

The Coloradan Gray Wolf Reintroduction:
An Ecological, Social, and Political Digestion

Honors Thesis

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Abstract

Proposition 114, also known as the Reintroduction and Management of Gray Wolves Proposition, has sparked ongoing controversy in Colorado since its original proposal in 2019. While the proposition suggests that the introduction of wolves will serve beneficial to the state of Colorado, a growing collection of evidence suggests otherwise. This review analyzes both current evaluations of Colorado's ecosystem, as well as studies following similar reintroductions and wildlife initiatives, dating back to Yellowstone's initial wolf reintroduction in 1995. Evidence from these studies has yielded recurring themes that suggest that the enactment of Proposition 114 proposes little to no benefit to Colorado ecologically, recreationally, or economically. The lack of tangible value accumulated in the logistics of the proposition suggests that bringing wolves back to Colorado has become less about species conservation, but has fallen victim to the driving factors of politics and social division.

Colorado is a state known for its redeemable efforts towards the coexistence of wildlife with suburban populations. As its reputation follows, Colorado has participated in various wildlife reintroduction efforts over the last half century, including, but not limited to, that of the bighorn sheep, moose, elk, and lynx. These restoration projects have often been presented on accounts of both ecological and recreational improvements, while others have been pushed forward to return a species to their native land. However, although ecologically intuitive, the political and social drivers of these introductions have oftentimes made these projects multifaceted. A subsequent question arises: Are all wildlife reintroductions done in good faith? An easy answer would be yes, they are. The thought of reestablishing a lost species to its indigenous home is a seemingly beneficial one to the general population. However, the political and social drivers and aspects of some of these wildlife reintroductions often introduce complications that overlook the so-called “effort to restore the ecosystem”, tainting the original ecological purpose such reintroductions hold in the first place. In recent years, a highly controversial reintroduction became a reality in western Colorado as voters enacted the reintroduction of wolves in December of 2023.

Colorado Proposition 114, also known as the Reintroduction and Management of Gray Wolves Proposition, sanctioned the release of ten gray wolves in Colorado in December of 2023 (Colorado Parks and Wildlife., n.d.). This was decided in the General Election of 2020 as the measure appeared on ballots of all voters across the state. A majority rule forced the releasement plan of gray wolves into creation by Colorado Parks and Wildlife (CPW), an organization responsible for the management of natural areas and species residing in Colorado. In 2023, three years after the origination of this plan, the gray wolf made its debut into western Colorado. These

wolves, captured from Oregon, were released into public lands within counties Grand and Summit as an effort towards restoration and reintroduction. The reintroduction has been extremely controversial among the people of Colorado, and although on the surface there seems to be many positive attributes that could be brought to Colorado as a result, many residents had concerns towards the project.

The idea of reintroducing the gray wolf to Colorado's ecosystem has been a circulating thought since the mid-1990's following Yellowstone's seemingly successful wolf reintroduction in 1995 and 1996. Despite this, the restoration was only first proposed to the Colorado secretary of state in May of 2019 by the Rocky Mountain Wolf Project, a non-profit organization dedicated to bringing back sustainable gray wolf populations in Colorado (Ballotpedia, n.d.). Proposition 114, which started as Initiative 107, proposed the reintroduction of gray wolves west of the continental divide with both "public input in commission development of [the] restoration plan" and "compensation to owners of livestock" (Colorado General Assembly, 2019). This reintroduction program, was proposed on the account of four notions:

