neonatal mortality of elk driven by climate, predator phenology and predator community composition. *Journal of Animal Ecology* 80: 1246-1257.

Gunther, K.A. (1994). Bear management in Yellowstone National Park, 1960-1993. *International Conference of Bear Research & Management* 9: 549-560.

Gunther, K.A., M.A. Haroldson, K. Frey, S.L. Cain, J. Copeland, & C.C. Schwartz (2004). Grizzly bear-human conflicts in the Greater Yellowstone Ecosystem, 1992-2000. *Ursus* 15: 10-22.

Gunther, K.A., & T. Wyman (2008). Human-habituated bears: The next challenge in bear management in Yellowstone National Park. *Yellowstone Science* 16: 35–41.

H.R. Rep. No. 93-412, 93rd Cong., 1 Sess. (July 27, 1973).

Hall, K., & N. Lamont (2003). Zoogeomorphology in the alpine: Some observations on abiotic-biotic interactions. *Geomorphology* 55:219-234.

Haroldson, M. A., C. C. Schwartz, K. C. Kendall, K. A. Gunther, D. S. Moody, K. Frey, & D. Paetkau (2010). Genetic analysis of individual origins supports isolation of grizzly bears in the Greater Yellowstone Ecosystem. *Ursus* 21: 1–13.

Haroldson, M.A., & K.A. Gunther (2013). Roadside bear viewing opportunities in Yellowstone National Park: Characteristics, trends, and influence of whitebark pine. *Ursus* 24: 27-41.

Helfield J.M., & R.J. Naiman (2006) Keystone interactions: Salmon and bear in riparian forests of Alaska. *Ecosystems* 9:167–180.

Herrero, S. (1985). *Bear attacks: Their causes and avoidance*. Lyons and Burford, New York, New York.

Herrero, S., T. Smith, T.D. DeBruyn, K. Gunther, & C.A. Matt (2005). From the field: Brown bear habituation to people–safety, risks, and benefits. *Wildlife Society Bulletin* 33: 362-373.

Hilderbrand, G.V., S.G. Jenkins,C.C. Schwartz, T.A. Hanley, & C.T. Robbins (1999b). Effect of seasonal difference in dietary meat intake on changes in body mass and composition in wild and captive brown bears. Canadian Journal of Zoology 77: 1623–1630.

Hilderbrand, G.V., C.C. Schwartz, C.T. Robbins, M.E. Jacoby, T.A. Hanley, S.M. Arthur, & C. Servheen (1999a). The importance of meat, particularly salmon, to body size, population productivity, and conservation of North American brown bears. Canadian Journal of Zoology 77: 132– 138.

Hilderbrand, G.V., T.A. Hanley, C.T. Robbins, & C.C. Schwartz (1999c). Role of brown bears (*Ursus arctos*) in the flow of marine nitrogen into a terrestrial ecosystem. *Oecologia* 121: 546-550.

Holtgreive, G.W., D.E. Schindler, & P.K. Jewett (2009). Large predators and biogeochemical hotspots: Brown bear (*Ursus arctos*) predation on salmon alters nitrogen cycling in riparian soils. *Ecological Research* 24: 1125-1135.

Interagency Grizzly Bear Subcommittee for the Cabinet Yaak and Selkirk Ecosystems, meeting notes, Dec.2013

Interagency Grizzly Bear Subcommittee for the Cabinet Yaak and Selkirk Ecosystems, annual reports

Interagency Grizzly Bear Study Team (1979-2012). Yellowstone grizzly bear investigations: Annual reports of the Interagency Grizzly Bear Study Team, U.S. Geologic Survey, Bozeman, MT USA

Interagency Grizzly Bear Study Team (2009). Yellowstone Grizzly Bear Mortality and Conflict Reduction Report. Interagency Grizzly Bear Study Team, Northern Rocky Mountain Science Center, Montana State University, Bozeman, MT USA

Jones C.G., J.H. Lawton, & M. Shachak (1994). Organisms as ecosystem engineers. *Oikos* 69: 373–386.

Keane, R.E., P. Morgan, & J.P. Menakis. 1994. Landscape assessment of the decline of whitebark pine (Pinus albicaulis) in the Bob Marshall wilderness complex, Montana, USA. Northwest Science 68: 213-229.

Keane, R.E., & S.F. Arno. 1993. Rapid decline of whitebark pine in western Montana: Evidence from 20-year remeasurements. Western Journal of Applied Forestry 8: 44-47.

Kendall, K. C., J. B. Stetz, J. Boulanger, A. C. MacLeod, D. Paetkau, & G. C. White (2009). Demography and genetic structure of a recovering grizzly bear population. *Journal of Wildlife Management* 73: 3–17.

Koteen, L. (2002). Climate change, whitebark pine, and grizzly bears in the Greater Yellowstone Ecosystem. Pages 343-414 in S.H. Schneider & T.L. Root (eds.). *Wildlife responses to climate change: North American case studies*. Island Press, Washington, D.C.

Lambeck, R.J. (1997). Focal species: A multi-species umbrella for nature conservation. *Conservation Biology* 11: 849-856.

Lande, R. (1995). Mutation and conservation. *Conservation Biology* 9: 782-791.

Langer, Jonathan (2004). Threatened grizzly bear habitat in the Greater Yellowstone Ecosystem. Report to Natural Resources Defense Council.

Larson, E.R. 2011. Influences of the biophysical environment on blister rust and mountain pine beetle, and their interactions, in whitebark pine forests. *Journal of Biogeography* 38: 453-470.

Linnell, J.D., J.E. Swenson, & R. Andersen (2000). Conservation of biodiversity in Scandinavian boreal forests: large carnivores as flagships, umbrellas, indicators, or keystones?. *Biodiversity & Conservation* 9: 857-868.

Linnell, J.D., J.E. Swenson, & R. Anderson (2001). Predators and people: Conservation of large carnivores is possible at high human densities if management policy is favourable. *Animal Conservation* 4: 345-349.

Liu, Y., S.L. Goodrick, & J.A. Stanturf (2013). Future U.S. wildfire potential trends projected using a dynamically downscaled climate change scenario. *Forest Ecology & Management* 294: 120-135.

Lubow, B.C., & B.L. Smith (2004). Population dynamics of the Jackson elk herd. *Journal of Wildlife Management* 68: 810-829.

Macfarlane, W.W., J.A. Logan, & W.R. Kern (2013). An innovative aerial assessment of Greater Yellowstone Ecosystem mountain pine beetle-caused whitebark pine mortality. *Ecological Applications* 23: 421-437.

Marcott, S.A., J.D. Shakun, P.U. Clark, A.C. Mix (2013). A reconstruction of regional and global temperature for the past 11,300 years. *Science* 339: 1198-1201.

Mattson, D.J., B.M. Blanchard, & R.R. Knight. 1992. Yellowstone grizzly bear mortality, human habituation, and whitebark pine seed crops. Journal of Wildlife Management 56: 432-442.

Mattson, D. J., S. Herrero, R.G. Wright & C.M. Pease (1996*a*). Designing and managing protected areas for grizzly bears: How much is enough? Pages 133-164 *in* R.G. Wright, editor. *National Parks and Protected Areas: Their Role in Environmental Protection*. Blackwell Science, Cambridge, Massachusetts.

Mattson, D.J., S. Herrero, R.G. Wright & C.M. Pease (1996*b*). Science and management of Rocky Mountain grizzly bears. *Conservation Biology* 10: 1013-1025.

Mattson, D.J. 1990. Human impacts on bear habitat use. International Conference of Bear Research & Management 8: 33-56.Mattson, D.J. (1997). Wilderness-dependent wildlife: The large and the carnivorous. *International Journal of Wilderness* 3: 34-38.

Mattson, D.J. (2000). *Causes and Consequences of Dietary Differences Among Yellowstone Grizzly Bears (*Ursus arctos*)*. Ph.D. Dissertation, University of Idaho, Moscow, ID. 173 pp.

Mattson, D.J., & T. Merrill (2002). Extirpations of grizzly bears in the contiguous United States, 1850–2000. *Conservation Biology* 16: 1123-1136.

Mattson, D.J. (2004). Living with fierce creatures? An overview and models of mammalian carnivore conservation. Pages 151-176 *in* N. Fascione, A. Delach & M. Smith, editors. *Predators and People: From Conflict to Conservation*. Island Press, Washington, D.C.

Mattson, D.J., & T. Merrill (2004). A model-based appraisal of habitat conditions for grizzly bears in the Cabinet-Yaak region of Montana and Idaho. *Ursus* 15: 78-91.

Mattson, D.J., K. Barber, R. Maw & R. Renkin (2004). *Coefficients of Productivity for Yellowstone's Grizzly Bear Habitat*. U.S. Geological Survey, Biological Resources Discipline Biological Science Report USGS/BRD/BSR-2002-0007. 99pp.

Mattson, D.J. &T. Merrill (in press). Models of grizzly bear density for conservation design in North American Rocky Mountains. Conservation Letter, 1:in press.

Mawdsley, J.R., R. O'Malley, & D.S. Ojima (2009). A review of climate-change adaptation strategies for wildlife management and biodiversity conservation. *Conservation Biology* 23: 1080-1089.

McLellan, B.N., F.W. Hovey, R.D. Mace, J.G. Woods, D.W. Carney, M.L. Gibeau, W.L. Wakkinen, & W.F. Kasworm (1999). Rates and causes of grizzly bear mortality in the interior mountains of British Columbia, Alberta, Montana, Washington, and Idaho. *Journal of Wildlife Management* 63: 911–920.

Mearns L.O., S. Sain, L. R. Leung, M. S. Bukovsky,,S. McGinnis, S. Biner, D. Caya, R. W. Arritt, W. Gutowski, E. Takle, M. Snyder, R. G. Jones, A. M. B. Nunes, S. Tucker, D. Herzmann, L. McDaniel, L. Sloan (2013). Climate change projections of the North American Regional Climate Change Assessment Program (NARCCAP). *Climatic Change* 120: 965–975.

Meehl, G.A., C. Covey, T. Delworth, M.O. Latif, B. McAvaney, J.F.B. Mitchell, R.J. Stouffer, & K.E. Taylor (2007). The WCRP CMIP3 multimodel dataset: New era in climate change research. *Bulletin of the American Meteorological Society* September: 1383-1394.

Merriam, C.H. (1922). Distribution of grizzly bears in U.S. *Outdoor Life* (December): 405-406.

Merrill, T., D.J. Mattson, R.G. Wright & H.B. Quigley (1999). Defining landscapes suitable for restoration of grizzly bears *Ursus arctos* in Idaho. *Biological Conservation* 87: 231-248.

Merrill, T., & D.J. Mattson (2003). The extent and location of habitat biophysically suitable for grizzly bears in the Yellowstone region. *Ursus* 14: 171-187.

Merrill, T. (2005). *Grizzly bear conservation in the Yellowstone to Yukon region*. Yellowstone-to-Yukon, Technical Report 6. Canmore, Alberta.

Messier, F. (1994). Ungulate population models with predation: A case study with the North American moose. *Ecology* 75:478–488.

Middleton A.D., T.A. Morrison, J.K. Fortin, C.T. Robbins, K.M. Proffitt, P.J. White, D.E. McWhirter, T.M. Koel, D.G. Brimeyer, W.S. Fairbanks, & M.J. Kauffman (2013a). Grizzly bear predation links the loss of native trout to the demography of migratory elk in Yellowstone. *Proceedings of the Royal Society* B 280: 20130870.

Middleton, A.D., M.J. Kauffman, D.E. McWhirter, J.G. Cook, R.C. Cook, A.A. Nelson, M.D. Jimenez, & R.W. Klaver (2013b). Animal migration amid shifting patterns of phenology and predation: Lessons from a Yellowstone elk herd. *Ecology* 94: 1245-1256.

Miller, C.R., & L.P. Waits (2003). The history of effective population size and genetic diversity in the Yellowstone grizzly (*Ursus arctos*): Implications for conservation. *Proceedings of the National Academy of Sciences* 100: 4334-4339.

Moore J.W., & D.E. Schindler (2004). Nutrient export from freshwater ecosystems by anadromous sockeye salmon (*Oncorhynchus nerka*). *Canadian Journal of Fisheries & Aquatic Sciences* 61:1582–1589.

Morgan, C.P., J. Davis, T.Ford, & N. Laney (2004) Promoting understanding: The approach of the North Cascades Grizzly Bear Outreach Project. *Ursus* 15: 137-141.

Moving Ahead for Progress in the 21st Century Act, Pub. L. No. 112-141, 126 Stat. 405 (July 6, 2012).

Mowat, G., D.C. Heard, & C.J. Schwarz (2013). Predicting grizzly bear density in western North America. *PLOS ONE* 8: e82757.

Naiman, R.J., R.E. Bilby, D.E. Schindler, & J.M. Helfield (2002). Pacific salmon, nutrients, and the dynamics of freshwater and riparian ecosystems. *Ecosystems* 5: 399-417.

National Marine Fisheries Service and U.S. Fish and Wildlife Service (2010). Interim: Threatened and Endangered Species Recovery Planning Guidance. Version 1.3.

Nawaz, M.A., J.E. Swenson, & V. Zakaria (2008). Pragmatic management increases a flagship species, the Himalayan brown bears, in Pakistan's Deosai National Park. *Biological conservation* 141: 2230-2241.

Nielsen, S.E., S. Herrero, M.S. Boyce, R.D. Mace, B. Benn, M.L. Gibeau, & S. Jevons (2004). Modelling the spatial distribution of human-caused grizzly bear mortalities in the Central Rockies ecosystem of Canada. *Biological Conservation* 120: 101-113.

Nielsen, S.E., G.B. Stenhouse, & M.S. Boyce (2006). A habitat-based framework for grizzly bear conservation. *Biological Conservation* 130: 217-229.

Noss, R.F., H.B. Quigley, M.G. Hornocker, T. Merrill, & P.C. Paquet (1996). Conservation biology and carnivore conservation in the Rocky Mountains. *Conservation Biology* 10: 949-963.

Oreskes, N. (2013). On the "reality" and reality of anthropogenic climate change. *Climatic Change*

Orians, G., D.A. Cochran, J.W. Duffield, T.K. Fulla, R.J. Gustierrez, W.M. Hanemann, F.C. James, P. Karieva, S.R. Kellert, D. Klein, N.N. McLellan, P.D. Olson, & G. Yaska (1997). *Wolves, bears and their prey in Alaska.* National Academy Press, Washington, D.C.

Paetkau, D., L.P. Waits, P.L. Clarkson, L. Craighead, E. Vyse, R. Wark, & C. Strobeck (1998). Variation in genetic diversity across the range of North American brown bears. *Conservation Biology* 12: 418–429.

PAGES 2k Consortium (2013). Continental-scale temperature variability during the past two millennia . *Nature Geoscience* 6: 339-346.

Paine, R.T. (1969). A note on trophic complexity and community stability. *American Naturalist* 103: 91-93.

Paine, R.T. (1980). Food webs: Linkage, interaction strength and community infrastructure. *Journal of Animal Ecology* 49: 667–685.

Pease, C.M., & D.J. Mattson (1999). Demography of the Yellowstone grizzly bears. *Ecology* 80: 957-975.

Peoples Way (2014). Highway 93 North Wildlife Crossing Structures-Montana. www.peopleswaywildlifecrossings.org

Povilitis, A. & Suckling, K. (2010). Addressing Climate Change Threats to Endangered Species in U.S. Recovery Plans. *Conservation Biology* pp. 1-5.

Primm, S., & S. Wilson (2004) Reconnecting grizzly bear populations: Prospects for participatory projects. *Ursus* 15: 104-114.

Primm, S.A. & T.W. Clark (1996). Making sense of the policy process for carnivore conservation. *Conservation Biology* 10(4):1036-1045.

Proctor, M.F., D. Paetkau, B.N. McLellan, G.B. Stenhouse, K.C. Kendall, R.D. Mace, W.F. Kasworm, C. Servheen, C.L. Lausen, M.L. Gibeau, W.L. Wakkinen, M.A. Haroldson, G. Mowat, C.D. Apps, L.M. Ciarniello, R.M.R. Barclay, M.S. Boyce, C.C. Schwartz, & C. Strobeck (2012). Population fragmentation and inter-ecosystem movements of grizzly bears in western Canada and the northern United States. *Wildlife Monographs* 180: 1–46

Prudhomme, C., I. Giuntolia, E.L. Robinson, D.B. Clark, N.W. Arnell, R. Dankers, B.M. Fekete, W. Franssen, D. Gerten, S.N. Gosling, S. Hagemann, D.M. Hannah, H. Kim, Y. Masaki, Y. Satoh, T. Stacke, Y. Wada, & D. Wissern (2013). Hydrological droughts in the 21st century, hotspots and uncertainties from a global multimodel ensemble experiment. *Proceedings of the National Academy of Sciences*

Pyare, S., & J. Berger (2003). Beyond demography and delisting: Ecological recovery for Yellowstone's grizzly bears and wolves. *Biological Conservation* 113: 63-73.

Quinn, T.P., S.M. Carlson, S.M. Gende., & H.B. Rich, Jr. (2009). Transportation of Pacific salmon carcasses from streams to riparian forests by bears. *Canadian Journal of Zoology* 87: 195-203.

Raithel, J.D., M.J. Kauffman, & D.H. Pletscher (2007). Impact of spatial and temporal variation in calf survival on the growth of elk populations. *Journal of Wildlife Management* 71: 795-803.

Reed, D.H., J.J. O'Grady, B.W. Brook, J.D. Ballou, R. Frankham (2003). Estimates of minimum viable population sizes for vertebrates and factors influencing those estimates. *Biological Conservation* 113: 23–34.

Rehfeldt, G.E., N.L. Crookston, M.V. Warwell, & J.S. Evans (2006). Empirical analyses of plant-climate relationships for the western United States. *International Journal of Plant Science* 167:1123–1150.

Rehfeldt, G.E., N.L. Crookston, C. Sáenz-Romero, & E.M. Campbell (2012). North American vegetation model for land-use planning in a changing climate: a solution to large classification problems. *Ecological Applications* 22: 119–141.

Robinson, M.J. (2005). *Predatory bureaucracy*. University Press of Colorado, Boulder, Colorado.

Roever, C.L., M.S. Boyce, & G.B. Stenhouse (2010). Grizzly bear movements relative to roads: Application of step selection functions. *Ecography* 33: 1113-1122.

Romme, W.H., & M.G. Turner (1991). Implications of global climate change for biogeographic patterns in the Greater Yellowstone Ecosystem. *Conservation Biology* 5: 373-386.

Schwartz, C.C., M.A. Haroldson, G.C. White, R.B. Harris, S. Cherry, K.A. Keating, D. Moody, & C. Servheen (2006). Temporal, spatial, and environmental influences on the demographics of grizzly bears in the Greater Yellowstone Ecosystem. *Wildlife Monographs* 161: 1–68.

Schwartz, C.C., M.A. Haroldson, & G.C. White (2010). Hazards affecting grizzly bear survival in the Greater Yellowstone Ecosystem. *Journal of Wildlife Management* 74: 654-667.

Servheen, C., S. Herrero, & B Peyton (compilers) (1999). *Bears: Status survey and conservation action plan*. IUCN/SSC Bear Specialist and Polar Bear Specialist Groups.

Shaffer, M.L. (1981). Minimum population sizes for species conservation. *BioScience* 31: 131-134.

Shaffer, M.L. (1992). *Keeping the grizzly bear in the American west: An alternative recovery plan*. The Wilderness Society, Washington, D.C.

Shaffer, M. L., and B. A. Stein (2000). Safeguarding our precious heritage [Chapter 11], in BA Stein, LS Kutner, and JS Adams eds., Precious heritage: the status of biodiversity in the United States. *Oxford University Press*, p. 299-321

Shepard, P., & B. Sanders (1985). *The sacred paw: The bear in nature, myth and literature*. Viking Penguin Books, New York, New York.

Shi, F., B. Yang, A. Mairesse, L. von Gunten, J. Li, A. Bräuning, F. Yang, & X. Xiao (2013). Northern Hemisphere temperature reconstruction during the last millennium using multiple annual proxies. *Climate Research* 56: 231–244.

Simberloff, D. (1999). Biodiversity and bears: A conservation paradigm shift. *Ursus* 11: 21-27.

Singer, F.J., A. Harting, K.K. Symonds, & M.B. Coughenour (1997). Density dependence, compensation, and environmental effects on elk calf mortality in Yellowstone National Park. *Journal of Wildlife Management* 61: 12-25.

Singleton, P.H., W.L. Gaines, & J.F. Lehmkuhl (2004). Landscape permeability for grizzly bear movements in Washington and southwestern British Columbia. *Ursus* 15: 90-103.

Six, D.L., & J. Adams (2007) White pine blister rust and selection of individual whitebark pine by the mountain pine beetle (Coleoptera: Cuculionidae, Scolytinae). Journal of Entomological Science 42: 345-353.

Smith, B.L., & S.H. Anderson (1996). Patterns of neonatal mortality of elk in northwest Wyoming. *Canadian Journal of Zoology* 74: 1229-1237.

Smith, B.L., & S.H. Anderson (1998). Juvenile survival and population regulation of the Jackson elk herd. *Journal of Wildlife Management* 62: 1036-1045.

Smith, M.E., J.D.C. Linnell, J. Odden, & J.E. Swenson (2000). Review of methods to reduce livestock depredation: L. guardian animals. *Acta Agriculture Scandanavica, Section A-Animal Science* 50(4):279-290.

Smith, T.S., S. Herrero, T.D. DeBruyn, & J.M. Wilder. (2008). Efficacy of bear deterrent spray in Alaska. *Journal of Wildlife Management* 72: 640–645.

Soulé, M.E., J.A. Estes, J. Berger, & C. Marintez del Rio (2003). Ecological effectiveness: Conservation goals for interactive species. *Conservation Biology* 17: 1238-1250.

Soulé, M.E., J.A. Estes, B. Miller, & D.L. Honnold (2005). Strongly interacting species: Conservation policy, management, and ethics. *BioScience* 55: 168-176.

Storer, T.I., & L.P. Tevis, Jr. (1955). *California grizzly*. University of California Press, Berkeley.

Tardiff S.E., & J.A. Stanford (1998). Grizzly bear digging: Effects on subalpine meadow plants in relation to mineral nitrogen availability. *Ecology* 79: 2219–2228.

Traill, L.W., C.J.A. Bradshaw, & B.W. Brook (2007). Minimum viable population size: A meta-analysis of 30 years of published estimates. *Biological Conservation* 39: 159-166.

Traill, L.W., B.W. Brook, R.R. Frankham, & C.J.A. Bradshaw (2010). Pragmatic population viability targets in a rapidly changing world. *Biological Conservation* 143: 28-34.

Trouet, V., H.F. Diaz, E.R.Wahl, A.E. Viau, R. Graham, N. Graham, & E.R. Cook (2013). A 1500-year reconstruction of annual mean temperature for temperate North America on decadal-to-multidecadal time scales. *Environmental Research Letters* 8: 024008.

U.S. Bureau of Census Data (2010). www.census.gov/2010census/data

U.S. Forest Service (1995). Forest Plan Amendment #19: Allowable sale quantity and objectives and standards for grizzly bear management, Amneded Environmental Assessment. Flathead National Forest.

U.S. Fish & Wildlife Service (1993). *Grizzly bear recovery plan*. US Fish & Wildlife Service, Missoula, Montana, USA.

U.S. Fish & Wildlife Service (1996). *Bitterroot Ecosystem recovery plan chapter-Supplement to the grizzly bear recovery plan*. US Fish & Wildlife Service, Missoula, Montana, USA.

U.S. Fish & Wildlife Service (1997). *North Cascades Ecosystem recover plan chapter-Supplement to the grizzly bear recovery plan*. US Fish & Wildlife Service, Missoula, Montana, USA.

U.S. Fish and Wildlife Service (1997-2012). Compilation of grizzly bear mortality data.

U.S. Fish and Wildlife Service (2000a) *Establishment of nonessential experimental population of grizzly bears in the Bitterroot Area of Idaho and Montana.*65 Federal Register 69624. U.S. Fish and Wildlife Service, Missoula, MT, USA

U.S. Fish & Wildlife Service (2000b). *Grizzly bear recovery in the Bitterroot ecosystem: Final environmental impact statement*. US Fish & Wildlife Service, Missoula, Montana, USA.

