

# WESTERN WILDLIFE MANAGEMENT

EPISODE #1

THE BIG, BAD WOLF

TYLER KEMP CAMP/HOOD APRIL 2022

# AN INTRODUCTION

This graphic novel is the culmination of my education in the Western Studies program at the University of Colorado, Boulder. This is a Capstone project about human-wildlife interactions and the politics and science behind Western wolf reintroduction. The wolf debate highlights many key issues surrounding Western studies, making it an interesting case study on the ways that people view themselves and their relationship to Western wild places and the creatures within them. Wolf reintroduction is highly politicized and the science and politics behind it can be difficult to approach based on how it is presented. This project was created as a way to develop alternative forms of science communication and gauge the feasibility of similar projects that could better present the facts behind related controversial issues. The goal of this graphic novel is to make highly politicized wildlife management policy more accessible to the general public, aiming to demonstrate how large predator management follows shifting Western ideology. Specifically, this project follows the transition that has occurred over the past century in how we understand the science of ecosystem dynamics and the role that large predators have within them. The title of this graphic novel infers that it is the first of more possible episodes despite this being a stand alone project. The title nods to how wolf reintroduction is just one part of the much larger story of wildlife management and human-wildlife interactions.

This story explores how the passage of Proposition 114, Colorado's wolf reintroduction bill, may play out in small towns across the Western slope and introduces key issues through the interactions of created characters. The structure of this graphic novel is not laid out in any specific order, except for the comic portion that plays out chronologically, and it is up the reader to piece together this puzzle to gain a full picture of all the players and opinions involved. Characters are used to represent major stakeholders such as the federal government or local ranchers and their actions and opinions largely follow what has been said and demonstrated by these group in the past. Some liberties were taken in creating the narrative plotline and specific wolf management practices, since it is still unclear how Colorado's reintroduction system will play out. This story takes place in the made-up county of Monteclaro, situated somewhere near the real town of Glenwood Spring, Colorado. The towns of Goldenaster, Grand Mesa, and all other associated places are all the work of fiction, unless otherwise stated.

The comic and plot of this graphic novel do not reflect real people or events and were created as a central narrative that all aspects of the wolf debate are framed around. All the papers, books, quotes, interviews, and images included before the publication date of this graphic novel, in April of 2022, reference real works and represent peer-reviewed science and research. A full list of sources used to create this project is included in the work cited page or is otherwise specified. Further readings into predator management and wildlife biology can also be found there. The actions taken by these created characters and arguments presented by them reflect real research conducted by real people or are pulled from real interviews. All the names of the characters do not represent real people, though some first and last names were pulled from the names of the biologists and park management behind the Yellowstone wolf reintroduction in 1995 or from prominent wildlife and ecosystem biologists to honor their contributions to science. Many of the names were chosen to reflect the international effort behind the Yellowstone reintroduction project and the culmination of scientific research conducted around the world on the interactions between predators and ecosystems. Some of these names may feel unfamiliar and so their pronunciations are included below. Finally, this project was created using accessible programs to demonstrate how future works may be created. All art in this graphic novel is original and was created in the free, online version of "Pixlr" and the project was pieced together in Microsoft Publisher.

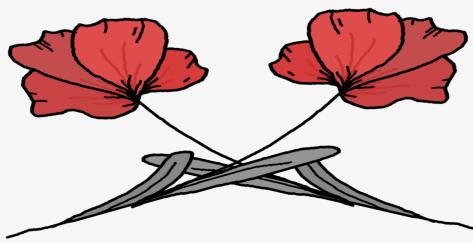
I hope you enjoy reading this as much as I enjoyed creating it.

Elaine Wojcik: "E-lay-nn V-oi-ch-kk"

Thomas Mbewe: "Tom-as m-Bow"

Kim Parreñas: "Kim Pear-en-yas"

Taylor Kostov: "Tay-lore Cost-of"



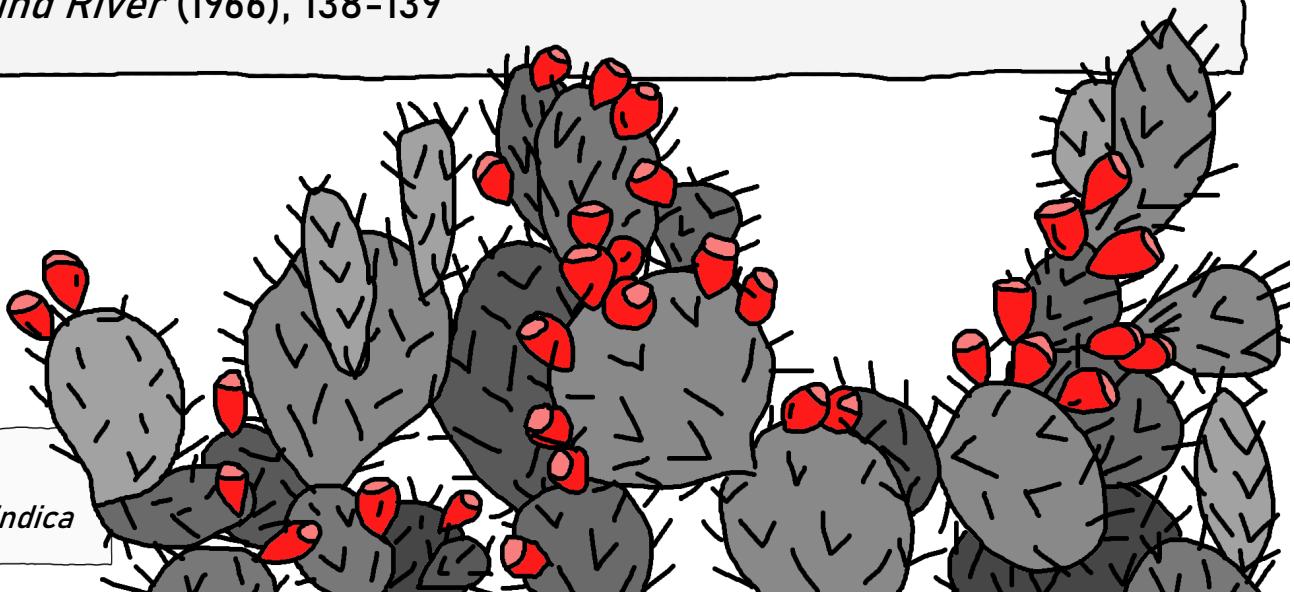
# PROLOGUE

"In those days we had never heard of passing up a chance to kill a wolf. In a second we were pumping lead into the pack, but with more excitement than accuracy: how to aim a steep downhill shot is always confusing. When our rifles were empty, the old wolf was down, and a pup was dragging a leg into impassable slide-rocks, we reached the old wolf in time to watch a fierce green fire dying in her eyes. I realized then, and have known ever since, that there was something new to me in those eyes - something known only to her and to the mountains. I was young then, and full of trigger-itch: I thought that because fewer wolves meant more deer that no wolves would mean hunters' paradise. But after seeing the green fire die, I sensed that neither the wolf nor the mountain agreed with such a view."

Aldo Leopold, *A Sand County Almanac: With Essays on Conservation from Round River* (1966), 138-139

Prickly pear

*Opuntia ficus-indica*



Welcome to camp, partner! Glad to see you've made it off the trail alright. Come and sit—I've got a fresh pot of coffee brewing. Settled? Nice. Its been awfully quite out here recently. A choir of wolf calls used to hold service here every evening, but now no longer. When the sun went down, the wolves would sing. Its been many years since I've heard their songs.

You've never heard them call? Well that's a shame because it is quite something. There just seems to be 'something' missing in their absence. The West no longer feels like the West without them here. It's times like these that I can't help but reflect on how we even got here—why we pushed the wolves out in the first place and why were fighting about bringing them back.

You know, this here whole 'wolf debate' has little to do with the wolves themselves. Really it is just a reflection on how we understand ourselves as "Westerners" and our relationship to the wild creatures we share a home with. The debate is biased because it is wrapped up in Western myths and misconceptions. Mostly it is just a continuation on the centuries old conflict over conservation versus preservation and the struggle to define what "conserving nature" actually means. To understand the 'wolf debate', one must start with the history of the American West—the human, environmental, and geographic.



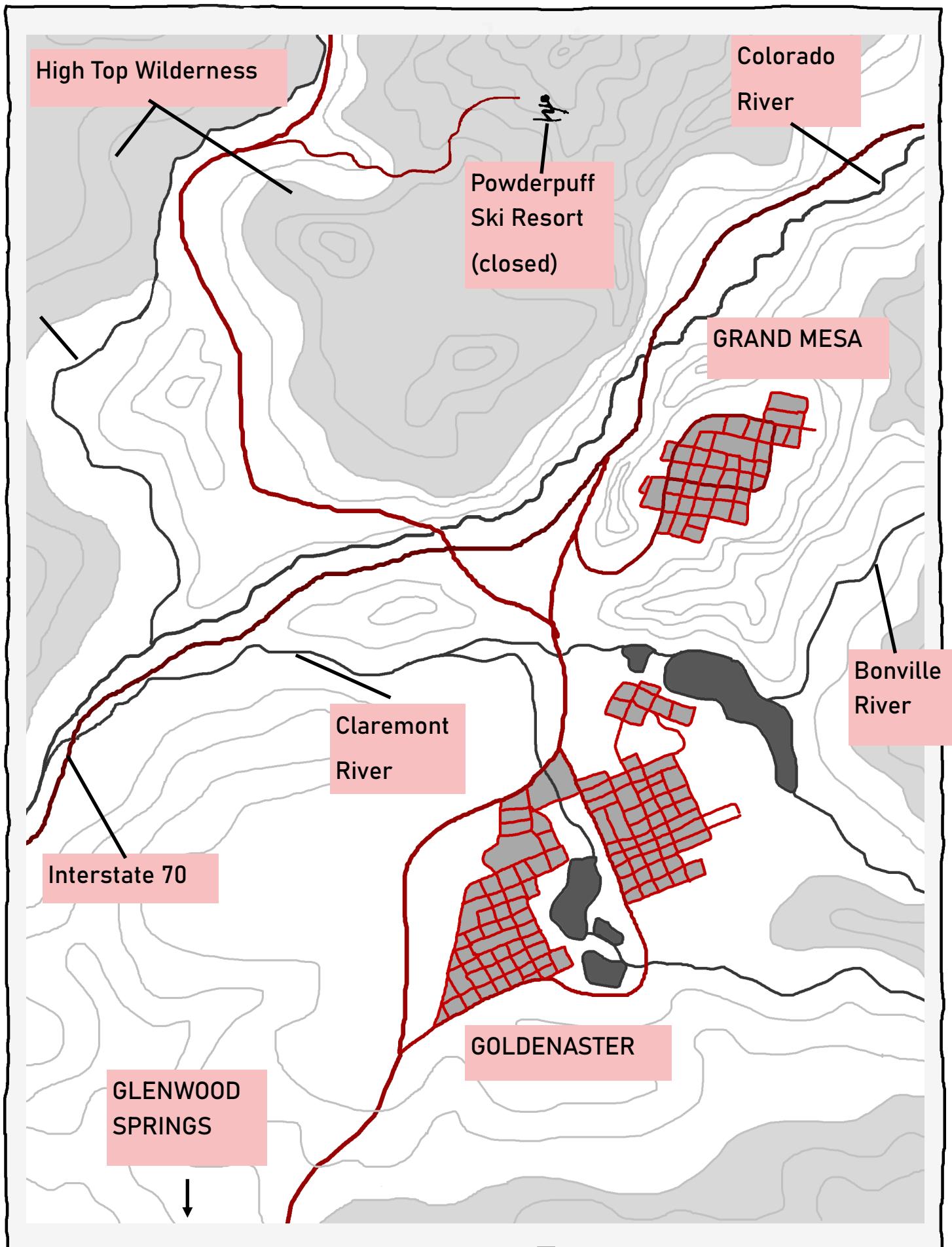
## PROPOSITION 114: “THE WOLF BILL”

Wolves are a keystone species that offer a multitude of ecosystem services that other species rely on to create and maintain healthy populations. Apex predators like the Grey wolf support biodiversity but their direct effect on prey species is location-dependent and hard to estimate in their absence. Colorado has not been home to a population of wolves since the late 1930s and it's highly unlikely that wolves will ever create a self-sustaining population without human intervention. A reintroduction program is the best way to restore wolf populations to the central Rockies ecosystem in Colorado, as legal hunting in northern neighbors such as Wyoming and Idaho prevents natural dispersion.

Proposition 114, Colorado's “wolf bill”, attempts to address the biological impact of the absence of wolves from the ecosystem by creating a program for reintroduction of wolves to the state's Western slope, under the direct management of Colorado Parks and Wildlife (CPW). Proposition 114 was passed in the fall of 2020, following the removal of the Gray wolf from the endangered species list by the Trump administration. Grey wolves now fall under state-wide protection and local and federal managers and scientist are working to create a reintroduction program what will attempt to successfully establish a wolf population and address all potential impacts on state industries like hunting and ranching. Before reintroduction begins, planned for the fall of 2023, state and federal managers must address concerns such as how ranchers will be compensated for livestock predations or how management of elk herds need to change following the wolf's return to the ecological stage.

To many voters across Colorado's front range, wolves were a surprising addition to the political arena in the fall of 2020, but to Western slope residents, this measure had long been anticipated. Proposition 114 asked a lot from voters, requiring an answer to what seemed like a relatively simple question but is in fact a much more complex and nuanced issue. Proponents argued that wolves will restore ecological balance, while opponents claimed that the return of the wolves will be detrimental to the ranching and hunting economy. For context, the Colorado Wildlife Commission voted against reintroduction in 2016, but their voting panel was made up of political appointees with few members that had degrees or backgrounds in biological science. The Commission's decision reflects the multitude of political issues that go into large predator management in the West and all the stakeholders involved. Disregarding the complexities of funding and resource allocation, the ballot measure provided little background and limited explanation of how this bill would play out over the next couple of years, missing the whole nuance behind the question:

Where do large predators fit into the landscape of the modern world?





## It's Official: Colorado's Reintroduced Wolves are Here. What Does This Mean for Monteclaro County's Ranchers?

Taylor Kostov, 4:01 PM MST 1/1/2024

GOLDENASTER - It's a bluebird morning on the day of the new year. The snowstorm that rolled in the previous evening left behind a fresh blanket of new snow that children, enjoying the remaining days of winter break, are using to full advantage. Driving through downtown you see children sledding on the hill in Greene park or building an infantry of snowmen along the residential streets. Their path across town can easily be observed through the footprints of small snow boots that criss-cross nearly empty streets. In the fresh snow, you can also spy the tracks of early-morning dog walkers and potentially the neighborhood cat on the hunt for small songbirds foraging in the morning sun. But for rancher Jennifer Bolan, the fresh snow reveals the tracks of Monteclaro's newest, and most controversial neighbor: the Gray wolf. Jennifer is the single mother of three boys and is starting to feel the added pressure that the wolf reintroduction bill has brought on her small ranch. Her property "Medicine Root Ranch" is situated at the end of town and has been in the family for generations. She learned the ins and outs and all the skills needed to tend a herd of cattle from her grandfather, who learned from his grandfather, making her sons the fifth generation of the family who has ranned on this land. Jennifer explained how worried she is for the future as we walked along the wolf tracks that paced the northern edge of her ranch.

"They keep me up all night - and they keep my girls up too." Jennifer is referring to her heifers who line the snow-covered valley framed on either side by large mesas. "Our bull took sick last month and is still in quarantine. Without him here, these girls are much more on edge. The wolves stalk them all night weighing their chances and sniffing out the old ones. They're stressed you can visibly tell." Jennifer motions to a group of cows resting in the sun, some lazily chew cud while a few stand guard. The scene is tranquil enough, but Jennifer explains how at night the wolves come down from the highlands and keep the cows up all night as they're forced to circle up to protect themselves.

"Calving season is just around the corner, we were trying to wait until after winter when the elk start giving birth to hopefully deter the wolves, but we can't afford to wait much longer. They're here every night. I've had to start bringing my dogs in because they go after them and I'm tired of paying the hefty vet bill. At this point, it just feels like a waiting game. Eventually one of my girls is going to be unable to

to take the stress of it all and they're going to get her. That is going to be a really sad day for the whole family."

Jennifer's youngest son Trevor has taken the spring semester off of college at Colorado College, Goldenaster to help his mom juggle all the responsibilities on the ranch. "It would be a whole lot easier to shoot them," Trevor explains from the seat of a tractor toting a bail of hay, "but I get we can't do that anymore. They're here to stay and we're going to have to find a way to live with them - I just wish it didn't play out this way."

Trevor is responding to the passage of Proposition 114 and the reintroduction program that began in Monteclaro county this past November. Colorado Parks and Wildlife worked closely with US Fish and Wildlife Services to introduce six wolves into the High Desert Wilderness, a few miles northwest of "Medicine Root Ranch", four females and two males. This occurred simultaneously with the release of five individuals, three females and two males, to San Juan National Forest south -east of Telluride. This reintroduction program set off after months of research, debate, and a brief delay due to when northwestern Coloradan ranchers filed a lawsuit back in the late summer of 2023, calling for an immediate cease of the program. That lawsuit did not go through however and the reintroduction continued as planned by USFS and CPW. Depending on what happens here in the northwest will determine how reintroduction plays out for the rest of western Colorado and potentially other states who are eyeing this program closely eager for success or failure.

The reintroduction program is dependent on one major constraint: how well will the wolves adapt to the western Coloradan landscape. Compensation is awarded to ranchers who lose livestock to wolf predation, but the state PWS is hoping for limited contact between ranchers and wolves. Based on research from other wolf reintroduction programs in Yellowstone National Park and northern Montana, Colorado's more urban landscape and restrictive topography have many officials worried about how the wolves are going to fit into the ecosystem following November's inaugural wolf release. Without the wide-open range for wolves to hunt deer and elk like they can in Wyoming and Montana, the potential for conflict between ranchers and wolves is high and many other western states are cautiously awaiting the results to see if similar reintroduction programs can be considered for them. The stakes are high for the wolves - if they are able to follow the rules, they create an opportunity for more reintroduction programs, but if they kill more livestock than what is allowed for under Proposition 144, they will be killed and all future programs will most likely go down with them.

With another pack moving in from Wyoming's Teton County, first documented back before Thanksgiving 2023, the interactions between wolves and ranchers are heating up in Monteclaro county. There have been five documented wolf killings in the

northwest portion of the state since the reintroduction program took place; one calf, two sheep, a goat, a pig, and a stray dog. This number shows an increase in wolf predation, following only nine documented killings between 2021 and 2023 for this region. This increase, however, was expected as shared in a press statement by State Parks and Wildlife Supervisor, Thomas Mbewe.