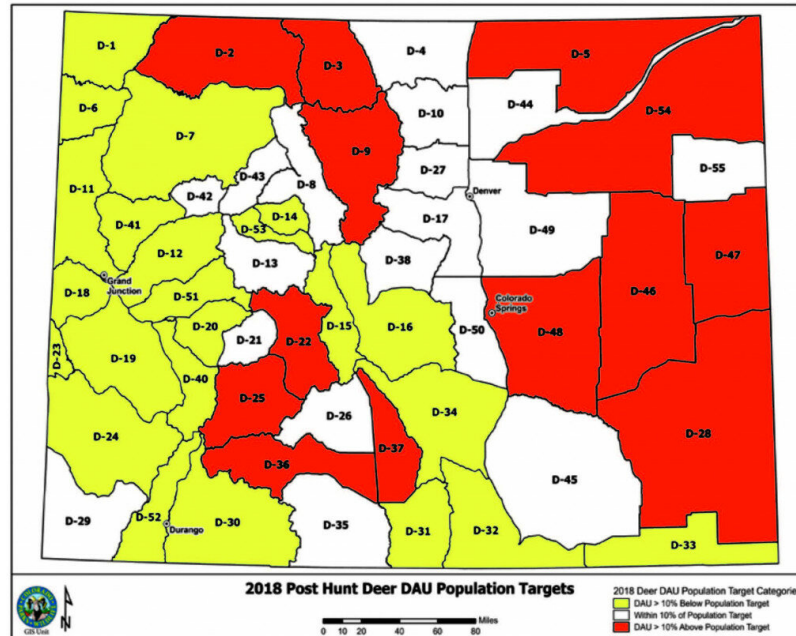
- a. HISTORICALLY, WOLVES WERE AN ESSENTIAL PART OF THE WILD HABITAT OF COLORADO BUT WERE EXTERMINATED AND HAVE BEEN FUNCTIONALLY EXTINCT FOR SEVENTY-FIVE YEARS [IN THE STATE];
- b. THE GRAY WOLF IS LISTED AS AN ENDANGERED SPECIES ON THE COMMISSION'S LIST OF ENDANGERED OR THREATENED SPECIES;
- c. ONCE RESTORED TO COLORADO, GRAY WOLVES WILL HELP RESTORE A CRITICAL BALANCE IN NATURE; AND

d. RESTORATION OF THE GRAY WOLF TO THE STATE MUST BE DESIGNED TO RESOLVE CONFLICTS WITH PERSONS ENGAGED IN RANCHING AND FARMING IN THIS STATE (Colorado General Assembly, 2019)

This proposal, while inherently good natured, displays flaws. For one, the proposal notes that “once restored to Colorado, gray wolves will help restore a critical balance in nature”. When reading this proposal, the reader might ask, “What balance is to be restored?”. While a stable ecosystem is not necessarily reliant on a singular species, it can be heavily influenced by one, This is commonly known as a keystone species. A keystone species can be defined as a one that has an extraordinarily large effect on the ecosystem in which it lives in comparison to other species that inhabit it (National Geographic Society, 2024). In many ecosystems, apex predators, such as the gray wolf, hold this role. Such predators are responsible for the stabilization of ecosystems through a trophic cascade, preventing any one species that resides below them on the food chain from becoming over or underpopulated. A disbalance of any one population could lead to detrimental effects on the structure and function of the ecosystem as a whole. Regarding the presence or absence of carnivores in an ecosystem, overgrazing often becomes the forefront of concern.

Overgrazing can be described as excessive feeding on grassland beyond the point of sustainability. This term is commonly used in regards to livestock given too much time to graze on a certain portion of land. In naturally occurring populations and ecosystems, the culprit of overgrazing is excessive, large herbivore populations, such as deer and elk. Regulation of these animals typically falls on carnivorous populations, and failures of such regulation commonly trace back to lack of these carnivores in the ecosystem. Proposition 114 directly lists one of two arguments for the proposition as “Gray wolves perform important ecological functions that

impact other plants and animals. Without them, deer and elk can overgraze sensitive habitats such as riverbanks, leading to declines in ecosystem health” (Colorado General Assembly. n.d.). However, the proposition later admits that the deer population in Colorado has been on a steady decline since 2006, while the elk population has remained relatively stable. The decline of deer populations is incredibly apparent as Colorado's statewide population has decreased from about 600,000 deer in 2006 to about 433,000 in 2018 (Colorado Parks and Wildlife, 2020). This decline is not a recent discovery, but has been known to wildlife officials for years as the deer populations in Western Colorado have been declining ever since the 1970’s. In 2018, only a year before the proposal, Colorado Parks and Wildlife expressed concern over declines in the largest herds in Western Colorado, explicitly saying that mule deer populations were facing more threats presently, in 2018, than they ever had before. Some of these threats included intense weather, habitat loss, disease, predation, and many others. These factors largely affected populations as 25 out of 54 deer herds in Colorado (46%) fell under objective targets in 2018, while 4 out of 42 (10%) of the state’s elk herds were below target as well (Colorado Parks and Wildlife, 2020). Of these herds, most were located west of the continental divide, where the wolves were proposed to be released.