U.S. Fish and Wildlife Service (2001) *Establishment of nonessential experimental population of grizzly bears in the Bitterroot Area of Idaho and Montana: removal of regulations*. 66 Federal Register 33623. U.S. Fish and Wildlife Service, Missoula, MT, USA

U.S. Fish & Wildlife Service (2007a). *Final conservation strategy for the grizzly bear in the Greater Yellowstone Area*. US Fish & Wildlife Service, Missoula, Montana, USA. http://www.fws.gov/mountain-prairie/species/mammals/grizzly/Final_Conservation_Strategy.pdf

U.S. Fish and Wildlife Service (2007b). *Final rule designating GYE population of grizzly bears as a distinct population segment and removing the Yellowstone distinct population segment of grizzly bears from the endangered and threatened wildlife list.* 70 FR 14866. U.S. Fish and Wildlife Service, Missoula, MT, USA.

U.S. Fish & Wildlife Service (2008). Final Recovery Plan for the Sierra Nevada Bighorn Sheep (Ovis Canadensis californiana. http://ecos.fws.gov/docs/recovery_plan/080213_1.pdf

U.S. Fish & Wildlife Service (2011). *Grizzly bear 5-year review: Summary and evaluation*. U.S. Fish and Wildlife Service, Grizzly Bear Recovery Office, Missoula, Montana, USA.

Warwell, M.V., G.E. Rehfeldt, & N.L. Crookston (2007). Modeling contemporary climate profiles of whitebark pine (Pinus albicaulis) and predicting responses to global warming. Pages 139-142 *in*. *Proceedings of the Conference Whitebark Pine: A Pacific Coast Perspective*. USDA Forest Service R6-NR-FHP-2007-01.

Weed, A. S., M.P. Ayres, & J.A. Hicke (2013). Consequences of climate change for biotic disturbances in North American forests. *Ecological Monographs* 83: 441–470.

Westerling, A.L., M.G. Turner, E.A.H. Smithwick, W.H. Romme, & M.G. Ryan (2011). Continued warming could transform Greater Yellowstone fire regimes by mid-21st century. *Proceedings of the National Academy of Sciences* 108: 13165–13170.

White, C.G., P. Zager, & M.W. Gratson (2010). Influence of predator harvest, biological factors, and landscape on elk calf survival in Idaho. *Journal of Wildlife Management* 74: 355-369.

Wilson, S.M. & S.G. Clark (2007). Resolving human-grizzly bear conflict: An integrated approach in the common interest. Pages 137-163 *in* K.S. Hanna & D.S. Slocombe (eds.). *Integrated resource and environmental management: Concepts and practice*. Oxford University Press, Don Mills, Ontario.

Wilson, S.M., J.A. Graham, D.J. Mattson, & M.J. Madel (2006). Landscape conditions predisposing grizzly bears to conflict on private agricultural lands in the western U.S.A. *Biological Conservation* 130: 47-59.

Winder M., D.E. Schindler, J.W. Moore, S.P. Johnson, W.J. Palen (2005). Do bears facilitate transfer of salmon resources to aquatic macroinvertebrates? *Canadian Journal of Fisheries & Aquatic Sciences* 62:2285–2293.

Testimony submitted to the Senate Committee on Environment and Public *Works*
Successful State Stewardship: A Legislative Hearing to Examine S. 614, the Grizzly Bear State Management Act

September 21, 2020

Thank you, Chairman Barrasso and Ranking Member Carper for the opportunity to submit this testimony outlining my views regarding S. 614: *Grizzly Bear State Management Act of 2019.*

A recovered and secure grizzly bear must be large enough and occupy enough extensive contiguous secure habitat to have a 95 percent probability of persisting for at least several centuries as a wild, free ranging, self-sustaining species. Such a population would have the size and habitat to sustain themselves in the face of the genetic, demographic, environmental and catastrophic uncertainties that constitute life in the natural world.

None of grizzly bear sub-populations in the lower 48 states in and of themselves meet this criteria. This is manifestly true of the Yellowstone bear sub-population because these bears live on a biological island separated geographically from other grizzly sub-populations and have been for at least a century. As long as the Yellowstone grizzlies live on this island, they can never be a secure population and will require national protection and oversight to assure their continued survival. There must be a national policy overriding different state's regulations to assure protected linkage habitat to other bear sub-populations.

S. 614 would remove the essential federal protections under the ESA and do nothing to assure the protected and secure interstate linkage habitat that is essential for a truly recovered and secure Yellowstone grizzly population.

S. 614 would grant the states the right to systematically target grizzlies attempting to recolonize former occupied habitat outside of an artificial "Demographic Monitoring Area" for elimination and this will guarantee that true grizzly recovery will be stopped in its tracks. A wide ranging slow-reproducing top-level opportunistic omnivore such as the grizzly cannot be turned over to the provincial interests of the livestock driven agendas of the state game departments of the Yellowstone region.

S. 614 would turn "back the clock" and assure that all the time and money spent toward true recovery of these bears would be for naught and will snatch " defeat right out of the jaws of victory". These bears must be allowed to disperse into all biologically suitable habitat to achieve true recovery and the bears themselves will show us that habitat. State management will not allow them to do that.

I oppose S.614.

Thank you

/signed/

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Testimony submitted to the Senate Committee on Environment and Public *Works*
Successful State Stewardship: A Legislative Hearing to Examine S. 614, the Grizzly Bear State Management Act

September 21, 2020

Thank you, Chairman Barrasso and Ranking Member Carper for the opportunity to submit this testimony outlining my views regarding S. 614: *Grizzly Bear State Management Act of 2019.*

I am opposed to S. 614 and respectfully ask that the Senate Committee not support this unfortunate and ill-conceived bill.

I am a wildlife biologist by training and a 52-year resident of Wyoming, having received my Ph.D. from the University of Wyoming after completing 8 years of research on the behavior and ecology of coyotes on the National Elk Refuge outside Jackson and Grand Teton National Park. Prior to that, I earned my Masters of Science degree completing research on golden eagles in the west-central desert of Utah. After completing my graduate work, I conducted wildlife assessments and inventories for the proposed siting of numerous, oil and gas wells and pipelines, an extensive uranium extraction proposal and the reconstruction of Jackson Lake Dam in Grand Teton N.P. My work addressed the potential impacts of the proposed activities to species of special concern including raptors, carnivores and big game populations, and of course species protected by the Endangered Species Act.

In addition to extensive field investigations as a professional consultant, I worked for 25 years as a documentary filmmaker producing wildlife programs for television. I have filmed a variety of threatened and endangered species including black rhinos and African elephants, polar bears, whooping cranes, and California condors, gray wolves and black-footed ferrets. I was also the first to film the critically endangered Giant Panda in the wilds of China in 1982.

I have filmed grizzly bears in Wyoming (Yellowstone and Grand Teton National Parks), Montana (Glacier N.P.) and at Alaska's McNeil River and in Denali and Katmai N.Ps. I also spent nearly two months filming on Kodiak Island, home of the largest grizzlies- the Kodiak sub-species. Over the years, I have spent hundreds of hours following and observing grizzly bears and have interacted extensively with bear biologists in order to accurately portray the grizzly's story to the viewing public through my own productions and for extended segments within other network productions.

My last career position was Executive Director of the Jackson Hole Conservation Alliance, a non-profit environmental organization based in Jackson Wyoming. (I am now retired). During my tenure with the Alliance, I witnessed the dramatic arrival of the gray wolf into the ecosystem, and I closely followed the successful growth and range expansion of the Greater Yellowstone Ecosystem (GYE) grizzly bear population.

During the various but related chapters of my life I have gained a substantial understanding of the complexity of ecosystems, their functioning and the role they play in sustaining our own health and contentment. And I have also come to understand the critical role large and unique apex species such as grizzly bears play in maintaining ecosystem health and function.

Sadly, I have also witnessed the diminishment of habitats from the Amazon Basin to the Arctic, from the sagebrush steppe of Wyoming to subtropical rainforests of southern China.

But for me, what is most distressing is how the GYE, the largest relatively intact temperate forest region in the world, is being choked by relentless human visitation and development, and how we are willingly managing every naturally wild thing into submission simply to appease a comfortable human experience. This ecosystem, these bears and future generations of humans deserve better then to allow this persistent, incremental deterioration and manipulation to go on. De-listing the GYE grizzly bear population with this legislation would be yet another tragic step in the dismantling of the Greater Yellowstone's ecosystem complexity and function.

The phrase Greater Yellowstone Ecosystem had its genesis with the pioneering work of brothers Frank and John Craighead. Their work on Yellowstone's grizzly population in the 1960s-70s, lead them to coin the name "Yellowstone Grizzly Bear Ecosystem." Years later this concept of large landscape ecosystems lead to the formation of the environmental organization- the Greater Yellowstone Coalition, of which I was a founding Board member. The Coalition's objective than, and as it continues today is to manage the area as one ecological unit, ignoring political boundaries as much as possible and allowing the system to function as free of human interference as possible.

This ecosystem concept of landscape management has taken hold around the world. Let us not now allow this history to be abused by de-listing the GYE's apex component, the grizzly bear and turning its future over to heavy-handed, homocentric management objectives.

I will keep my specific comments succinct; I will not dwell on the legitimacy of the GYE grizzly bear population estimates used by various interests, or the many environmental factors influencing population trends. I will not dwell on the moral question of sanctioning the killing of grizzly bears in order to allow hunters to claim a "trophy reward." These are all legitimate social and biological concerns and worthy of much greater discussion than is appropriate here.

However, I will focus on what we can realistically assume to happen if the Greater Yellowstone grizzly bear population is de-listed and its management is turned over to the states of Idaho, Montana and Wyoming.

Allow me to present several scenarios laying out plausible, future conditions. First, there appears to be a tenuous consensus that the current grizzly population is approximately 750, with some professional estimates ranging as high as 1,000 and 1,200.

The "*2016 Conservation Strategy for the Grizzly Bear in the Greater Yellowstone Ecosystem*" (p.4) calls for **"Maintaining at least 500 bears in the GYE…"** (Emphasis added.) Similarly, the 2016 "*Memorandum of Agreement Regarding the Management and Allocation of Discretionary Mortality of Grizzly Bears in the Grater Yellowstone Ecosystem*" (p.4) calls for the three states; Idaho, Montana and Wyoming to **"Maintain a minimum population size of 500 bears within the DMA** (Demographic Monitoring Area) **of the GYE."** (Emphasis added.)

In Wyoming, the grizzly bears outside the DMA will be aggressively managed: meaning greatly reduced in numbers and not counted toward overall ecosystem's mortality limits. With the current de-listing proposal, it's only what happens to the bears within the DMA that counts.

Though not required, the three states consider a minimum population of 600 bears to be a level below which more restrictive management strategies will take effect- making the 600 figure a significant threshold within their collective management plans. This then provides a buffer of 100 bears to the 500 required by the Conservation Strategy.

With this base line understanding, if the GYE grizzly population's management authority is turned over to the states with their current management plans, we can assume efforts will be taken to bring the population to near the 600 level. This means that at this point in time, at least 150 grizzly bears can be killed, primarily through hunting and agency removal.

If we accept that there may be as many as 1,000 grizzlies occupying their native habitat in the GYE, then upwards of 400 bears would be killed in order to approach the 600 target. And, if the extreme population estimate of 1,200 bears is accepted as official, then we can assume upwards of 600 grizzly bears would be killed. Again, this mortality figure does not take into count the bears outside the DMA that will be aggressively controlled.

In the case of Wyoming, Grizzly Bear Hunt Areas 7 and 8 are outside the DMA and have an "any grizzly bear" quota of 12 with the potential to kill bears over bait if the Wyoming Game and Fish Department determines it is necessary to meet management objectives (Sec. 7. Chapter 68. Grizzly Bear Hunting Season. 2018). Hunting over bait is perhaps the most un-sportsman-like method of hunting and should never be part of any de-listing agreement.

These realistic scenarios do not take into account that these reductions will occur over several years, during which time new bears will be born and recruited into the population. This annual recruitment will increase the overall number of bears to be killed in order to approach the population objective of 600. How many more will be killed? No one knows.

Clearly, we can anticipate that the goal of the three states will be to reduce the GYE grizzly bear population to near their agreed upon 600 level. And if there is any doubt of this, we need look no further than the history of wolf management in these same three states.

At the end of 2016, the year before wolves were de-listed in Wyoming, the wolf population in the state and outside Yellowstone N.P was estimated to be 269. The *"Wyoming Gray Wolf Monitoring and Management – 2018 Annual Report.* (p.i) states: **"In 2018 the Wyoming Game and Fish Department implemented a wolf hunting season with the biological objective to reduce the wolf population to approximately 160 wolves…"** (Emphasis added.)

At the end of 2019, the population within Wyoming's Trophy Game Area was estimated to be 175, a 35 percent decrease over four years, and just 9 percent above Wyoming's stated population objective of 160. This was accomplished with just four years of "sport hunting" and aggressive management removal.

If Wyoming's wolf management history is any indication, we can expect a similarly aggressive reduction in grizzly bear numbers once the state gains management authority. (Similar goals and trends can be seen with Montana and Idaho's wolf management history in the GYE.)

I submit Wyoming as an example because the state has the largest segment of the GYE's primary grizzly habitat and population- approximately 58 percent. This includes Yellowstone and Grand Teton N.Ps. where grizzly bear hunting is prohibited, but included in the population count (*Memorandum of Agreement Regarding the Management and Allocation of Discretionary Mortality of Grizzly Bears in the Greater Yellowstone Ecosystem. 2016. p.5).* It's safe to say that Wyoming's management actions will have the single, greatest long-term impact on the ecosystem's grizzly population.

Regardless of the final numbers one wants to subscribe to, one thing stands outs: if management authority of the GYE grizzly population is given to the three states with management plans as currently written, and with the clear history of managing large carnivores for minimum numbers, we can anticipate that hundreds upon hundreds of grizzly bears will be killed. I seriously doubt that the American public will tolerate this level of killing.

Also, reducing and holding the grizzly bear population to near 600 will significantly jeopardize the chances of natural genetic flow between the GYE and the nearest grizzly population- Montana's Northern Continental Divide population. Even with the current number of bears- 750, there is no evidence that active connectivity and the successful exchange of genetic material has occurred. What then will be the chances with a drastically reduced population and the perpetual killing that will likely be concentrated at the edges of the population- the grizzly occupied habitat outside the DMA?

Will future management of the GYE grizzly bear population rely on "pickup truck" connectivity: arbitrarily hauling bears between populations? Will the great bear's long-term survival in the GYE depend upon humanity keeping its heavy finger on the scale of natural ecosystem functions? Will the great bear's longevity be determined more by human factors then by their own extremely evolved survival wits? Is this what the authors of the Endangered Species Act considered to be the successful recovery of a species? I think not.

I respectfully ask this Senate Committee to not pass S.614. Wyoming, Montana and Idaho are not ready to properly manage the Greater Yellowstone Ecosystem's iconic grizzly bears.

A dead bear is not a recovered bear.

Thank you,

/ signed /

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HUMANE SOCIETY LEGISLATIVE FUND

THE HUMANE SOCIETY OF THE UNITED STATES

Testimony to the Senate Committee on Environment and Public Works
Successful State Stewardship: A Legislative Hearing
to Examine S. 614, the Grizzly Bear State Management Act
September 9, 2020

The Humane Society Legislative Fund and the Humane Society of the United States thank Chairman Barrasso and Ranking Member Carper for the opportunity to express our views on S. 614, the Grizzly Bear State Management Act, pursuant to your hearing on the legislation.

We oppose S. 614 for the reasons detailed in this document, and we urge the Senate not to pass this harmful bill.

In 2017, due to pressure from trophy hunters, ranching lobbies and the northern Rocky Mountain states, the U.S. Fish and Wildlife Service (FWS) issued a final rule removing grizzly bears of the Greater Yellowstone Ecosystem (GYE) from the Endangered Species Act's (ESA) list of threatened species. The rule was overturned by two federal courts—the District of Montana in 2018, and the Ninth Circuit Court of Appeals in 2020—with the judges finding that FWS had violated the law and ignored the best available science in its rush to delist the population.

The federal court rulings correctly and objectively applied the law

Judicial review of delisting actions serves as a critical check to ensure that FWS faithfully carries out the ESA, including its mandate to make decisions solely on the basis of the best available science. The rulings overturning the 2017 delisting rule underscore the important role the courts play in ensuring fair administration of the ESA. Some have mischaracterized these rulings as politically motivated, or as prioritizing ideology over science. But even a quick read of the opinions shows this is untrue. The district and appeals courts simply held FWS accountable, determining that the agency had violated the ESA and disregarded the best available science—including the scientific opinion of its own biologists and grizzly bear recovery coordinator—in order to delist the population as quickly as possible. As the District of Montana held, FWS "cannot negotiate away its obligation to make decisions solely on the basis of the best available science." *Crow Indian Tribe v. United States*, 343 F. Supp. 3d 999, 1018 (D. Mont. 2018). These opinions confirm what the drafters of the ESA understood: judicial review is necessary to ensure that listing decisions are made on the basis of science, not politics.

GYE grizzly bears must remain listed because they still face threats to their survival

According to a recent study, a majority of academic-affiliated grizzly bear biologists believe GYE grizzly bears should retain federal ESA protections because they face extinction. Indeed, grizzly bears once ranged from northern Mexico to Alaska and numbered as many as 50,000 in the contiguous 48 states in the early 1800s. Today, however, wild grizzly bears number less than 2,000 in the contiguous 48, with fewer than 1,000 bears in the GYE, and face a lack of genetic

connectivity to other grizzly bear populations. On top of that, GYE grizzly bears' major food sources—white bark pine seeds and cutthroat trout—have all but disappeared due to climate change and invasive species. The Interagency Grizzly Bear Study Team did not "debunk" the harms to the population from the loss of these staple food sources. Their review found that omnivorous grizzly bears can adapt by seeking new food sources, but it ignored the new threats that GYE bears encounter as a result of this dietary shift. Now, GYE bears have adopted a more heavily meat-based diet, but they must abandon the safety of national parks to find this food. Outside park boundaries, they are exposed to more human-caused mortality, resulting in record numbers of dead bears since 2015: roughly 325 deaths, according to the latest figures from the U.S. Geological Survey.

Livestock losses from grizzly bears are statistically nil, and claims are grossly exaggerated

In 2013, according to FWS, Wyoming ranchers grazed 253,826 cattle and 52,600 sheep amongst the GYE grizzly bear population. Remarkably, only 108 cattle (0.042% of the inventory) and 6 sheep (0.011% of the inventory) were killed by grizzly bears that year. Montana's cattle inventory in the GYE that year was 105,250 animals and its sheep inventory 10,050 animals, according to FWS; GYE grizzly bears in Montana killed 14 cattle that year and 17 sheep. The Montana Board of Livestock confirmed that in 2018 grizzly bears (including those from the Northern Continental Divide Ecosystem/Glacier National Park population) killed 61 cattle and 23 sheep statewide. These livestock mortality figures are statistically nil. By contrast, U.S. Department of Agriculture data indicate that *nine times* more cattle and sheep die every year from disease, respiratory problems, birthing problems and poisoning than from wild native carnivores, domestic dogs and raptors *combined*.

Delisting will be immediately followed by ineffective state-sponsored trophy hunts that will harm the population

Following the 2017 delisting, Idaho and Wyoming rushed to open trophy hunts on the vulnerable GYE population, proposing to charge out-of-state hunters up to $600 for the right to legally kill a grizzly bear for the first time in decades. These bears are killed for nothing more than trophies; no one hunts grizzly bears just for food. Trophy hunting serves no legitimate management purpose: studies have shown that hunting native carnivores does not reduce conflicts with humans or livestock, and to the contrary increases conflict in many cases by disrupting populations' social and territorial dynamics. Trophy hunting also causes severe and irreparable harm to grizzly bear populations. Killing a female orphans her dependent young, all but guaranteeing their death. Killing females also reduces the very few breeding females left in the GYE population, which is devastating as bears produce only a few cubs in their lifetimes. Studies show that, even with hunter education courses, hunters are incapable of distinguishing between male and female bears—or even between grizzly bears and black bears. Trophy hunting would also harm the already perilous genetic health of the population by removing the fittest adults from the gene pool. Open season should not be immediately declared on this isolated and beloved population, but that is what will happen if delisting occurs.

Non-lethal strategies must be adopted to address human and livestock conflicts

Delisting—and the liberalized killing of bears that will follow—is neither necessary nor effective for addressing bear conflicts with humans and livestock. Instead, FWS should encourage states, federal land managers and landowners to adopt proven non-lethal practices to keep both bears and people safe. The few livestock conflicts that occur are frequently associated with human-caused problems such as poor husbandry practices. The Blackfoot Challenge in northwestern Montana, a partnership of ranchers, state and federal wildlife agents and land managers, has demonstrated that when agencies and communities work together, they can implement commonsense measures and change social norms that almost entirely eliminate threats to bears and wolves. As a result, grizzly bear conflicts have declined by over 90% in the organization's service area.

In most years, run-ins with elk hunters are the leading human cause of grizzly bear deaths in the GYE. But these attacks are avoidable. An Alaska study shows that bear spray is 98% effective in stopping grizzly bear attacks, and most people who use it walk away uninjured. In comparison, firearms only are about 50% effective at stopping grizzly bear attacks. Bear spray is the most effective deterrent available and does not result in dead bears, yet neither the U.S. Forest Service nor any GYE state requires hunters in the field to carry bear spray. In 2019, after a series of bear attacks on elk hunters, a coalition of NGOs petitioned Idaho, Montana and Wyoming to adopt rules requiring hunters to carry bear spray in the field in grizzly country, but all three states declined to adopt this commonsense rule.

Grizzly bear tourism earns billions of dollars for local GYE economies

According to the National Park Service, Grand Teton and Yellowstone national parks generated $1.4 billion in revenues for local economies of the northern Rockies states in 2019, including supporting over 15,000 jobs, thanks to 7.4 million park visitors. A 2017 FWS report showed that, since 2011, hunting numbers had plummeted by 21%, with big game hunters declining by 2.4 million, while wildlife watchers had increased by 28%. A study by the University of Wyoming found that wildlife watchers spent nearly twice ($365 million) the amount spent by big game hunters ($206 million) in Wyoming. In short, it makes enormous economic sense to let grizzly bears live and keep them protected for wildlife tourism.

Bear spray saves lives

Bear spray is recognized by many agencies and biologists as the most effective way to prevent bear attacks. Its use will keep both hunters and bears safer and avoid unwanted mortalities on all sides.

Putting bears and hunters at risk.

In the Greater Yellowstone Ecosystem, U.S. government data show that elk hunters who hunt in grizzly bear country are a major source of grizzly bear mortality. Between 1992 and 2017, 29% of all grizzly bears killed by humans were elk hunters (see table below). Of all the grizzly bear attacks on humans between 1992 and 2017, most of them—29—occurred on hunters.

In the late summer and fall during a period called *hyperphagia*, bears need to consume a tremendous amount of calories to survive wintertime hibernation. But also during that critical time, elk hunters will leave elk carcasses and gut piles in the field, providing an attractive source of food for grizzly bears. Wyoming's labor laws encourage private hunting guides to carry and be trained in the use of bear spray to maintain their safety.

Firearms are unreliable.

Hunters who rely on firearms, rather than bear spray, to stop a grizzly bear attack put themselves in mortal danger because bullets will not always stop a bear in his or her tracks. A U.S. Fish and Wildlife study found that persons who used firearms during a bear attack avoided injury only about 50% of the time, because many handguns and rifles are not of an adequate caliber to stop a charging grizzly bear. What's more, using firearms during an attack increases the risk of hunters injuring companions or themselves.

PHOTO BY: DON GETTY

Bear spray is far more effective, safe and reliable.

In contrast, bear spray—defined as EPA-registered capsicum products that contain 1% to 2% capsaicin and related capsicinoids—is specifically formulated to stop an attack and saves lives of both hunters and grizzly bears.

Several studies confirm that bear spray is far more effective, safe and reliable than firearms, and that people who used bear spray avoided injury almost every time.

For example, a study of close-range bear encounters in Alaska showed that 98% of people who carried bear spray walked away uninjured. The 2% who were wounded received only minor injuries. And the biologists associated with the Interagency Grizzly Bear Committee, which ensures ensure recovery of viable grizzly bear populations and their habitat in the lower 48 states, determined in both 1999 and 2008 that bear spray is far more effective in protecting people from bear attacks than all other methods, including firearms.

Human/grizzly bear encounters and outcomes

Year	Total human injuries from bears	Percent of humans who were hunters injured by bears	Total human-caused grizzly bear deaths	Percent of grizzly bear deaths caused by hunters
1992-2000	38	50% (19 incidents to hunters of 38 total incidents)	72	39% (28 of 72 incidents)
2012	3	66% (2 of 3)	34	32% (11 of 34)
2013	3	0% (0 of 3)	23	17% (4 of 23)
2014	3	33% (1 of 3)	19	37% (7 of 19)
2015	2	100% (2 of 2)	53	26% (14 of 53)
2016	3	100% (3 of 3)	51	14% (7 of 51)
2017	3	66% (2 of 3)	42	36% (15 of 42)

Visitors and hunters in this region should carry bear spray to protect themselves, their companions, and our country's rare and iconic grizzly bears from harm.