"The number of wolf predations is expected to increase following the release of the six individuals into the High Desert Wilderness later this year." Mbewe stood outside of Monteclaro County courthouse to address a crowd of protestors in early September of 2023 after the management plan was finalized. He went on to describe that the reintroduced wolves will have to contend with other established packs around the area over territory and resources, and it is that initial jockey that will lead to above-average wolf predation at the beginning of this year. This is expected to "mellow out" once the packs fully establish themselves across the northwest and begin to spread out to the surrounding wilderness. Mbewe weighed in on the recent wolf sighting this past Friday, "What we are seeing currently is very much anticipated. Unfortunately, this is going to mean that the ranchers of Monteclaro and Blue Sage counties are going to have to face the brunt of the initial attacks until the wolves are able to spread out and return to natural sources of food like elk and deer."

Mbowe says that he and his partner District Wildlife Manager Elaine Wojcik have been working around the clock responding to ranchers and investigating possible wolf predations. "We have our work cut out for us this year. My wife is really not happy about that, but we will manage" Mbewe joked but you could see just how tired he already is. The District Wildlife Management team has already responded to 11 reports of wolf predation on farms and ranches and are the final say if compensation is to be given out or not. "This part can lead to some very unwanted conflict. As part of Proposition 114, we are responsible for determining if a dead cow is the product of a wolf attack. If it is, then the rancher will receive just compensation based on factors like size, age, and number of pregnancies. Most of the time it is easy to tell - wolf attacks are pretty brutal. But other times it's just a dead cow and that can really upset small farmers who may be relying on that compensation to "keep the lights on". I do not envy ranchers right now." Mbewe's home was vandalized earlier this month with fake blood and the message 'WE NEVER WANTED THEM HERE'. He did not press charges on the individual responsible.

Tensions are high right now as farmers debate environmentalists over this bill and all of its consequences. Mbewe clarified that there is no need for panic and that "...we just need to let nature play out as intended". But what exactly is natural about this conflict between domesticated-cattle ranchers and reintroduced wolves? I asked this question to Mbewe, but he just smiled and refused to share his opinion. Back on Bolan's ranch, I helped Trevor install a series of motion-activated floodlights, which he hopes will help deter wolf activity and alert the family when they are in the area.

The lights are provided for free through the DWM office for all ranchers who make a request as part of the bill.

"There are a handful of mitigation strategies we can use to keep them off property and push them in the direction of the elk. You can't just 'shoo' them over the fence because then they become a problem for the neighbors. We have to work together if we're going to make it through this year unharmed." Trevor comments on the geography of the ranch, situated between two others in the narrow valley of the Medicine Root River. Scaring the wolves away is only a temporary solution, they need to get them back up onto the mesa before the elk herds move on. The pack most likely followed the elk herd into the more protected valley following last month's record-breaking snowstorm. The Bolans and their neighbors, the Henderson's and Brittle-brushes, are worried that the wolves are going to stay after the elk move back up into the mountains and will cause a whole lot of trouble.

"I'm just going to be thankful for the day when I can get a full night's rest." Jennifer told me on my way out.

It's official, the wolves are here and they are here to stay, but what this actually means for Monteclaro still remains uncertain despite promising initial estimates. As the sun begins to set and the ranchers of Medicine Root valley prepare for potentially another sleepless night, it begs the question: where do wolves fit into the modern western landscape? I'm starting to wonder if we're ever going to find that answer. What is for certain, however, is the long days and even longer nights that the ranchers and Wildlife Managers will have over the following months as the interactions between man and beast intensify.

District Wildlife Manager Elaine Wojack is asking anyone who sees a wolf or wolf tracks to please report them to their online database instead of calling into their office.

*Taylor Kostov, journalist at the Monteclaro Lookout tkostov@monteclarolookout.com*





Jennifer Bolan

Well folks, It's happened.

They got one of my heifers. Happened just this morning around 4AM - we got an alert from district wildlife managers and tried to get out in time but it was too late. Poor girl was ripped right open along the neck and stomach - she was dead by the time we rode out.

Spotlights and electric lines are not enough - the wolves know that our cattle are easy targets and can problem-solve their way into anywhere.

Shocked, sad, and scared. These cows are our living and I would never want to see anything bad happen to them not only because I depend on ranching to support my family but also because I care about each and every one of them.

The divide between ranchers and "civilians" is only growing and I'm not sure how much longer we can endure before ranching is no longer possible here in the West. They are so far removed from the reality of the people they get their steaks from. Rural Colorado no longer exists in the eyes of the rest of the state.

We must work together to get through this least they force our hand to become Wolfers.

12

names

Like

Comment

Share



Mary-May Brittlebrush

So sorry to hear about your loss :(  
LMK if we can ever lend a hand!



Jim Henderson

Outrageous! Denver and the rest of the wolf bill voters are selfish and ignorant

## The West Needs Wolves, and Wolves Need the West

### Kim Parreñas: Leader, "Pals of Predators"

*Originally published in the February edition of the Pals of Predators monthly newsletter, uploaded online 02/01/2024*

The Gray wolf is a revered species, symbolizing the West with the species' appeals to independence, grit, and spiritual connection. Once a top predator dominating both the open plains and rocky alpine, Gray wolves are now all but absent from the landscape, except for a few defiant pockets along the Canadian border and mountainous forests of Idaho and Wyoming. Through a century of active hunting, trapping, and poisoning the wolf was removed to protect the ranching, farming, hunting, and forestry industries and interests and to finally prove that America had "conquered the West". Since their absence around the 1930s, there has been a shift in the understanding of how Americans view their relationship to the natural world and the aspects of nature that they value. The landmark passage of the 1973 Endangered Species Act, arguably one of the most important pieces of environmental legislation, marked a new era for the human-wolf relationship that fostered efforts to reintroduce the species to the Western wilderness, starting in Yellowstone National Park. The story of wolf management speaks the story of America and the ways that we understand ourselves and the world around us, specifically out here in the West.

Proposition 114 and subsequent reintroduction of the species into the Coloradan wilderness has sparked great debate, often based on biased or misinformed understanding. The wolf's story is long and complicated but vital to understanding the ongoing debate we see before us about the rights and privileges of the large predators that we share our home with. Understanding the Colorado wolf debate requires a long explanation that explores the history, politics, and contradictions behind western large predator "management". Wolves belong in the western landscape - humans are solely responsible for their disappearance and are therefore responsible for their return. From their ecological role acting as a cap to large ungulate populations to their importance to Native American communities, wolves matter and it should be our mission to fight for their place, despite the sacrifices that it will require. Wolf reintroduction is necessary to heal the wounds of a long history of ecological harm and colonization. We must all ask ourselves to make space to let this essential species return to its rightful place among the other large predators of the western landscape. The transition will be difficult but it is necessary. We must all work together to make sure that the wolf can return without causing more harm to it or the people of the west. We ask you to stand with Pals of Predators and continue to fight for the acceptance of wolves and support reintroduction efforts across the West.

# PART ONE

# GIRL WHO CRIED WOLF

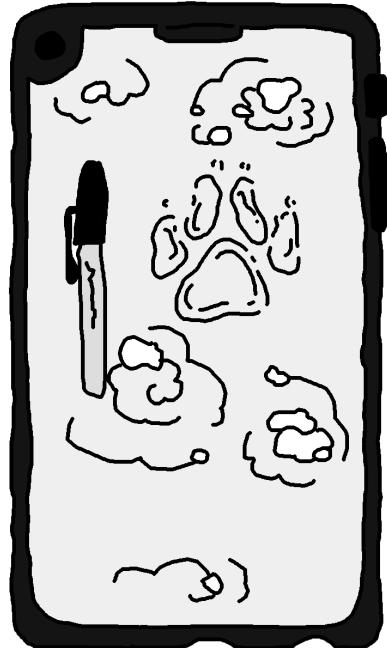
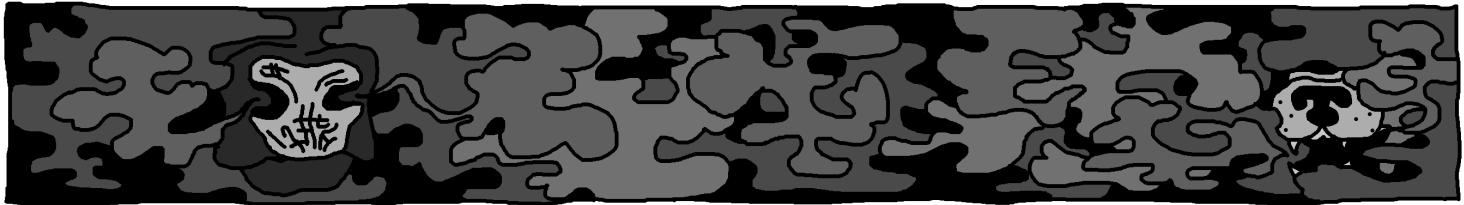
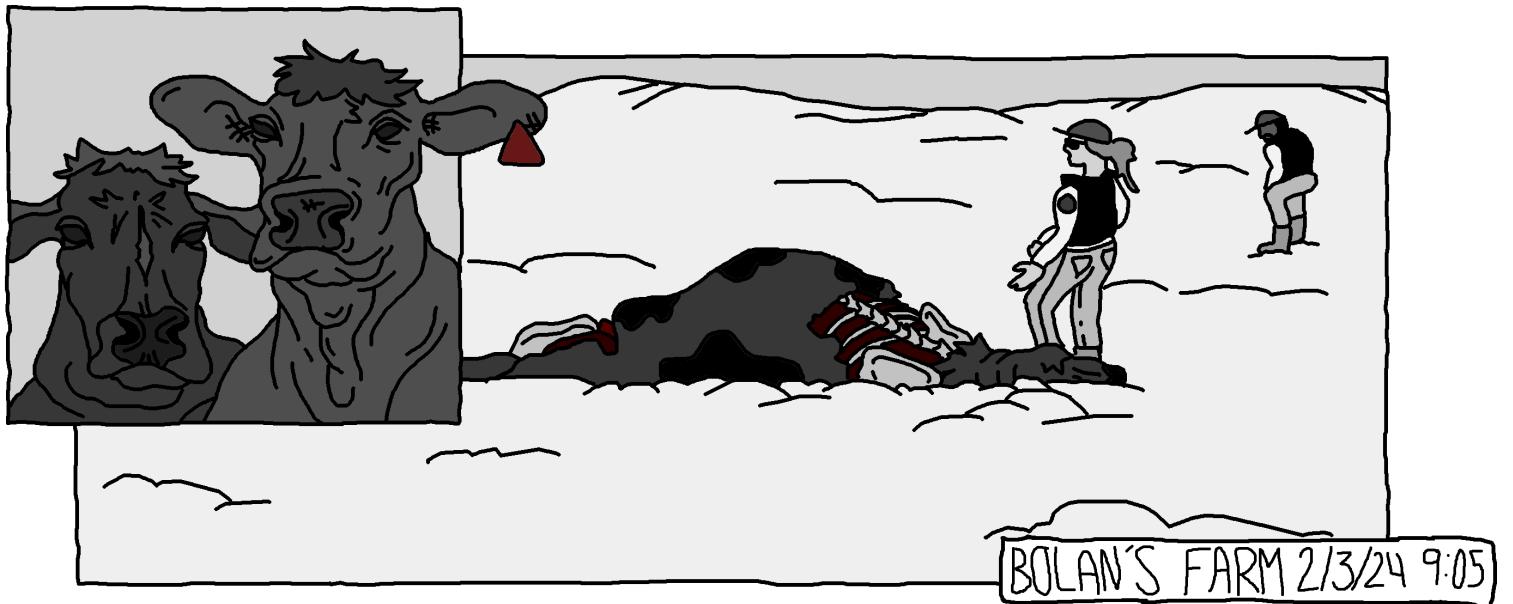
"Conservation means the wise use of the earth and its resources for the lasting good of men. Unless we practice conservation, those who come after us will have to pay the price of misery, degradation, and failure for the progress and prosperity of our day."

-Gifford Pinchot

"Few are altogether deaf to the preaching of pine trees. Their sermons on the mountains go to our hearts; and if people in general could be got into the woods, even for once, to hear the trees speak for themselves, all difficulties in the way of forest preservation would vanish."

-John Muir





WE'VE GOT  
DISCOLORATION  
AROUND THE  
EYES, NOSE  
AND MOUTH

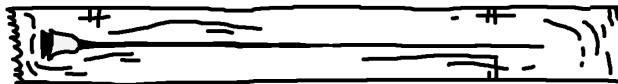
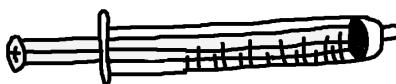


AND HEAVY  
MUCUS BUILD-  
UP AROUND  
THE GUMS  
AND TEETH

THERES OBVIOUS BITE MARKS - BUT  
THE MUSCLE COLOR & TEXTURE LOOKS  
ALL WRONG... THESE BLOOD VESSELS ALONG  
THE SHOULDER HERE. ITS ALL 'POST MORTEM'.  
I THINK THIS GIRL WAS ALREADY DEAD  
BEFORE THE WOLVES GOT HERE.

I'VE GOT  
A URINE  
SAMPLE.

HMM... PNEUMONIA?  
CHECK THE LUNGS.



CHEWED RIB  
BONE  
(PARTIAL)

POCKET  
KNIFE  
(DISINFECTED)

LUNG FLUID SAMPLE

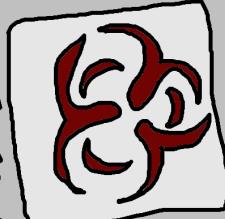
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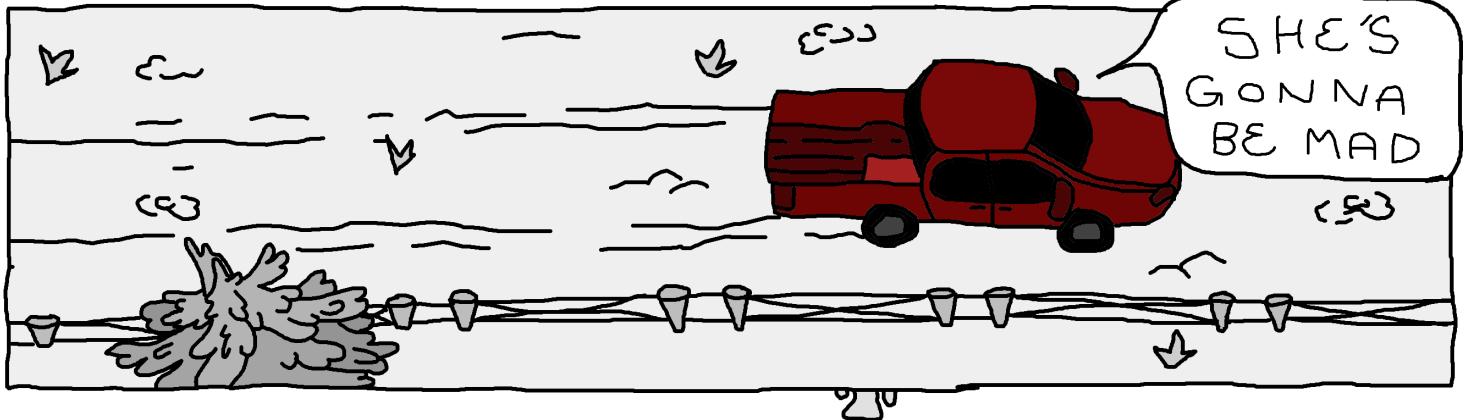
FEB 3 2024

PHOTOGRAPHIC  
EVIDENCE  
(ON PHONE)

URINE  
SAMPLE  
(WOLF)

SHARPS  
DISPOSAL







JENNIFER, BETWEEN OUR CONVERSATION & WHAT WE COLLECTED ON-SITE — YOUR COW WAS DEAD BEFORE THE WOLVES SHOWED UP. MOST LIKELY PNEUMONIA, BUT NOT BACTERIAL ...



BUT THEY RIPPED HER RIGHT OPEN!



Notes from Investigation on Bolan's Ranch, 2/3/2024

Thomas Mbewe, State Parks and Wildlife Supervisor

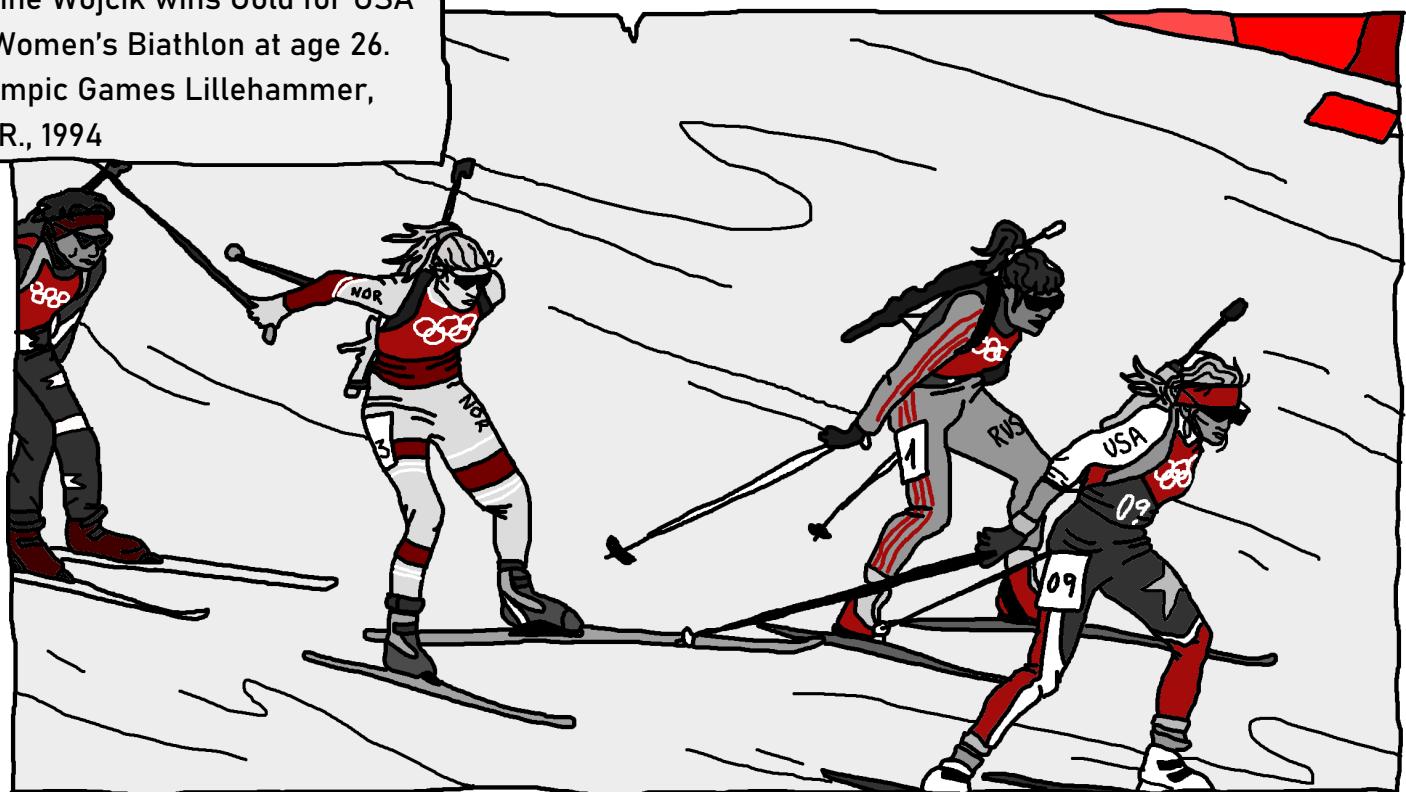
There is perhaps no species more studied than the wolf. From early recordings taken from bounties to handwritten records from Progressive Era conservationists to modern radio collar GPS tracking, we know more about the wolf than potentially any other large predator living out West. Wolves have become a focal species because the requirements for their survival represent factors important to maintaining ecologically healthy conditions. If the wolves are doing good then the rest of the wilderness should be too. Wolves are considered keystone species, their presence is vital to the success of other species and necessary for the population management of prey like elk and moose. This is why wolf recovery projects, like the one currently taking place, are essential to creating sustainable natural areas that are able to successfully adapt to changing climate conditions and anthropogenic constraints.