Colorado Parks and Wildlife. (2020). *2018 Post Hunt Deer DAU Population Target*

Overgrazing within these areas due to deer is unlikely as populations are not meeting their target quota. While a reintroduction of wolves in an area overpopulated with deer and elk could reduce the harmful effects of overgrazing, such as soil erosion, introducing wolves into a currently underpopulated western Colorado could further contribute to the decline of deer. A continued decrease in these populations has potential to lead to the overpopulation of vegetation within the area, eventually leading to larger “ripple” effects within the ecosystem.

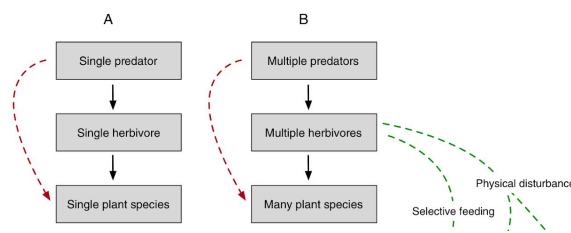
Additionally to deer and elk, gray wolves also feed on moose, a recently reintroduced species to Colorado. Historical records dating back to the 1850’s indicate moose’s presence in Colorado, likely wandering from Wyoming, but there was never an established population within Colorado itself until recent efforts (Colorado Parks and Wildlife, n.d.). In the 1950s, Colorado wildlife officials started to consider the reintroduction of the moose on the account of lack of natural predators and abundant habitat within the area. However, this task turned out to be rather difficult as state legislation refused to fund the project, forcing the Division of Wildlife to seek funds from private sources including various wildlife and sporting organizations and private

individuals (Duvall, A. C., & Schoonveld, G. S., 1988). Despite this toil, a successful introduction proceeded in 1978. Since then, there have been four additional releases of moose into Colorado to support and sustain the possibility of a secure breeding population. By 2012, with incredible effort and proper management, the moose population had reached 2,300 in Colorado (Colorado Parks and Wildlife, n.d.) and is now reaching up to 4,000 in 2025 (Wisniewski, K., 2025). However, a species that previously lacked any natural predators could be significantly impacted by an introduction of an apex predator, such as the gray wolf, into the ecosystem. Since the gray wolf's diet primarily consists of large-hoofed mammals, moose are an extremely large target. This especially applies to the ten wolves that Colorado Parks and Wildlife aimed to release, as they were imported from northeastern Oregon, an area with an established breeding population of moose (Oregon Department of Fish & Wildlife., n.d.). These wolves likely have a history of moose hunting due to their previous location. Since wolves teach their young to hunt, moose could not only be targeted by the original group of wolves, but also in the generations that follow. It seems that these two reintroductions contradict each other, as an introduction of wolves with plausible moose-hunting history has potential to undo the extraordinary effort put into reintroducing moose in the first place.

A combination of the potential losses of multiple big game populations within Colorado could have potential detrimental effects on the ecosystem rather than holding the positive impact that was suggested by the proposition. Similar claims of ecological function were made when wolves were reintroduced to Yellowstone National Park. Primarily located in northwestern Wyoming, Yellowstone was abundant with wolves until federal and state mandated control efforts allowed wolves to be hunted to extinction in the 1920s (Hobbs, N., et al., 2024). Following the extermination of this predator, Yellowstone's ecosystem changed slowly in the

following years. Due to an abundance of large herbivores as a result of the loss of a major carnivore, vegetation within the area experienced a dramatic change. This shift was seen most prominently in willow trees. Willows experienced a great decline of abundance and stature as high-density areas of tall willows were soon replaced by low-density areas of short willow due to herbivores overgrazing the trees (Singer, F. J., et al., 1994). Consequently, beaver populations within the area experienced a similar decline as they abandoned the streams within the northwestern range due to losing their primary food source and dam-building material (Jonas, R. J., 1955). Beavers, a keystone species in the Yellowstone ecosystem, provide vital functions such as dam building, which is necessary for raising the water table next to streams. Raised water tables keep the adjacent soil moist, supporting tall willows and other thick vegetation within the area. The loss of beaver dams in northwestern Yellowstone completely changed the nature of the environment from a thick, willow forest to a grassland state as water became less available in the area (Singer, F. J., et al., 1994).