Find out more information at https://tinyurl.com/CarryBearSpray

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Government data confirm that grizzly bears have a negligible effect on U.S. cattle and sheep industries

In the United States, data show that grizzly bears (*Ursus arctos*) kill few cattle and sheep. Livestock predation data collected by various governmental bodies differ significantly, however. The most recent data published by the U.S. Department of Agriculture-Animal and Plant Health Inspection Service (USDA)[1] indicate losses many times greater than those collected by states and the U.S. Fish and Wildlife Service (FWS). For instance, the USDA claims grizzly bears killed 3,162 cattle in *nine* states (in 2015), while the FWS verified only 123 such losses in *three* states (in 2013). Montana's Board of Livestock's data show that between 2015 and 2018 cattle losses from grizzly bears numbered 61 or less annually. The USDA's methodology involves collecting data from a few mostly unverified sources, which the USDA then extrapolated statewide without calculating standard errors or using models to test relationships among various mortality factors.[2] This contravenes the scientific method and results in exaggerated livestock losses attributed to native carnivores and dogs. Unfortunately, this misinformation informs public policies that harm native carnivores, including countless legislative attacks on grizzly bears, wolves and the Endangered Species Act.

The Humane Society of the United States analyzed the USDA's embellished predation numbers. Their data show that farmers and ranchers lose nine times more cattle and sheep to health, weather, birthing and theft problems than to all predators combined. In the USDA reports, "predators" include mammalian carnivores (e.g., cougars, wolves and bears), avian carnivores (e.g., eagles and hawks) and domestic dogs. Domestic dogs, according to the USDA's data, kill 85 percent more cattle than grizzly bears. Also according to the USDA, in the states where grizzly bears live (excluding Alaska), they cause far fewer than one percent of unwanted cattle-calf (hereinafter "cattle") losses by inventory.

The USDA's sheep losses report fails to differentiate between black bears and grizzly bears, making an analysis for grizzly bears impossible. Black bears live in approximately 41 states,[3] while in the lower 48 states grizzly bears live in only three: Idaho, Montana and Wyoming. Black bears' and grizzly bears' ranges overlap in those same three states. Grizzly bears also occur in Alaska, but the USDA does not analyze Alaska in their livestock reports.

We present our analysis of the USDA's data sets on cattle deaths in the three, grizzly bear-occupied states (excluding Alaska) and grizzly bears' effects on the national cattle industries. We compare the USDA's cattle data to those of other governmental bodies that also collect this information, which corroborates our findings that while the USDA's predation figures are significantly exaggerated, they are nominal when compared to livestock mortalities from health, weather, theft and birthing problems (we refer to these livestock losses as "maladies"). We describe humane, efficacious and cost-effective non-lethal methods for livestock protection, and show that only a fraction of cattle and sheep growers in grizzly bear-occupied states use non-lethal methods to protect their herds—even as numerous published studies have found that non-lethal methods to protect non-native cattle and sheep from native carnivores are more efficacious and cost effective than the constant slaughter of wildlife that is ubiquitously employed—even on federally protected species.

Dated: Mar. 6, 2019

I. Grizzly bears of the Northern Rocky Mountains remain "threatened" under the Endangered Species Act

On June 30, 2017, the FWS prematurely removed federal Endangered Species Act protections from grizzly bears living in the Greater Yellowstone Ecosystem.[4] In August, immediately after the required 60-day notice period to the agency, the Humane Society of the United States, the Sierra Club and the Center for Biological Diversity filed suit under the Endangered Species Act. Nine Native American tribes led by the Crow Nation also sued the FWS for failure to consult with the tribes concerning the delisting. The states of Idaho, Wyoming and Montana, and some groups (Safari Club International, National Rifle Association, Rocky Mountain Elk Foundation and others) intervened on behalf of the FWS.

On September 25, 2018, the federal court agreed with the Humane Society of the United States and our co-plaintiffs and restored Endangered Species Act protections to grizzly bears.[5] After an injunctive order and the final order preventing grizzly bear delisting, their deaths spiked, showing that even with restored ESA protections, grizzly bears were not immune from heavy-handed persecution.[6] Fig. 15. As of February 2019, defendants have appealed the district court's decision.

II. USDA data show most livestock die from health, weather and other maladies

The USDA's reports show that the primary causes of cattle and sheep losses in the U.S. come from health problems, weather, theft and other maladies, but *not* from native carnivores, including grizzly bears.[7] Nationwide USDA data show that *nine times* more cattle and sheep died from maladies such as illnesses, birthing problems, weather, poisoning and theft (3,990,035), than from all mammalian or avian predators together (474,965). Of the 119 million cattle and sheep inventoried in the U.S. in 2014 and 2015, less than one percent (0.4 percent) died from mammalian and avian predators combined. Figs. 1 - 5. In Idaho, Montana and Wyoming, grizzly bears killed between 0.01 percent and 0.03 percent of cattle inventories. Fig. 3. Of the total unwanted cattle deaths in the Northern Rocky Mountains, between 91 percent and 96 percent came as a result of maladies. Fig. 4.

A. Despite being inflated, USDA data show that few cattle die from grizzly bears, other native carnivores or dogs

In 2015, the USDA inventoried 112.2 million cattle in the U.S.[8] Of that number, 4.5 million died from *all* unwanted causes. Most of those deaths (3.6 million, or 3.2 percent of U.S. cattle inventory) stemmed from health-related maladies, weather and theft. According to the USDA's data, mortalities from all predators amounted to 280,570 cattle deaths, representing a mere 0.3 percent of the U.S. cattle inventory—with grizzly bears taking 0.003 percent of the U.S. cattle inventory. Figs. 1 and 2.

PHOTO BY: DON GETTY

Fig. 1. United States Cattle Inventory and Mortality by Cause

Data from USDA-APHIS (2017), Data Year 2015

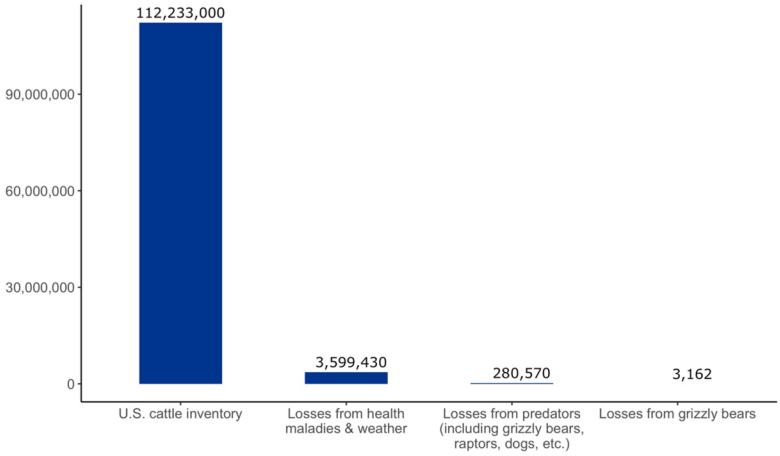

Fig. 2. United States Cattle Mortality by Rank

Data from USDA-APHIS (2017), Data Year 2015

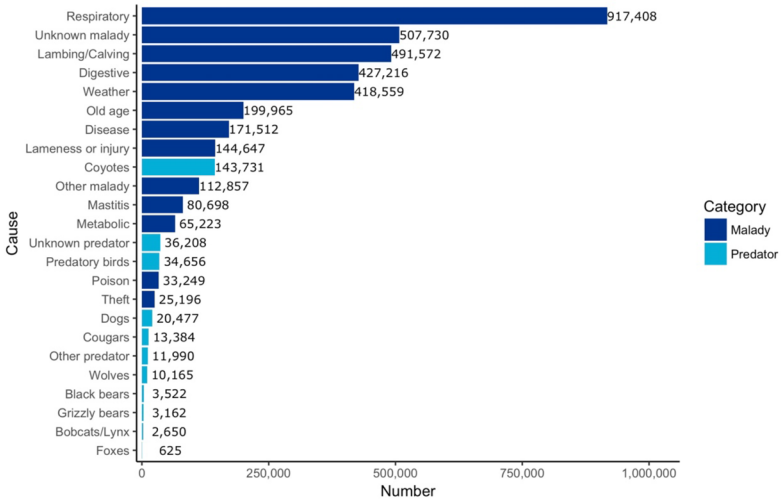

Fig. 3 Cattle Inventory Losses by State (*Unverified* data from the USDA-Animal and Plant Health Inspection Service, 2017 (Data year 2015))					
State	Cattle Inventory	Cattle losses from maladies (illness, birthing problems etc.)	Percent of cattle inventory losses from maladies	Cattle losses from grizzly bears	Percent of cattle inventory losses from grizzly bears
Idaho	3,020,000	89,050	2.95%	308	0.01%
Montana	3,995,000	80,730	2.02%	952	0.02%
Wyoming	1,880,000	35,600	1.89%	553	0.03%
Total	8,895,000	205,380	2.31%	1,813	0.02%

B. <u>Despite being inflated, USDA data show that few sheep die from grizzly bears, black bears, other native carnivores or dogs</u>

In 2015, the U.S. sheep inventory amounted to 6.8 million individuals. Health, weather, poison, theft and other maladies were responsible for the majority of ranchers' and farmers' losses: 390,605 sheep deaths (or 5.7 percent of the U.S. sheep inventory). In comparison, native mammalian carnivores, raptors and domestic dogs killed 194,395 sheep, or 2.9 percent of the U.S. sheep inventory, with grizzly bears and black bears' contributions amounting to 0.10 percent of the U.S. sheep inventory.[9] Figs. 5 and 6. The USDA's sheep predation data fail to distinguish between black bears and grizzly bears. Predation of sheep is greater than of cattle, likely because sheep have smaller body size and lack predator-avoidance skills.[10] Despite this, the USDA's data show few sheep growers use non-lethal methods to protect their flocks (*see*: Figs. 16 and 17 below).

PHOTO BY: JOHN E. SWALLOW

Fig. 4 U.S. Cattle: Unwanted losses by cause and state (Unverified data, USDA-Animal and Plant Health Inspection Service, 2017 (Data year 2015))							
States	Total unwanted cattle losses	Cattle losses from maladies (illness, birthing problems, etc.)		Cattle losses from all predators		Cattle losses from grizzly bears	
		Number	Percent of total unwanted cattle losses	Number	Percent of total unwanted cattle losses	Number	Percent of total unwanted cattle losses
Idaho	93,000	89,050	95.75%	3,950	4.25%	308	0.33%
Montana	88,000	80,730	91.74%	7,270	8.26%	952	1.08%
Wyoming	39,000	35,600	91.28%	3,400	8.72%	553	1.42%
Total	220,000	203,380	92.45%	14,620	6.65%	1,813	0.82%

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Fig. 5. United States Sheep Inventory and Mortality by Cause

Data from USDA-APHIS (2015), Data Year 2014

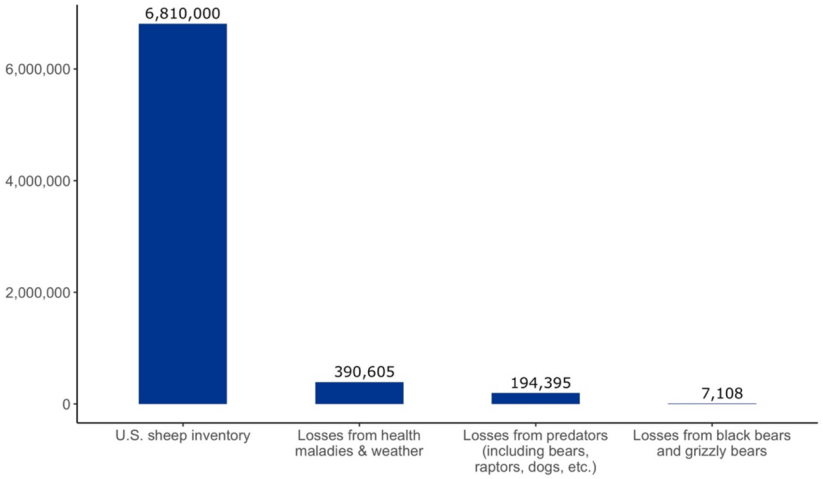
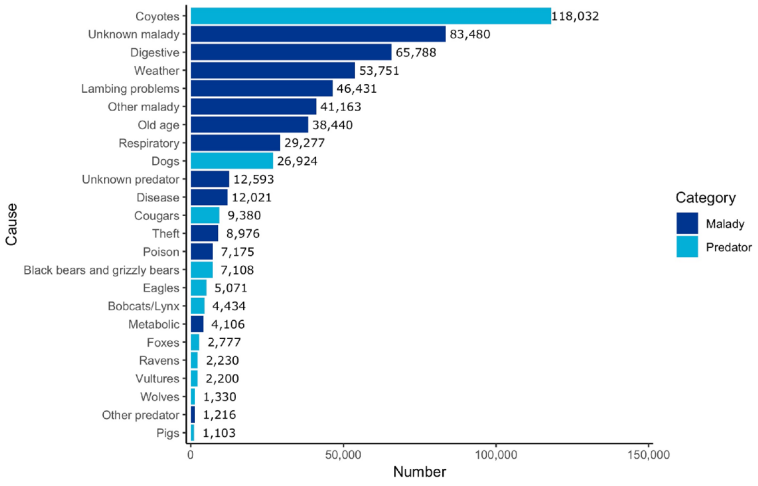


Fig. 6. United States Sheep Mortality by Rank

Data from USDA-APHIS (2015), Data Year 2014

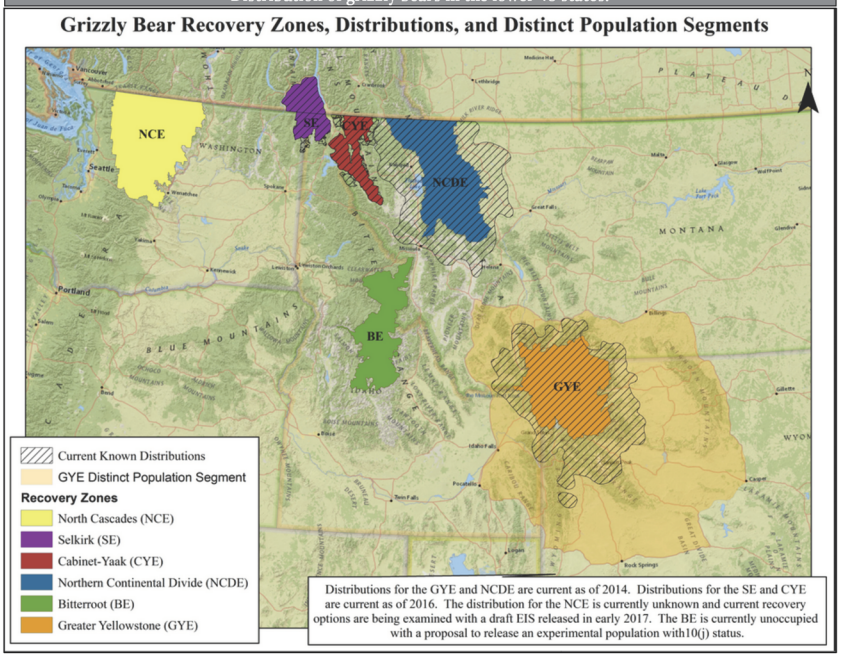


III. Even in grizzly bear-occupied states, USDA's data show nominal losses of cattle and sheep to predators

In the lower 48 states, fewer than 1,800 grizzly bears live in Idaho, Montana and Wyoming. They live in subpopulations located in the Cabinent-Yaak Ecosystem (with a subpopulation of about 50 bears),[11] the Greater Yellowstone Ecosystem (~700 bears),[12] the Northern Continental Divide Ecosystem (~942 bears)[13] and the Selkirk Ecosystem (~80 bears). While the FWS also classifies U.S. subpopulations in the Northern Cascades Ecosystem (which extends into Canada),[14] and Bitterroot Ecosystem, neither have occupant grizzly bears. (The Northern Cascades' Canadian portion may have some bears.) Fig. 7.

We detail these subpopulations here because the USDA reported cattle losses to grizzly bears in Arkansas, Colorado, Georgia, Nevada, Oregon and Wisconsin, *places where no grizzly bears live*, either currently or historically, further damaging the credibility of the agency's livestock losses reports.[15] Fig. 8.

Fig. 7.
Distribution of grizzly bears in the lower 48 states.



*Map courtesy of the FWS.[16]

IV. USDA *unverified* losses data for cattle and sheep losses, ranked

Based on data from other governmental agencies, the USDA exaggerates the cattle and sheep losses it attributes to native carnivores and dogs. Also, the USDA reports attribute wolf and grizzly bear deaths in states where neither species exists. Fig. 8. Given that these data are exaggerated, there is value in showing the USDA's cattle and sheep loss numbers in rank order to demystify predator events on cattle and sheep. We show unwanted losses to cattle and sheep in each grizzly-bear-occupied state in the Northern Rocky Mountain region (the USDA's reports excluded Alaska). The data clearly show that health and weather problems are the biggest concerns livestock growers face. Figs. 9-11.

Fig. 8.
USDA (2017) cattle death claims for grizzly bears
The six highlighted states have no grizzly bear populations

AR	175
CO	270
GA	537
ID	308
MT	952
NV	81
OR	28
WI	132
WY	553

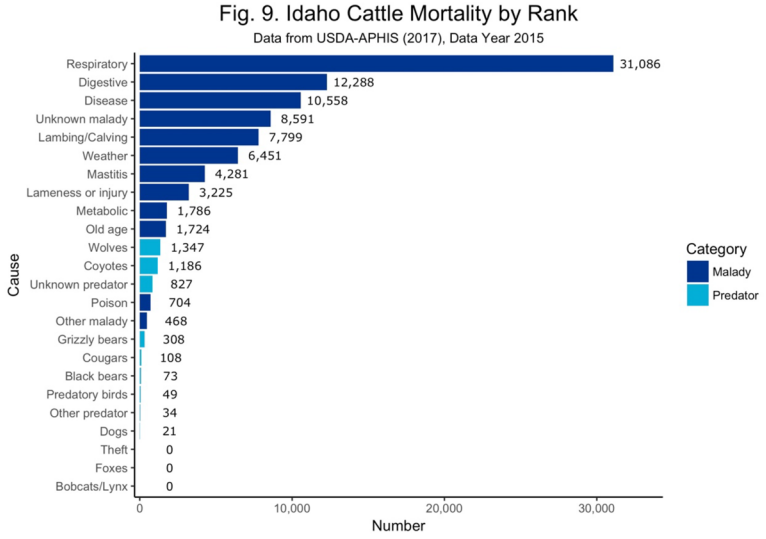


Fig. 10. Montana Cattle Mortality by Rank

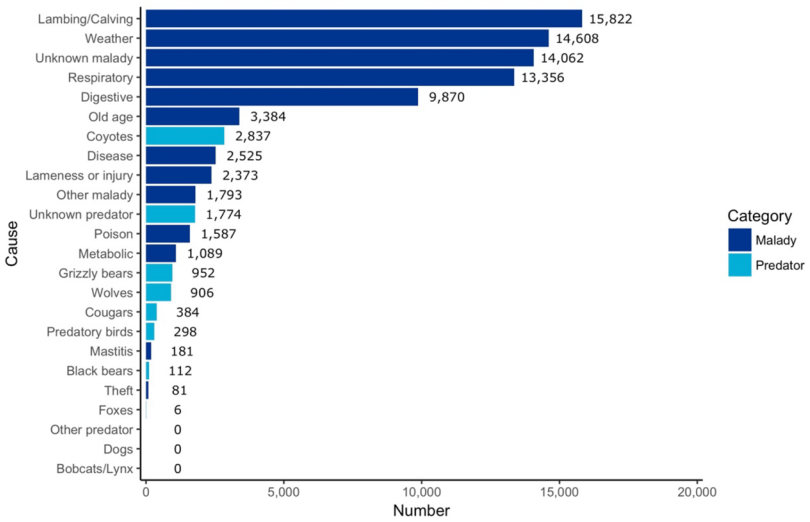
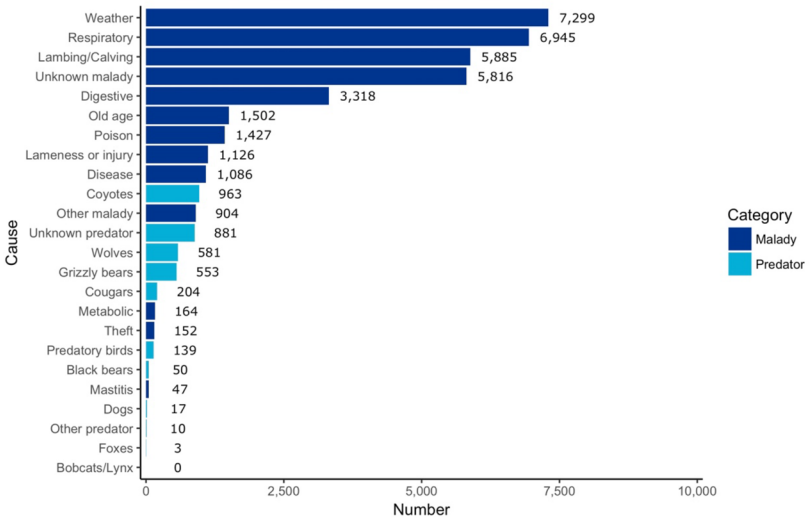


Fig. 11. Wyoming Cattle Mortality by Rank



V. The FWS and Montana Board of Livestock's verified grizzly bear-livestock data from the Northern Rocky Mountain states show that USDA numbers are highly inflated

When other governmental agencies confirm data on livestock losses, the results show many fewer losses than the unverified claims by the USDA. (Again, the USDA did not distinguish between black bears and grizzly bears in its sheep report, precluding our analysis of their data concerning grizzly bear-sheep losses.)

- In 2013 in the Greater Yellowstone Ecosystem (Idaho, Montana and Wyoming), the FWS found that grizzly bears killed 123 cattle and 11 sheep. Fig. 12. In comparison, the USDA claimed that grizzly bears killed 308 cattle in Idaho, 952 in Montana and 553 in Wyoming (data year 2015).
- In the Northern Continental Divide Ecosystem, the FWS found that in 2013, grizzly bears killed 23 cattle and 11 sheep. The USDA's data for cattle deaths attributed to grizzly bears in Montana (statewide in 2015) is 952. Fig. 13.
- The Montana Board of Livestock also found a fraction of grizzly bear-, wolf- and mountain lion-livestock deaths compared with those proffered by the USDA. Fig. 14.

Also, the number of grizzly bears killed in the Northern Rockies is not proportional to the nominal losses of livestock caused by grizzly bears. For instance, in the Greater Yellowstone Ecosystem, from a population that the FWS believes is 700, between 2015 and 2018, federal and state agents and individuals killed more than 250 bears, with a majority of annual mortalities occurring in 2018, the year when this population of grizzly bears had their federal protections restored by a federal district court.[17] Fig. 15.

PHOTO BY: WENDY KEEFOVER

Human-caused grizzly bear mortalities result from multiple causes, including mistaken identity kills (by black bear hunters), or because hunters kill elk and leave their carcasses unattended overnight, attracting grizzly bears. Northern Rockies ranchers believe that grizzly bears cause real or perceived threats to livestock.[18] But as the data show, these threats are nominal and can be reduced when ranchers employ non-lethal methods to protect their herds. Members of the Montana-based organization the Blackfoot Challenge offer an example of how ranchers and farmers can successfully reduce livestock mortality from grizzly bears through non-lethal means (see: Section VII).