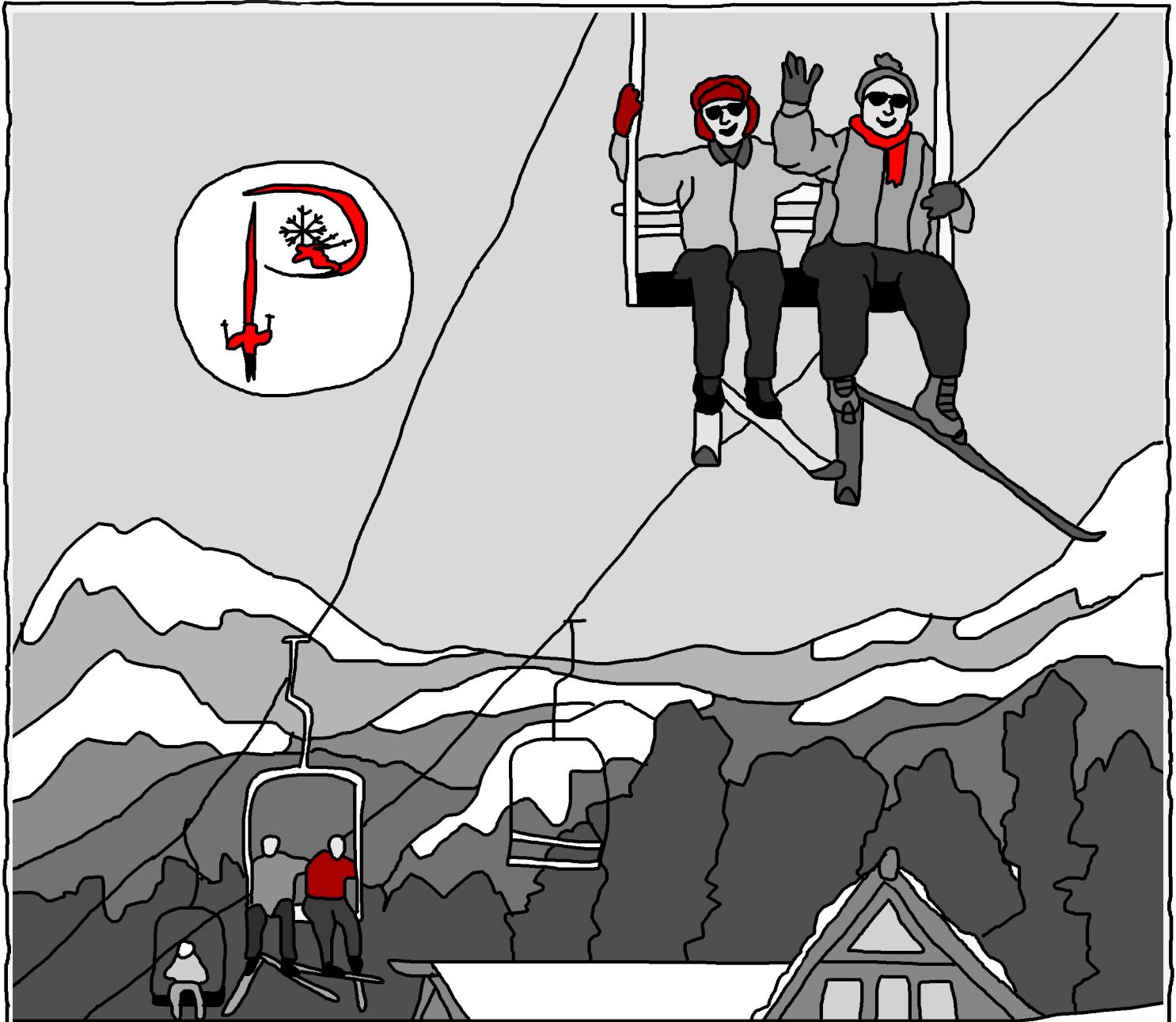
Natural recovery was never going to be successful in Colorado. There were too many constraints and hazards along the distribution corridor. The geography of Colorado's wilderness isolated it from established wolf populations in northern Wyoming and central Idaho. With legal hunting, at least seasonally, in states along the northern and central Rockies, any movement outside designated protected areas was too dangerous and wolves migrating south to Colorado were routinely shot. Even when they did make it to Colorado and fell under the protection of the state's hunting restrictions, as soon as they crossed back into Wyoming or wandered too far into Utah, they were shot, trapped, or simply disappeared without a trace. There are too many barriers to natural recovery for Colorado, reintroduction with continued protection and management is the only way that they would ever make it back and successfully establish roots and cultivate a new generation. If successful wolf reintroduction is going to occur in the West - state, local, and community concerns must be seriously and honestly addressed. Wolves are directly susceptible to human persecution, especially by gunfire and poison. Reintroduction is not simply a matter of science, carefully weighing every bit of data to determine how many individuals fit naturally into the landscape. This is because it is not the question of how many wolves the ecosystem can handle, it is a question of how many wolves is the public willing to take.



Thomas Mbewe, 20, with Canadian helicopter pilot and two wolves prepped for transport to Yellowstone National Park. Alberta, CAN. January, 1995

Elaine Wojcik wins Gold for USA  
in Women's Biathlon at age 26.  
Olympic Games Lillehammer,  
NOR., 1994





## POWDERPUFF RESORT TO CLOSE

Beloved ski area half an hour outside of Goldenaster and Grand Mesa is scheduled to permanently close in the spring of next year, 1991, following the bankruptcy of the owners. There are currently no buyers looking to purchase the ski resort and a final celebration is planned for December.

Powderpuff is looking to keep a portion of the 15 runs open for backcountry skiing and is working with the Forest Service for seasonal avalanche mitigation and cont-

Hello, you have reached the office of District Wildlife Manager Elaine Wojcik, servicing western Monteclaro and southern Blue Sage county. Our staff is currently out of office, but please leave your name and contact information and we will get back to you at our earliest convenience. The personal contact information for our staff is included at the end of this message if you need to reach them directly.

District Manager Elaine Wojcik, 720-318-2253

State Parks and Wildlife Agent Alex Martinez, 970-112-2371

Messages for State Parks and Wildlife Supervisor Thomas Mbewe may also be left here or on his cell, 406-983-6551



Call at 7:02 PM, 2/5/24

ALEX MARTÍNEZ, CPW MONTECLARO COUNTY: Hey Elaine, just got that deer cleared up from the side of Highway 62. The one that was called in late last night. It damn near in the exact same spot as the last time. It's that bottle neck through the aspen groves behind the new stone quarry. I think we're gonna need to put up a fence. Signs if nothing else. We've got a full-on death trap here - not safe for driver or deer. I'm going to call the city to see if they have any ideas. Also have you heard from Thomas yet today - not good news. Ill catch up with you later.

Call at 9:13 AM, 2/5/24

TAYLOR KOSTOV, *JOURNALIST MONTECLARO LOOKOUT*: Afternoon Elaine - and [uh]

Thomas and Alex. I was just hoping to follow up with you about the town hall we have planned for the end of this month and see if you would still be interested in speaking at it. We would really appreciate hearing your insight on this whole wolf thing and the recent protest at the mayor's office. We just need to finalize our list of speakers by the end of next week so let me know if that's still something you want to do. Oh and I also have an idea for a story for next week. I would love it if you would be open for comment, but we can discuss that later. Talk to you soon!

Call at 10:43 AM, 2/5/24

MANAGER THOMAS MBOWE, *CPW MONTECLARO COUNTY*: Hey good morning,

Elaine. I'll try your cell next. I have here the report from the urine sample we collected at the Bolan's and the radio collar data—it was WY-9. Luckily the cow at the Bolan's was already dead before he got there, but if he's tracked to one more livestock killing before the eleventh, we're going to have to put him down. That being said, I do not have great news. There was calf killing last night, the Henderson's called it in this morning. I'm down here at Muddy Creek Ranch and it's not looking promising so far. Exact same pacing behavior and limb cache seen at the Bolan's. I'll email you the site report when we're finished collecting and when we get the samples to the lab. WY-9 was here, the collar data says so, but that doesn't mean he took down the calf. Call me back. I think we need to "talk strategy". I've already spoken with Alex. You take care, now.

Call at 3:27 PM, 2/5/24

DANIEL GUTIÉRREZ, *CPW HINESDALE & MINERAL COUNTY*, Evening there Thomas and Elaine. Seems like you guys finally got your first wolf kill! All joking aside, I just wanted to check in see how you were doing and if you needed anything from us here down south. Have not heard a peep from our wolves yet, no one has even seen them. Lost one of them the other day... CO-6 went across the border into Utah and suddenly her collar goes dark. The team that went out after her tracked her location to a irrigation ditch—collar was there, wolf was gone. The whole thing feels fishy to me so I'm headed out there this weekend to look for signs of foul play. Hope y'all are holding up alright—don't hesitate to reach out.



## JOHN MUIR

- Figurehead of the preservationist movement and helped found the Sierra Club
- Believed that natural land should be left aside from human extraction or manipulation
- Argued that nature holds intrinsic value and that 'undisturbed' natural spaces important to humans for practical, cultural, and spiritual reasons
- Had a fear of human encroachment on natural land specifically through development and infrastructure
- Preservationist ideas formed the basis for the National Park system
- Muir's views of preservation largely left out Native Americans and land stewardship



## GIFFORD PINCHOT

- Helped found the National Forest system and then became its first chief
- Figure head for the conservation movement
- Believed that nature should be used to fulfill the biological, cultural, economic, and recreational needs of people while minimizing its impact on the environment
- Argued for more control of the federal government over western lands in the form of national forests - people banned from recreation but forests could be logged, mined, and leased by the federal government
- Conservationist ideas created the basis for ski resorts, most of which are located on federal forest lands

## ← Notes



11/20/23: wolf reintroduction begins in western CO  
2/10/22: US District court vacates 2020 USFW ruling delisting gray wolf, returning management to USFWS (then CPW)  
11/4/20: Prop. 114 passes in CO—state protection greater than federal  
1/4/20: Wolves federally delisted under Trump administration  
1974–2020: Wolves federally protected under ESA  
8/5/2010: Gray wolf relisted in Northern Rockies  
9/8/2009–4/5/2010: Idaho's first wolf hunt, 188 harvested  
4/2/09: Northern Rockies wolves delisted  
1/14/09: USFWS removes wolves from ESA list  
1/3/05: USFWS expands authority of tribal wolf management based in protecting tribal sovereignty  
1/12/95: Yellowstone reintroduction program  
12/28/73: 4 subspecies of gray wolf listed as endangered under Endangered Species Act

- Rocky Mountain gray, N. Rockies (*Canis lupus irremotus*)
- Eastern timber wolf, Great Lakes (*C. l. lycaon*)
- Mexican red, southwest and southern Rockies (*C. l. baileyi*)
- Texas gray, southwest and southern Rockies (*C. l. rufus*)

  
1940s: Last western wolf poisoned and killed  
1931: Animal damage control Act  
1890s: Progressive era conservation efforts  
1886: Bureau of Biological Survey founded  
1883: Western buffalo eradication  
1871: Department of Fish and Wildlife founded  
1870s: Wolf bounties posted at state and local level



# *Canis lupus*: Masters of Adaptability

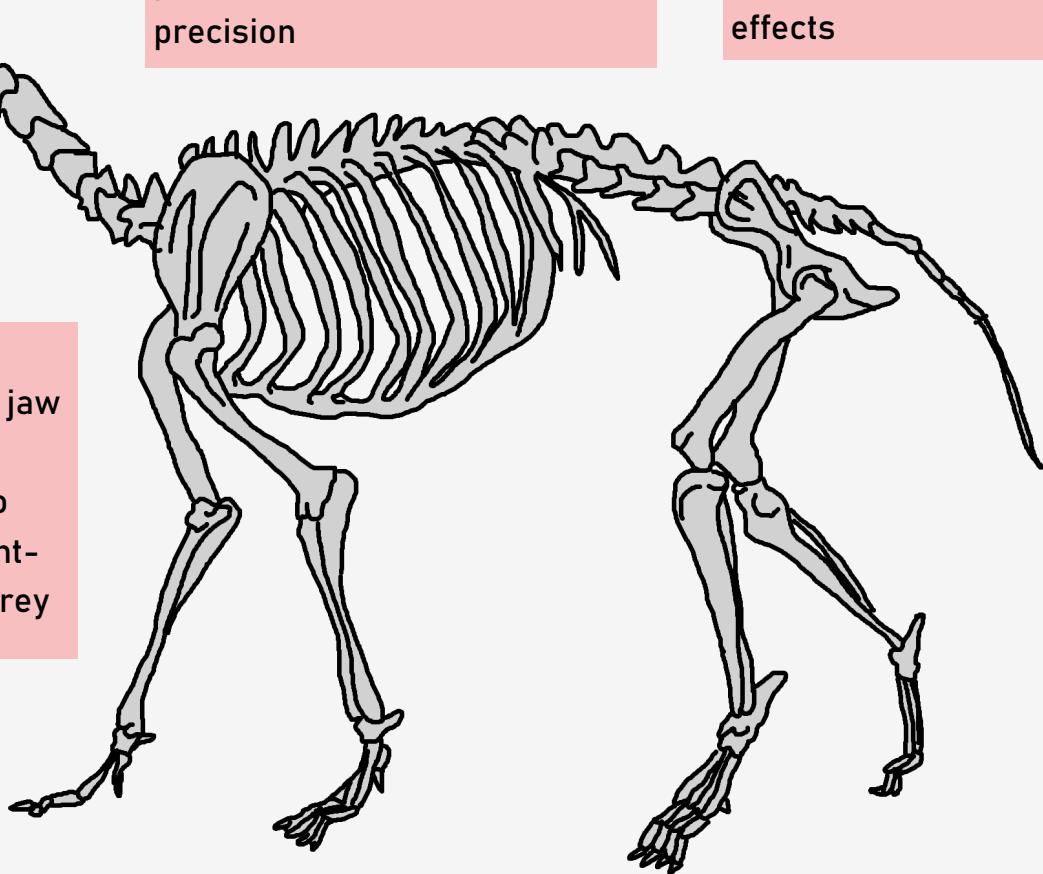
Emma Hedges  
Biology 6th

Long nasal cavity creates better thermo-regulation increasing endurance

Diverse set of teeth allow for processing of variety of living and dead prey: incisors and canines catch prey, molars shear hide and flesh, carnassial crush bone, and overall parabolic structure creates precision

Metabolic manipulation allows for long periods of fasting with minimal side effects

Long nose pushes teeth further from jaw decreasing bite strength leading to need for group hunting to take down prey

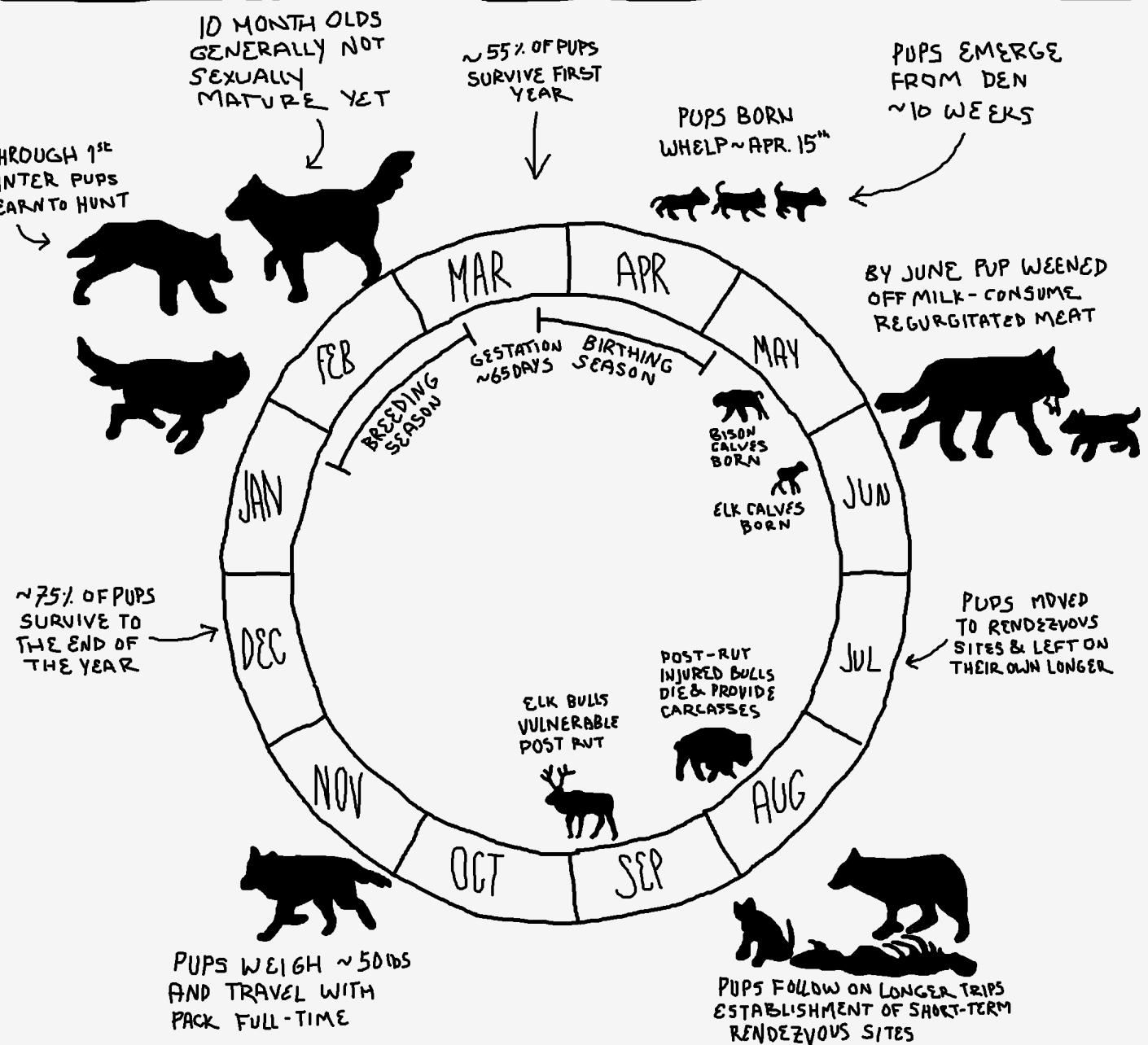


Muscles concentrated close to leg bone reduces angular momentum increasing speed and endurance

Compact four toe structure increases efficiency while running

Leg bone structure allows for movement over great distances in little time

Submitted to Ms. Goodall's biology class, Goldenaster Highschool by Emma Hedges, 2/27/24



ANNA-SOPHIE  
BRITTLEBRUSH  
BIOLOGY 6<sup>th</sup>

Wolf development poster submitted to Ms. Goodall's  
Biology class, Goldenaster High. 2/7/2024  
Adapted from Smith et al., 2020

# PART TWO

## DEATH BY GORING, MISHMING, & MISHMING

"Such [conservation] efforts are to be applauded, but the most critical element of wildlife management in twenty-first-century America will be modifying the behavior of the most pervasive species of all. Reducing conflicts between people and wild animals will require controls on human actions: where we build our homes, how we landscape our yards, the way we dispose of our trash and house our pets."