Undoubtedly, the loss of wolves in the Yellowstone ecosystem caused an extreme shift. But would bringing back the wolf years after its extinction restore Yellowstone to its original state? Thompson Hobbs, an academic researcher at Colorado State University argues no. The restoration of an apex predator to a simple, linear trophic cascade model with a single predator, single herbivore, and single plant species would likely reverse the effects of its removal (Hobbs, N., et al., 2024). However, bringing a predator back to a complex food chain involving multiple predators, multiple herbivores, and multiple plant species is not so simple. As Hobbs explains, this is due to the indirect effects of herbivores on the plant community and the ecosystem as a whole stemming from selective feeding and physical disturbance. Such indirect effects are not experienced in a simple linear model.



(Hobbs et al., 2024, Figure 1)

These interactions between remaining species when a predator is removed would likely bring the ecosystem to an alternative stable state, where multiple environmental conditions have slowly changed. An alternate state that has been slowly stabilized over time can show hysteresis. Hysteresis, explained by Hobbs, is when an alternate state of the ecosystem might be resistant to the effects of a reintroduction of a component that had previously been lost, such as the wolf. His team tested the theory of hysteresis at Yellowstone following the reintroduction of wolves almost 70 years after their extinction within the area.

In 1995, 14 wolves were released into Yellowstone, marking the first existence of the predator since 1926 (Hobbs, N., et al., 2024). Several more wolves were released in the two years following, adding up to a total of 41 gray wolves by 1997. Following this introduction, Thompson Hobbs and his group of researchers conducted an observational study to monitor the growth rates of willows in the area, testing to see if they display any change in relation to the presence of the wolves. To conduct this study, the team set up different plots within the area, observing the difference between growth rates of the willows in each plot. Control plots remained unaltered by the researchers, representing the current state of Yellowstone as it is. This current state is also referred to as the elk-grassland state. These control plots would remain vulnerable to the effects of the introduced wolves over the course of the experiment. Meanwhile, the experimental plots were fenced away from herbivores and/or supplied with a dam to raise the water table, representing the conditions in Yellowstone prior to the extinction of wolves 70 years prior, referred to as the beaver-willow state. These plots would be monitored for 20 years following the introduction of wolves. In these 20 years, the researchers hypothesized that

Yellowstone would display hysteresis. This would mean that the current elk-grassland state would be resistant to the effects of wolves on the ecosystem, failing to restore itself to the beaver-willow state that Yellowstone experienced prior to the predator's leave. In other words, the control plots would not display the same restoration as seen in the experimental plots. After 20 years of closely monitoring the different plots, the researchers found that they had predicted correctly. The willows in the fenced and dammed experimental plots displayed a growth rate that tripled the rates found in the control plots, increasing the mean annual growth rate by 9.7 cm/year (Hobbs, N., et al., 2024). Additionally, the average height of the willows in these experimental plots reached beyond 350 cm while the willows in the control plots averaged out at a height of less than 180 cm. If the beaver-willow state had been restored in Yellowstone, experimental and control plots would display similar growth, but they did not.

This lack of restoration from Yellowstone's elk-grassland alternative state to its original beaver-willow state can be attributed to multiple factors. For one, even though the elk population fell from more than 15,000 elk to less than 2,000 in the year 2023, largely in part to the introduction of wolves, the herbivore population stayed stable through an increase of bison in the area (Hobbs, N., et al., 2024). Even though the increase in bison didn't nearly match the loss of elk, bison are much bigger and heavier, consuming way more vegetation, including willow trees. The increase of bison in Yellowstone is a prime example of hysteresis. Although the elk population decreased, the restoration of thick willows was resisted by the increase of another herbivore. Even though wolves had regulated the elk population since the time of their reintroduction, they did not regulate the entire herbivore community. The bison remained generally unaffected by the wolves and a loss of elk within the area simply allowed the bison population to flourish with less competition for resources.