Fig. 12
Cattle and sheep inventories & mortalities in the range of Greater Yellowstone Ecosystem grizzly bears (2013 data from FWS)[19]

State	Cattle Inventory in grizzly bear range	Grizzly bear-cattle deaths	Percent cattle killed by grizzly bears	Sheep inventory in grizzly bear range	Grizzly bear-sheep deaths	Percent sheep killed by grizzly bears
ID	45,769	1	0.020	18,260	0	0.000
MT	105,250	14	0.000	10,050	17	0.002
WY	253,826	108	0.000	52,600	6	0.000
TTL	404,845	123	0.030	80,910	23	0.028

Fig. 13
Cattle and sheep inventories & mortalities in the range of Northern Continental Divide Ecosystem grizzly bears (2013 data from FWS)[20]

State	Cattle inventory in grizzly bear range	Grizzly bear-cattle deaths	Percent cattle killed by grizzly bears	Sheep inventory in grizzly bear range	Grizzly bear-sheep deaths	Percent sheep killed by grizzly bears
MT	135,000	23	0.017	16,217	11	0.068

Fig.14
Confirmed and probable livestock losses in Montana
(data from Montana Board of Livestock)[21]

Confirmed livestock losses in Montana, 2015-2017						
	Grizzly bear		Wolf		Mountain lion	
	Cattle	Sheep	Cattle	Sheep	Cattle	Sheep
2018	61	23	45	7	0	50
2017	57	14	50	6	0	29
2016	33	26	46	5	ND	ND
2015	50	32	39	22	ND	ND
Probable livestock losses in Montana, 2015-2017						
	Grizzly bear		Wolf		Mountain lion	
	Cattle	Sheep	Cattle	Sheep	Cattle	Sheep
2018	20	6	13	6	0	13
2017	31	1	8	2	0	2
2016	43	41	11	5	ND	ND
2015	16	1	7	0	ND	ND

11

Fig. 15
Greater Yellowstone Ecosystem grizzly bear mortalities, 2013-2018

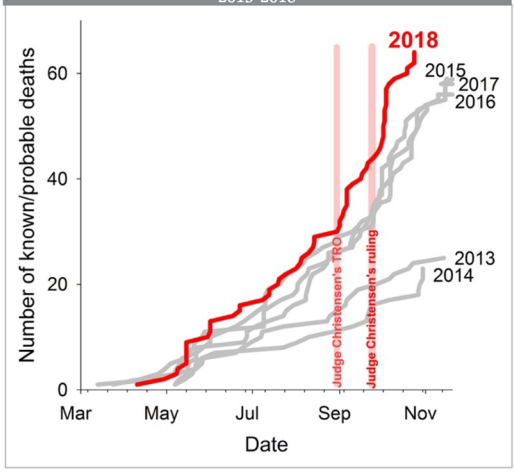


Figure courtesy of David Mattson, Ph.D.

VI. American values concerning predator control

According to a 2017 public attitudes study, lethal predator controls such as shooting animals from aircraft (aerial gunning), neck snares, gassing of pups in dens, leg-hold traps and poisons are unpopular with the American public.[22] Predator control is only acceptable to the public if it removes the particular individuals who prey on livestock, damage crops or cause economic losses.[23] Unfortunately, predator control rarely works that way. Predator control agents typically kill random animals instead of the individual animals responsible for livestock losses.

Another recent study indicates that when states or the federal government engage in lethal predator-control activities for the purpose of killing native carnivores to alleviate alleged or real livestock losses, then poaching activities increase.[24] This is because community members perceive that native carnivores have little value. Conversely, if no state-sponsored predator control is conducted, fewer people poach wildlife, the opposite of what some surmise to be true.[25]

VII. Non-lethal methods to protect cattle and sheep are more cost-effective, less cruel and more efficacious

Not only is the public's view of predator control generally negative, but a bevy of studies also contradict the claimed efficacy of lethal predator control programs. Numerous wildlife biologists have declared these programs biologically and fiscally expensive.[26] That is, removing native carnivores through predator control harms wildlife and their ecosystems.[27] Predator control is also expensive to taxpayers—Wildlife Services receives tax money from municipalities, counties, states and federal appropriations.[28] New studies also show that non-lethal measures are the best means for protecting cattle, sheep and other domestic animals. Such methods include sanitary carcass removal, fladry and or turbo fladry, synchronizing birthing seasons with native ungulates, changing livestock types or breeds, spotlights, airhorns, guard animals, range riders, electric fencing and Foxlights™.[29]

In Montana, a coalition of land owners, biologists and governmental officials have implemented the program called the Blackfoot Challenge that has not only reduced landowner conflicts with grizzly bears, but also saved many grizzly bears' lives. The Blackfoot Challenge ensures that grizzly bears cannot access human-food attractants, including livestock, demonstrating that human and grizzly bear coexistence is possible.

PHOTO BY: DON GETTY

The Blackfoot Challenge, based in northwestern Montana, is a coalition of state and federal agents, livestock growers, land owners and non-profits. According to grizzly bear biologists who work on the Blackfoot Challenge, this consortium has reduced human-bear conflicts by 74 percent. [30] Obtaining that positive outcome required many years of work, education and building relationships. The outcome: increased human safety, fewer livestock losses and less property damage from grizzly bears (and lately wolves too).[31]

To resolve human-bear conflicts, the Blackfoot Challenge surveyed landowners and ranchers to assemble conflict data. It also used data collected by Montana Fish, Wildlife & Parks. It mapped those data to understand the scale of conflicts, which helped ranchers realize that if even one person was doing the right thing, it would take the whole community working together to achieve positive results.[32]

Grizzly bear conflict mitigation involves employing commonsense, non-lethal solutions across entire landscapes, such as using the right kind of electric fencing around calving and lambing pens, boneyards, stored animal feed and around crops. Other strategies include using bear-proof trash receptacles and creating secured dumps in rural communities. And perhaps most importantly, cleaning up calving areas and making boneyards inaccessible to native carnivores.[33] The Blackfoot Challenge accomplished this result because of public and private funding, in-kind donations and donations from partners and the ranching community, which has made services available for free or at low cost to the ranchers.[34] According to Wilson et al. (2017), the lessons learned from the Blackfoot Challenge are:

1. Resources need to be coordinated
2. Efforts must be informed by science such as the GIS mapping of conflict areas
3. The process must incorporate all stakeholders' values, and
4. There has to be a decision-making process that allows all stakeholders to discuss issues, make decisions and implement actions.[35]

Despite the success of the Blackfoot Challenge and its demonstrable benefits, the USDA's data show that few ranchers use non-lethal methods to protect their herds. On average, only 13 percent of cattle growers in grizzly bear-occupied states use all non-lethal methods available to protect their animals. Fig. 16. An average of 19 percent of cattle growers used all non-lethal methods to protect sheep, although an average of 43 percent used guard dogs and an average of 52 percent used fences. Only about one-third used sheds for lambing or penned their sheep at night. On average, fewer than 13 percent removed stillborn or other dead sheep. Fig. 17. This lack of reliance on non-lethal methods in grizzly bear country is tragic.

According to Treves et al. (2016), the published studies that laud the effectiveness of lethal predator control are concentrated in three or four journals, and the scientific methods involved in these studies were insufficient.[36] A subsequent study by Eklund et al. (2017) located 27,781 articles concerning predator control; of that number, only 562 met the authors' criteria for having some scientific merit.[37] And, of those 562 articles, only 21 used scientific methodologies the authors deemed excellent, a number so insufficient that it prevented the authors from conducting a meta-analysis of the efficacy of predator control.[38]

Eklund et al. (2017) writes that although the loss of livestock to predators has occurred for thousands of years—likely since livestock were first domesticated—the scientific study of successful interventions is rare, and unfortunately our understanding of the efficacy of predator control is "based on narrative review" rather than sound science.[39] In fact, Treves et al. (2016) strongly suggest that all lethal predator control should be suspended until "gold standard" reviews of the efficacy of some predator-control methods are completed.[40] Eklund et al. (2017) similarly concluded that the science of predator control is vacuous. In yet a third article concerning predator control, Lennox et al. (2018) also recommend against the expensive, broadscale killing of native carnivores, and call upon us all to adapt to and coexist with carnivores because of their ecological benefits—even in urban areas.[41] If grizzly bears are to survive into the next century, we must make a concerted effort to adapt to living with them.[42]

Fig. 16
Percentage of Cattle Operators Using Non-Lethal Methods (USDA 2017, data year 2015)

State	Percent of operations with any cattle deaths	Percent of operations that used some non-lethal method to protect cattle
ID	6.10%	10.10%
MT	10.60%	14.50%
WY	10.30%	14.00%

Fig. 17.
Percentage of sheep operators using non-lethal methods (USDA 2015, data year 2014)

State	Guard Dogs	Llamas	Donkeys	Fences	Lamb shed	Herding	Night penning	Fright tactics	Remove carrion	Cull	Change Bedding	Frequent checks	Altered breeding season	Other
ID	46.9%	11.3%	23.3%	52.3%	28.4%	4.1%	25.1%	1.4%	8.0%	23.4%	3.7%	19.1%	1.6%	0.9%
MT	38.9%	24.0%	9.3%	37.2%	49.0%	7.9%	48.0%	6.5%	24.5%	23.4%	12.2%	34.5%	0.6%	9.3%
WY	42.9%	2.0%	20.1%	65.1%	26.5%	4.1%	19.7%	1.7%	6.2%	6.3%	6.6%	9.1%	1.7%	6.8%
Avg.	42.9%	12.4%	17.2%	51.5%	34.6%	5.4%	30.9%	3.2%	12.9%	17.7%	7.5%	20.9%	1.3%	5.7%

VIII. Conclusion

The Humane Society of the United States analyzed two data sets compiled by the USDA as part of its livestock reports. We make these data publicly decipherable, and, more importantly, unmask the fraction of losses that livestock operators experience from grizzly bears, other native carnivores and domestic dogs. Using the USDA's data, we found that native carnivores and domestic dogs allegedly killed 0.4 percent of the 119 million cattle and sheep inventoried in the U.S. in 2014 and 2015. Furthermore, we found that other governmental data for the Northern Rocky Mountain region indicate that the USDA's attributions of cattle mortalities (and likely sheep deaths too, although the USDA sheep reports do not distinguish between bear species) by grizzly bears and other carnivores are highly exaggerated because of the agency's suspect methodology.

As this report shows, farmers, ranchers and wildlife managers should fear maladies the most—especially respiratory and birthing problems—that kill nine times more cattle and sheep than all predators (wild mammalian and avian carnivores and domestic dogs) combined. In the face of this evidence, the anxiety of some in society against native carnivores is misplaced. While wildlife managers and cattle and sheep ranchers are quick to kill wolves, coyotes, bears, cougars and bobcats allegedly for livestock protection reasons, the data show that few livestock growers use non-lethal method to protect their herds from predation. In grizzly bear-occupied states, according to the USDA's data, few livestock growers use non-lethal measures necessary to protect herds from predation.

Wildlife biologists have found that predator-control programs to kill grizzly bears and other native carnivores are unscientific, because most studies advocating predator control do not adhere to the scientific method, including the lack of study control areas for purposes of comparison. Three review articles, published in 2017 and 2018, reviewed the corpus of predator-control studies. All concluded that the use of non-lethal methods to protect livestock was more efficacious than killing native carnivores. While some in society complain about wolves and other carnivores, the reality is we humans are an unsustainable "super predator."[43] Because grizzly bears live in a fraction of their historical

range, it is time that we stop conducting lethal predator controls and trophy-hunting practices on grizzly bears in the guise of livestock protection and or ungulate recruitment.

IX. Methodology

Methods:
All data wrangling and analyses were conducted in R v. 3.5.0 (R Core Team, 2018). We used the R package tabulizer (Leeper, 2018) to extract tables from the 2017 USDA report "Death Loss in U.S. Cattle and Calves Due to Predator and Nonpredator Causes, 2015" (1) and the 2015 USDA report "Sheep and Lamb Predator and Nonpredator Death Loss in the United States, 2015" (2). Once extracted, data were combined, summarized, and plotted using R packages dplyr (Wickham et al. 2018), tidyr (Wickham & Henry, 2018), ggplot2 (Wickham, 2016), and extrafont (Chang, 2014).

Data used from each report:
(1) From the 2017 USDA cattle report, we used data from the following tables: B.1. Number and percentage of cattle over 500 lbs. on Jan. 1, 2016, and calf crop (2015), by state, A.2.d. Number of cattle over 500 lbs. who died in 2015, by cause and by state, A.2.e. Number of calves who died in 2015, by cause and by State, A.2.h. Percentage of operations with any calf deaths due to nonpredator, predator and all causes, by state, A.2.j. Cattle death loss due to nonpredator, predator and all causes, as a percentage of inventory of cattle 500 lb. or more on Jan. 1, 2016, by state, A.2.k. Calf death loss due to nonpredator, predator and all causes, as a percentage of calf crop (2015), by state, C.1.g. Percentage of cattle deaths due to nonpredator causes, by cause and by state, C.2.f. Percentage of calf death loss due to nonpredator causes, by cause and by state, D.1.a. For all operations, number and percentage of cattle death loss due to predators, by predator, D.1.c. Percentage of cattle death loss due to predators, by state and by predator, D.2.d. Percentage of calf death loss due to predators, by state and by predator.

(2) From the 2015 sheep report, we used data from the following tables: B.1. Number of ewes, rams, market sheep and lamb crop, by state, A.2.a. Number of sheep and lambs that died, by State and by cause, A.2.d. Percentage of Jan. 1, 2015, adult-sheep inventory lost in 2014, as a percentage of adult-sheep inventory on January 1, 2015, by cause and by state, B.8. Number of sheep and lambs who died due to enterotoxemia, internal parasites or other digestive problems in 2014, by state, B.9. Number of sheep and lambs who died due to respiratory problems, metabolic problems or other disease problems in 2014, by state, B.10. Number of sheep and lambs who died due to weather-related problems, starvation or lambing problems in 2014, by state, B.11. Number of sheep and lambs who died due to old age, being on back or poisoning in 2014, by state, B.12. Number of sheep and lambs who died due to theft, other nonpredator causes, were found dead or died from unknown nonpredator causes in 2014, by state, C.8. Number of sheep and lambs who died by bears, bobcats or lynx, coyotes or dogs, by state, C.9. Number of sheep and lambs who died by mountain lions (cougars/pumas), wolves or vultures, by state, C.10. Number of sheep and lambs who died by ravens, feral pigs, eagles, other known predator causes or other unknown predator causes, by state.

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Endnotes

[1] USDA-Animal and Plant Health Inspection Service, "Death Loss in U.S. Cattle and Calves Due to Predator and Nonpredator Causes, 2015," *https://www.aphis.usda.gov/animal_health/nahms/general/downloads/cattle_calves_deathloss_2015.pdf* (2017); USDA-Animal and Plant Health Inspection Service, "Sheep and Lamb Predator and Non-Predator Death Loss in the United States," *https://www.aphis.usda.gov/animal_health/nahms/sheep/downloads/sheepdeath/SheepDeathLoss2015.pdf* (2015).

[2] In their cattle report, the USDA explains its methodology as follows: "The numbers provided in this report are based on a sample of operations **and are thus estimates of the true numbers**. There is variability associated with each estimate, although the measures of variability (such as the standard error) are not always shown" (emphasis added). USDA-Animal and Plant Health Inspection Service, "Death Loss in U.S. Cattle and Calves Due to Predator and Nonpredator Causes, 2015," ii.

In their sheep report, the USDA explains its methodology here: "For 2015, death losses by cause were estimated to match NASS' total death losses published in "Sheep and Goats," released January 30, 2015. Estimates were generated with SUDAAN® software (Research Triangle Institute, version 11.0.1). Standard errors, where shown, account for the stratified study design...."The number of operations with sheep in 2014 (table A.2.a) was estimated using the number of operations in the sample, weighted by the expansion weight (the number of operations in the population that each sampled operation represents). Similarly, the total number of deaths are estimated by expanding the number of deaths in the sampled operations. For lamb losses, pre- and postdocking losses are captured separately for CO, MT, UT, and WY, while all other Western States count only postdocking losses. The lamb loss estimates in this report are estimated by expanding the postdocking losses for sampled operations in Western States and all losses for sampled operations in Eastern States." USDA-Animal and Plant Health Inspection Service, "Sheep and Lamb Predator and Non-Predator Death Loss in the United States."

[3] Hank Hristienko and Jr. McDonald, John E., "Going in the 21st Century: A Perspective on Trends and Controversies in the Management of the Black Bear," *Ursus* 18, no. 1 (2007).

[4] On June 22, 2017, Interior Secretary Ryan Zinke announced the Yellowstone population of grizzly bears as recovered and delisted it. U.S. Fish and Wildlife Service, "Secretary Zinke Announces Delisting of Yellowstone Grizzly Bear: Partners Celebrate Endangered Species Act Delisting Following Decades of Collaboration," *https://www.fws.gov/news/ShowNews.cfm?_ID=36059&ref=secretary-zinke-announces-delisting-of-yellowstone-grizzly-bear-* (2017). Multiple plaintiff groups sued the FWS. One day before Wyoming and Idaho's trophy hunt on grizzly bears were to commence, Judge Dana Christensen declared the Service's delisting as premature. In 2018, a record 65 Yellowstone-area grizzly bears died—most as a result of human intervention. Fig. 12.

[5] The HSUS and co-plaintiffs won litigation against the FWS for delisting grizzly bears on these grounds: First, the court held that the FWS illegally separated out the Greater Yellowstone Ecosystem population despite their connection to, and interdependence with, the other surviving populations of grizzly bears in the United States. Second, the court found that the FWS failed to ensure that sufficient protections would remain in place to protect grizzly bears after delisting. Finally, it concluded that the delisting decision did not take into account scientific evidence indicating the precarious genetic health of this still vulnerable population. See: *Crow Tribe et al. v. United States*, 343 F.Supp.3d 999 (D. Mont. 2018).

[6] U.S. Geological Survey-Interagency Grizzly Bear Study Team, "Known and Probable Grizzly Bear Mortalities in the Greater Yellowstone Ecosystem," *https://www.usgs.gov/science-explorer-results?es=Known+and+Probable+Grizzly+Bear+Mortalities+in+the+Greater+Yellowstone+Ecosystem* (2018).

[7] U.S. Department of Agriculture-Animal and Plant Health Inspection Service-Veterinary Services, "Death Loss in U.S. Cattle and Calves Due to Predator and Nonpredator Causes, 2015," *https://www.aphis.usda.gov/animal_health/nahms/general/downloads/cattle_calves_deathloss_2015.pdf* (2017); U.S. Department of Agriculture-Animal and Plant Health Inspection Service, "Sheep and Lamb Predator and Nonpredator Death Loss in the United States," *http://usda.mannlib.cornell.edu/usda/current/sgdl/sgdl-05-27-2010.pdf* (2015).

[8] USDA-Animal and Plant Health Inspection Service, "Death Loss in U.S. Cattle and Calves Due to Predator and Nonpredator Causes, 2015."

[9] USDA-Animal and Plant Health Inspection Service, "Sheep and Lamb Predator and Non-Predator Death Loss in the United States."

[10] F. F. Knowlton, E. M. Gese, and M. M. Jaeger, "Coyote Depredation Control: An Interface between Biology and Management," *Journal of Range Management* 52, no. 5 (Sep 1999), <Go to ISI>://000082837300001; Philip J. Baker et al., "Terrestrial Carnivores and Human Food Production: Impact and Management," *Mammal Review* 38 (2008); S. M. Wilson, E. H. Bradley, and G. A. Neudecker, "Learning to Live with Wolves: Community-Based Conservation in the Blackfoot Valley of Montana," *Human-Wildlife Interactions* 11, no. 3 (Win 2017), <Go to ISI>://WOS:000422844800010; Seth M. Wilson et al., "Natural Landscape Features, Human-Related Attractants, and Conflict Hotspots: A Spatial Analysis of Human–Grizzly Bear Conflicts," *Ursus* 16, no. 1 (2005/04/01 2005), accessed 2017/04/28, http://dx.doi.org/10.2192/1537-6176(2005)016[0117:NLFHAA]2.0.CO;2; Seth M. Wilson, Gregory A. Neudecker, and James J. Jonkel, "Human-Grizzly Bear Coexistence in the Blackfoot River Watershed, Montana: Getting Ahead of the Conflict Curve," in *Large Carnivore Conservation: Integrating Science and Policy in the North American West*, ed. S.G. Clark and M.B. Rutherford (2014).

[11] U.S. Fish and Wildlife Service, "Endangered Species: Mammals: Grizzly Bear (*Ursus Arctos Horribilis*)," *http://www.fws.gov/mountain-prairie/es/grizzlyBear.php* (2019).

[12] U.S. Fish and Wildlife Service, "Questions and Answers: Greter Yellowstone Ecosystem Grizzly Bear Population Proposed Delisting Rule," *https://www.fws.gov/mountain-prairie/es/GYE%20Grizzly-FAQs.pdf* (2016).

[13] U.S. Fish and Wildlife Service, "Northern Continental Divide Ecosystem: Grizzly Bear Conservation Strategy," *https://www.fws.gov/mountain-prairie/science/PeerReviewDocs/NCDE_Grizzly.pdf* (2013).

[14] The FWS provides: "There have been only four confirmed detections of grizzly bears in the greater NCE in the past 10 years, all of which occurred in British Columbia and may comprise only two individuals (IGBC NCE Subcommittee 2016)." U.S. Fish and Wildlife Service, "Endangered Species: Mammals: Grizzly Bear (*Ursus Arctos Horribilis*)," i.

[15] USDA-Animal and Plant Health Inspection Service, "Death Loss in U.S. Cattle and Calves Due to Predator and Nonpredator Causes, 2015."

[16] FWS map of grizzly bears: https://www.fws.gov/mountain-prairie/es/species/mammals/grizzly/GBdistributions.jpg. Last visited December 18, 2018.

[17] U.S. Geological Survey-Interagency Grizzly Bear Study Team. The number of bears found dead is likely a fraction of the true number and perhaps an undercount by over 80%. B. N. McLellan et al., "Rates and Causes of Grizzly Bear Mortality in the Interior Mountains of British Columbia, Alberta, Montana, Washington, and Idaho," *Journal of Wildlife Management* 63, no. 3 (Jul 1999), http://dx.doi.org/10.2307/3802805; Bruce N. McLellan, Garth Mowat, and Clayton T. Lamb, "Estimating Unrecorded Human-Caused Mortalities of Grizzly Bears in the Flathead Valley, British Columbia, Canada," *PeerJ* 6 (2018/10/11 2018), http://dx.doi.org/10.7717/peerj.5781.

[18] U.S. Geological Survey-Interagency Grizzly Bear Study Team.

[19] U.S. Fish and Wildlife Service, *Livestock Losses and Grizzly Bears: Perspectives on Livestock Loss and Risks*, by Chris Servheen (Government memo, 2014).

[20] Ibid.

[21] George Edwards, *Montana Livestock Losses Board, Tables of Losses from 2015-2018* (email: 2018). Mr. Edwards notes that these claims are only the ones where ranchers came forward, Wildlife Services verified the claims and then the ranchers contacted the Montana Livestock Losses Board for reimbursement. As such, the claims may be underrepresented.
[22] K. Slagle et al., "Attitudes toward Predator Control in the United States: 1995 and 2014," *Journal of Mammalogy* 98, no. 1 (Feb 2017), http://dx.doi.org/10.1093/jmammal/gyw144.
[23] Ibid.
[24] Guillaume Chapron and Adrian Treves, "Blood Does Not Buy Goodwill: Allowing Culling Increases Poaching of a Large Carnivore," *Proceedings of the Royal Society of London B: Biological Sciences* 283, no. 1830 (2016-05-11 00:00:00 2016), http://dx.doi.org/10.1098/rspb.2015.2939.
[25] Ibid.
[26] B. J. Bergstrom, "Carnivore Conservation: Shifting the Paradigm from Control to Coexistence," *Journal of Mammalogy* 98, no. 1 (Feb 2017), http://dx.doi.org/10.1093/jmammal/gyw185; Adrian Treves, Miha Krofel, and Jeannine McManus, "Predator Control Should Not Be a Shot in the Dark," *Frontiers in Ecology and the Environment* 14, no. 7 (2016), http://dx.doi.org/10.1002/fee.1312; Francisco J. Santiago-Avila, Ari M. Cornman, and Adrian Treves, "Killing Wolves to Prevent Predation on Livestock May Protect One Farm but Harm Neighbors," *PLOS ONE* 13, no. 1 (2018), http://dx.doi.org/10.1371/journal.pone.0189729; A. Eklund et al., "Limited Evidence on the Effectiveness of Interventions to Reduce Livestock Predation by Large Carnivores," *Scientific Reports* 7 (May 2017), http://dx.doi.org/10.1038/s41598-017-02323-w; Robert J. Lennox et al., "Evaluating the Efficacy of Predator Removal in a Conflict-Prone World," *Biological Conservation* 224 (2018/08/01/ 2018), http://dx.doi.org/https://doi.org/10.1016/j.biocon.2018.05.003.
[27] J. A. Estes et al., "Trophic Downgrading of Planet Earth," *Science* 333, no. 6040 (Jul 2011), http://dx.doi.org/10.1126/science.1205106; William J. Ripple et al., "Extinction Risk Is Most Acute for the World's Largest and Smallest Vertebrates," *Proceedings of the National Academy of Sciences* 114, no. 40 (October 3, 2017 2017), http://dx.doi.org/10.1073/pnas.1702078114; W. J. Ripple et al., "Status and Ecological Effects of the World's Largest Carnivores," *Science* 343, no. 6167 (Jan 2014), http://dx.doi.org/10.1126/science.1241484; Chris T. Darimont et al., "The Unique Ecology of Human Predators," *Science* 349, no. 6250 (2015).
[28] The Humane Society of the United States, "Wildlife Disservice: The Usda Wildlife Services' Inefficient and Inhumane Wildlife Damage Management Program," *http://www.humanesociety.org/assets/pdfs/wildlife/wildlife-services-white-paper-2015.pdf* (2015).
[29] William F. Andelt, "Carnivores," in *Rangeland Wildlife*, ed. P. R. Krausman (Denver: Society for Range Management, 1996); A. Treves and K. U. Karanth, "Human-Carnivore Conflict and Perspectives on Carnivore Management Worldwide," *Conservation Biology* 17, no. 6 (Dec 2003), <Go to ISI>://000186869700009 ; Eklund et al; S. A. Stone et al., "Adaptive Use of Nonlethal Strategies for Minimizing Wolf-Sheep Conflict in Idaho," *Journal of Mammalogy* 98, no. 1 (Feb 2017), http://dx.doi.org/10.1093/jmammal/gyw188; M. Parks and T. Messmer, "Participant Perceptions of Range Rider Programs Operating to Mitigate Wolf-Livestock Conflicts in the Western United States," *Wildlife Society Bulletin* 40, no. 3 (Sep 2016), http://dx.doi.org/10.1002/wsb.671.
[30] Wilson, Bradley, and Neudecker.
[31] Ibid.
[32] Ibid.
[33] Ibid.
[34] Ibid.
[35] Ibid.
[36] Treves, Krofel, and McManus.
[37] Eklund et al.
[38] Ibid.
[39] Ibid., 2.
[40] Treves, Krofel, and McManus.
[41] Lennox et al.
[42] Neil H. Carter and John D. C. Linnell, "Co-Adaptation Is Key to Coexisting with Large Carnivores," *Trends in Ecology & Evolution* 31, no. 8 (2016), accessed 2016/07/21, http://dx.doi.org/10.1016/j.tree.2016.05.006. Guillaume Chapron and José Vicente López-Bao, "Coexistence with Large Carnivores Informed by Community Ecology," *Trends in Ecology & Evolution* 31, no. 8 (2016), accessed 2016/07/21, http://dx.doi.org/10.1016/j.tree.2016.06.003.
[43] Darimont et al.