Daniel Baron, "The Beast in the Garden: A Parable of Man and Nature" (2005)

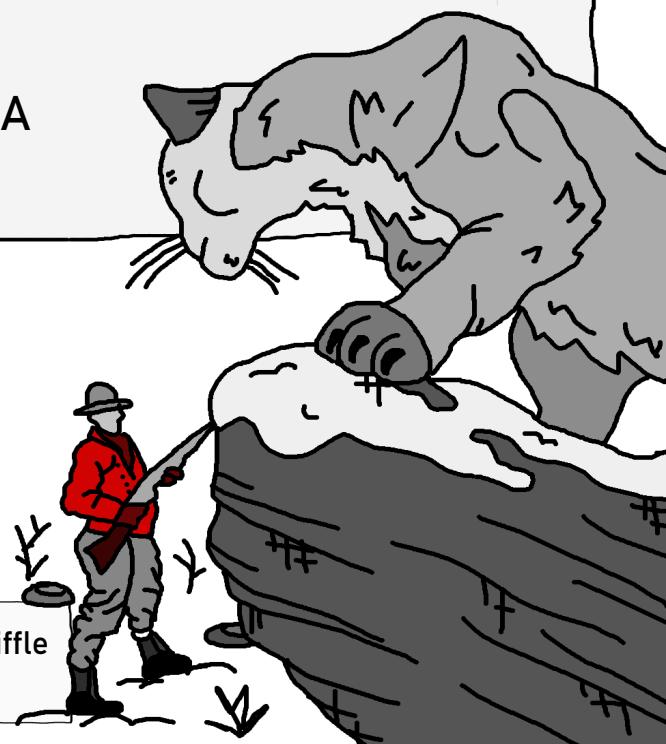


Illustration adapted from Winchester rifle ad, artwork by Philip Goodwin (n.d)



## Monteclaro's First Official Wolf Predation Marks A Death Sentence For Wyoming Transplant

Taylor Kostov, Images Provided by Emma Hedges 8:09 AM MST 2/12/2024

GRAND MESA- With the stroke of county judge Ed Moore's pen, the fate of wolf "WY-9" is sealed. Five or more reported livestock killings in the span of four months is declared "problematic" by the state department of Fish and Wildlife, meaning this four-year-old wolf will be shot within the week. District Wildlife Manager Elaine Wojcik will lead the case but refused my request for comment. Thomas Mbewe - the state Fish and Wildlife supervisor who was interviewed earlier this month - shared his thoughts with me over the phone.

"It's a very sad day when we have to shoot a wolf. You never want to see it happen, but sometimes it comes down to this. It's difficult for us because we work so hard to see these wolves get reestablished in the state and all that hard work ends because the wolf kills too many animals within a set time limit they are not even aware of. It sometimes feels as though we are playing a game against a competitor who does not even know they are playing. It's sad because it's just a wolf behaving naturally under these very unnatural constraints."

WY-9 was tracked to the "scene of the crime" for all five predations that occurred throughout the northern part of the state between January and February of this year. Two sheep, a pig, a stray dog and now, most recently, a calf. The use of radio collars helps state Fish and Wildlife services track wolf movement and collect data to help better manage the species within and across state boundaries. WY-9 is a transplant, originating from a pack in Wyoming's Teton range, and gets his name because he was the ninth wolf from Wyoming to be collared in the state. Interstate monitoring and data collection has become essential to wildlife managers, especially in high-profile predator reintroductions.

"We believe that WY-9 suffered from a bad leg injury as an adolescent, as seen from his physical [from] when he was collared in the fall of 2022." Mbewe is commenting on the routine examination that all wolves undergo when they are collared and reported to the state's database. "He most likely cannot take down natural game and that is why he is going after livestock. This is not normal wolf behavior. WY-9 is traveling with a collared female, CO-3, who we presume is denning with pups. He's going after the easy targets to help support his mate and ensure the health of his new pups without the support from pack members"

"It's early for birthing, but not unlikely," District Wildlife Manager, Elaine Wojcik, commented in the judge's ruling. "The pattern of behavior and a significant decrease in home range for CO-3 shows that she is pregnant and has already made a den. Denning usually occurs from March through April, but relocation can sometimes cause an earlier mating and birthing season."

The potential for the state's first pups born from reintroduced individuals is exciting, but without any other members in their pack, CO-3's pups will most likely not survive through gestation in WY-9's absence.

CO-3 is one of the female wolves that was released back in November when the re-introduction program began. CO-3 and WY-9 are of extreme interest to state management because if the data collected from her radio collar is accurate, she will be the first reintroduced female to give birth. The last time wolf pups were born in the state occurred in the fall of 2020 by previous emigrants from the Teton range. Those pups were the first to be born in Colorado in more than forty years and would go on to get shot by hunters legally participating in Wyoming state wolf hunt in the years following. The potential for new pups holds great ecological significance and would provide a good metric for success, demonstrating the wolf's resilience.

The fate of WY-9 is all but sealed, but the future for CO-3 is still uncertain. Kim Parreñas, the leader of Colorado-based, political non-profit, "Pals of Predators", sent a letter to the District Wildlife Management office asking for the pardoning of WY-9. Kim is a retired wildlife biologist and was one of the loudest voices fighting for re-introduction back in 2020. Kim has worked with wolves before, mainly in northern Mexico, and has been fighting for a re-introduction program in Colorado since Yellowstone National Park's re-introduction in 1995. Kim, in her letter, highlights what she sees as the obvious contradictions in Proposition 114 and the management plan that is currently in place to deal with the newly reintroduced predators.

"The death of WY-9 will cause direct harm to his innocent pups, irreversibly damaging the integrity of the re-introduction program and state and federal wildlife management. Successful re-introduction must include a plan for how to deal with both experimental and already established populations, which Colorado has failed to do. Two separate management strategies for the same species, living in the same location, is ridiculous. There are obvious signs of mismanagement and Pals of Predators will pursue legal action if WY-9 is not pardoned"

Pals of Predators actively works to promote the wellbeing of natural predators, large and small through politics and education. They are currently working on a documentary sharing what they believe are obvious signs of mismanagement with state representatives and the public. They have expanded their operations following November's wolf release.

Kim shared her thoughts with me earlier this week after I asked her to explain the letter and planned legal action.

"Everyone needs to see what's going on here. Predator reintroduction programs can be a wonderful thing, but not when we are causing direct harm to the very species we are trying to reintroduce. Reintroduction is a necessary investment not only for the wellbeing of our wild spaces, but also for the wellbeing of the West. That investment is being wasted because we are trying not to hurt anyone's feelings. There are necessary sacrifices, but not when it comes at the direct expense of the taxpayers and ranchers. Ranching is unsustainable in its current form and that should have been addressed well before November's release. We need wolves in the state but reintroduction will never be successful if it's not an all-encompassing plan that works across state lines and restructures the ranching industry it will directly effect. We need wolves but we need to create better ranching practices first that limit interactions with wolves and can easily adapt to their presence."



Jim Henderson talks on the phone with calf in background, Muddy Creek Ranch 2/5/2024

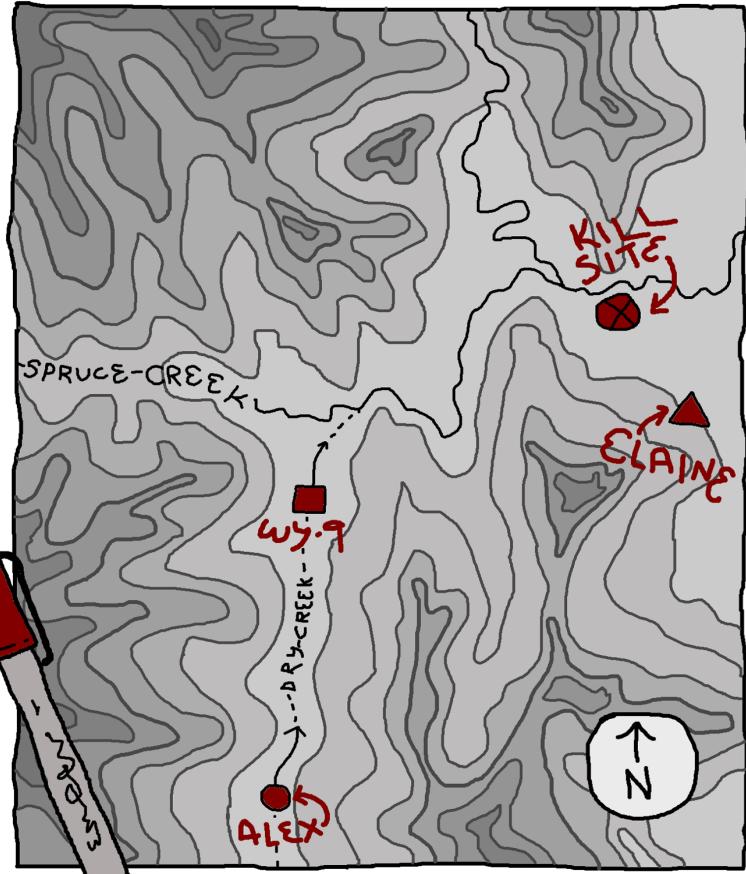
District Wildlife Manager Elaine Wojack is asking anyone who sees a wolf or wolf tracks to please report them to their online database instead of calling into their office.

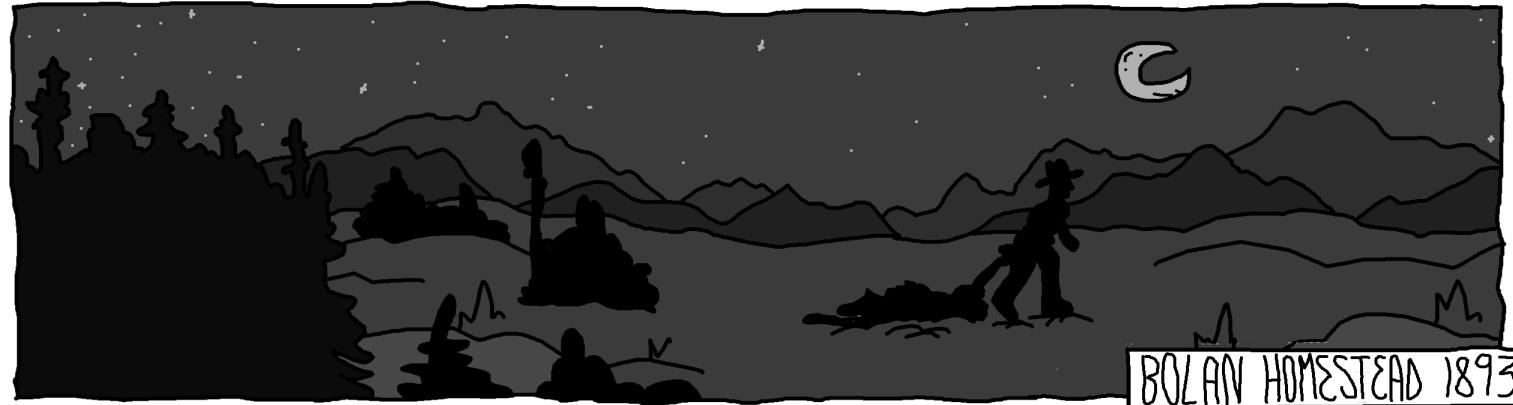
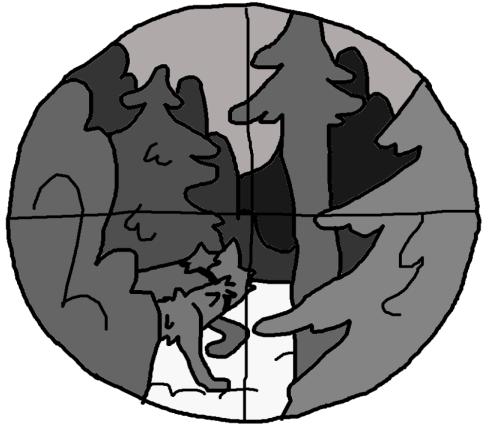
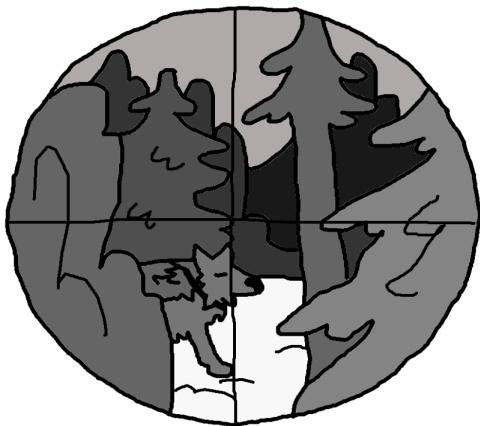
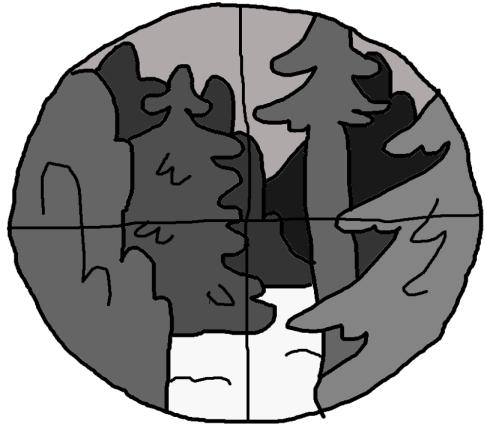
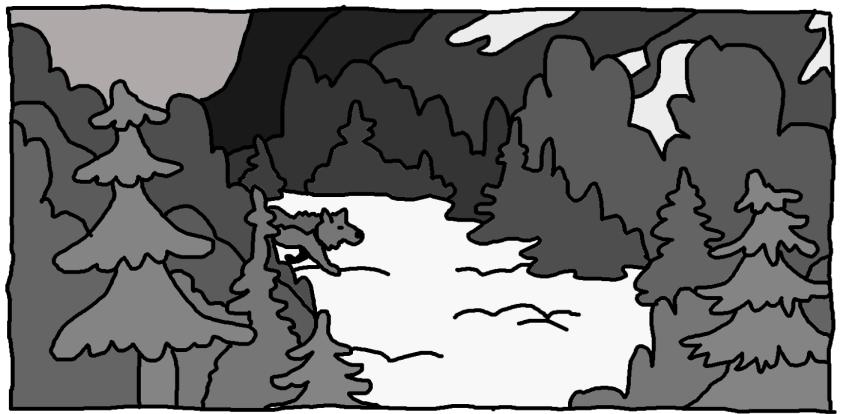
*Taylor Kostov, journalist at the Monteclaro Lookout tkostov@monteclarolookout.com*





12 MI. NORTH OF GOLDENASTER 2/4/22







STAND DOWN! ALEX STAND DOWN!



KIM & 'THE PALS' HAVE DECIDED TO SUE... SHE FOUND SOME LOOPHOLE BETWEEN THE WYOMING ENDANGERED WOLVES & COLORADO EXPERIMENTAL ONES.