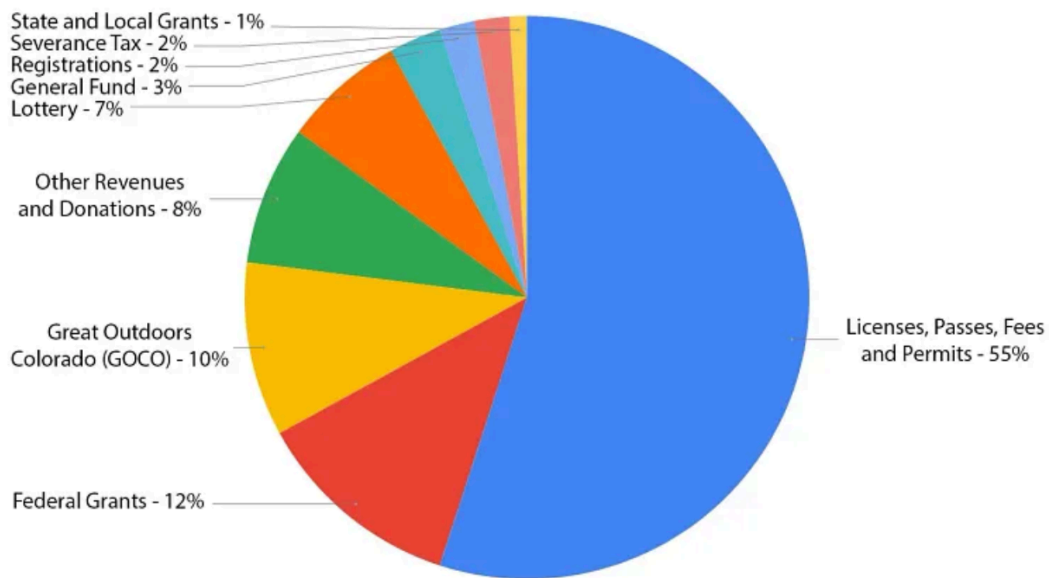
From this experiment, Thomas Hobbs and his team concluded that the ecological restoration that had been hoped for did not occur. However, this conclusion contradicts what the public has been led to believe about wolves in Yellowstone. Through popular media, false claims had been made that Yellowstone's ecosystem had been completely transformed and restored following the reintroduction of the wolf with claims of flourishing vegetation and newly running rivers (Clark, J. R., & Friend, D., 2020). These claims had been taken out of context, often coming from biased studies that aimed to prove the extreme benefit of predator restoration. For example, William Ripple and Robert Beschta, ecologists and conservationists teaching at Oregon State and the University of Arizona, claim that wolves significantly reduced browsing on willows, increasing their growth rate as a result and restoring the previous state of Yellowstone. However, the study conducted by the researchers fails to mention that they used a non-random sampling design, only observing willow growth rates in areas of vegetation that had the best access to groundwater or sites close to rivers that experienced very little change in the first place (Johnston, D. B., Cooper, et al., 2011). Ripple and Beschta also misrepresented the findings of other studies following the effect of wolves on Yellowstone to support their claim. For example, a study from Kristan Marshall, an ecologist and researcher graduating from Colorado State University, concludes that "the 70-year absence of predators from the ecosystem changed the disturbance regime in a way that was not reversed by predator reintroduction". It was further concluded that "predator restoration may not quickly repair effects of predator removal in ecosystems" (Marshall, K. N., et al., 2013). The conclusion of the study was completely ignored by Ripple and Beschta as they used details from the study as evidence to support their claim of ecosystem restoration. Ripple and Beschta's study among other biased experiments were blasted to the general public, leading many to believe that the wolf "fixed" Yellowstone. Misguided

opinions about Yellowstone have shaped the opinion on many wildlife issues, especially the Colorado wolf reintroduction. Swayed to believe that bringing wolves back to Colorado would have a similar beneficial effect on the ecosystem, many showed their support for Proposition 114. Regardless of false claims stemming from nonrandomized and biased studies, ecosystem restoration is not a guaranteed, or even likely effect of the reintroduction of a predator that had been present before sometime in the past.