References

Andelt, William F. "Carnivores." In *Rangeland Wildlife*, edited by P. R. Krausman, 133-55. Denver: Society for Range Management, 1996.

Baker, Philip J., Boitani Luigi, Stephen Harris, Glen Saunders, and Piran C.L. White. "Terrestrial Carnivores and Human Food Production: Impact and Management." *Mammal Review* 38 (2008): 123-66.

Bergstrom, B. J. "Carnivore Conservation: Shifting the Paradigm from Control to Coexistence." *Journal of Mammalogy* 98, no. 1 (Feb 2017): 1-6. http://dx.doi.org/10.1093/jmammal/gyw185.

Carter, Neil H. and John D. C. Linnell. "Co-Adaptation Is Key to Coexisting with Large Carnivores." *Trends in Ecology & Evolution* 31, no. 8 (2016): 575-78. Accessed 2016/07/21. http://dx.doi.org/10.1016/j.tree.2016.05.006.

Chapron, Guillaume and José Vicente López-Bao. "Coexistence with Large Carnivores Informed by Community Ecology." *Trends in Ecology & Evolution* 31, no. 8 (2016): 578-80. Accessed 2016/07/21. http://dx.doi.org/10.1016/j.tree.2016.06.003.

Chapron, Guillaume and Adrian Treves. "Blood Does Not Buy Goodwill: Allowing Culling Increases Poaching of a Large Carnivore." *Proceedings of the Royal Society of London B: Biological Sciences* 283, no. 1830 (2016-05-11 00:00:00 2016). http://dx.doi.org/10.1098/rspb.2015.2939.

Darimont, Chris T., Caroline H. Fox, Heather M. Bryan, and Thomas E. Reimchen. "The Unique Ecology of Human Predators." *Science* 349, no. 6250 (2015): 858-60.

Edwards, George. *Montana Livestock Losses Board, Tables of Losses from 2015-2018*. Edited by Wendy Keefover. email, 2018.

Eklund, A., J. V. Lopez-Bao, M. Tourani, G. Chapron, and J. Frank. "Limited Evidence on the Effectiveness of Interventions to Reduce Livestock Predation by Large Carnivores." *Scientific Reports* 7 (May 2017). http://dx.doi.org/10.1038/s41598-017-02323-w.

Estes, J. A., J. Terborgh, J. S. Brashares, M. E. Power, J. Berger, W. J. Bond, S. R. Carpenter, T. E. Essington, R. D. Holt, J. B. C. Jackson, R. J. Marquis, L. Oksanen, T. Oksanen, R. T. Paine, E. K. Pikitch, W. J. Ripple, S. A. Sandin, M. Scheffer, T. W. Schoener, J. B. Shurin, A. R. E. Sinclair, M. E. Soule, R. Virtanen, and D. A. Wardle. "Trophic Downgrading of Planet Earth." *Science* 333, no. 6040 (Jul 2011): 301-06. http://dx.doi.org/10.1126/science.1205106.

Hristienko, Hank and Jr. McDonald, John E. "Going in the 21st Century: A Perspective on Trends and Controversies in the Management of the Black Bear." *Ursus* 18, no. 1 (2007): 72-88.

Knowlton, F. F., E. M. Gese, and M. M. Jaeger. "Coyote Depredation Control: An Interface between Biology and Management." *Journal of Range Management* 52, no. 5 (Sep 1999): 398-412. <Go to ISI>://000082837300001.

Lennox, Robert J., Austin J. Gallagher, Euan G. Ritchie, and Steven J. Cooke. "Evaluating the Efficacy of Predator Removal in a Conflict-Prone World." *Biological Conservation* 224 (2018/08/01/ 2018): 277-89. http://dx.doi.org/https://doi.org/10.1016/j.biocon.2018.05.003.

McLellan, B. N., F. W. Hovey, R. D. Mace, J. G. Woods, D. W. Carney, M. L. Gibeau, W. L. Wakkinen, and W. F. Kasworm. "Rates and Causes of Grizzly Bear Mortality in the Interior Mountains of British Columbia, Alberta, Montana, Washington, and Idaho." *Journal of Wildlife Management* 63, no. 3 (Jul 1999): 911-20. http://dx.doi.org/10.2307/3802805.

McLellan, Bruce N., Garth Mowat, and Clayton T. Lamb. "Estimating Unrecorded Human-Caused Mortalities of Grizzly Bears in the Flathead Valley, British Columbia, Canada." *PeerJ* 6 (2018/10/11 2018): e5781. http://dx.doi.org/10.7717/peerj.5781.

Parks, M. and T. Messmer. "Participant Perceptions of Range Rider Programs Operating to Mitigate Wolf-Livestock Conflicts in the Western United States." *Wildlife Society Bulletin* 40, no. 3 (Sep 2016): 514-24. http://dx.doi.org/10.1002/wsb.671.

Dated: Mar. 6, 2019

Ripple, W. J., J. A. Estes, R. L. Beschta, C. C. Wilmers, E. G. Ritchie, M. Hebblewhite, J. Berger, B. Elmhagen, M. Letnic, M. P. Nelson, O. J. Schmitz, D. W. Smith, A. D. Wallach, and A. J. Wirsing. "Status and Ecological Effects of the World's Largest Carnivores." *Science* 343, no. 6167 (Jan 2014): 151-+. http://dx.doi.org/10.1126/science.1241484.

Ripple, William J., Christopher Wolf, Thomas M. Newsome, Michael Hoffmann, Aaron J. Wirsing, and Douglas J. McCauley. "Extinction Risk Is Most Acute for the World's Largest and Smallest Vertebrates." *Proceedings of the National Academy of Sciences* 114, no. 40 (October 3, 2017 2017): 10678-83. http://dx.doi.org/10.1073/pnas.1702078114.

Santiago-Avila, Francisco J., Ari M. Cornman, and Adrian Treves. "Killing Wolves to Prevent Predation on Livestock May Protect One Farm but Harm Neighbors." *PLOS ONE* 13, no. 1 (2018): e0189729. http://dx.doi.org/10.1371/journal.pone.0189729.

Slagle, K., J. T. Bruskotter, A. S. Singh, and R. H. Schmidt. "Attitudes toward Predator Control in the United States: 1995 and 2014." *Journal of Mammalogy* 98, no. 1 (Feb 2017): 7-16. http://dx.doi.org/10.1093/jmammal/gyw144.

Stone, S. A., S. W. Breck, J. Timberlake, P. M. Haswell, F. Najera, B. S. Bean, and D. J. Thornhill. "Adaptive Use of Nonlethal Strategies for Minimizing Wolf-Sheep Conflict in Idaho." *Journal of Mammalogy* 98, no. 1 (Feb 2017): 33-44. http://dx.doi.org/10.1093/jmammal/gyw188.

The Humane Society of the United States. "Wildlife Disservice: The Usda Wildlife Services' Inefficient and Inhumane Wildlife Damage Management Program." *http://www.humanesociety.org/assets/pdfs/wildlife/wildlife-services-white-paper-2015.pdf* (2015).

Treves, A. and K. U. Karanth. "Human-Carnivore Conflict and Perspectives on Carnivore Management Worldwide." *Conservation Biology* 17, no. 6 (Dec 2003): 1491-99. <Go to ISI>://000186869700009

Treves, Adrian, Miha Krofel, and Jeannine McManus. "Predator Control Should Not Be a Shot in the Dark." *Frontiers in Ecology and the Environment* 14, no. 7 (2016): 380-88. http://dx.doi.org/10.1002/fee.1312.

U.S. Department of Agriculture-Animal and Plant Health Inspection Service-Veterinary. "Death Loss in U.S. Cattle and Calves Due to Predator and Nonpredator Causes, 2015." *https://www.aphis.usda.gov/animal_health/nahms/general/downloads/cattle_calves_deathloss_2015.pdf* (2017).

U.S. Department of Agriculture-Animal and Plant Health Inspection Service. "Sheep and Lamb Predator and Nonpredator Death Loss in the United States." *http://usda.mannlib.cornell.edu/usda/current/sgdl/sgdl-05-27-2010.pdf* (2015).

U.S. Fish and Wildlife Service. "Northern Continental Divide Ecosystem: Grizzly Bear Conservation Strategy." *https://www.fws.gov/mountain-prairie/science/PeerReviewDocs/NCDE_Grizzly.pdf* (2013).

U.S. Fish and Wildlife Service. *Livestock Losses and Grizzly Bears: Perspectives on Livestock Loss and Risks*, by Servheen, Chris, 2014.

U.S. Fish and Wildlife Service. "Questions and Answers: Greter Yellowstone Ecosystem Grizzly Bear Population Proposed Delisting Rule." *https://www.fws.gov/mountain-prairie/es/GYE%20Grizzly-FAQs.pdf* (2016).

U.S. Fish and Wildlife Service. "Secretary Zinke Announces Delisting of Yellowstone Grizzly Bear: Partners Celebrate Endangered Species Act Delisting Following Decades of Collaboration." *https://www.fws.gov/news/ShowNews.cfm?_ID=36059&ref=secretary-zinke-announces-delisting-of-yellowstone-grizzly-bear-* (2017).

U.S. Fish and Wildlife Service. "Endangered Species: Mammals: Grizzly Bear (*Ursus Arctos Horribilis*)." *http://www.fws.gov/mountain-prairie/es/grizzlyBear.php* (2019).

U.S. Geological Survey-Interagency Grizzly Bear Study Team. "Known and Probable Grizzly Bear Mortalities in the Greater Yellowstone Ecosystem." *https://www.usgs.gov/science-explorer-results?es=Known+and+Probable+Grizzly+Bear+Mortalities+in+the+Greater+Yellowstone+Ecosystem* (2018).

Wilson, S. M., E. H. Bradley, and G. A. Neudecker. "Learning to Live with Wolves: Community-Based Conservation in the Blackfoot Valley of Montana." *Human-Wildlife Interactions* 11, no. 3 (Win 2017): 245-57. <Go to ISI>://WOS:000422844800010.

Wilson, Seth M., Michael J. Madel, David J. Mattson, Jonathan M. Graham, James A. Burchfield, and Jill M. Belsky. "Natural Landscape Features, Human-Related Attractants, and Conflict Hotspots: A Spatial Analysis of Human–Grizzly Bear Conflicts." *Ursus* 16, no. 1 (2005/04/01 2005): 117-29. Accessed 2017/04/28. http://dx.doi.org/10.2192/1537-6176(2005)016[0117:NLFHAA]2.0.CO;2.

Wilson, Seth M., Gregory A. Neudecker, and James J. Jonkel. "Human-Grizzly Bear Coexistence in the Blackfoot River Watershed, Montana: Getting Ahead of the Conflict Curve." In *Large Carnivore Conservation: Integrating Science and Policy in the North American West*, edited by S.G. Clark and M.B. Rutherford, 2014.

Protecting Montana's wildlife, land, waters and hunting & fishing heritage for future generations.

Sept. 4, 2020

The Honorable Sen. John Barrasso, Chair
Senate Environment and Public Works Committee
410 Dirksen Senate Office Building
Washington, D.C. 20510

RE: S. 614, The Grizzly Bear State Management Act

Dear Chair Barrasso and Senate EPW Committee members,

The Montana Wildlife Federation is our state's oldest and largest state-based wildlife conservation and sporting organization. We were formed in 1936 when hunters joined landowners to restore depleted wildlife in our state. We have an 84-year history of working on the difficult issues around our public trust wildlife, habitat, and recreational resources, including grizzly bears.

We do not support a top-down approach to grizzly bear management where Congress intervenes in the recovery of species under the Endangered Species Act as dictated by S. 614. The successful recovery of species requires the careful application of science, cooperative management by state and federal agencies, and the support of the public. The federal court decision that reinstated federal protections for grizzly bears in the Greater Yellowstone Ecosystem remanded the delisting proposal back to the agencies. The court detailed deficiencies in the delisting proposal and the state's approach to mortality management.

MWF believes these deficiencies can and should be addressed to assure the long-term conservation and careful management of grizzly bears and their habitat. It is important to note that these deficiencies were pointed out by professional staff at the U.S. Fish and Wildlife Service prior to the delisting proposal, but these deficiencies were not addressed, and the delisting proposal was overturned by the court.

MWF is supportive of the concept of delisting the Greater Yellowstone Ecosystem population of grizzly bears and the corresponding return to the states of management of our state animal if post-delisting management is done properly. We strongly believe that the conservation of important wildlife species like grizzly bears requires the application of the best available science combined with a careful and measured management approach. Grizzly bears are a conservation reliant species that will require careful management even after recovery and delisting. For

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recovery and delisting to be successful, there needs to be careful management of all forms of mortality, linkage management in place to allow for eventual connections between grizzly populations, and commitments and cooperation between state agencies to exercise care when managing grizzly mortality.

Montanans have tremendous pride in the restoration of grizzly bears. The species has made tremendous gains since it was put under federal protection under the Endangered Species Act in 1975. Both the Northern Continental Divide and Greater Yellowstone Ecosystem grizzly populations now meet their recovery goals under the Grizzly Bear Recovery Plan. That's the result of decades of hard work among all stakeholders – including federal land management agencies, state and federal wildlife agencies, farmers and ranchers, hunters, recreational users, rural communities and many others.

We believe the strongest and best decisions on complex wildlife management issues are made when the best available science is applied and a diversity of all interests are brought together. Please respect the solid work that has been done to date to recover grizzly bears and give the state and federal agencies the time and resources needed to rectify the issues identified by the court to improve the post-delisting management plan so that the future of grizzly bears is secure, and delisting can proceed.

Thank you for this opportunity to comment on this bill.

Sincerely,

Tom Puchlerz

Tom Puchlerz
President

NPCA Position for Senate Environment and Public Works Hearing on September 9, 2020

September 8, 2020

Dear Senator,

Since 1919, National Parks Conservation Association (NPCA) has been the leading voice of the American people in protecting and enhancing our National Park System. On behalf of our nearly 1.4 million members and supporters, please consider our position on S.614, the "Grizzly Bear State Management Act of 2019" when it comes before the Senate Environment and Public Works Committee for a hearing on September 9, 2020.

NPCA is **strongly opposed** to this legislation, which removes Greater Yellowstone Ecosystem (GYE) grizzly bears, including the grizzlies of Yellowstone and Grand Teton national parks, from protections under the Endangered Species Act (ESA).

Congress showed incredible foresight when it passed the Endangered Species Act with bipartisan support in 1973. Since that time, the ESA has been a critically important tool in the restoration of national park species like the California condor, the humpback whale and the Santa Rosa Island fox. The ESA continues to provide an essential safety net to stop and then reverse the decline of scores of other species throughout the country.

When a species is elevated for protection under the ESA, our nation is making a long-term promise to conserve the ecosystem upon which that species depends and provide a program for the conservation of that species.[1] The recovery process is a commitment to management actions that are necessary for the "survival and conservation of the species"[2] with the ultimate goal of restoring the population to a level that will no longer require expanded protections. It takes hard work, collaboration and time to recover a species.

Grizzly bears were driven to the brink of extinction by eradication programs in the mid-19th century. The GYE population had dropped to as few as 136 bears when the species was listed as threatened under the ESA in 1975. Thanks to the resources and protections of the ESA, the hard work of state and federal scientists, and the willingness of communities to adopt policies and practices to live with bears on the landscape the population is on its way towards recovery.

But recovery is not complete. On the eve of what can be another great success story for the ESA, S. 614 undermines the progress that has been made and negates the investment the people of this country and the people of the GYE have made in the recovery of the Yellowstone grizzly

[1] Endangered Species Act of 1973, Sec. 2(b) Purposes.
[2] Endangered Species Act of 1973, Sec. 4(f) Recovery Plans.

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population. Congressionally delisting this species would undermine the decades of hard work and resources that have gone into getting grizzly restoration to this point.

The legislation would also circumvent the crucial role of the judicial system in the implementation of one of the nation's bedrock conservation laws. In 2017, the U.S. Fish and Wildlife Service (USFWS) removed ESA protections from the GYE grizzly bear population. The United States District Court for the District of Montana found that the final rule from USFWS lacked critical analysis and failed to address several threats to the population's long-term survival. These findings were upheld by the United States Court of Appeals for the Ninth Circuit this year.[3] The Courts outlined what USFWS must address before this population can be considered for removal from the endangered species list. None of those requirements were unsurmountable and USFWS is now in the process of addressing the Courts' concerns.

The Trump administration did not even seek to challenge two of the three grounds on which the United States District Court for the District of Montana ruled that the GYE grizzly bear delisting was illegal. S.614 is attempting to muscle through a delisting that even the current administration declined to defend.

The goal of the ESA is to recover a species and ensure that once delisted that recovery can be maintained. This population of bears is on the path to recovery but removing federal protections without an adequate plan in place to ensure the long-term health of this population is short sighted and will prevent the recovery of this icon of the American west.

We urge you to oppose S.614 due to its harmful impact on the recovery of grizzly bears in the Greater Yellowstone Ecosystem. The Courts have laid out a practical path that USFWS must follow to secure delisting and ensure the continued success of this important population.

Thank you for considering our views.

Sincerely,

Ani Kame'enui
Deputy Vice President, Government Affairs

[3] "Victory: 9th Circuit Upholds Endangered Species Protections for Yellowstone Grizzlies." National Parks Conservation Association, 8 July 2020, https://www.npca.org/articles/2613.

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April 8, 2020

Montana Grizzly Bear Advisory Council
Facilitators Shawn Johnson and Heather Stokes
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Re: Hunting Grizzly Bears in Montana

Dear Montana Grizzly Bear Advisory Council:

Thank you for the time, work, and thought that each of you have dedicated to discussing the future of grizzly bear management in Montana—particularly over the past few weeks under such trying circumstances. On behalf of the Natural Resources Defense Council ("NRDC") and our thousands of members in Montana, we appreciate the opportunity to submit these comments regarding one aspect of grizzly management under consideration: hunting. For the reasons explained below, grizzly bear hunting is unwarranted and unsafe, because it would be unlikely to reduce human-grizzly conflicts and could even increase risk to human safety. Therefore, we urge you to recommend that FWP not hold hunting seasons for grizzly bears in the future, and that it instead focus on continuing its important efforts to provide information and resources to the Montana public about how to live, work, and recreate safely in grizzly bear country.

I. There is Little Evidence that Hunting Grizzlies Would Reduce Conflicts with or Attacks on People.

To provide background information for the Advisory Council's discussion about this issue, Montana Fish, Wildlife & Parks ("FWP") prepared a briefing paper ("Brief") on the history of, and laws pertaining to, grizzly bear hunting in Montana.[1] In its Brief, FWP suggested that some people might support grizzly bear hunting, because "hunting may help bears become warier of humans," and because hunting could "potentially address conflict bears."[2] Similarly, the Brief explained that Montana's current Grizzly Bear Policy, found within the Administrative Rules of Montana, identifies sport hunting as the "most desirable method" of "minimizing depredations against private property" and "minimizing grizzly bear attacks on humans."[3]

[1] See FWP, Support Team Brief on the history of grizzly bear hunting in Montana and review of existing laws, policies, rules, and plans, version 5 (March 30, 2020) ("Brief").
[2] Id. at p. 1.
[3] Id. at p. 2; see also A.R.M. § 12.9.1401(1)(c)(ii).

Thus, two of the primary rationales for hunting grizzlies in Montana are that it could minimize conflicts, and that it could minimize attacks on humans. However, there is little evidence to support these assumptions. Montana's Grizzly Bear Policy was adopted in 1972; since then, numerous studies have repeatedly demonstrated that its rationales are incorrect.

II. Hunting Would Be Unlikely to Reduce Conflicts.

It is unlikely that hunting grizzly bears would reduce human-grizzly bear conflicts. Researchers from around the world have studied the effects of hunting on a variety of bear species and consistently found that hunting does not reduce human-bear conflicts. For example, studies of grizzly bears in British Columbia, brown bears in Norway, American black bears in Wisconsin and Ontario, and Asiatic black bears in Japan all found no correlation between the number of bears killed by hunters and the number of human-bear conflicts during that year or subsequent years (Artelle et al. 2016, Sagør et al. 1997, Treves et al. 2010, Obbard et al. 2014, Huygens et al. 2004, respectively). In other words, across all of these countries and continents, a remarkably consistent theme emerged: hunting bears did not reduce conflicts.

The studies' authors suggested several potential reasons for this finding. Artelle et al. explained that bears killed by hunters tended to be older and live farther from human habitation than those involved in conflicts.[4] Thus, bears targeted by hunters were usually not the same bears involved in run-ins with people. Sagør et al. explained that it can be difficult to distinguish conflict bears from non-conflict bears.[5] Because non-conflict bears were probably also being shot during removal efforts, efforts to kill conflict bears were not helping to reduce sheep losses.

Treves et al. and Huygens et al. suggested that, following hunting seasons, new bears were just filling vacancies left by killed bears, and then triggering new conflicts.[6] As a result, conflicts following hunting seasons did not decrease. Treves et al. also pointed out that females with cubs, which could not be killed by hunters (which would also be the case during a grizzly hunt in Montana), would have been left alive to potentially repeat any pre-hunt nuisance behavior.[7] Lastly, Obbard et al. suggested that, rather than actually reducing conflicts, allowing the hunting of bears may just reduce complaints.[8] They speculated that *actually* reducing conflicts would require high enough levels of killing to drive bear populations to very low densities—a management approach that may threaten the very viability of the population.[9]

Obbard et al.'s point was recently reiterated by former U.S. Fish and Wildlife Service ("FWS") grizzly bear recovery coordinator Chris Serhveen. Servheen explained why a conventional hunting season would not reduce conflicts:

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[4] See Artelle et al. 2016, p. 5.
[5] See Sagør et al. 1997, p. 94.
[6] See Treves et al. 2010, p. 39; Huygens et al. 2004, p. 200.
[7] See Treves et al. 2010, p. 39.
[8] See Obbard et al. 2014, p. 106.
[9] Id.