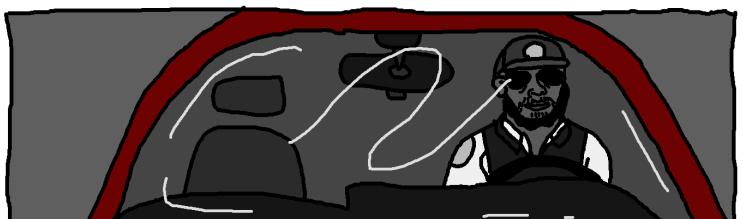
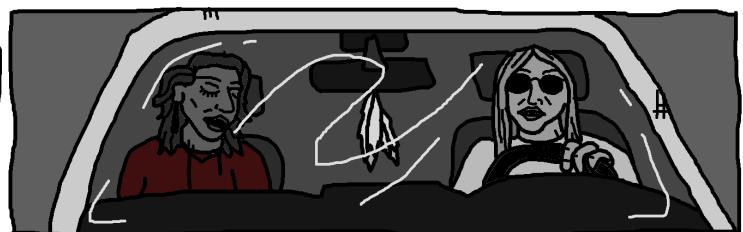


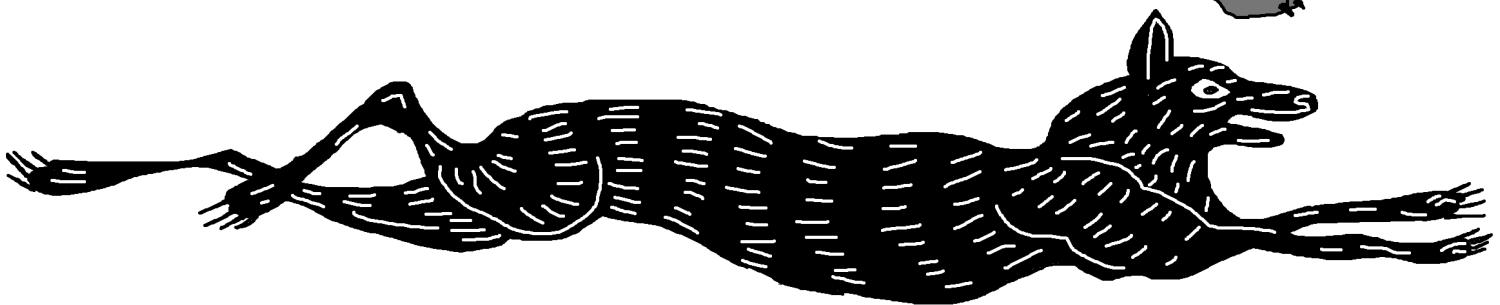
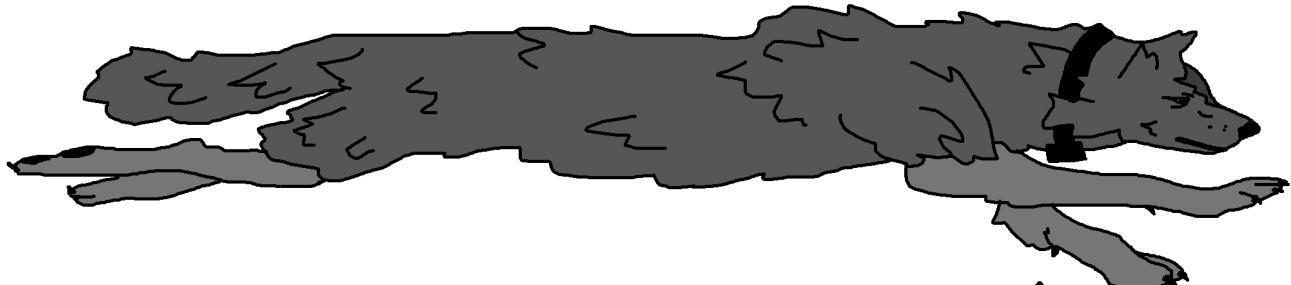
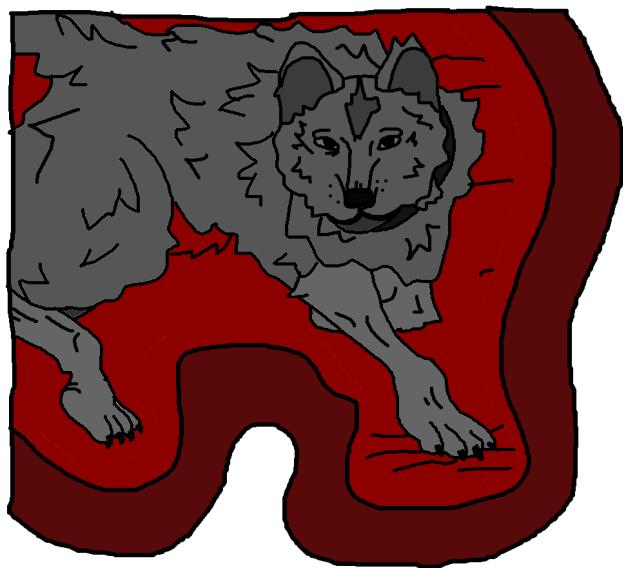
JUDGE MOORE DOESN'T KNOW WHAT TO DO - HE'S CALLED THE WHOLE THING OFF. I'M DRIVING OVER NOW.

COPY THAT — STANDING DOWN.



WY-Q'S A LUCKY WOLF TODAY...







*Radio Broadcast recorded 2/5/2024, Monteclaro University Community Radio Station. 7:00 AM-7:46 AM*

[Show intro]

MARY-MAY: Good morning, Goldenaster! The time is 7:01 on Monday, February 5<sup>th</sup>. Happy February everyone! This is one of my favorite months because of Valentine's day and the fact that spring is finally around the corner! But we are not quite to spring just yet - it's shaping up to be a beautiful day here in the valley with highs in the low 40s and sun all day, but snow is expected tomorrow evening so plan accordingly.

My name is Mary-May Brittlebrush and you are listening to Sunny Side Up, where we keep you company every Monday morning with a curated selection of stories from Colorado's history before getting into news, finance, and politics needed to start your day. Stay tuned to us because this morning we are diving into the only thing that this town has been talking about for months - large predator management.

[Play soundbite: Proposition 114 protest, Goldenaster 10/1/2023, 2:04 min-2:31 min]

MARY-MAY: Lions, wolves, and bears - oh my. Goldenaster, like many cities across the west, sits nestled in the space between developed and wild and at one point shared a valley with many large predators. A long and gruesome history of predator eradication has left all but a handful of timid mountain lions and black bears that cautiously roam the wildflower meadows and ponderosa plateaus. That was until last year's wolf reintroduction program brought back a long-forgotten member of the community, a character that has been on the forefront of everyone's minds since 2020. *Canis lupus*, or the Gray wolf, has been absent from the western landscape for about a century, but a controversial piece of legislation reintroduced the species into our state's back in November 2023. Goldenaster, along with neighboring cities along the western I70 corridor, have been waiting in anticipation for what the new neighbors are going to do. Now, after more than three months of silence, the wolves have given up their location. As the state works to manage our new wolves, I can't help but reflect on how we even got here in the first place. Large predator "management" did not always look how it does today. The federal wildlife management services used to actively hunt and trap wolves in the name of ecological benefit but now, a century later, are working very hard to bring the wolves back. So, what changed?

*PRERECORDED: Sunny-Side Up is a production of Colorado College: Goldenaster and Colorado Public Radio. We would like to thank our sponsors and listeners for keeping community radio public and accessible.*

MARY-MAY: Wolf management did not start as a centralized and federalized effort and during the mid-19th century, wolf management took the form of private bounties and bounty hunters. Management in this time followed the ecological practices demonstrated through the slaughter of bison across the plains, viewing wolves as "vermin" and giving them the same treatment as other farm nuisances like rats or locusts. Early extermination was for the poor, unemployed, and or colonized - limited by the nature of the work and fluctuation of pay. "Wolfing" as the practice was called, initially required Wolfers to track, locate, then trap wolves in a long process that could take many days to complete. Wolfing was not for the faint of heart - individual wolves who found themselves unlucky enough to get stuck in a trap had to be shot and when Wolfers found dens, they would wait for the mother to return to her pups and then suffocate them in the den by either burying them alive or sealing off the entrance and pumping in carbon monoxide. The work was hard and required the stomach for violence and patience for navigating unforgiving terrain.

Wolves, and their predation on cattle, are indirectly responsible for bringing democracy out west. Some of the earliest western governments came from ranchers getting together to discuss mitigating wolf predation on livestock. Over the years as the west began to expand and industrialize, wolf "management" became an important way to protect the interests of ranchers moving their operations to the range. Early wolf management came in the form of unorganized bounty hunters who worked with private ranches and local governments to round up and kill wolves and would then present the skins or parts of the body for proof of a job completed. Wolves stood directly opposed to ranchers who viewed themselves as righteous producers and wolves as greedy consumers.

This was a bit of a contradiction as the ranching industry produced cattle, fattened off of the bounty of the open plains and shipped to slaughterhouses in the Midwest, to feed a growing population both domestic and abroad. Wolves were inevitably tied to the commodities market and their population size was directly correlated with fluctuations in market demand. Wolfers responded to two main market drivers - the exponentially expanding western ranching industry and the demand for furs to feed foreign fashion trends. Wolf furs were desirable and went to trim fashionable Victorian jackets or line the interior of European military coats.

Caught within cultural anxieties about overproduction and predation, Wolfers drifted towards the margins of colonial society during the conquest of the frontier, with their status as producers constantly at odds with the nature of their work. Wolfers would go on to wage an all-out assault on the fauna of the western plains when advancements in technology made effective poison available in the front country. Strychnine, a poisonous alkaloid derived from tropical *Strychnos* plants, has been used for centuries as a pesticide and a poison, valued for its ability to affect the central nervous system resulting in respiratory failure and brain death. Strychnine transformed Wolfing, reducing the need for tracking wolves then setting traps and returning regularly to make sure they were set and nothing had carefully removed the bait. With poison, the Wolfer could easily lay out strychnine-smothered meat and return at their leisure to collect the bounty.

The extermination of the American bison provided an abundance of carcasses to poison and allowed for Wolfing to become a secondary job that ranchers, cowboys, or any other profession could engage in it as they made their daily rounds. Strychnine poison unintentionally killed a plethora of other plains scavengers and led to the population decline of animals such as fox, badger, skunk, crows, raccoons, cats, and dogs. Despite the sudden ease of the work, it was never in the best interest of the Wolfers to fully eradicate wolves as they depended on the hides for extra income. For this reason, and issues with fraudulent bounty claims, Wolfing became federalized following the turn of the century. With the financial resources and organized manpower of the federal government, the death of the Grey wolf was imminent.

The Bureau of Biological Survey was started in 1896, forming from the Division of Economic Ornithology and Mammalogy and serving under the control of the Department of Agriculture. The Bureau's early work started with mapping geographical distributions of plants and animals and eventually turned towards mitigating agricultural pests like prairie dogs and eventually wolves. With federal resources and a centralized effort, wolves were removed from the western frontier by the 1920s and became all but absent within America's borders by the 1940s. Shifting cultural and social ideals during the 20th century resulted in environmentally-conscious legislation, backed by scientific authority, that reflected new American values and understandings about the relationship between man and

nature. From these shifting ideals came the appeal of nature as intrinsically necessary and the romanticization of a wilderness before Anglo-European settlement, both products of the Progressive-era conservation movement. The Bureau of Biological Survey was merged with the Bureau of Fisheries in 1940 to form the US Fish and Wildlife Service and shifted its focus to conserving, protecting, and enhancing wild habitats. The Federal Wilderness Act was passed in 1964 that would go to protect more than 95 million acres of land – an area roughly the size of Montana. The fate of the wolf forever changed with the 1973 passage of the Endangered Species Act and the federal protection of the remaining members of the species with the hope of eventual recovery. The status of wolves on the list was, and continues to be, dependent on a population quota that does not reflect other indicators of the species' wellbeing or ecosystem dependence.

Colorado wolf reintroduction reflects the need to establish the species back to its original territory with the goal of preventing community isolation that makes populations susceptible to inbreeding and disease. Wolves may have naturally reestablished themselves, but the large divides between the central Rockies and northern and southern sections largely prevented successful relocation. Establishing a population in Colorado benefits wolves across the west, diversifying the gene pool and allowing for natural defenses to variable ecological conditions and the effects of climate change. US Fish and Wildlife have now turned to a more holistic approach to wildlife management, taking into consideration more than just species count to measure wellbeing. This shift in policy reflects more than a century of scientific and cultural change in how we understand our relationship with nature and more importantly our relationship with large predators like wolves. After their long absence from the western frontier, wolves now need to contend with a multitude of new variables for successful reestablishment, but their continued acceptance and tolerance are necessary to bring the species back and reap all the benefits their presence provides.

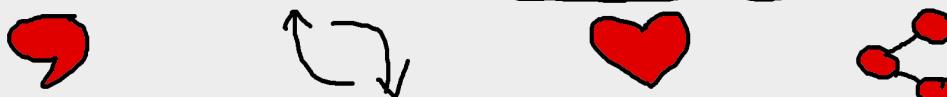
[Play segment outro]

MARY-MAY: Don't go anywhere— Sunnyside Up will be back with news next, but first lets take a word from our sponsors.

## ← Thread

Rep. Jane Eardley  
@JEardley4CO

Public land ranchers today remain in the mythical world created and shared by children of a bygone era playing “cowboy”.



Rep. Jane Eardley @JEardley4CO

With naive nostalgia for a “wild west” that never existed & the failure to consider history & science, western public land ranchers now have the clout to control the political arena and bully others into submitting to the rule of their tyranny

Rep. Jane Eardley @JEardley4CO

They boast themselves as self-reliant & actively fighting against an over-reaching gov’t while abusing gov’t benefits & low grazing fees that fail to recoup even the basic administrative costs.

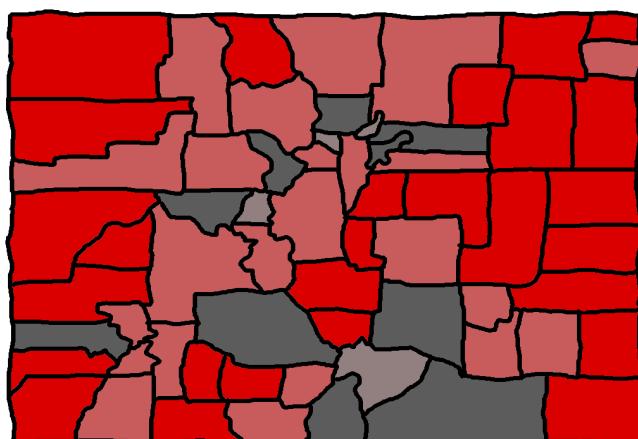
Rep. Jane Eardley @JEardley4CO

They replace cowboy boots for 4-wheelers & horses with snowmobiles yet appeal to the nostalgia of an “easier, bygone era” acting as though they own the range when their activities there is but a privilege!

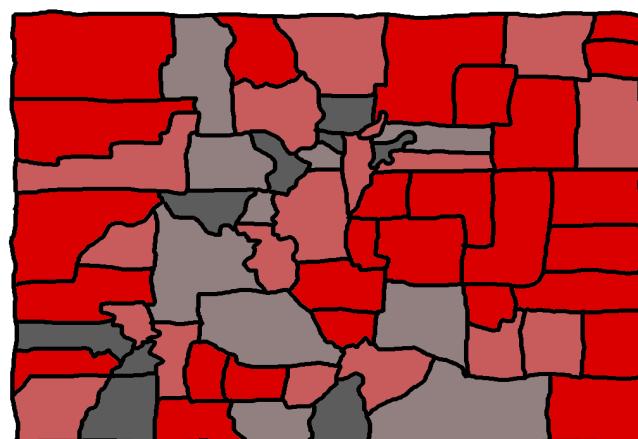
Rep. Jane Eardley @JEardley4CO

They pride themselves as the original conservationists yet conceal a shotgun under the front seat for picking off coyotes. Does no one see the act they are playing? They’re using myths to drive their narrative!

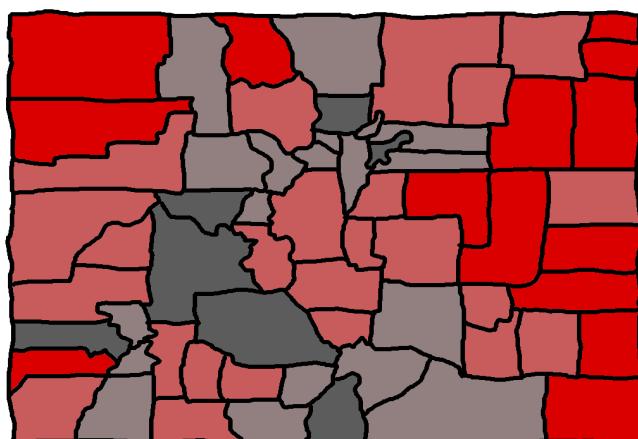
# CO. Election Map by County, MIT Election Lab Data



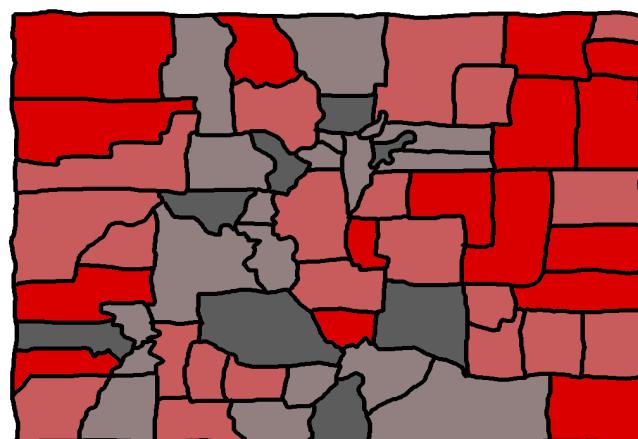
100% DEM      2000      100% REP



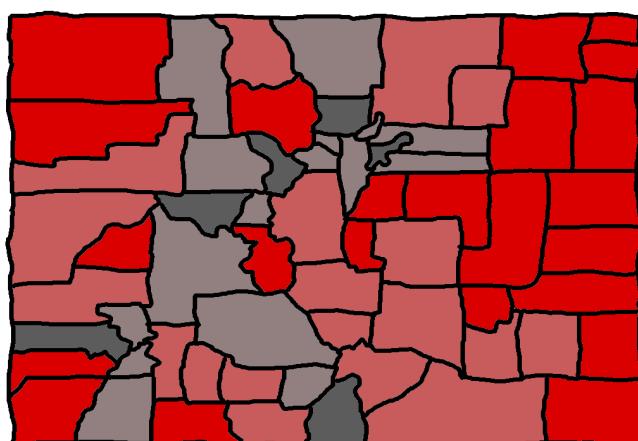
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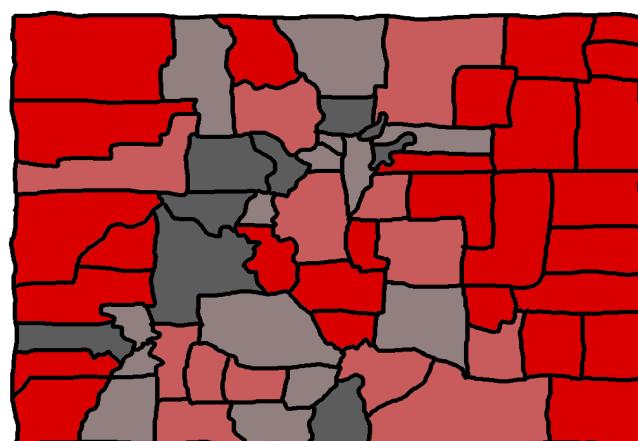
100% DEM      2008      100% REP



100% DEM      2012      100% REP



100% DEM      2016      100% REP



100% DEM      2020      100% REP

# Including Human Involvement in Landscape Management

Report by Alex Martínez, Agent Colorado Parks and Wildlife

Published 9:49 AM, 2/16/2024

Quaternary Panarchy is an extension of ecosystem theory based on the understanding that human manipulation plays a significant role in natural ecosystem cycles. The quaternary period of geologic history includes the most recent interglacial period (icesheet free ~2.5million years ago—today) of relative climate stability. Of course, anthropogenic climate change has influenced the general climatic trend of this period, but the quaternary period includes the Holocene and human interaction as a factor in environmental systems. This understanding links anthropogenic activities into the Panarchy model which has historically left out humans as a relevant factor in modeling natural systems. Humans are not separate from nature and they never have been.