In addition to ecological impact, an introduction of wolves holds potential to have negative effects on the hunting scene in Colorado. Colorado Parks and Wildlife issues a certain number of hunting licences each year based upon the fluctuation of game populations in the state and the regulatory factors they had faced in the last season. In the 2023-2024 hunting season, CPW issued 236,000 licenses for deer, elk, pronghorn, bear, and moose (Colorado Parks and Wildlife, 2023). This is a 12% reduction from the year prior statewide. The reduction was heavily localized in the northwest region of Colorado, where a 33% reduction in deer hunting licences issues was seen. This can be attributed to many factors including severe weather conditions and Chronic Wasting disease, a neurological disease that has significantly decreased deer populations (Colorado Parks and Wildlife, 2023). As the gray wolf was reintroduced to Colorado in December of 2023, there was far too little time for wolves' predation patterns to hold any significant effect on the number of hunting licenses issued in the 2024 season as licenses are sold in March, only four months after the wolves were released. Therefore, there is likely little to no correlation between the release of wolves and decrease in hunting licenses issued in the 2023-2024 season. However, future hunting seasons could be increasingly affected as the introduction of wolves could further decrease the big game populations as previously discussed. Licenses sold to Colorado residents and non-residents will likely decrease in years to come, not

only taking away recreational value within the state but also reducing a major contributor to wildlife management funds.

Hunting and fishing licenses are used nationwide to support wildlife management efforts across the nation. Colorado Parks and Wildlife in particular uses the revenue from these licenses to support habitat management, non-game species conservation, recreational hunting and fishing, and scientific and educational programs. In the fiscal year 2023-2024 alone, CPW brought in over 215 million dollars in revenue from hunting and fishing licenses, which was over 55% of all revenue brought in during the year (Colorado Parks and Wildlife., n.d.).



(Colorado Parks and Wildlife., n.d., Figure 1).

A reduction in licenses sold could heavily affect the funds available to support these programs across the board. A study done by Eric J. Bergman, the Director of the Division of Local Government in the Colorado Department of Local affairs, looks at the reduction of hunting

licenses due to a similar declination of deer populations in 1999. The study finds that limiting deer licenses effectively increased overall the total deer population, but resulted in a 7.86 million dollar loss in revenue to the Colorado Division of Wildlife (CDOW), a state agency later to merge with the Colorado division of Parks to become Colorado Parks and Wildlife (Bergman, E. J., et al, 2011). Luckily, CDOW was not forced to cut any major programs due to this loss of revenue as the large sale of elk hunting licenses were able to counteract the loss. However, at the time, elk populations were stable and therefore the number of licenses was not being reduced. This may not be the case today. Elk, as one of the wolf's main food sources, could potentially reduce in numbers, further decreasing the current reduction in elk hunting licenses that we see today. This could cause CPW to be forced to cut or defund conservation programs supported by these licenses.

Not only does Proposition 114 bring potential to harm Colorado ecologically, but resulting factors could greatly affect the recreational opportunities in the state. This questions if an introduction of wolves would reap any benefits at all. In fact, there are many values outside of bionomics and recreation that a species can carry. As said by Gene Decker, a well renowned wildlife biologist and professor of 31 years at Colorado State University, wildlife has five core values: aesthetic, economic, recreational, scientific/educational, and ecological (Decker, G., 2022). Although, based on evidence, the gray wolf would likely have negative impacts both ecologically and recreationally, it is fair to ask if the wolf reintroduction holds value in other areas. In a survey recorded and analyzed by Rebecca Neimiec, an assistant professor and researcher at Colorado State University, residents in Colorado were surveyed on their opinions about the Colorado wolf reintroduction prior to the election, and what they predicted the impacts, both positive and negative to be.