> The only way you reduce bear conflicts through hunting is to reduce their numbers significantly in specific areas where depredations occur. A normal hunting season won't reduce conflicts. You're taking out just a few bears across large areas, and a lot of the bears you remove probably weren't causing problems. Hunting is too random to ensure the "right" bears get shot. The best way to solve depredation is to capture, recapture, and remove individual problem bears.[10]

While the studies above found no correlation between hunting and human-bear conflicts, many of them did find a strong correlation between the availability of natural foods and levels of conflict. For example, Artelle et al. found that during years with lower salmon abundance in Alaska, there were corresponding increases in human-grizzly bear conflicts.[11] Likewise, Obbard et al. found that years with lower abundance of natural foods like berries and nuts in Ontario were associated with increased levels of human-black bear conflicts.[12] Treves et al. discussed several other studies that showed that in years of poor wild food availability, bears were more likely to engage in nuisance behavior.[13] Similarly, Huygens et al. suggested that levels of conflict between humans and black bears in Japan were a consequence of factors other than hunting, including natural food availability.[14]

These findings challenge the assumption in FWP's Brief and in Montana's outdated Grizzly Bear Policy that sport hunting could be a useful tool to reduce human-bear conflicts. As Obbard et al. emphasized, "Although it may be intuitive to assume that harvesting more bears should reduce human-bear conflicts, empirical support for this assumption is lacking despite considerable research."[15]

Indeed, later in its Brief, FWP acknowledged many of the points made by the researchers, stating that "in the context of Montana grizzly bears, recreational hunting would probably be limited to such a small number of bears that behavioral effects at the population level would be unlikely;" "nuisance females would be largely unaffected by a recreational hunt, potentially allowing their young to learn undesirable habits;" and that, "although a hunt specifically targeting nuisance bears is theoretically possible, it would be logistically difficult and raise ethical issues regarding fair chase."[16]

FWP's Brief also quoted a position paper published in 2017 by the International Association for Bear Research and Management that said, in part, "If the primary management goal is to reduce human-bear conflict, the crucial, and, arguably, only efficient and long-term way to do so is

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[10] See https://www.themeateater.com/conservation/wildlife-management/would-hunting-grizzlies-reduce-conflict-with-humans.
[11] See Artelle et al. 2016, p. 5.
[12] See Obbard et al. 2015, p. 105.
[13] See Treves et al. 2010, p. 38.
[14] See Huygens et al. 2004, p. 200.
[15] Obbard et al. 2015, p. 106.
[16] Brief, p. 5.

through education, outreach, and implementation of practices and regulatory policies that remove bear attractants."[17]

Likewise, as a result of their findings, many of the authors of the studies described above recommended nonlethal approaches to reducing conflicts rather than relying on hunting. Their list of recommendations to reduce conflicts included: increasing public education; more closely managing livestock rather than allowing them to range untended; changing crop rotations to crops that are not attractive to bears in high-risk areas; using electric fences; applying aversive conditioning techniques; promoting, protecting, or restoring natural food production (e.g., through habitat protection); and focusing on understanding the underlying ecology of conflicts to better target mitigation efforts when and where conflicts are most likely to occur.[18]

III. Hunting Would Be Unlikely to Reduce Attacks on Humans.

Hunting grizzly bears would also be unlikely to reduce attacks on humans. As a threshold matter, while it is important to prevent any bear attack on a human, it is also important to recognize that these attacks are already extremely rare. For example, between 2000 and 2015 in Montana, there were 25 grizzly bear attacks that resulted in physical injury to humans, and two of those resulted in a human fatality (Bombieri et al. 2019). A recent article put those numbers into perspective:

> Statistically, grizzlies really aren't all that dangerous. Yellowstone National Park's website puts it bluntly: the odds of getting hurt by a grizzly in the park are about one in 2.7 million. Combined, grizzly and black bears have killed fewer than three people per year in the U.S. and Canada since 2010. By contrast, in the U.S. alone, 94 people died kayaking in 2017 and 44 died skiing during the 2016-17 season.[19]

Also, 95% of all brown bear attacks in the world during that same time period (2000 to 2015) were the result of a bear reacting defensively to an encounter with humans.[20] In other words, it's extremely rare for a bear to behave in a predatory way or to seek out an encounter with a human.

Thus, bear attacks are rare. In addition, there is little evidence that sport hunting would reduce this already rare event even further. A recent, comprehensive review of brown bear attacks worldwide found no significant difference in the number of attacks in countries where brown bear hunting is legal and those where it is not (Bombieri et al. 2019). This suggests that hunting brown bears does not result in fewer attacks on humans. Importantly, the study also made clear that hunting *itself* can result in attacks: of the 664 attacks that were investigated, nearly a quarter

[17] Id.
[18] See Artelle et al. 2016, p. 5; Sagør et al. 1997, pp. 94-95; Obbard et al. 2014, p. 106, Huygens et al. 2004, p. 201.
[19] See https://www.outsideonline.com/2402436/grizzly-bears-habitat-humans (Oct. 3, 2019).
[20] See Bombieri et al. 2019, p. 4.

(123) occurred while the humans were hunting, and of those, 27 occurred while humans were hunting *brown bears*.[21]

Further, nearly half of the attacks (47%) were the result of a defensive reaction of a female with cubs.[22] As mentioned above, under FWP's draft grizzly bear hunting regulations, female bears with cubs would not be hunted.[23] Thus, even if hunting were an effective means of reducing grizzly bear attacks, it would not affect half of the bears involved in attacks each year.

Many grizzly bear biologists in the U.S. agree that hunting grizzlies will not reduce attacks on people. According to FWP grizzly bear management specialist Kim Annis, "If the argument is that hunting bears will teach them to be afraid of humans, I don't understand how that would play out. . . . Bears are solitary animals. If someone kills one, it's dead. It would have to stay alive to actually learn something."[24] Annis pointed out that "people have been hunting black bears forever and they still come around people. Alaska has allowed hunting of brown bear . . . and there are still conflicts between bears and humans there."[25] She continued, "I don't see where there is any evidence that bears learn to fear humans because of hunting. . . . If people want to be able to hunt grizzly bears as a trophy, that's what they should say."[26]

Similarly, Confederated Salish and Kootenai Tribes grizzly bear specialist Stacy Courville has said, "Dead bears don't learn anything. . . . Unless there is a bear right there standing next to the one that got shot, I'm not sure how bears would learn anything about being hunted."[27]

Former U.S. Geological Survey grizzly bear biologist David Mattson has also pointed out that, in essence, we've already been hunting grizzlies in the lower 48 states for years, with no indication that it has affected bears' wariness:

> Think, for example, of all the grizzlies that have been killed by big game hunters during surprise encounters or in conflicts over hunter-killed elk—increasingly. Or by ranchers and other people in defense of life and property. Functionally this is probably little different from a sport hunt . . . . We've essentially been hunting grizzlies in [the] Yellowstone [area], without any evidence that it has affected human safety one way or another.[28]

Further, a study of brown bears' wariness toward humans in Eurasia concluded that the availability of human foods was a more significant determinant of wariness than hunting

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[21] See Bombieri et al. 2019, p. 4.
[22] Id. at p. 5.
[23] See FWP, Grizzly Bear Montana Hunting Regulations, p. 4.
[24] See https://missoulian.com/news/local/dead-bears-don-t-learn-anything-biologists-balk-at-notion/article_930fd1e3-31ad-571c-ad30-78d11bcd3b73.html (Nov. 30, 2017).
[25] Id.
[26] Id.
[27] Id.
[28] See https://www.counterpunch.org/2016/01/15/hunting-to-scare-grizzly-bears/ (Jan. 15, 2016).

(Swenson 1999). The author determined that "[t]he availability of human-derived foods apparently caused bears to lose their wariness, even when hunted."[29] This finding speaks to the importance of securing human food and other attractants—both to reduce conflicts and to maintain bears' wariness toward people.

In sum, the evidence above indicates that hunting bears is unlikely to reduce attacks or make people safer. Indeed, it could have the opposite effect: more hunters in grizzly bear country, moving slowly and silently, and often alone, could result in more startled bears, which could result in more human injuries and deaths. Taking steps to avoid surprising bears, and to prevent them from accessing human foods and other attractants, appears much more likely to maintain bears' wariness and keep humans and bears safe.

IV. Conclusion and Recommendations

For the reasons described above, hunting grizzly bears in Montana would most likely not reduce conflicts or reduce attacks on humans. It could even put more people at risk. As a result, we urge the Advisory Council to make the following recommendations:

1) FWP should not hold hunting seasons for grizzly bears in Montana.

2) FWP—and other agencies—should instead continue to provide information and resources (such as assistance with installing electric fencing around attractants, or supplying bear spray) to ensure that those who live, work, and recreate in grizzly bear country can do so safely.

3) FWP and the Montana Fish and Wildlife Commission should undertake a rulemaking process to delete the inaccurate and outdated statements in Montana's Grizzly Bear Policy, including those that say sport hunting is the "most desirable method" of "minimizing depredations against private property" and "minimizing grizzly bear attacks on humans." This language should be replaced with evidence-based statements that identify strategies such as public education and proactive conflict-prevention as the most effective ways to minimize negative human-bear interactions.

These actions are the best way to reduce human-grizzly bear conflicts and ensure the safety of both humans and bears in Montana. Thank you for considering these comments.

Sincerely,

[29] See Swenson 1999, p. 159.

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References

Artelle, K.A., et al. 2016. Ecology of conflict: marine food supply affects human-wildlife interactions on land. Scientific Reports 6, 25936; doi: 10.1038/srep25936.

Bombieri, G. et al. 2019. Brown bear attacks on humans: a worldwide perspective. Scentific Reports 9:8573.

Huygens, O.C. et al. 2004. Relationships between Asiatic black bear kills and depredation costs in Nagano Prefecture, Japan. *Ursus* 15(2):197-202.

Obbard, M.E. et al. 2014. Relationships among food availability, harvest, and human-bear conflict at landscape scales in Ontario, Canada. *Ursus* 25(2):98-110.

Sagør, J.T. et al. 1997. Compatibility of brown bear *Ursus arctos* and free-ranging sheep in Norway. Biological Conservation 91-95.

Swenson, J.E. 1999. Does hunting affect the behavior of brown bears in Eurasia? *Ursus* 11:157-162.

Treves, A. et al. 2010. American black bear nuisance complaints and hunter take. *Ursus* 21(1):30-42.

June 26, 2020

Montana Grizzly Bear Advisory Council
Shawn Johnson, Facilitator shawn.johnson@mso.umt.edu
Heather Stokes, Facilitator heather.stokes@umconnect.umt.edu
Dillon Tabish, Montana Fish, Wildlife & Parks dillon.tabish@mt.gov

Re: Social Tolerance, Conflict Reduction, and Compensation

Dear Montana Grizzly Bear Advisory Council:

Thank you for your ongoing work to develop recommendations regarding grizzly bear conservation in Montana. On behalf of the Natural Resources Defense Council ("NRDC") and our thousands of members in Montana, we appreciate the opportunity to submit these comments, which build upon the previous comments we provided on April 8, 2020.

Our earlier comments explained why hunting grizzly bears would not reduce human-grizzly conflicts or make people safer. The following comments also explain why hunting grizzlies would not increase social tolerance or public faith in wildlife management. In addition, these comments explain why, instead of hunting, the Council should recommend greater investment in conflict-prevention measures. They also explain why the Council should not recommend an increase in compensation for unconfirmed livestock losses (such as through a "multiplier").

I. It Is Unlikely that Hunting Grizzly Bears Would Increase Social Tolerance or Public Faith in Wildlife Management.

In our previous comments, we explained why hunting grizzly bears would not reduce conflicts or (already very rare) attacks on people.[1] Likewise, hunting grizzlies would be unlikely to increase social tolerance or to garner public trust in Montana's approach to wildlife management. For these reasons, we continue to urge the Advisory Council to recommend against proposing or holding a future grizzly bear hunt in Montana.

[1] See NRDC Comments Re: Hunting Grizzly Bears in Montana (April 8, 2020), available at https://www.nrdc.org/sites/default/files/media-uploads/nrdc_comments_for_gbac_re_grizzly_bear_hunting_4-8-2020_3.pdf.

A. Evidence indicates that hunting grizzly bears would not increase social tolerance.

FWP's position is that hunting grizzlies would increase social tolerance. For example, its southwestern grizzly bear management plan states, "Hunting promotes acceptance and tolerance of this large and potentially life-threatening animal by some of the local public who are asked to live with grizzlies."[2] Similarly, its western grizzly bear management plan says, "FWP strongly believes that regulated harvest of predators builds tolerance by those most negatively impacted by their presence."[3] Indeed, FWP's position is that *not* allowing grizzly hunting "would greatly hinder FWP's ability to develop increased tolerance for the species."[4]

However, research—including FWP's—contradicts those beliefs. For example, scientists in Slovenia found no difference in attitudes toward brown bears among residents living where bear hunting was allowed and those living where it was not (Kaczensky et al. 2003). Surveys done by researchers in Wisconsin revealed that, following the first wolf hunting and trapping season held there in decades, there was an overall *decrease* in tolerance towards wolves among residents living in wolf range (Hogberg et al. 2015).

A study conducted in Norway and Sweden found that poaching, motivated by lack of social tolerance, was responsible for nearly half of the annual adult mortality of Eurasian lynx in those countries (Andrén et al. 2006). Poaching occurred even in areas where lynx could be legally hunted. The researchers found no significant relationship between the numbers of lynx poached, and the numbers of lynx allowed to be legally hunted, in any given area. As a result, they concluded, "There does not seem to be a simple relationship between an increased legal harvest and decreased poaching as is commonly expected."[5]

In 2012, FWP reached a similar conclusion with respect to wolf hunting. That year, the agency conducted four surveys (sent to: (1) general households; (2) private landowners; (3) resident wolf license holders; and (4) resident deer and elk license holders) asking thousands of Montanans to rate their overall tolerance for wolves on the landscape before and after the 2011 wolf hunting season.[6] Survey results indicated that tolerance levels did not change:

> Reported tolerance amongst survey respondents for each of the four surveys was the same for both before and after the 2011 Montana wolf hunt. That is, tolerance did NOT significantly change following the 2011 Montana wolf hunt. . . . These

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[2] See FWP, Grizzly Bear Management Plan for Southwestern Montana, Final Programmatic Environmental Impact Statement (2013) ("Southwestern Grizzly Plan"), p. 61.
[3] See FWP, Grizzly Bear Management Plan for Western Montana, Final Programmatic Environmental Impact Statement (2006) ("Western Grizzly Plan"), p. 58.
[4] Id. at p. 60.
[5] See Andrén et al. 2006, p. 23.
[6] See Lewis et al. 2012, Selected Results from Four Separate Surveys of Resident Montanans Regarding Montana's Wolf Hunt: Summary of Research.

> findings suggest that attitudes and beliefs regarding wolves may be resistant to change and not easily influenced by specific management efforts.[7]

The agency conducted another, similar set of surveys in 2017.[8] While the surveys "revealed a slight shift in the direction of more tolerance for wolves," there was no indication that it was attributable to wolf hunting or trapping, as opposed to other aspects of wolf management. Indeed, prior to the surveys being conducted, NRDC had spent two field seasons working with cattle producers and the federal agency Wildlife Services to install fladry around calving pastures in western Montana with histories of wolf depredation. No depredations occurred in any of the pastures while encircled by fladry (Young et al. 2018). Also during that time, other organizations, such as the Blackfoot Challenge, Tom Miner Basin Association, Centennial Valley Association, People and Carnivores, and Defenders of Wildlife—often in collaboration with FWP—were using fencing, range riding, carcass removal, and other techniques to reduce conflicts with wolves. These efforts could have collectively contributed to increased tolerance for wolves among landowners.

Further, survey responses from "general households" (the demographic most representative of the Montana public), revealed no change in tolerance toward wolf hunting or trapping, and no change in the public's confidence in FWP's ability to manage wolves, among most respondents.[9]

Courts have also been skeptical of the claim that hunting improves attitudes or decreases poaching. In 1984, a federal court held that the U.S. Fish and Wildlife Service ("FWS") could not allow a sport hunting season for Minnesota wolves, which were listed as "threatened" under the Endangered Species Act.[10] FWS argued that a sport hunt was needed to "enhance the value of the wolf in the eyes of the public" and reduce the number of wolves illegally killed each year.[11] The Court disagreed, reasoning, "While these illegal killings must be stopped, this can hardly be accomplished by allowing a sport season and creating a market in wolf pelts."[12]

Similarly, in 2006, another federal court held that FWS could not allow Wisconsin to conduct a lethal control program to kill up to 43 wolves for the purpose of "fostering greater social tolerance for wolves."[13] The court dismissed FWS's rationale—that "killing 43 allegedly depredating wolves will increase social tolerance for wolves and ultimately result in fewer illegal killings of wolves"—as a "labyrinthian analysis."[14] The Court quoted yet another case in which

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[7] Id. at pp. 2, 8.
[8] See Lewis et al. 2018, Better Understanding Montanans Thoughts Regarding Wolves and Wolf Management in Montana: Summary of Research.
[9] Id.
[10] See Sierra Club v. Clark, 577 F.Supp. 783 (D. Minn. 5th 1984).
[11] Id. at 790.
[12] Id.
[13] See Humane Society of the U.S. v. Kempthorne, 481 F.Supp.2d 53, 54, 72 (D.D.C. 2006) (vacated on other grounds).
[14] Id. at 63.

the judge, when confronted with the same rationale from FWS, noted the agency's contradiction in logic:

> I am baffled by the government's position here. I have to be perfectly frank. I have a hard time understanding the notion you kill the wolves to save the wolves.[15]

In light of the available evidence described above, it is equally difficult to understand the concept of "hunting the grizzlies to save the grizzlies."

B. To maintain public faith in wildlife management, FWP must manage grizzly bears on behalf of the entire public.

To maintain or enhance public trust in wildlife management and FWP's grizzly bear program, FWP must ensure that it is considering the public as a whole. FWP's grizzly bear management plans insist, without evidence, that hunting grizzlies could increase social tolerance among some people who live in grizzly habitat. Even if this were true, the agency cannot limit its analysis of social tolerance or public attitudes to just a single demographic. Instead, it must consider the impact that hunting grizzlies could have on the public writ large.

Under Montana law, "[t]he responsibility of [FWP's] Wildlife Division is to protect, enhance, and regulate the wise use of the state's wildlife resources for *public benefit* now and in the future."[16] In other words FWP must ensure that its management decisions benefit the public as a whole, not just particular constituencies.

Yet, FWP's grizzly bear management plans only discuss the effect that hunting grizzly bears might have on the social tolerance of a single portion of the public—that is, some of "the local public who are asked to live with grizzlies"[17] and are "most negatively impacted by their presence."[18] Neither plan discusses what effect holding a hunt might have on the attitudes of other, potentially larger demographics, such as those who also live or work in or near grizzly habitat but are not bothered by the presence of the bears,[19] or even consider their presence to be beneficial; those who visit Montana to see grizzly bears; or those (residents and visitors, hunters and non-hunters) who do not support the idea of hunting this particular species. Indeed, a recent survey by the Association of Fish

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[15] Id. (quoting Defenders of Wildlife v. Norton, Civil Action No. 05-1573 (D.D.C. 2005), transcript of preliminary injunction hearing at p. 11).
[16] See A.R.M. § 12.1.101(10) (emphasis added).
[17] See Southwestern Grizzly Plan, p. 61.
[18] Id. at p. 8.
[19] See Eneas 2020, p. 47 (explaining that, on the Flathead Indian Reservation, "some tribal members viewed their property as home to the grizzly bear first, and therefore were not bothered by depredation of their livestock").

and Wildlife Agencies revealed that only 33 percent of Americans in the West approve of hunting grizzly bears.[20]

FWP's grizzly bear management plans laudably emphasize the importance of enhancing "public faith in management"[21] and avoiding "erosion of public trust and support for the grizzly bear program."[22] To achieve these objectives, however, FWP must ensure that it is considering the public as a whole, rather than a few select stakeholders, when making decisions about grizzly bear management, including whether or not to allow grizzlies to be hunted.

II. Rather than Hunting, the Council Should Recommend Increased Investment in Nonlethal Conflict Prevention.

While there is no evidence to suggest that hunting grizzly bears would increase social tolerance, there is clear evidence that the use of proactive conflict-prevention measures—such as electric fencing, scare devices, and guardian dogs—benefits humans and grizzlies alike, by reducing the risk of property damage and livestock losses while keeping bears alive and out of trouble. Opportunities for increased investment in such measures exist at the local, state, and federal levels.

A. There are many ways to effectively reduce conflicts with bears.

i. Electric fencing

If used correctly, electric fencing is a highly effective bear deterrent. It has been used to deter grizzly bears in North America for decades. In the 1970s, electric fences were successfully used to exclude grizzlies from garbage dumps in U.S. and Canadian national parks, including Yellowstone, Denali, Banff, and Jasper.[23] Since then, electric fencing has been used successfully to keep bears from accessing beehives, livestock, fruit trees, and other attractants. Shocks delivered by electric fences not only deter bears, but also aversively condition them to stay away and avoid high human-traffic areas.

Electric fencing can achieve a near-100 percent success rate, when implemented and maintained properly. For example, a recent study of the effectiveness of electric fencing to protect livestock in Montana's Mission Valley found that "[n]o depredations occurred when livestock were inside a properly functioning electric fence and 7 livestock depredations occurred at sites without electrified fencing."[24] The researchers found that the probability of depredation without an electrified fence was 50 percent, while the probability with an electric fence was zero.[25]

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[20] See Responsive Management and the National Shooting Sports Foundation, Americans' Attitudes Toward Hunting, Fishing, Sport Shooting, and Trapping (2009), p. 29.
[21] See Southwestern Grizzly Plan, p. 8.
[22] See Western Grizzly Plan, pp. 4, 82.
[23] See Interagency Grizzly Bear Committee, Grizzly Bear Compendium (1987), pp. 92.
[24] See Eneas et al. 2020, pp. 37.
[25] Id. at p. 45.

Similarly, in Katmai National Park's Brooks Camp Campground in Alaska, the National Park Service utilized electric fencing to protect campers and facilities from bears starting in 1995.[26] Fencing deterred bears from approaching the area and decreased human-bear conflicts to zero in following years.[27] Additionally, Parks Canada installed an electric fence around the Lake Louise campground in Banff National Park, which eliminated all bear conflicts that had been occurring for decades.[28]

For more than ten years, Defenders of Wildlife's Electric Fencing Incentive Program has assisted landowners in the Northern Rockies with paying for and installing electric fences to secure livestock, beehives, gardens, and other attractants.[29] As of 2019, of 145 program participants surveyed, 99 percent reported that their fence had successfully protected the intended attractant.[30]

Similarly, in 2018, NRDC and Defenders of Wildlife helped the federal agency Wildlife Services create a new, nonlethal conflict-prevention specialist position in Montana dedicated to installing temporary and permanent electric fencing to reduce conflicts with bears and other native carnivores. Of the dozens of electric fences installed by the specialist in the years since, there have been no instances of livestock depredation or property damage within any of the enclosures.[31]

Both portable and permanent electric fencing have proven highly effective. In 2018, Smith et. al investigated the efficacy of portable electric fencing systems for bear deterrence and confirmed that they were effective in protecting humans, their food, and property from bears in a variety of environments.[32] The study implemented field trials of portable electric fencing systems around campsites in Alaska, Montana, and Wyoming. The trials used electric mesh nets to protect food caches in these bear-dense areas for "5,638 user nights with no loss of food, save 1 instance," which "strongly underscores the effectiveness of this this tool for protecting people, their gear, and bears from trouble."[33]

ii. Scare devices

When used properly, a variety of acoustic and visual repellents can also be used to deter bears. Devices that play recordings of aggressive grizzlies and barking dogs; flares; pyrotechnics; and even loud radios have successfully deterred bears in small areas or near attractants for short periods of time in Canada and near Yellowstone National Park.[34]

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[26] See Smith et al. 2018, p. 309.
[27] Id.
[28] Id.
[29] See https://defenders.org/got-grizzlies.
[30] See https://defenders.org/sites/default/files/2020-05/Electric-Fence-Incentive-Program-2019-Annual-Report.pdf.
[31] See https://www.nrdc.org/experts/zack-strong/congress-funds-new-nonlethal-conflict-prevention-positions.
[32] See Smith et al. 2018, pp. 311.
[33] Id. at p. 320.
[34] Id. at p. 311.