Panarchy theory is a way of understanding how ecosystems change over time based on natural stages of plant and climate patterns. Ecosystems shift through a hierarchically nested series of adaptive cycles that result in self-organizing natural systems that assemble across all scales in space and time. Put another way, ecosystems change over time and space because they are made up of organic components with set developmental structures that respond to variations such as shifts in climate or changes in soil pH. Take for example a small lake that develops due to a retreating glacier following a period of above-average temperatures. Over time, sediment deposition fills in the lake and the landscape shifts to marshland. Where there was once a lake is now fertile ground and trees and plants move in. First, early colonizers like aspens are able to take over, quickly dispersing thanks to their biology that allows new saplings to grow from shoots produced by the roots of mature trees. Following the aspens come pine trees that are able to grow taller than the aspens and out-compete them for the resource of light. The pine forest matures until a disturbance event, such as fire, comes through and resets the whole system. Following the reset, early colonizers like perennials and shrubs come in before the saplings of fast-growing trees like aspens establish themselves and are eventually pushed out again by larger pines as the forest matures. A natural equilibrium is created that, over time, adapts to shifting climatic conditions and landscape constraints such as changing rivers or mountain uplift.

The human element was largely left out of this understanding of ecosystem successional patterns. The Panarchy theory neglected to include human-caused disturbances that exploit and shift natural progression through this system. This includes the manipulation of geomorphic processes, hydrologic processes, and habitat connectivity. Humans dam rivers, raise hills, and burn forests which influences this cycle. Early humans living in North America cleared great areas of forest for farming, hunting, and for resources and land needed to build developments. Late-stage, mature forests were culturally transformed into early

successional ones to create a mosaic of anthropogenically managed forests and fields. Native Americans were not perfect forest managers and large-scale deforestation and ecosystem collapse can be documented across the United States as the result of occupation and settlement. Many species of megafauna were also removed from the landscape either directly as a result of hunting or indirectly because of ecosystem change. Homosapiens are a keystone species and have been manipulating lands in the western US since their first journey across the land bridge.

There is a myth of the “pristine forest” in Western conservation that is based in the misconception of pre-contact purity, popularized in the late nineteenth-century by largely White, male scientists. The forests documented by original Anglo-European settlers did not represent a natural system that would exist in the absence of human interference and instead reflected centuries of Native American management and manipulation. Much of the early conservation efforts in America were based on misconceptions about returning the landscape to what it was before Anglo-European settlement that neglected to include the need for implementing long-established management practices. Even today the West is still fighting this misconception and is facing the consequences of a century of fire suppression with megafires that are getting harder and more expensive to control. Western fire management failed to account for Native American land stewardship, including practices such as cultural burnings, that mitigated the effects of fire while maintaining healthy forests. It was not until 2020 that the California Forest Service finally considered collaborations with Native American tribes to include teachings of forest management practices like cultural burnings into state programs to help combat the effects of large-scale fires and better manage state forests.

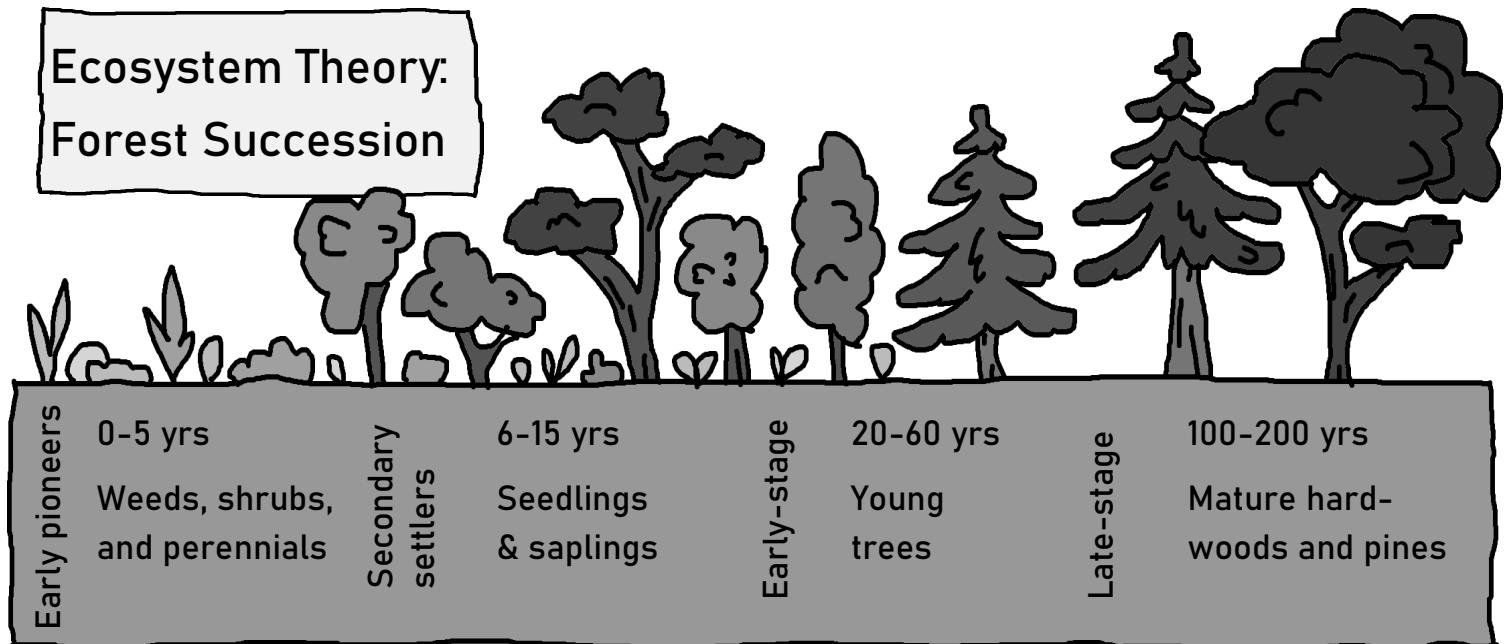
The Quaternary Panarchy theory provides a better framework for understanding ecosystem succession and its cyclical nature because it includes the history of human management and manipulation and its impact. There is also the myth of the “Natural Man” based on romanticized teachings from primarily White scholars about how humans once lived in harmony with nature. The idea of the “Noble Savage” was used by European colonists to interpret the relationship between First Nations people and their environment. This idea became the basis for understanding American landscapes by environmental historians up until the late 20th century. The idea that human interference began with European settlement is wrong and ignores a long history of Native American environmental practices and teachings. All western land management needs to adapt this model of Quaternary Panarchy and include the variable of human influence on the landscape for all proposed management practices. Since our introduction to North America, humans have changed their environment and without understanding that first, no piece of conservation legislation will ever be successful.

Now this one tripped me up so do not be worried if this idea seems complicated. What Alex is attempting to explain here is that humans have been manipulating their environment since their arrival in North America. Ecosystems naturally shift between times of calm and times of change and humans are a major driving force behind those shifts. The forests we know today are the product of human influence. All management practices relating to Western ecosystems must take into consideration the long history of Native American influence and land stewardship if they are going to promote healthy plants and happy critters.

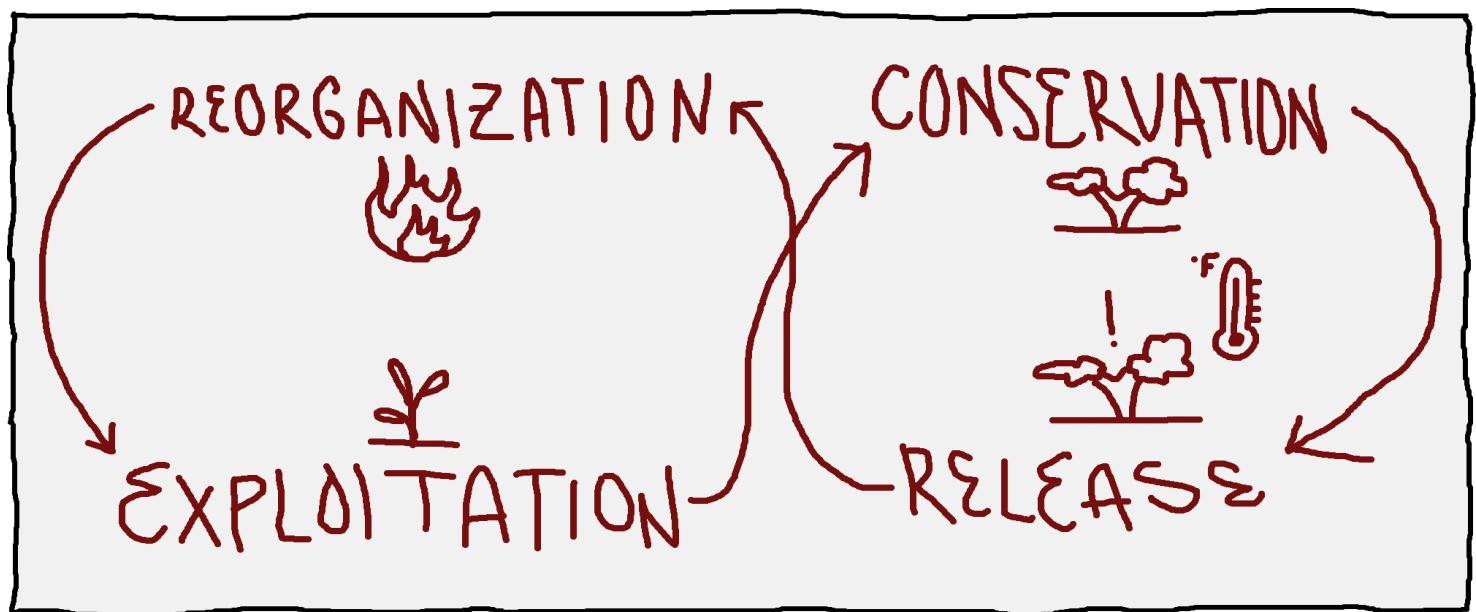
Same goes for the wolves. Wolf reintroduction will fail without the insight of the people who know the land best. Native Americans have been connected to Western ecosystems a whole lot longer than the rest of us and so their insight matters. Without looking at the history and practices of the people who have always been here, out West, there will never be successful reintroduction. There will never be successful 'conservation'.



## Ecosystem Theory: Forest Succession



## Panarchy Theory:



Reorganization: system recycles following disturbance (wildfire, flood, glaciation)

Exploitation: early colonization by pioneer species

Conservation: nutrient development, biomass gained in plants, transition from early successional to late successional (early to late stage)

Release: vulnerability to change by late successional and established species

Diagrams adapted from  
Delcort & Delcort, 2004

# PART THREE

# THE NOT SO "WILD" BUT

# VERY MUCH STILL WILD'

# WEST

The overall success of this long-term [wolf reintroduction] effort provides information that will be of inestimable value to other restoration projects, sharing methods that can help wolves and humans coexist in a changing world and serving as an example of what can happen if people unite to give Mother Nature a chance.

-Jane Goodall

Smith et al., "Yellowstone Wolves" (2020)



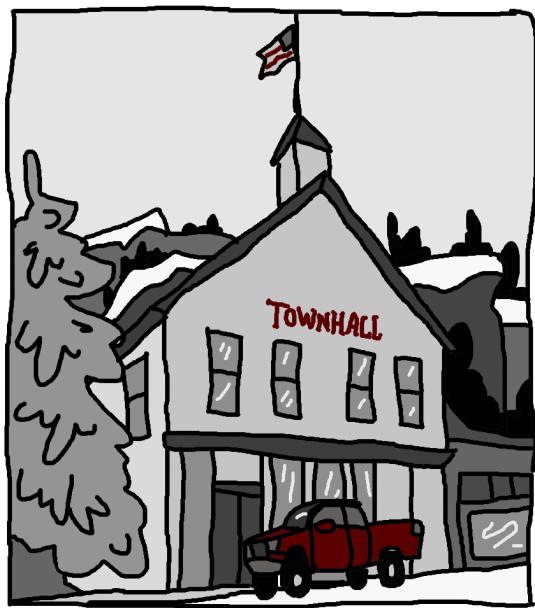


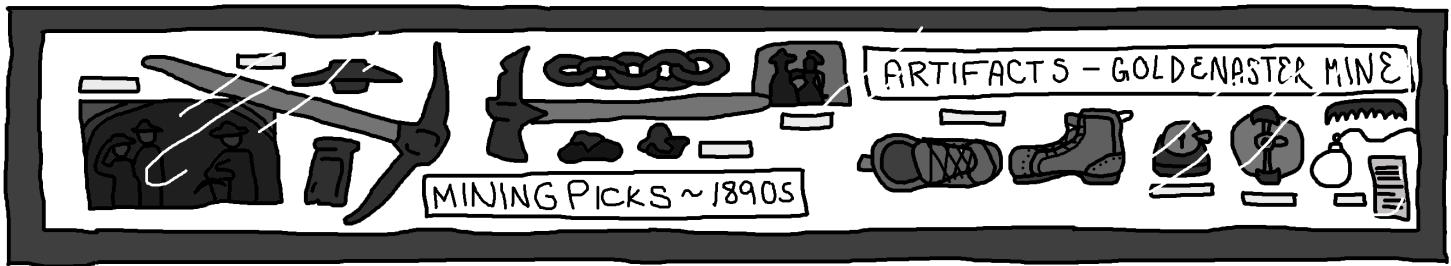
Call at 1:34 AM, 2/15/24

KIM PARREÑAS: Elaine. I just wanted to check in. Im sorry to hear about what happened today with WY-9. I also wanted to let you know that I apologize for being harsh towards you and your team in the paper the other day. You know how much your work means to me—I was just feeling unheard. I hope you understand and again just wanted to check in after yesterday. No need to call back. [Pause] Ill see you at the townhall.

Call at 3:27 PM, 2/15/24

DANIEL GUTIÉRREZ, CPW HINESDALE & MINERAL COUNTY, Hey team, shame about your Wyoming transplant. Just wanted to check in. This have not been smooth for us here either. No sign of CO-6 anywhere and the feds are pissed. How can you loose a wolf they asked. Loose? I'm convinced she was shot and the collar ditched once the hunters realized what they had got. I feel like we need to mourn her or something—same goes for CO-3 and her pups—no one asked if the wolves wanted to be transported from their happy home in northern Canada to the mess that is down here. Anyway the trail had run cold and we are receiving non stop complaints. This was a possibility that no one wanted to consider yet here we are, thousands of tax dollars, a missing wolf, and widowed mother later. Say 'hey' to the Governor for me. She's coming down here next and I cant say I'm looking foreword to it.



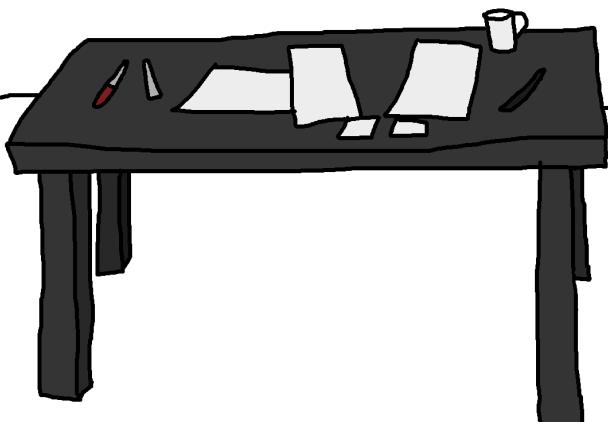
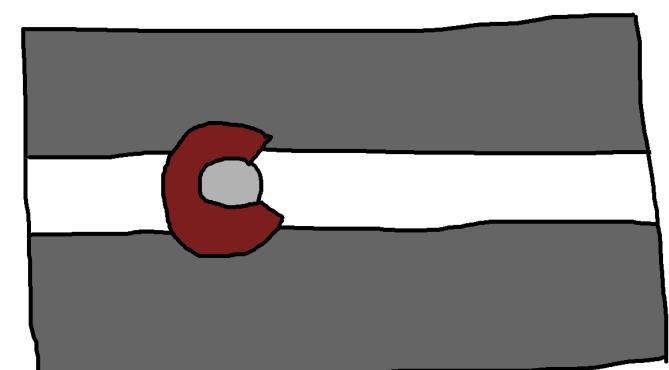


ELAINE, WERE YOU NOT AN OLYMPIAN?

YES, BUT THAT'S WHY I LEFT AFTER MY FIRST 'GAMES'. WILDLIFE BIOLOGY HAS ALWAYS BEEN MY PASSION - I LEFT BECAUSE I HATED THE POLITICS

WILDLIFE MANAGEMENT IS POLITICS. ITS DRAMA, AND THEATRE AND EMOTION

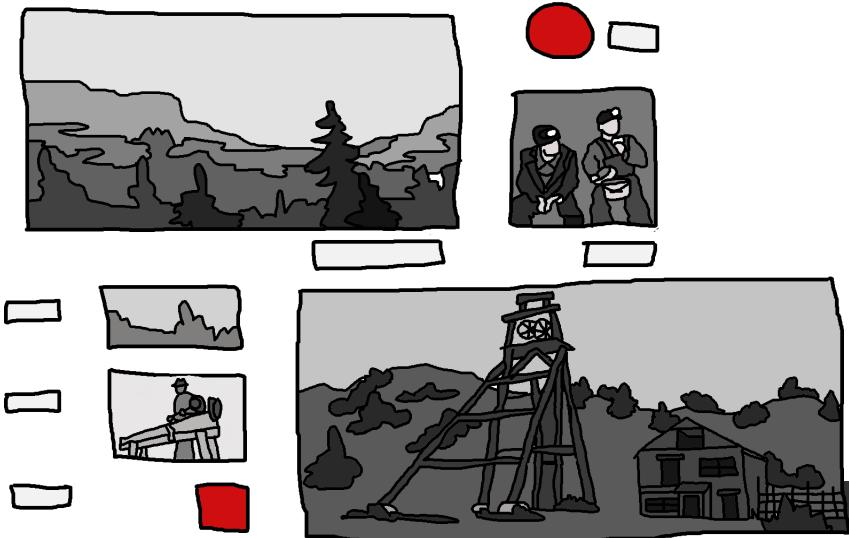
EXACTLY, BUT IT DOESN'T NEED TO BE. ITS JUST APPLIED SCIENCE - WHY DOES IT HAVE TO BE ANY MORE THAN THAT



ELAINE CAN I LET YOU IN ON A LITTLE SECRET?