In Montana, devices like the Critter Gitter, which are motion-activated noise makers, have successfully been employed by FWP to temporarily keep bears away from attractants such as chicken coops and garages.[35] Similarly, the Get Bear Smart Society—a conservation organization based in Whistler, British Columbia—suggests using air horns and, where circumstances warrant, "bear bangers," and even emergency flares.[21]

Bears can become accustomed to many of these disturbances within days or weeks, but noise and visual deterrents can reduce conflicts for at least a limited period to allow for the time to implement a more long-term solution. Much like any wildlife management solution, visual and acoustic repellents are not a one-size solution for reducing bear conflicts; however, these repellents, in conjunction with other non-lethal tools, can increase the efficacy of bear-conflict management strategies.

iii. Livestock guardian dogs

Livestock guardian animals have been called the "ultimate disruptive stimulus device" (Shivik 2006). Livestock owners have used guard animals such as llamas, donkeys, and dogs to protect their herds and flocks for centuries. Livestock guardian dogs have proven effective at deterring bears in the U.S. and Europe (Smith et al. 2000). For example, during a study conducted from 1990 to 1993 in Montana's Absaroka Mountains, 29 sheep were killed by grizzlies in the two years before dogs were used, but only seven sheep were killed in the two years after dogs were employed (Green et al. 1993). In a different study, a lone Great Pyrenees dog was unable to prevent sheep depredations by a grizzly bear in Idaho; however, a lone Akbash Dog in Montana was observed successfully deterring a grizzly:

> The dog would stand nose-to-nose with the bear, and if the bear made an offensive move toward the dog, the dog deftly avoided the bear's attack, quickly circled, and lunged at the exposed flank of the bear. After a series of these bouts that gradually moved the bear away from the sheep, the bear would amble off, and the dog would return to the flock. This series of events occurred several times during the 3-hour period. No sheep were lost during the encounter.[36]

Similarly, during a three-year project in Norway, the use of herders and livestock guardian dogs resulted in the loss of only a single sheep from brown bears, while the control herd experienced a 15-20 percent loss (Krogstad et al. 1999). Further, Krogstad et al. "documented numerous encounters with brown bears in which the dogs were successful in chasing the bear away."[37]

iv. Other measures

Many other conflict-reduction strategies have also proven effective. For example, bear spray is a safe and reliable tool to prevent bear attacks on people. Smith et al. found that bear spray was 92

[35] See FWP, 2018 Grizzly Bear Management Progress Report, NCDE Portion of Region 1, p. 5.
[36] See Green and Woodruff 1989 in Bear-People Conflicts: Proceedings of a Symposium on Management Strategies (1987), p. 51.
[37] Id.

percent effective at deterring grizzly bears in Alaska and that 98 percent of people carrying bear spray were uninjured by bears in close-range encounters.[38] Further, no bears were killed by bear spray.[39] By contrast, handguns and long guns were found to be less effective (84 percent and 72 percent, respectively) and resulted in far more human injuries and bear deaths (humans were injured in 56 percent of bear encounters involving firearms; bears were killed in 64 percent of such encounters).

To reduce conflicts in backcountry camp sites, People and Carnivores has installed more than 200 "bear poles" throughout western Montana and northwestern Wyoming.[40] Bear poles consist of a single horizontal log or pole fixed high off the ground between two trees. These sturdy structures enable backcountry users to make attractants like camp food, game meat, and livestock feed inaccessible to bears by hanging them at least 10 feet above the ground and four horizontal feet from anything a bear could climb.[41]

Similarly, the Greater Yellowstone Coalition has helped to purchase and install more than 1,000 bear-proof bins to store groceries and garbage in developed Forest Service campgrounds throughout the Greater Yellowstone Ecosystem.[42] Meanwhile, coalitions of conservation groups, wildlife and land management agencies, local businesses, and others have reduced human-bear conflicts in communities like Missoula and Big Sky by installing bear-resistant trash cans and better educating residents about how to avoid run-ins with bears.[43]

B. The Council should recommend greater investment in nonlethal conflict prevention at all levels of government.

The Council should examine, and make recommendations regarding, opportunities that exist at the local, state, and federal levels to expand the use of proactive strategies to help reduce human-grizzly conflicts.

i. Local level

As Montana's grizzly bear populations expand, it is increasingly important for counties and municipalities in or near the bear's range to inform residents how to take steps to avoid conflicts, particularly by securing chickens, fruit trees, gardens, garbage and other attractants. As mentioned above, places like Missoula and Big Sky have created successful bear coexistence programs that could serve as models for other Montana towns. Indeed, NRDC and other conservation organizations recently submitted a letter to the Bozeman City Commission and Planning Board pointing to those communities and others as examples and offering recommendations regarding how the City could address ongoing run-ins with black bears, and potential future conflicts with grizzly bears.[44]

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[38] Smith et al. 2008.
[39] Id.
[40] See https://peopleandcarnivores.org/bear-poles/.
[41] Id.
[42] See https://buckrail.com/gyc-forest-service-cap-1-million-5-year-project-to-keep-bears-alive-and-people-safe/.
[43] See http://missoulabears.org/; https://www.wcscommunitypartnerships.org/bear-smart.
[44] See NRDC and Conservation Orgs Comments Re Draft Bozeman Community Plan and Human Bear Conflicts (May 11, 2020), submitted with these comments as Attachment A.

to take any necessary steps, such as revising relevant national conservation practice standards, to enable grant programs such as the Environmental Quality Incentives Program to be used more widely to address human-carnivore conflicts.[53]

A third opportunity would be for the Council to express support, and recommend that other stakeholders also express support, for the continuation of the $1.38 million federal appropriation Congress allocated in FY20 to pay for nonlethal conflict-prevention specialists employed by Wildlife Services in Montana and other states.[54] NRDC and Defenders of Wildlife supported the FY20 appropriation, which enabled Wildlife Services to hire more than a dozen new employees focused exclusively on reducing livestock-predator conflicts, including those involving grizzly bears in Montana.[55] Stakeholders are seeking a second appropriation this year to ensure that work can continue into the next fiscal year. Support from the Council, agricultural producers, conservation organizations, and others in Montana affected by or supportive of grizzly bear conservation would be compelling.

III. The Council Should Not Recommend an Increase in Funding to Pay for Unconfirmed Livestock Losses.

The Council appears to be considering a recommendation to increase the amount of funding available for compensation so that it can be used by the LLB to pay for unconfirmed depredations. Such a recommendation would be misguided for several reasons.

A. Montana's compensation system is already relatively generous.

First, Montana already takes a relatively liberal approach to compensation. Montana law requires the reimbursement of up to the fair market value ("FMV") of animals whose deaths are determined to be "confirmed" or "probable" depredations.[56] While some other jurisdictions compensate for probable losses at a lower rate than confirmed losses,[57] the LLB reimburses 100 percent of FMV for both confirmed and probable losses.[58]

In addition, Montana law allows compensation for losses that may not have been caused by predators. Under the law, a "confirmed" loss is defined as one where there is "reasonable physical evidence that livestock was actually attacked or killed . . . that allows a reasonable inference of wolf, lion, or grizzly bear predation on an animal," even if it "has been largely consumed."[59] A "probable" loss means one where there is "the presence of some evidence to suggest possible predation but a lack of sufficient evidence to clearly confirm predation by a

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[53] See https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/technical/cp/ncps/.
[54] See https://westernlandowners.org/usda-wildlife-services-to-use-1-38m-to-implement-and-study-nonlethal-predation-management/.
[55] See https://www.nrdc.org/experts/zack-strong/congress-funds-new-nonlethal-conflict-prevention-positions.
[56] See M.C.A. § 2-15-3112(2)(a).
[57] For example, Washington, Arizona, New Mexico, Alberta, Manitoba, Saskatchewan all compensate probable losses at half the rate of confirmed losses, while Minnesota, British Columbia and Ontario compensate for confirmed losses but not probable losses.
[58] See, e.g., FWP, Montana Annual Report, Wolf Conservation and Management (2018), p. 13.
[59] See M.C.A. § 2-15-3112(6)(a).

particular species."[60] These definitions do not require certainty of depredation. Such latitude enables ranchers in Montana to be reimbursed for losses even in situations where there is doubt that the losses were due to predation.

Also, the practice of compensating full FMV for probable losses, and the current definitions of confirmed and probable, help to offset situations where actual depredations cannot be compensated (such as when insufficient remains of a carcass prevents making a "confirmed" or "probable" determination).

B. There is no empirical basis for "multipliers."

Second, there is little precedent, and no scientific justification, for applying specific ratios (or "multipliers") to compensation for unconfirmed losses. Only two jurisdictions in North America appear to currently use multipliers: Washington and Wyoming. Even in these states, multipliers are not applied to all losses, but are instead limited to specific geographies and predator species.[61] Further, a recent report concluded that there was no clear empirical support for the ratios used in either state (Harris 2020). Specifically, the report could find no "specific numeric justification" for the ratios used by Washington,[62] and found that the study relied upon for Wyoming's ratios (Sommers et al. 2010) "suffered from design and analytical flaws, rendering inferences from its results unreliable."[63]

C. Increasing compensation would not address the root issue: reducing conflicts.

Lastly, increasing the amount of funding available for compensation so that the LLB could also pay for unconfirmed losses would not contribute to the fundamental objective and need to reduce conflicts—and could even inhibit that goal by disincentivizing coexistence efforts and failing to improve social tolerance. Increasing compensation funding to pay for unconfirmed losses would "only at best address the symptoms and not the cause of the problem."[64] It would not provide resources, information, or assistance to landowners and producers desiring to be proactive about protecting their property or livestock. On the contrary, it could risk being counter-productive by disincentivizing producers from expanding their use of proactive conflict-reduction measures (Bulte et al. 2005). Such a result would "reduce husbandry practices [while doing] nothing to decrease depredation" (Morehouse et al. 2018).[65] No matter how much funding for compensation

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[60] See M.C.A. § 2-15-3112(6)(c).
[61] Washington compensates wolf confirmed wolf depredations at 200% FMV if they occur on grazing sites exceeding 100 acres in size. Wyoming compensates depredations (the state does not distinguish between confirmed and probable) by bears and mountain lions at 350% FMV and by wolves in the northeastern part of the state where they are designated as "trophy game animals" at 700% FMV.
[62] See Harris 2020, p. 14.
[63] Id. at p. 20.
[64] See F. Lamarque et al. *Human-Wildlife Conflict in Africa: Causes, Consequences and Management Strategies* (Rome: Food and Agriculture Organization of the United Nations, 2009), pp. 37-72.
[65] See Morehouse et al. 2018, p. 2.

might be increased, "in the absence of incentives for rural residents to protect their assets, a permanent state of conflict is assured."[66]

What is more, investing more in compensation would be unlikely to improve attitudes toward grizzlies. As Richard Harris, FWP's Grizzly Bear Plan Coordinator, recently reported:

> [A]ll the research I've reviewed that has attempted to measure producer attitudes rigorously has concluded that attitudes toward predators, per se, are generally not improved as a result of compensation for losses (Agarwala et al 2010, Marino et al. 2016, Montag et al. 2003, Naughton-reves et al. 2003, Naughton and Treves 2005, Rigg et al. 2011, Treves et al. 2009).[67]

Investing more money into compensation to pay for unconfirmed losses would fail to address the root problem (reducing conflicts), risk disincentivizing proactive conflict prevention, and would be unlikely to increase social tolerance. For these reasons, we urge the Council not to advance such a recommendation.

IV. Conclusion and Recommendations

For the reasons described above, hunting grizzly bears would be unlikely to increase social tolerance or public faith in Montana's approach to wildlife management. Likewise, devoting more funding to compensation for unconfirmed losses would not only fail to increase social tolerance, it could disincentivize efforts to achieve a goal all Montanans should hold in common: reducing human-grizzly conflicts. Instead, the Council should focus on identifying opportunities for greater investment in conflict-prevention measures that would benefit communities and bears alike. As a result, in addition to the recommendations NRDC put forward in its previous comments, we urge the Advisory Council to also make the following recommendations:

1) At the local level, in coordination with FWP, all Montana counties and municipalities in or near grizzly bear range should begin, or continue, to inform residents and visitors about the potential presence of grizzlies and take affirmative steps to prevent or reduce human-bear conflicts (see Attachment A, NRDC letter to Bozeman City Commission and Planning Board, as an example).

2) At the state level, legislation should be introduced to ensure that general funds appropriated annually to the Livestock Loss Board equally prioritize compensation and nonlethal conflict prevention.

3) Agricultural associations, conservation organizations, and other affected stakeholders should urge:

    a. NRCS to take any needed steps, such as revising its national conservation practice standards, to make more funding available to support conflict-prevention efforts involving grizzly bears and other native carnivores;

[66] See Nyhus et al. 2005, p. 110.
[67] See Harris 2020, p. 6.

b. Congress to expand the Wolf Livestock Loss Demonstration Project to include grizzly bears and increased funding for conflict prevention; and

c. Congress to approve a $1.38 million appropriation for Wildlife Services for FY21 to pay for nonlethal conflict-prevention positions and activities in Montana and other states.

4) All Montanans living, working, or recreating in or near grizzly bear range should make all reasonable efforts to proactively prevent conflicts, such as by carrying bear spray, securing attractants with electric fencing or other means, and using guard dogs or other strategies to protect livestock.

Thank you for considering these comments.

Sincerely,

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References

Andrén, H. et al. 2006. Survival rates and causes of mortality in Eurasian lynx (*Lynx lynx*) in multi-use landscapes. Biological Conservation 131, no. 1: 23–32.

Bulte, E.H. et al. 2005. Why compensating wildlife damages may be bad for conservation. The Journal of Wildlife Management 69, no. 1:14-19.

Eneas, K.L. 2020. Influence of livestock and electrified fences on livestock depredation and habitat selection by grizzly bears in the Mission Valley, Montana. Graduate Student Theses, Dissertations, & Professional Papers, 11551.

Harris, R.B. 2020. Literature review of livestock compensation programs: considering ways to assist livestock producers with grizzly bear conservation efforts in Montana. Montana Fish, Wildlife & Parks Background Discussion Paper, p. 14.

Hogberg, J. et al. 2015. Changes in attitudes toward wolves before and after an inaugural public hunting and trapping season: early evidence from Wisconsin's wolf range. Environmental Conservation, pp. 1-11.

Kaczensky, P. et al. 2003. Public attitudes towards brown bears (*Ursus arctos*) in Slovenia. Biological Conservation 118:661-674.

Morehouse, A.T. et al. 2018. Coexistence with large carnivores supported by a predator-compensation program. Environmental Management 61, 719–731.

Nyhus, P.J. et al. 2005. Bearing the costs of human-wildlife conflict: the challenges of compensation schemes, in People and Wildlife: Conflict or Coexistence? Cambridge University Press.

Shivik, J.A. 2006. Tools for the edge: What's new for conserving carnivores. USDA National Wildlife Research Center – Staff Publications. Paper 4.

Smith, M.E. et al. 2000. Review of methods to reduce livestock depredation II. Aversive conditioning, deterrents and repellents. Acta Agriculturae Scandinavica, Section a - Animal Science 50(4): 304–15.

Smith, T.S. et al. 2008. Efficacy of bear deterrent spray in Alaska. The Journal of Wildlife Management 72(3):640-645.

Smith, T.S. et al. 2012. Efficacy of firearms for bear deterrence in Alaska. The Journal of Wildlife Management 1-7.

Smith, T.S. et al. 2018. Portable electric fencing for bear deterrence and conservation. Human–Wildlife Interactions: Vol. 12: Iss. 3, Article 3.

Young, J.K. et al. 2018. When strange bedfellows go all in: a template for implementing non-lethal strategies aimed at reducing carnivore predation of livestock. Animal Conservation, pp. 1-3.

Attachment A

May 11, 2020

Bozeman City Commission
Bozeman Planning Board
agenda@bozeman.net

Re: Comments on Draft Bozeman Community Plan; Recommendations to Incorporate Human-Bear Conflict-Prevention Measures

Dear Bozeman City Commission and Bozeman Planning Board:

Thank you for your leadership and for all that the City has done to keep Bozeman residents safe and supported over the last few months. We are grateful to live in such a close-knit and compassionate community—particularly during such a difficult time.

On behalf of the Natural Resources Defense Council ("NRDC") and our more than 300 Bozeman-area members, as well as the undersigned Bozeman-area conservation organizations, we appreciate the opportunity to submit the following comments on Bozeman's Draft Community Plan ("Draft Plan"). Thank you for all of the time, consideration, and effort that has gone into developing the Draft Plan. It is a thoughtful, forward-looking document that will serve as an important guide to help Bozeman successfully navigate the many challenges that the City will face in the years ahead.

We offer the following thoughts and recommendations on one issue that remains, however, largely unaddressed: reducing Bozeman-area human-wildlife conflicts. Specifically, we suggest measures that could be incorporated into the Draft Plan—as well as other City planning documents, municipal ordinances, and the City's webpage—that could help mitigate human-bear conflicts. Bozeman has a long history of human run-ins with black bears; unless action is taken, not only will those conflicts continue, but residents could also begin to experience encounters with grizzly bears as the Yellowstone-area grizzly population continues to expand northward toward the Gallatin Valley.

Despite Bozeman's history of human-bear problems, there seem to be very few plans, policies, committees, or ordinances in place aimed at reducing them. By contrast, numerous other communities throughout the Northern Rockies region and across North America have adopted effective measures designed to keep both humans and bears safe. We propose several steps the City could take to help ensure that Bozeman residents and their property remain safe and secure, and that bears remain in the wild and out of harm's way.

Attachment A

I. Human-Bear Conflicts in Bozeman

For many years, Bozeman residents have regularly encountered black bears. Bozeman Police Department reports published in the Bozeman Daily Chronicle indicate that between 2014 and 2019, there were at least 47 human-black bear conflicts, and dozens more black bear sightings. These are just the published reports—a small fraction of total reports. These reports also do not include calls to the Gallatin County Sheriff's Office or Montana Fish, Wildlife & Parks ("FWP"), or unreported incidents or sightings (of which there were likely many more). Reported conflicts included: bears trying to access chickens[1] and fruit from trees;[2] wandering inside garages,[3] homes,[4] and the high school;[5] eating garbage;[6] and getting hit by vehicles.[7]

Such incidents can result in property damage and put human safety at risk. In addition, all too often, they can result in bears being killed. For example, FWP captured and euthanized a black bear in Bozeman last summer, because it had become accustomed to food rewards from humans. Before being killed, the bear had visited multiple residential neighborhoods, followed a woman who was walking her dogs in Lindley Park, broke into a backyard livestock enclosure, and frequented homes with bird feeders. FWP's Regional Supervisor in the Bozeman area described this as "a sad news story with an all-too-common sad ending."[8]

Unless steps are taken to reduce such incidents, they will continue—and could even increase. As Bozeman continues to grow, more people could come into contact with bears. In addition, climate change is expected to exacerbate fluctuations in "natural food productivity years"—that is, years when natural bear foods like berries are far less available.[9] Studies indicate that bears use urban areas (and come into conflict with people) more frequently during poor natural food years.[10]

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[1] See, e.g., https://www.bozemandailychronicle.com/police_reports/police-reports-for-sept/article_eb7141bd-fea7-5518-9f91-131575d67a95.html.
[2] See, e.g., https://www.bozemandailychronicle.com/police_reports/police-reports-for-sept/article_75e9b072-4efc-5b36-ba27-54c1fc17cbb4.html.
[3] See, e.g., https://www.bozemandailychronicle.com/police_reports/police-reports-for-oct/article_96154fb7-a758-5bfe-8945-c0b5b2bbe80b.html.
[4] See, e.g., https://www.bozemandailychronicle.com/police_reports/police-reports-for-sept/article_d3c11fea-c24f-5aba-8cef-6a4cdcff82bf.html.
[5] See https://www.youtube.com/watch?v=Y4jIBVlW5UY.
[6] See, e.g., https://www.bozemandailychronicle.com/police_reports/police-reports-for-nov/article_8e2caa5e-6c58-11e4-9f40-873523b6316b.html.
[7] See, e.g., https://www.bozemandailychronicle.com/police_reports/police-reports-for-oct/article_a600b3be-fe2c-51db-bdb7-eb09940c25c2.html.
[8] See http://fwp.mt.gov/news/newsReleases/fishAndWildlife/nr_1244.html.
[9] See Baruch-Mordo, Sharon et al. "Stochasticity in natural forage production affects use of urban areas by black bears: implications to management of human-bear conflicts." *PloS one* vol. 9,1 e85122. 8 Jan. 2014, doi:10.1371/journal.pone.0085122.
[10] Id.

Also, while we are not aware of any conflicts between humans and grizzly bears having occurred in the Bozeman area in recent decades, it is possible that such encounters could occur in the near future. As indicated by the maps in Appendix I, the Yellowstone-area grizzly population is expanding northward. It seems likely that dispersing individuals (such as young male bears in search of new territory) could appear near—or even within—Bozeman's city limits one year soon. Being well-prepared for this scenario in the Bozeman area will benefit both people and bears.

II. Existing Plans and Policies

Despite its history of human-bear conflicts, the City appears to have very few plans or policies in place to reduce the risk of future incidents.

A. City Plans

Bozeman's Strategic Plan does not mention human-wildlife conflicts. Nor does its Parks, Recreation, Open Space and Trails Plan, its Downtown Bozeman Improvement Plan, its Bozeman Creek Neighborhood Plan, its Bozeman Creek Enhancement Plan, or its Urban Forestry Management Plan.

Encouragingly, Bozeman's 2009 Community Plan does refer to human-wildlife conflicts several times. For example, it states:

- "Interactions between humans and wildlife created by subdivisions in important wildlife habitat often create situations which are harmful to wildlife."[11]

- The "wildlife urban interface [between the City and public lands] poses threats and conflicts for property owners not often encountered in urban areas. Wildland fire and wildlife conflicts are the two most common concerns."[12]

- "Conflicts with wildlife can also create very emotional and costly situations. Learning to live alongside wildlife like bears, mountain lions and elk will help property owners manage their property in ways which reduces these conflicts."[13]

- "Bozeman and Gallatin County, along with other municipalities, have prepared a Hazard Mitigation Plan, 2006" in order to address "[t]he safety of people and property due to threats to public health and safety, including but not limited to wildfire, flooding, erosion, water pollution, hazardous wildlife interactions, and traffic hazards."[14]

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[11] See 2009 Community Plan, available at https://www.bozeman.net/home/showdocument?id=9641 (June 1, 2009), p. 15-5.
[12] Id. at p. G-9.
[13] Id.
[14] Id. at p. H-19.

However, the only substantive commitment identified by the 2009 Community Plan aimed at reducing human-wildlife conflicts is to "ensure the maintenance of an adequate transition zone between the community and" nearby national forest and state lands.[15] It is not clear what is meant by "adequate transition zone"—the phrase does not appear anywhere else in the Plan.

Further, neither that phrase nor that commitment appear in the City's current Draft Plan. The only mention of human-wildlife conflicts in the Draft Plan is:

> The habitat needs of larger and/or predatory wildlife species such as deer, moose, bears, coyotes, or similar species will not be met within urban density development and will likely be in conflict with people. Therefore, these types of animals are found to be undesirable within the City boundaries.[16]

However, merely finding the presence of large wildlife species to be undesirable and in conflict with people, without identifying any corresponding steps to prevent such conflicts from occurring, is not solutions-oriented.

Finally, the 2009 Community Plan indicates that a 2006 joint City-County Hazard Mitigation Plan addresses, among other things, "hazardous wildlife interactions." However, the most recent version of the Hazard Mitigation Plan, published in 2019, contains no mention of human-wildlife conflicts or interactions.

B. City Ordinances

Bozeman's Municipal Code also contains few ordinances designed to reduce human-wildlife conflicts. For example, it does not contain any provisions prohibiting the feeding of wildlife (intentionally or unintentionally), requiring solid waste to be stored in bear-proof containers in high-risk areas, or regulating the planting of vegetation that attract bears (such as fruit trees, berry bushes, and vegetable gardens).

Bozeman ordinances do require that chickens (a common bear attractant) be provided with "predator-proof" houses and enclosures;[17] however, no such protections are required for other domestic animals, such as honey bees (and their hives) or livestock. Similarly, city ordinances require that chicken feed be kept in "predator-proof" containers,[18] but do not require the same of other types of bear attractants, such as barbeques, pet food, or bird seed.

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[15] Id. at p. 9-9.
[16] See 2020 Draft Community Plan, available https://www.bozeman.net/home/showdocument?id=10026 (March 17, 2020), p. 58.
[17] See Bozeman Municipal Code § 8.02.070(C)(3), (4).
[18] Id. at § 8.02.070(C)(8).

In addition, the use of electrical fencing—an extremely effective bear deterrent—is prohibited in most areas within city limits.[19]

III. Other Communities

Several other communities in Montana and other states have taken steps to reduce human-bear conflicts. These examples offer useful ideas for policies and programs that Bozeman could also consider implementing.

A. Missoula

In 2004, an organization called Missoula Bears began to focus on minimizing human-bear conflicts in the Rattlesnake neighborhood in Missoula. Since then, the effort has expanded to include all of Missoula County, as well as the Bitterroot, Blackfoot, upper Clark Fork, lower Clark Fork, and Mission valleys. It has also grown to include a number of partners, including Defenders of Wildlife, FWP, the University of Montana, and the U.S. Fish and Wildlife Service. The group's mission is to minimize conflicts with bears and other wildlife, while also increasing human safety, minimizing bear mortalities, keeping neighborhoods clean, and "[r]educing the amount of time FWP spends addressing bear conflicts each year, allowing FWP to use their time more effectively in other areas of concern."[20]

The group's website provides regular reports about bear and mountain lion activity in the area. It also provides information about how to effectively use electric fencing, as well as how to prevent bears from damaging bird feeders, fruit trees, gardens, compost, barbeques, coolers, chickens, livestock, livestock feed, pet food, garbage, and other bear attractants.[21]

In 2016, the City of Missoula also designated a "Bear Buffer Zone" in areas around the perimeter of the City that were experiencing bear conflicts. The City adopted ordinances regulating the storage of garbage and allowing the use of electric fences within the zone.[22]

B. Big Sky

In 2013, the Wildlife Conservation Society led the formation of the Bear Smart Big Sky Council, a diverse coalition of conservation groups, state and federal agencies, local businesses, and community organizations that came together to provide Big Sky residents with information about, and assistance with, reducing human-bear conflicts. In the time since, the Council has overseen a more than 50% increase in the number of Big Sky residents using bear-resistant trash

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[19] Id. at § 38.350.060(D)(1).
[20] See http://missoulabears.org/about/our-mission/.
[21] See http://missoulabears.org/.
[22] See Missoula Municipal Code §§ 8.28.085, 12.31.070(D).

cans, and a notable decline in bears relocated and lethally removed each year as a result of coming into conflict with humans.[23]

C. Gardiner

Through its website, the Gardiner Chamber of Commerce provides information to visitors, including links to National Park Service instructional videos, about how to avoid surprise encounters with bears and how to react if they do occur; how to carry and use bear spray; how to camp in bear country; and how to safely view bears from vehicles.[24] While these guidelines focus more on reducing bear conflicts with recreationists than with urban residents, the website is nonetheless a useful example of how information about living safely with bears might be effectively conveyed to the public.

D. Jackson and Teton County, Wyoming

In 2006, the Town of Jackson and Teton County signed the "10x10 Resolution" to commit to a ten percent reduction in electricity use and a ten percent reduction in fuel use.[25] The Resolution also implemented a "Green Building Energy Checklist," which included potential points for green-certification if there were no fruit-bearing trees or bear attractants on the property's landscape, in order to reduce human-bear conflicts.

Later, in 2015, Teton County adopted a Resolution titled the "Teton County Land Development Regulations," which established bear conflict-prevention standards and bear-resistance standards within "Conflict Priority Areas" as determined by data obtained from the Wyoming Game and Fish Department.[26] The conflict-prevention standards require the use of bear-resistant containers or enclosures and bear-proof bird feeders. The Resolution also prohibits the feeding of black bears and grizzly bears in all areas of Teton County, outlining the risks posed by supplemental feeding to both human and bear populations.[27] The Land Development Regulations can be accessed on the County's website alongside its Comprehensive Plan.[28]

E. Boulder and Colorado Springs, Colorado

In 2012, an organization called the Boulder Bear Coalition began investigating ways to reduce human-bear conflicts within the City of Boulder. The organization and City officials identified trash as a major attractant that lured bears into town. Since then, the Boulder Bear Coalition has worked with the City and Colorado Parks and Wildlife to implement a "Mandatory Bear-

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[23] See https://www.wcscommunitypartnerships.org/bear-smart.
[24] See https://www.visitgardinermt.com/item/229-staying-safe-in-bear-country?highlight=WyJiZWFyIiwiYmVhcidzIl0=.
[25] See https://www.jacksonwy.gov/DocumentCenter/View/335/10-by-10-Initiative-Final-Report-PDF?bidId=
[26] See Teton County Land Development Regulations, § 5.2.2.
[27] Id. at § 5.1.3.
[28] See http://www.tetoncountywy.gov/1188/Comprehensive-Plan-LDRs.

Resistant Cart Zone" established through the city's Bear Protection Ordinance in 2014.[29] The ordinance requires all trash and curbside compost to be secured from bears at all times by being placed in a bear-resistant cart or container until collected by waste management services. Information on bear-resistant containers and other proactive bear resources are available on the City's "Co-existing with Bears" webpage.[30]

More recently, in March 2020, the Colorado Springs City Council established a "Bear Management Area" to help mitigate human-bear conflicts west of I-25. The City enacted two ordinances that require residents and business owners to secure their trash using bear-resistant containers within the Bear Management Area.[31]

F. Other Communities

The Get Bear Smart Society, a conservation organization based in Whistler, British Columbia, describes how communities in many other states, including Alaska, Nevada, Virginia, and New Jersey, as well as in several Canadian Provinces, such as British Columbia and Ontario, have also implemented successful bear-conflict reduction programs.[32]

IV. Recommendations

To reduce the potential for human-bear clashes in Bozeman, we recommend that the City of Bozeman consider taking the following steps:

A. Strategic Plan

Section 6 of Bozeman's Strategic Plan ("A Sustainable Environment") includes many important recommendations for how to "cultivate a strong environmental ethic" by protecting "clean air, water, open spaces and climate."[33] One missing component of cultivating a strong environmental ethic, however, is promoting coexistence between humans and wildlife by implementing proactive, non-lethal conflict-prevention methods. Therefore, we propose the following addition to the strategic plan:

> *6.7 Reduce human-bear conflicts* – Develop a plan to mitigate conflicts between humans and bears through the use of proactive, non-lethal measures.

NRDC, and the undersigned organizations, would welcome the opportunity to work with the City to develop such a plan.

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[29] See City of Boulder Ordinance 8161.
[30] See https://bouldercolorado.gov/wildlife.
[31] See https://coloradosprings.gov/bears.
[32] See http://www.bearsmart.com/managing-communities/success-stories/.
[33] See Bozeman Strategic Plan, available at http://weblink.bozeman.net/WebLink8/0/doc/154660/Electronic.aspx (March 5, 2018), p. 9.

B. Draft Community Plan and Other City Plans

Similarly, Theme 3 of the Draft Plan ("A City Influenced by Our Natural Environment, Parks, and Open Space") recognizes important conservation principles shared by the Bozeman community, such as that the City is "home to an outdoor-conscious population that honors and protects our natural environment" and that " [t]he natural environment should be conserved and development should respect significant natural features and systems."[34]

Of course, wildlife is a central feature of Bozeman's natural environment. Therefore, the Draft Plan's goals should be expanded to reflect the City's aspirations to coexist with local wildlife—particularly bears. Under Goal EPO-4, we suggest adding a sub-goal identical to the strategic plan provision recommended above:

> *EPO-4.7* Develop a plan to mitigate conflicts between humans and bears through the use of proactive, non-lethal measures.

Similar provisions could be added to other City plans where relevant.

C. Advisory Board

We applaud the City's creation of numerous Citizen Advisory Boards to address important issues ranging from climate change to economic development to trails and open space.[35] The City should consider forming an additional board, or expand the scope of an existing board, to focus on reducing human-wildlife conflicts—perhaps with an initial emphasis on reducing human-bear conflicts. Particularly given the number of conservation organizations based in Bozeman, and the number of resident wildlife enthusiasts, it is likely that community members would show significant interest in participating on, and would bring considerable expertise to, such a board.

D. Education and Outreach

The City should consider including on its website, or in pamphlets distributed to residents in high-risk bear-conflict areas, information about how to safely live with bears.

E. Conflict monitoring

The City should consider creating and making available to the public a detailed database of human-bear conflicts in the Bozeman area, both to alert residents to the potential presence of bears in their area, and to track improvements in reducing negative human-bear interactions as new policies are put in place.

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[34] See 2020 Draft Community Plan, available https://www.bozeman.net/home/showdocument?id=10026 (March 17, 2020), p. 22, 58.
[35] See https://www.bozeman.net/government/citizen-advisory-boards.

F. City Ordinances

Existing ordinances should be revised, or new ordinances adopted, to incorporate provisions designed to reduce human-bear conflicts, such as designating zones in which bear-proof garbage containers would be required or electric fencing as a bear deterrent would be allowed.

G. Collaboration with Gallatin County

Finally, the City of Bozeman should consider collaborating with Gallatin County to address human-wildlife conflicts at a broader scale. Such partnerships have proven effective in other communities, such as the City of Missoula-Missoula County and Town of Jackson-Teton County examples described above. Bozeman and Gallatin County have worked together on similar issues, such recent efforts to address growth and development in the Bozeman-Belgrade-Four Corners area through the Triangle Community Plan.[36] City and County residents both value conservation and wildlife, as demonstrated by the passages of city[37] and county[38] open space bonds in recent years. Jointly developing a plan to mitigate human-wildlife conflicts would be a productive and timely opportunity for the City and County to benefit our area's human and animal inhabitants alike.

V. Additional Resources

The Get Bear Smart Society's website—http://www.bearsmart.com/—provides a wealth of information about bear biology and behavior, effective techniques for deterring bears and managing bear attractants, how to safely live, work, and recreate in bear country, and steps that communities and neighborhoods can take to mitigate human-bear conflicts (such as conducting bear hazard assessments, developing human-bear conflict management plans, and adopting effective ordinances and bylaws).

Similarly, FWP's "Be Bear Aware" website contains an abundance of information specific to living with bears in Montana.[39] Finally, NRDC staff and representatives of the undersigned conservation organizations would be happy to offer our thoughts, advice, and help.

VI. Conclusion

NRDC and the undersigned organizations are committed to protecting the planet's wildlife and wild spaces and to ensuring a safe and healthy environment for all living things. An important

[36] See https://gallatincomt.virtualtownhall.net/planning-community-development/pages/triangle-community-plan.
[37] See https://www.bozeman.net/city-projects/top-trails-open-space-and-parks-program/resources/trails-open-space-and-parks-top-program-background.
[38] See https://www.bozemandailychronicle.com/news/politics/gallatin-county-voters-ok-open-space-levy/article_9e993c89-dbc6-5df5-b65a-1994a79e4322.html.
[39] See http://fwp.mt.gov/fishAndWildlife/livingWithWildlife/beBearAware/.

focus of many of our organizations' work is to proactively reduce human-carnivore conflicts in the Northern Rocky Mountains and beyond.

We feel reducing human-wildlife conflicts—both to protect human health, safety, and property and to maintain healthy wildlife populations—represents a critical part of the Bozeman environmental ethic. By taking the recommended steps to mitigate conflicts with bears in the Bozeman area, the City can create a more thoughtful and informed community that will make for better neighbors to multiple types of wildlife that are often deemed "nuisance" animals once they start to access unsecured anthropogenic food sources. A commitment to proactively address and mitigate potential run-ins with wildlife is a necessary addition to the City's Strategic and Community Plans. We would welcome an opportunity to work with the Commission and the Bozeman community to develop and implement a conflict-mitigation plan and our other recommendations above.

Thank you for considering these comments.

Sincerely,

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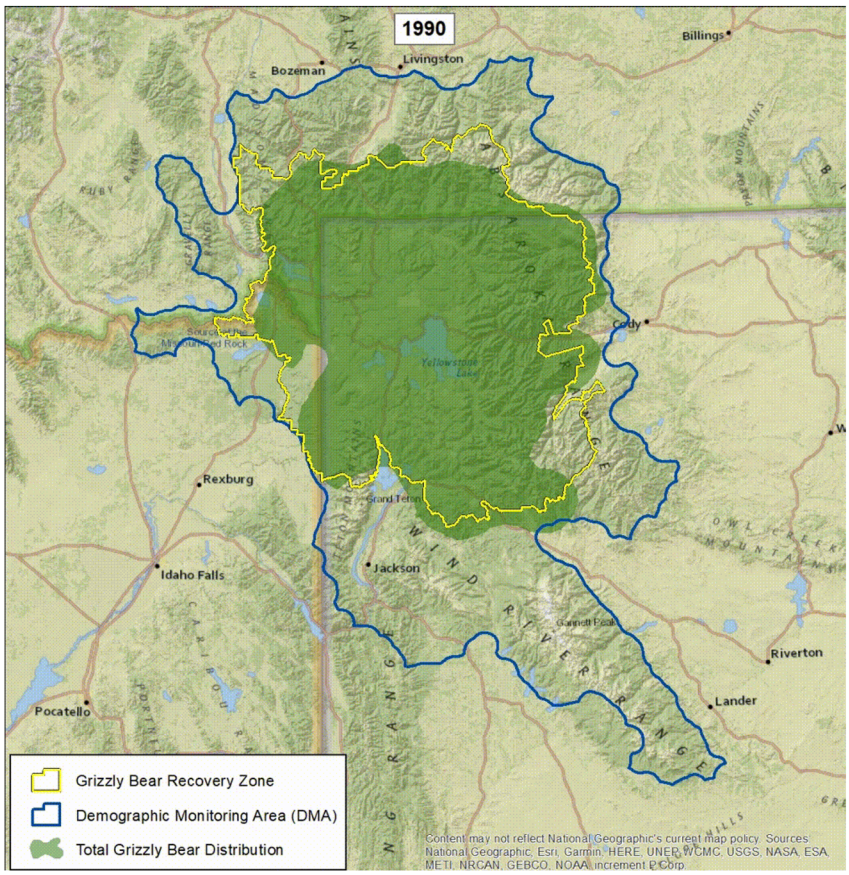
Attachment A

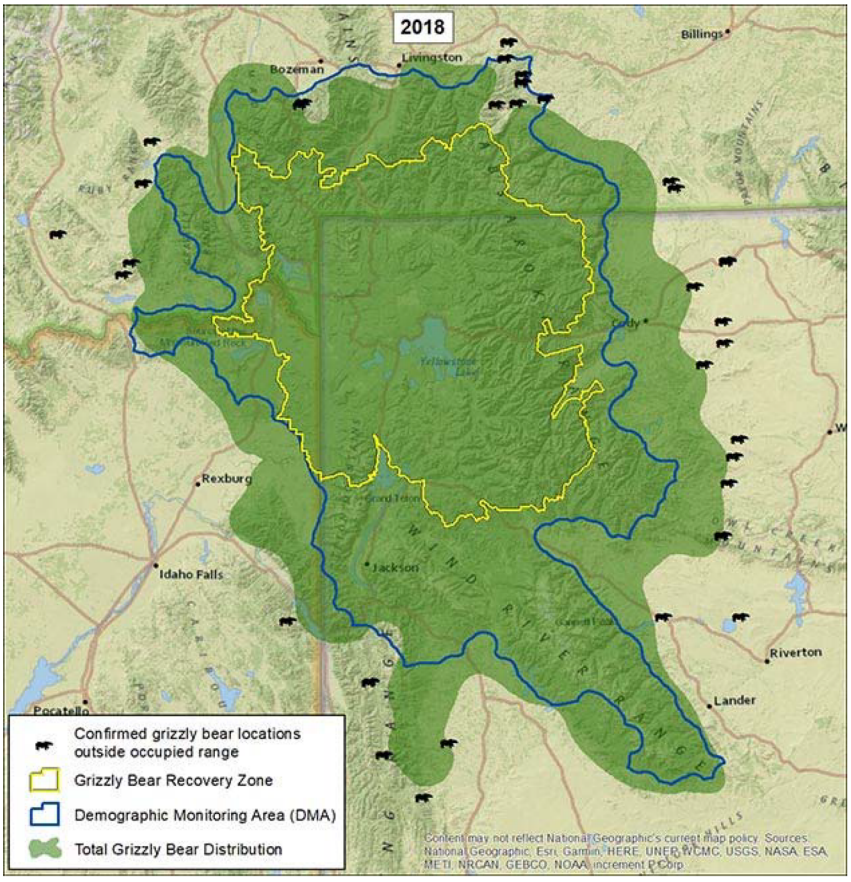
Appendix I

Greater Yellowstone Ecosystem Grizzly Bear Distribution, 1990 and 2018[40]



[40] See https://wgfd.wyo.gov/wildlife-in-wyoming/more-wildlife/large-carnivore/grizzly-bear-management.

Attachment A



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September 23, 2020

The Honorable John Barrasso
Chairman
U.S. Senate Committee on Environment and Public Works
Washington, DC 20510

The Honorable Thomas Carper
Ranking Member
U.S. Senate Committee on Environment and Public Works
Washington, DC 20510

Dear Chairman Barrasso and Ranking Member Carper:

On behalf of the National Wildlife Federation and our more than six million members, we write to share our concerns with the Grizzly Bear State Management Act, S. 614. NWF supports delisting grizzly bears in the Greater Yellowstone Ecosystem from the Endangered Species Act, seeing it as the next appropriate step in the evolution of their recovery. However, we do not support legislative intervention in the administrative and judicial process of deciding to list or delist them under the Endangered Species Act.

The recovery of grizzly bears in the lower 48 is a true American conservation success story. They went from being a population on the brink to of extinction when they were listed in 1975 to now expanding their range and living in places they have not been seen for a century. Their rebound in the Greater Yellowstone Ecosystem as well as the Northern Continental Divide Ecosystem is a testament to what can be achieved when stakeholders ranging from the U.S. Fish and Wildlife Service, state wildlife agencies, non-governmental organizations and individuals work together.

Pursuing a legislative delisting of the greater Yellowstone grizzly bear population undermines the ESA and politicizes wildlife management. Instead of going down this road, NWF recommends Congress focus on finding a bipartisan solution to address how species are delisted. A clear, durable and enduring delisting process that recognized success once adequate management plans have been established, and species recovery goals have been met would improve how the ESA functions as a whole. This approach would benefit Yellowstone grizzlies, and other species that have been saved from extinction because of ESA protections.

In addition to improving the delisting process, NWF recommends the FWS reengage a conversation with stakeholders and governors of Idaho, Montana, and Wyoming to address the concerns of the 9th Circuit Court of Appeals -- a strategy for connecting grizzly bear populations in the northern Rockies. The federal-state partnerships that have been forged around delisting have provided an important framework for addressing these problems moving forward. A three-state stakeholder process should be given serious consideration as it could improve the FWS's case for delisting, and broaden public understanding and support for grizzly bear populations in the region.

A similar process has recently been completed in Montana. The Grizzly Bear Advisory Council, formed by Governor Bullock, was comprised of Montanans with a wide range of interests and perspectives including ranchers, conservationists, hunters, loggers, and tribes. The council crafted a series of recommendations for how to manage and conserve grizzlies, especially as the potential for run-ins with people grow due to a greater number of people and bears on the landscape. This is a good process that could be broadened to include Idaho and Wyoming as a way to increase coordination and collaboration amongst the states that will assume management when the bear is delisted. In our view, this approach to addressing the important and complicated issue of grizzly bear management is more durable than pursuing a legislative solution.

The recovery and management of grizzly bears has been and will continue to be a challenge that will depend on people coming together to create solutions that work on-the-ground. We encourage this Committee and this Congress to consider how to best support state efforts to continue grizzly conservation, without undermining essential provisions of the Endangered Species Act.

The National Wildlife Federation stands ready to engage in these important conversations moving forward. We also respectfully request this letter be entered into the hearing record.

Sincerely,

Tom France
Regional Executive Director
National Wildlife Federation

Testimony of the Rocky Mountain Tribal Leaders Council
Senate Committee on Environment & Public Works
Hearing on S. 614, the Grizzly Bear State Management Act
Wednesday, September 9, 2020

Chairman Barrasso, Ranking Member Carper, and Members of the Committee, thank you for the opportunity to provide testimony for the record of the hearing on S. 614, the Grizzly Bear State Management Act (Enzi, R-WY). My name is Gerald Gray and I am the Chairman of the Little Shell Tribe of Chippewa Indians, and Chairman of the Rocky Mountain Tribal Leaders Council's ("RMTLC") Board of Directors. This testimony is provided on behalf of the RMTLC.

The Rocky Mountain Tribal Leaders Council serves tribal nations located in Montana, Wyoming, Idaho, and Alberta, specifically the Blackfeet Nation, the Chippewa-Cree, the Confederated Salish & Kootenai Tribes, the Crow Tribe, the Eastern Shoshone, the Fort Belknap Indian Community, the Fort Peck Tribal Executive Board, the Little Shell Tribe of Chippewa Indians, the Northern Arapaho Tribe, the Northern Cheyenne, the Shoshone-Bannock Tribes of Idaho, and the Piikani Nation of the Blackfoot Confederacy.

The RMTLC member tribes have connections to the lands and cultural resources now found within the Yellowstone National Park and the Greater Yellowstone Ecosystem. These lands are home to the grizzly bear, which is integral to the religious and cultural practices of our tribes. The grizzly bear holds a unique position in our traditional cultures, ceremonies, and spiritual practices.

The RMTLC, its predecessor—the Montana & Wyoming Tribal Leaders Council ("MWTLC"), the Great Plains Tribal Chairman's Association ("GPTCA"), the Blackfoot Confederacy, as well as tribal nations, and organizations from across the country have long fought to protect the sacred grizzly. In 2014, the MWTLC approved an Official Resolution (No. 11, Dec 2014-04), stating that "the sovereignty and spiritual rights of Tribal Nations in Montana and Wyoming are threatened by the proposed delisting of the Yellowstone grizzly bear from the Endangered Species Act protections by the US Fish & Wildlife Service." Further, the RMTLC member tribes are signatories to *The Grizzly: A Treaty of Cooperation, Cultural Revitalization and Restoration* ("Grizzly Treaty"), which aims to revitalize the ancient relationship between Indian tribes and the grizzly, as well as restore balance to land stewardship.

The RMTLC also expressed concerns regarding the delisting of the grizzly bear directly to this Committee, and to the House Committee on Natural Resources. In March 2018, the RMTLC informed Chairman Barrasso of our objection to grizzly bear delisting, and the reinstitution of grizzly trophy hunts. The letter also offered alternative management plans set forth in the Grizzly Treaty. Further, in October 2018, the RMTLC joined the GPTCA, and the Blackfoot Confederacy in providing testimony to this Committee, which stated that any attempt to legislatively nullify the ruling in *Crow Tribe et al v. Zinke* and strip ESA protections from the grizzly bear would violate the federal-Indian trust responsibility. Finally, the RMTLC testified before the House Committee on Natural Resources in May 2019, expressing concern about delisting the grizzly, and support for the Tribal Heritage and Grizzly Bear Protection Act (H.R. 2532), which would ensure permanent protections for grizzly bears, and guarantee Indian tribes a role in conserving and managing the species.

S. 614, the Grizzly Bear State Management Act would direct the Secretary of the Interior to reissue a final rule relating to removing the Greater Yellowstone Ecosystem population of grizzly bears from the Federal list of endangered and threatened wildlife. The intent of the Grizzly Bear State Management Act is inconsistent with the Rocky Mountain Tribal Leaders Council's efforts to protect the sacred grizzly bear. The RMTLC appreciates your attention to this testimony, and we would be pleased to further discuss this issue.

ii. State level

At the state level, one way to increase investment in conflict-prevention measures would be to more evenly balance how the Montana Livestock Loss Board (LLB) is funded. Montana law directs the LLB to address livestock depredations by grizzly bears and other large carnivores in two ways: first, by compensating ranchers for depredations that are determined to be "probable" or "confirmed;" and second, by providing grants to ranchers to help pay for nonlethal conflict-prevention measures to help reduce losses.[45]

However, these two programs are not evenly funded. By law, the compensation program receives $300,000 per year directly from the state general fund.[46] By contrast, the reduction program receives no direct general fund money, and instead receives only "leftover" funding from the compensation program account if that account exceeds $300,000 at the end of the fiscal year.[47] Large amounts paid by the LLB for compensation claims in recent years (over $230,000 in 2018 and over $260,000 in 2019) have left little money available for the reduction program.[48]

LLB funding is also inequitably distributed in other ways. For example, the law prevents the LLB from using compensation program funds to pay for administrative expenses.[49] Instead, those expenses must be paid for out of reduction program funds.[50] In addition, while compensation program funds may only be used for compensation, reduction program funds may be split between providing grants for nonlethal prevention measures and contracting with the federal agency Wildlife Services (for lethal or nonlethal control).[51]

This funding structure disproportionately prioritizes funding for compensation over funding for nonlethal conflict reduction. Instead, the two should be funded equally, with the long-term goal of leveraging the use of conflict-reduction measures to reduce the need to compensate ranchers for livestock losses. The Council should recommend that legislation be introduced to ensure a more equitable approach to investing in compensation and nonlethal conflict prevention (and paying for LLB administrative expenses), while separating any funding for Wildlife Services into its own program and account.

iii. Federal level

Finally, there are several options for generating new resources at the federal level. One opportunity would be to expand the FWS Wolf Livestock Loss Demonstration Project to include grizzly bears, and to increase the annual amount of program funding available for conflict prevention.[52] Another option could be to encourage the Natural Resources Conservation Service

[45] See M.C.A. §§ 2-15-3110 et seq.
[46] See M.C.A. §§ 81-1-112(2); 15-1-122(3).
[47] See M.C.A. §§ 81-1-112(4).
[48] See http://liv.mt.gov/Attached-Agency-Boards/Livestock-Loss-Board/Livestock-Loss-Statistics-2019.
[49] See M.C.A. § 81-1-112(2).
[50] See M.C.A. § 81-1-113(6).
[51] See M.C.A. § 81-1-113(5).
[52] See 7 U.S.C. § 8351, Note § 6201 et seq.; see also https://www.fws.gov/endangered/grants/.

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