DON'T TELL ANYONE ELSE - I HAD THE CHANCE TO LOOK OVER THE DONOR LIST FOR THE "PALS OF PREDATORS". ONE OF THE TOP DONORS, CHARLIE ROBINSON, OWNER OF COLORADO'S THIRD-LARGEST PRIVATE CONTRACTOR. THEY SPECIALIZE IN MIDDLE-CLASS RESIDENTIAL. HIS FATHER-IN-LAW, HOWARD MARRIS, CFO OF "AWESOME! SKI RESORTS".

YOU MAY REMEMBER SKIING 'POWDERPUFF' AS A KID. "AWESOME!" IS LOOKING TO BUY THE SITE AND REVAMP IT FOR THE '26-'27 SEASON. STATE OF THE ART, HIGH-TECH, HIGH-SPEED CHAIRLIFT. IF IT GOES TO PLAN, MONTECLARO'S GOING TO GET A WHOLE LOT BUSIER. I SUSPECT MR. ROBINSON'S LOOKING TO CAPITALIZE ON THAT.



THE OLD ROAD TO POWDERPUFF RUNS RIGHT  
THROUGH THE RANCHES ALONG THE MEDICINEROOT  
IF SOMEONE COULD GET THEIR HANDS ON THAT  
RANCHLAND, THEY COULD MAKE A SMALL FORTUNE  
I FEEL THAT MR. ROBINSON'S HOPING THAT  
ALL THIS UNCERTAINTY AROUND PROPOSITION 114  
MIGHT JUST GET THEM TO SELL.

GOVERNOR ALLEN, THE  
MAYOR WOULD LIKE  
A WORD BEFORE THE  
TOWNHALL.

FOLLOW THE MONEY, ELAINE,  
EVERYTHING WE DO IS  
POLITICAL.



# On Wolves and False Profits: What Happened in Yellowstone Was Not a Miracle, and We Can't View Wolves as Our Saviors.

Guest Commentary, Henry Brittlebrush. Professor of Biology, Colorado College: Monteclaro. *Originally published to the University Newsletter 2/18/2024*

The idea of trophic cascade is central to the argument from much of the pro-wolf conservation legislation but is largely based on the misappropriation of an ecological concept. This idea comes from ecosystem dynamics and is used to explain how one keystone species, such as the wolf, has a whole host of influences on other species and their presence changes the landscape through “trickle-down” reactions. Yellowstone National Park (YNP) provides a perfect example of trophic cascade in action, demonstrating how the reintroduction of the wolf changed elk behavior, decreasing grazing on woody plants ,which in turn allowed stream-hugging willows to reestablish, luring the beaver to come back and dam the rivers. Beavers are an example of ecosystem engineers who manipulate their environment which provides homes for a host of other species. The willows not only brought back the beaver that dammed the streams and restored the wetlands, but also decreased riverbank erosion and allowed for more species to flourish. This example of trophic cascade seems almost too good to be true and that's because it is.

Explaining everything that was seen following wolf reintroduction to YNP puts too much emphasis on trophic cascade to explain all the changes in ecosystem processes that were documented. First proposed by researchers, what was seen in Yellowstone had the potential to prove the exact role wolves play in their environment with tangible effects that could be presented as proof that such conservation efforts are worth their investment. Trophic cascade was quickly ruled out as the explanation behind the changes documented, but the idea had gone mainstream and journalists like George Monbiot built careers off of discussing how “wolves saved the broken ecosystem”. Monbiot is not to be fully blamed here, he is an investigative journalist who applied what he saw in Yellowstone to this scientific principle, but his analysis of the magnitude of the wolves' effect on landscape dynamics generalizes inconclusive findings from inconsistent and lacking data. Monbiot would go on to publish a best-selling book and host a viral ‘TedTalk’ that would go on to be shared in businesses, courtrooms, and schools across the country. I have read Monbiot’s book and watched his viral “TedTalk” and found many faults with his logic behind his idea of rewilding and trophic cascade. For sure he is on to something here-

I am not discrediting his work, but I am not alone when I say that his work presents some very large conclusions based on limited data. There is relevance to his findings, however, I am not suggesting that his book is biased or not based on scientifically sound research, I am just saying that he is applying a specific finding to a much broader area. His ideas stuck around and continue to cloud the actual science of wolf recovery project and their impact on ecosystems and human communities. Wolves did not fix the YNP ecosystem—its much more complicated than that.

Trophic cascade exists and has been documented within Yellowstone, but that does not mean that it is applicable to other ecosystems outside of the park's boundaries. Wolves played a significant role in decreasing elk populations and controlling elk behavior in northern Yellowstone, but there still is a lack of consensus over the magnitude of the wolf's impact on prey populations and behavior. This is because there has been no other reintroduction program like the one that took place in Yellowstone and without another controlled or replicable experiment, the finding can only be applied to the park and nowhere else. There are huge uncertainties in the Yellowstone wolf-elk relationship findings because the data is discontinuous and inconsistent with how elk populations are recorded and measured. For instance, elk numbers were historically recorded from field studies that took place over multiple days and largely overestimated the actual population size, but now take place in a single day from aerial counts that generally underestimates size. There are other considerations that need to take place here, such as the fact that wolves were eliminated from Yellowstone ecosystems alongside other elk and calf-predating species like cougars and bears and wolf reintroduction needs to be considered from within that context. Monbiot's research also largely leaves out the pre-colonial history of long-term ecological manipulation by indigenous Americans, but that is a topic for another time.

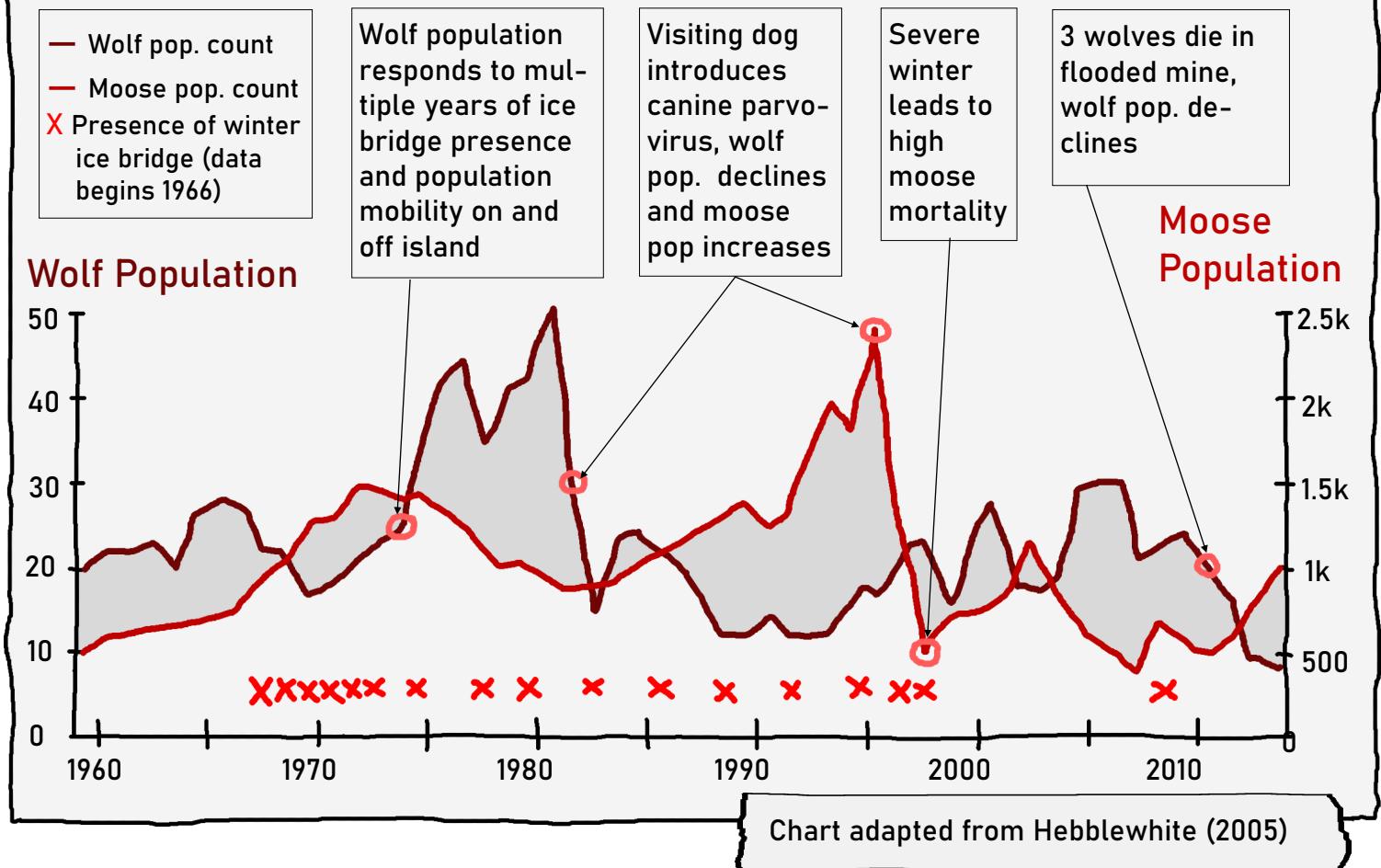
Elk have a significant and direct effect on willow and aspen sapling numbers, but the effect of wolves on elk population number and behavior is uncertain. Monbiot generalizes inconclusive research, but I still respect the man and his work very much. This is more just a critique on what I have been seeing coming from wolf reintroduction supporters. There is a gap between how wolf research is interpreted and what we are actually seeing in the science of "rewilding". These gaps have tangible consequences for the people and animals living in the crosshairs of reintroduction programs like this one. Misinformation is dangerous to producing effective conservation programs.

Population dynamics and the direct effect of one species on another is difficult to determine, especially in predator-prey relationships. Take for example the population trend of wolves and moose in Isle Royale National Park. The growth and decline factors are dependent on a multitude of factors, skewing the effect of wolf presence on moose populations. Population dynamics are more the product of many random happenings that result in non-standard oscillations. The presence of wolves affects elk populations in the West, just like moose populations on Isle Royale, but the magnitude of that effect is impossible to pull out given the small data size and numerous random factors like the introduction of disease or harsh winters that crash population numbers. Monbiot relies far too heavily on the idea of trophic cascade to explain what has been observed in Yellowstone and fails to consider other factors from bear population data to human hunter influence.

Bottom line, what we are seeing from reports of trophic cascade in places like YNP is important because it gives us better insight into how top predators influence entire ecosystems. I voted in favor of the wolf bill and I still stand by that - wolves play a vital role in maintaining the health and wellbeing of the flora and fauna of the Rocky Mountains, despite their direct impact still being uncertain. What we are doing here in Colorado is vital to improving our understanding of wolves and predator-prey relationships and how they play out on landscape-level scales, but misconceptions like the one demonstrated by Monbiot hurt future reintroduction efforts because they generalize research that leads to unreasonable expectations.

We have a joke among biological scientists, "short-term data may answer specific questions, but long term data asks new ones". The results seen in YNP provide us with one answer: reduced herbivory improves the growth of woody forage plants, like willows, which can help reduce stream erosion. The study also presents a follow-up question that we can not yet answer but can work towards with the Colorado reintroduction: to what degree are wolves responsible for restoring ecosystem dynamics?

## Population of Moose and Wolves, Isle Royale NP, MI



Predator-prey population trends generally follow oscillating cycles where one species benefits at the expense of the other until variable conditions force the trend in the opposing direction. These patterns are rarely consistent and represent how ecosystems operate as a series of events and reactions. At small-scales, patterns are easier to see making places like islands vital to ecology. Minnesota's Isle Royale National Park is a remote, rugged island located offshore in Lake Superior where wolve and moose populations are directly connected. Population data began being recorded n the late 1950s and clearly demonstrates how species respond to random events. An icebridge from the mainland to the island allows for species dispersal through a short window of time allowing isolated populations to travel on and off island, gain new members, and replenish a restricted gene pool. The connection between island and mainland directly influences to population dynamics. Random events such as disease introduction or severe weather trigger shifts in population oscillations on Isle Royale which can be applied to larger ecosystem trends, making records take on islands vital to ecological science.

# Causes of Wolf Death: Yellowstone National Park

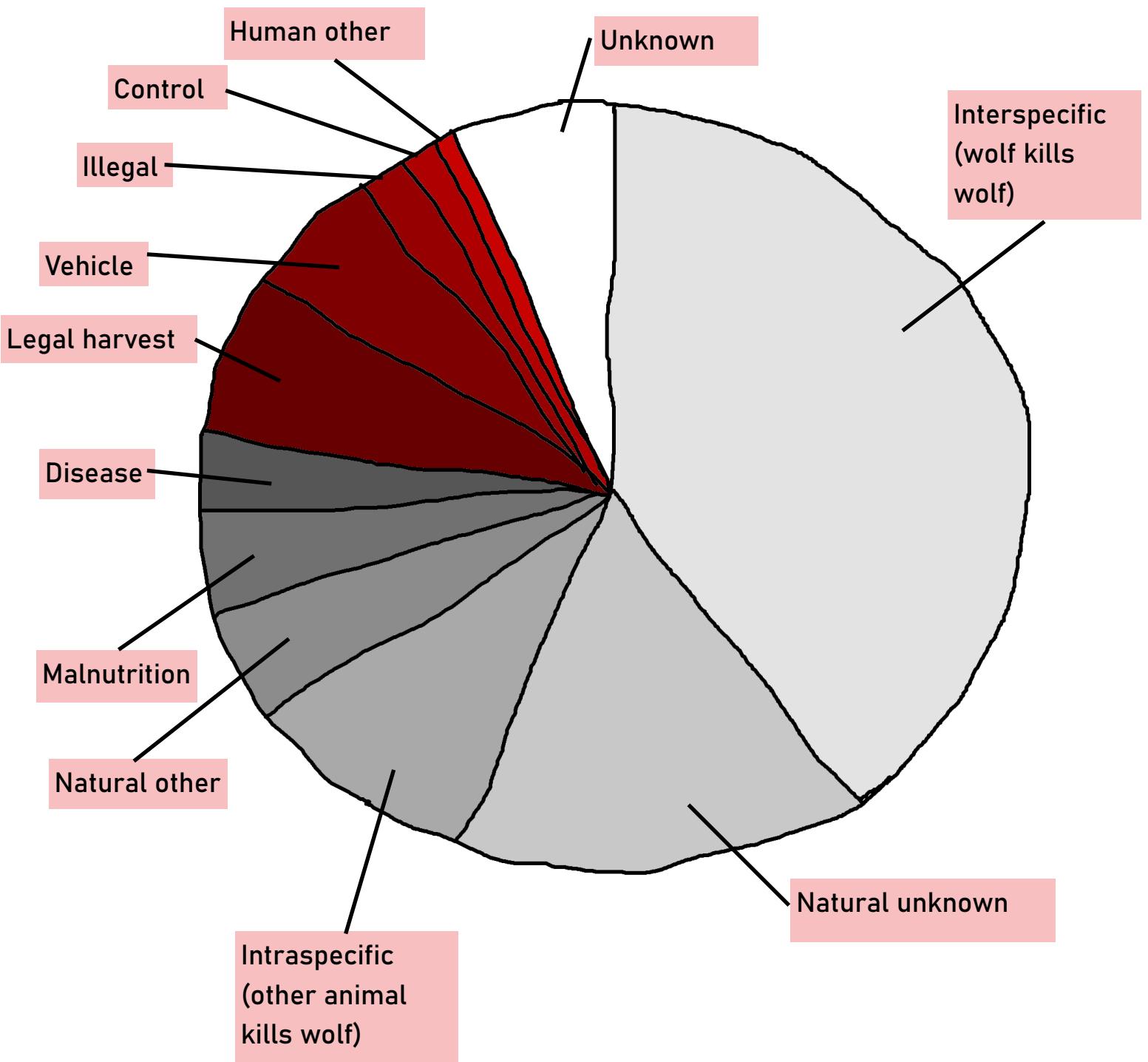


Chart adapted from Smith et al. (2020)

# Causes of Wolf Death: Outside Yellowstone NP

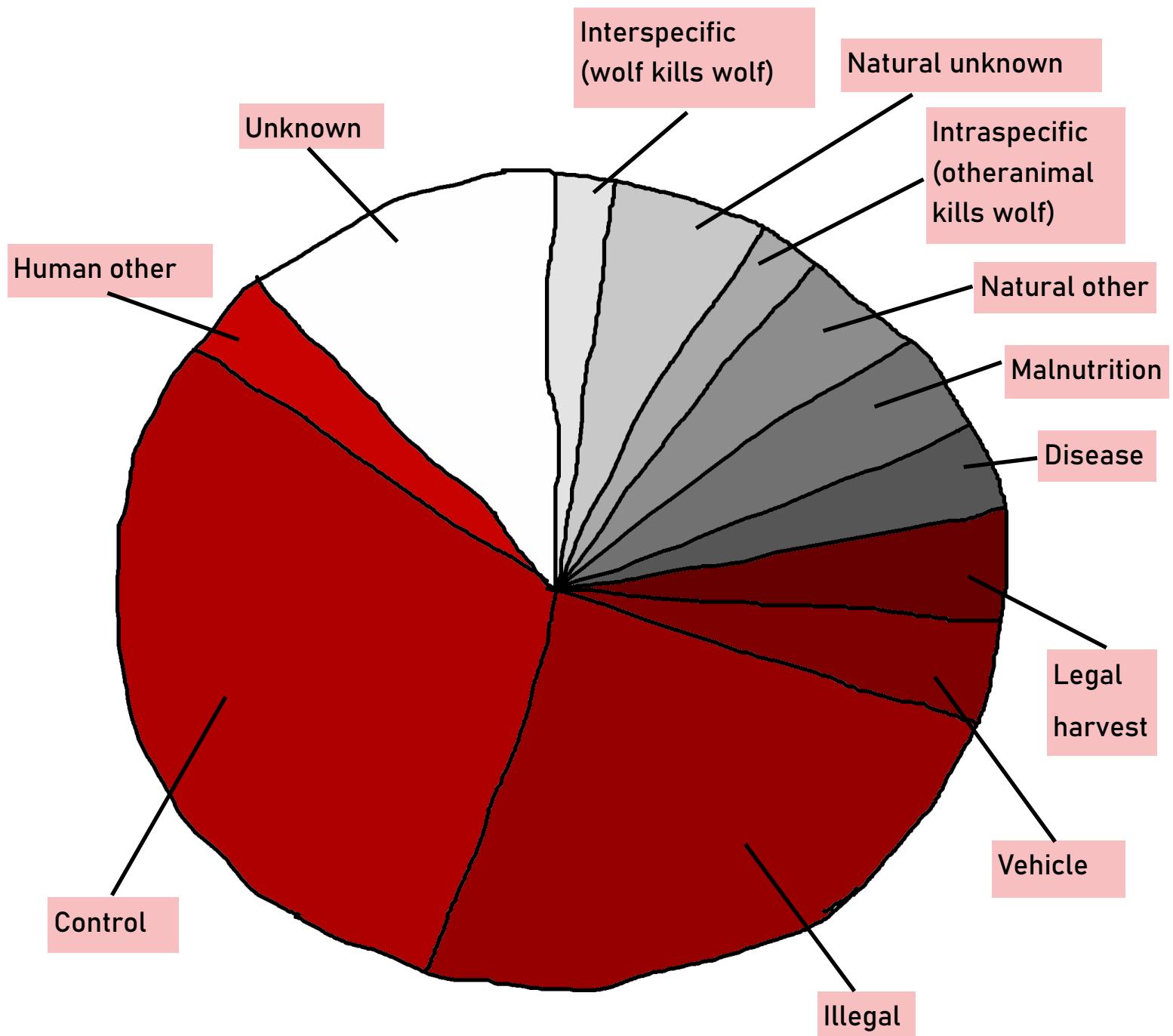


Chart adapted from Murray et al. (2010)

*Radio Broadcast recorded 2/5/2024, Monteclaro University Community Radio Station. 7:01 AM-7:23 AM*

[SOUNDBITE OF A HORSE BRAYING]

MARY-MAY: Welcome back to Sunny Side Up. When we left off yesterday, we were talking about how wolves were systematically eradicated in the West to make ranching easier. But in some places that were not as easy as it was in Colorado. In places like northern Montana and around the Nez-Perce National Forest in Idaho, wolves were never fully removed and frequently come down from forests in Canada. Despite local hunting laws, states like Montana and Idaho have never been wolf free. This is where today's story starts, on horseback traversing a snow-covered ranch outside of Helena.

[SOUNDBITE OF HORSES GALLOPING]

MAGGIE: Watch this bit here, we're crossing a frozen stream and there can be some unexpected rocks.

MARY-MAY: The voice you are hearing belongs to Maggie Day, she owns Jackalope Ranch, nestled in a protected valley along the Absaroka Mountain Range. This ranch has been in the day family since the late 1890s and they have had to learn how to contend with a diverse array of Montana wildlife.

MAGGIE: It's never easy. If it's not one thing it's another. Last week we had a grizzly stalking our pregnant females. Before that our dog got into it with a mountain lion. Oh and right before Christmas we had a family of foxes raid the henhouse. I would get frustrated if I did not love being on the land like this. You just have to learn how to adapt.

MARY-MAY: Were riding out to a spot on the ranch where the cattle are scattered close to the valley wall. Behind us is Maggie's brother, David, and their four dogs keeping pace. I was greeted by spotted faces and cropped tails when I arrived. Zenith and Azmuth are cattle dogs and help the Day's herd and move cattle in daily operations, but Talus and Scree are husky mixes and are taken out specifically to help train the cattle.

MAGGIE: Okay this is how it's going to play out. You are going to ride left with David and I'll go right. Were going to round up the cattle

[PLAY FROM RECORDING "CATTLE RANGLING" 15:03-15:27]

MARY-MAY: What we're doing here may seem a bit odd but it's training for the new females in the herd. Talus and Scree are kept away from the cattle normally so that they are not associated with the working cattle dogs. They look like wolves and the Days hope that their association with this training exercise will help the herd learn how to protect themselves when they sense the presence of wolves.

MAGGIE: In the wild, bison will form a protective circle whenever wolves come around. The calves are kept in the middle where the wolves can't get in. Were trying to teach the cows to do the same thing when they see our dogs, Talus and Scree.

MARY-MAY: In an almost choreographed maneuver we help push the cows to form a protective ring. It's still a bit chaotic, but the cows seem to instinctively know what to do. Even still a few calves are lost in the chaos. The Days make sure to keep this training as quick as possible to not distress the new mothers too much.

MAGGIE: A couple of times a month we go out with Talus and Scree. It took a bit of training but now the cows seem to understand what to do. The most important thing is to keep them from running. Cows when circled up like this are safe, but a cow on the move is a dead cow. They can't outrun wolves so this is the safest strategy for them and something their wild ancestors learned to do.

MARY-MAY: The Days are some of the frontrunners on more sustainable cattle ranching. The state that finding solutions to raise cattle alongside wolves is essential for sustainability, not just incorporating more eco-friendly practices.

MAGGIE: We are doing things differently and it seems to be working. Our farm started raising Highlands because of how cold it gets up here but we learned that because Highland cattle have horns, the wolves are much less likely to approach. The same goes for the grizzlies. There's a preference for polled cows, those breed to have no horns, because they are easier to manage, transport, and raise in close proximity without risk of injury. But cows without horns are more susceptible to predators so if we're looking to keep wolves on the landscape we should shift our ranching practices to reflect that. What we're doing now, with ranching generally, is just not smart for cow or rancher.

MARY-MAY: Along with breed of cow and wolf training, the Days employ a handful of other strategies to better live alongside wolves.

MAGGIE: We're constantly checking on them. Most ranching in the West follows the approach of 'turn them loose in the summer and round them up in the winter'. We can't do that. It does increase the time commitment needed for this job but it's necessary. We prepare our herd with all the available resources to keep themselves safe and then provide a watchful eye. They still mostly take care of themselves but we are here to provide that extra support, as good ranchers should.

DAVID: And it's not just us. A lot of ranchers out here in western Montana have learned to live with wolves. And bears. And mountain lions. Ranching can one-hundred percent exist in a landscape with large predators and we are proof of that. It will take a bit of experimenting and patience but we will figure it out. It's not an either-or scenario. Ranching is not going anywhere because the wolves are coming back. If anything is going to get better because it takes into consideration our impact of raising cows on the environment and animals we share a ranch with.

MARY-MAY: As David mentioned, the Day's are just one example of how ranchers are learning to adapt to the wolves. Their incorporation of predator considerations in the model of sustainable ranching is gaining them the attention of ranchers across the West.

MAGGIE: It's not about who is doing it right or wrong it's about trying. It's about making a life and living off the land and listening to what it has to say. The bison really gave us all the answers and I can't really take any credit. All the answers are there, you just have to listen.

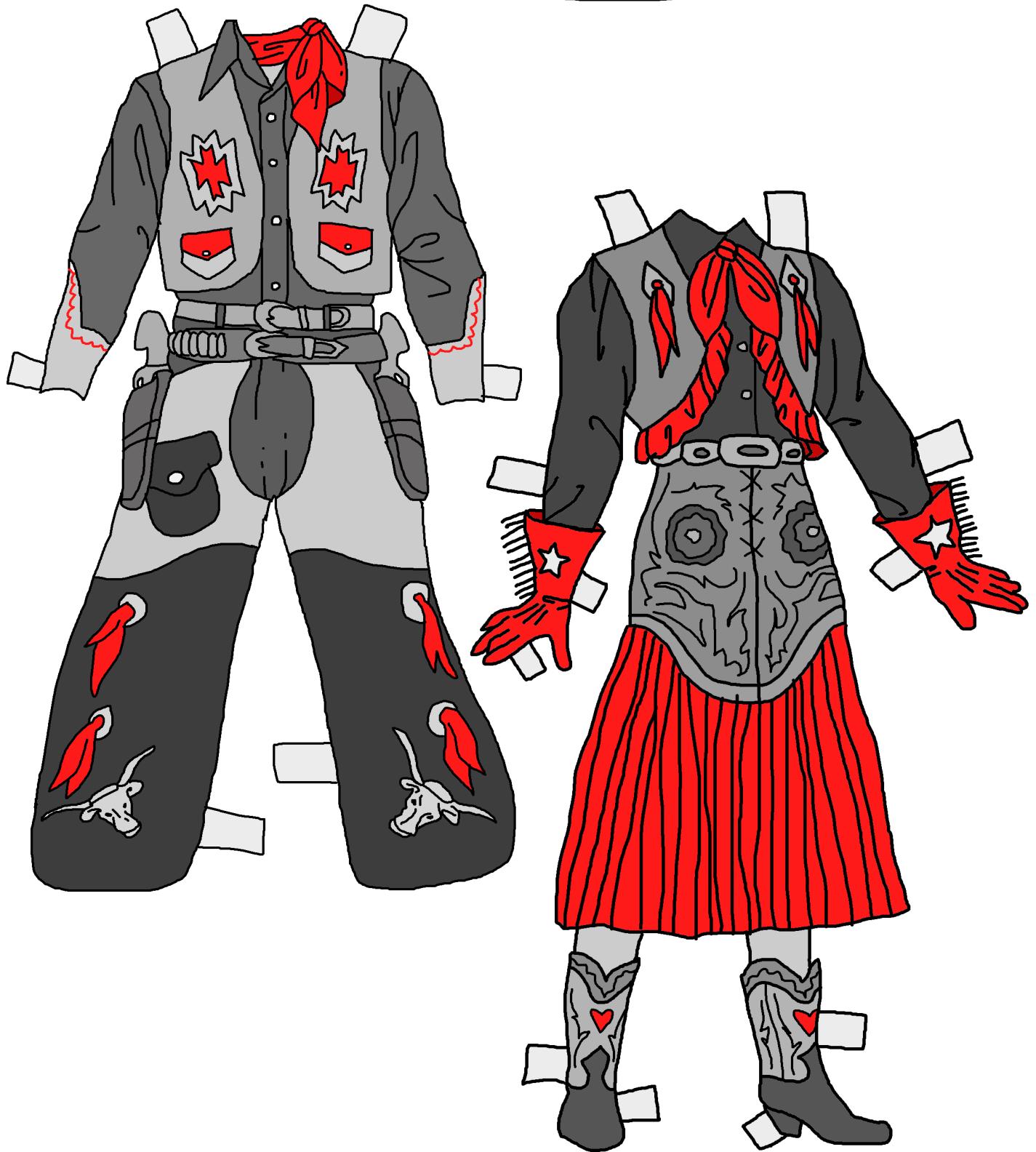
I hope you have a better understanding of the wolf reintroduction debate now. As you are probably aware, there is no clear answer here. There never really is. This debate has failed to really consider the wolves as just animals and instead gets trapped in the same arguments over rights privileges. We really have all the answers we need—it now just comes time to act on them.

Unfortunately ,the real losers in this debate are the wolves who continue to suffer by way of gunfire and poison. Sustainability is achievable, but not easy and it is up to us to determine how much we are willing to “give up” to make space for them.

Oh, and me? Ill be alright. I'm merely just a ghost of time long past. Ill miss having someone to talk to but hopefully I can see you around. Maybe next time you're driving the long, lonely highway across scrub-pine hills and sagebrush valleys we'll meet again. Ill be around, sweeping the stoop of boom-towns long since reclaimed by wildflower and ponderosa or sitting behind the check-out counter at some tourist trap outside of Yellowstone. Heck you might even see me out here, waiting for the night that I hear the wolves call, just one more time.



WORK CUTTED



Banzhaf, H. Spencer. "The Environmental Turn in Natural Resource Economics: Conservation Reconsidered" *Journal of the History of Economic Thought*, vol. 41, no. 1, Mar. 2019, pp. 27–46. Cambridge University Press, <https://doi.org/10.1017/S1053837218000305>.

Barnhill, Frankie. "Idaho's New Wolf Hunting Law Digs up Old Wounds as Feds Review Listing Status." *Boise State Public Radio*, 2021, <https://www.boisestatepublicradio.org/show/idaho-matters/2021-10-14/idahos-new-wolf-hunting-law-digs-up-old-wounds-as-feds-review-listing-status>.

"Beef Cow-Calf Health and Management Practices in the United States, 2017". *US Department of Agriculture*, 2017, p. 112-205.

Bramwell, Lincoln, and William Cronon. *Wilderburbs: Communities on Nature's Edge*. University of Washington Press, 2014. ProQuest, <http://ebookcentral.proquest.com/lib/ucb/detail.action?docID=3444612>.

Brasch, Sam. "Three Of Colorado's 'Pioneer Wolves' May Have Been Killed In Wyoming." *Colorado Public Radio*, 9 Sept. 2020, <https://www.cpr.org/2020/09/09/colorado-wolves-may-have-been-killed-in-wyoming/>.

Brown, Jennifer. "North Park Is Ground Zero in Colorado's Wolf Controversy. Ranchers Want to Know If Anyone Hears Them." *The Colorado Sun*, 30 Jan. 2022, <https://coloradosun.com/2022/01/30/wolf-reintroduction-colorado-rancher-concerns/>.

"Wolf Reintroduction Happened so Fast in Montana and Idaho, the States Are Expanding Hunting. Here's What Colorado Can Learn." *The Colorado Sun*, 13 July 2021, <https://coloradosun.com/2021/07/13/gray-wolf-reintroduction-hunting/>.

Brown, Jennifer, David, Gilbert. "Ranchers in Some States Can Shoot Wolves That Attack Livestock, but Not in Colorado." *Durango Herald*, 2021, <https://www.durangoherald.com/articles/ranchers-in-some-states-can-shoot-wolves-that-attack-livestock-but-not-in-colorado/>. Accessed 7 Feb. 2022.

Colpitts, George. "Peace, War, and Climate Change on the Northern Plains: Bison

- Fortin, Daniel, et al. "Wolves Influence Elk Movements: Behavior Shapes a Trophic Cascade in Yellowstone National Park." *Ecology*, vol. 86, no. 5, 2005, pp. 1320–1330.
- Gibbs, Michael. *Frontier Re-Imagined: The Mythic West in the Twentieth Century*. University of South Carolina. ProQuest, <http://www.proquest.com/docview/2185956268/abstract/4575305D4D044BFEPQ/1>. Accessed 8 Mar. 2022.
- Hebblewhite, Mark. "Predation by Wolves Interacts with the North Pacific Oscillation (NPO) on a Western North American Elk Population." *Journal of Animal Ecology*, vol. 74, no. 2, 2005, pp. 226–33. Wiley Online Library, <https://doi.org/10.1111/j.1365-2656.2004.00909.x>.
- Kauffman, Matthew, et al. "Are Wolves Saving Yellowstone's Aspen? A Landscape-Level Test of a Behaviorally Mediated Trophic Cascade." *Ecology*, vol. 91, no. 9, 2010, pp. 2742–55.
- Marris, Emma. *A Very Old Man for a Wolf*. [Podcast] <https://www.outsideonline.com/podcast/very-old-man-wolf/>. Accessed 7 Feb. 2022.
- Matsumura, Shuichi, et al. "Reconstructing the Colonization History of Lost Wolf Lineages by the Analysis of the Mitochondrial Genome." *Molecular Phylogenetics and Evolution*, vol. 80, Nov. 2014, pp. 105–12. *ScienceDirect*, <https://doi.org/10.1016/j.ympev.2014.08.004>.
- Monbiot, George. *For More Wonder, Rewild the World*. TedTalk, 2013. [www.ted.com, https://www.ted.com/talks/george\\_monbiot\\_for\\_more\\_wonder\\_rewild\\_the\\_world](https://www.ted.com/talks/george_monbiot_for_more_wonder_rewild_the_world).
- Monda, Collin. *Trouble With Wolves*. Prime Video, 2020, [Documentary] <https://www.amazon.com/gp/video/detail/B087421NDT/>.
- Murray, Dennis L., et al. "Death from Anthropogenic Causes Is Partially Compensatory in Recovering Wolf Populations." *Biological Conservation*, vol. 143, no. 11, Nov. 2010, pp. 2514–24. *ScienceDirect*, <https://doi.org/10.1016/j.biocon.2010.06.018>.
- Murtazashvili, Ilia. *The Political Economy of the American Frontier*. Cambridge

Ripple, William, Beschta, Robert. "Linking Wolves and Plants: Aldo Leopold on Trophic Cascades." *Biological Science*, vol. 55, no. 7, 2005, pp. 613–21. JSTOR, [https://doi.org/10.1641/0006-3568\(2005\)055\[0613:twapal\]2.0.co;2](https://doi.org/10.1641/0006-3568(2005)055[0613:twapal]2.0.co;2).

Robinson, Michael. *Predatory Bureaucracy: The Extermination of Wolves and the Transformation of the West*. University Press of Colorado, 2005.

Rott, Nathan. "Montana Ranchers Learn Ways To Live With Wolves." *KUER*, 8 Feb. 2014, <https://www.kuer.org/2014-02-08/montana-ranchers-learn-ways-to-live-with-wolves>.

Sayre, Gordon M. "Feral: Rewilding the Land, the Sea, and Human Life by George Monbiot (Review)." *Resilience: A Journal of the Environmental Humanities*, vol. 4, no. 1, 2016, pp. 169–74.

Schmitz, Oswald J., et al. "Trophic Cascades in Terrestrial Systems: A Review of the Effects of Carnivore Removals on Plants." *The American Naturalist*, vol. 155, no. 2, 2000, pp. 141–53. <https://doi.org/10.1086/303311>.

Smith, Douglas W., et al. *Yellowstone Wolves: Science and Discovery in the World's First National Park*. University of Chicago Press, 2020, [https://colorado.idm.oclc.org/login?url=https://search.ebscohost.com/login.aspx?direct=true&db=nlebk&AN=2593845&site=ehost-live&scope=site&ebv=EB&ppid=pp\\_vii](https://colorado.idm.oclc.org/login?url=https://search.ebscohost.com/login.aspx?direct=true&db=nlebk&AN=2593845&site=ehost-live&scope=site&ebv=EB&ppid=pp_vii).

Sutherland, Paige, and Meghna Chakrabarti. "The Indigenous Communities Rising up to Protect the Gray Wolf." On Point, *WBUR, Boston*, 26 Jan. 2022, <https://www.wbur.org/onpoint/2022/01/26/newly-removed-from-the-endangered-species-list-whats-next-for-americas-gray-wolves>.

White, Courtney. *Revolution on the Range: The Rise of a New Ranch in the American West*. Island Press, 2008. ProQuest, <http://ebookcentral.proquest.com/lib/ucb/detail.action?docID=3317537>.

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