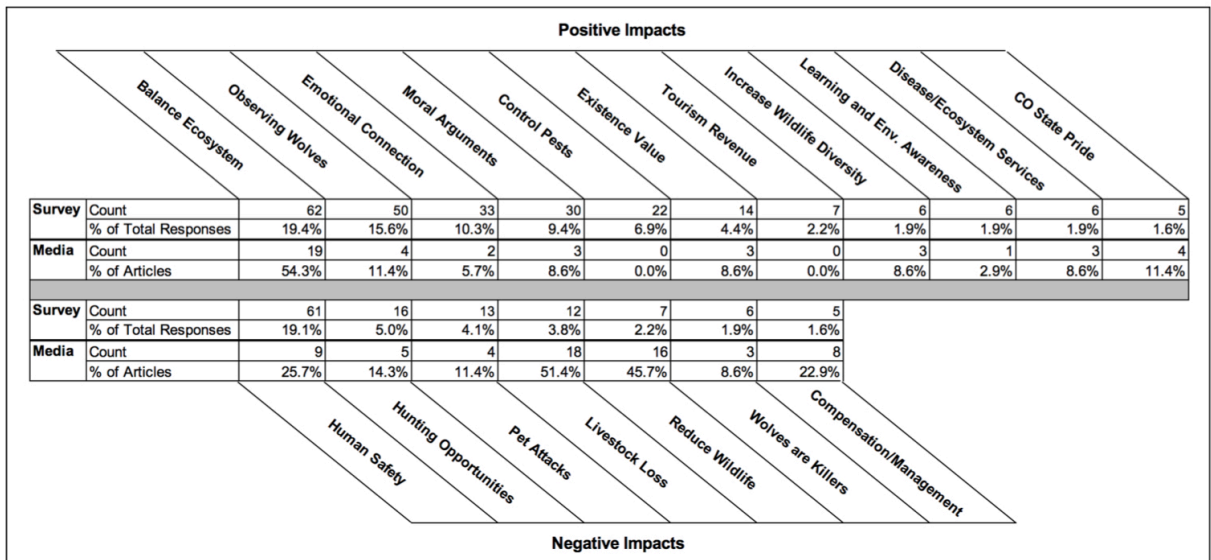


Figure 7 Percentage of media articles and survey respondents reporting positive and negative themes related to the impacts of wolf reintroduction. [Full-size !\[\]\(b04a3f7529e149789a2598d7fab34da8_img.jpg\) DOI: 10.7717/peerj.9074/fig-7](https://doi.org/10.7717/peerj.9074/fig-7)

(Niemiec, R., et al., 2020, Figure 7)

The study found that Colorado residents most notably believed that the introduction of wolves would hold a positive impact by balancing the ecosystem, a claim likely enforced by media coverage of the Yellowstone wolf reintroduction. Other positive impacts noted by residents were the ability to observe wolves, emotional connection, moral arguments, existence values, education/awareness, state pride, and tourism revenue (Niemiec, R., et al, 2020). Many of these values fall under an aesthetic category, including Colorado state pride, having the ability to observe or hear wolves, or simply knowing of their existence in the state. Such values hold no benefit to the environment or to wolves themselves, but simply appeal to a humanized, abstract value, holding no physical value outside of human appreciation and aesthetic. Other impacts mentioned appeal to the moral and emotional nature of humans such as emotional connection to the animal or a moral obligation to rejuvenate the wolf to its home. But what exactly gives humans a stronger emotional connection and “moral obligation” to a wolf versus an equally as,

or more important species for our environment. For example, many pollinators in Colorado are experiencing major declines in populations, having the potential to significantly affect all types of vegetation, wildlife, and agriculture (Colorado State University, 2024). However, pollinators that do not appeal to the human eye, such as beetles, moths, and flies, gain little to no such conservational traction out of moral obligation or emotional connection, despite being keystone species to ecosystems across the world (Fukano, Y., & Soga, M. 2023). So what makes the wolf different? Human connection and attitude towards wolves as a species is likely attributed to their heavy presence in cultures all over the world, including that of America. Even before European colonization, wolves played an important role in native American culture. The Nunamiut people, for example, depict the wolf as a creature that exists in both the known and hidden world, dually representing known parts of society and mysterious parts of the natural world (Cassidy, K. A. 2022). Upon European colonization and then Western expansion, the wolf became a symbol of wilderness that needed to be tamed. Even in today's urban world, the wolf is still often viewed as the wilderness. In the modern sense, the wilderness that remains. In popular media, such as *White Fang* or *Balto*, the wolf battles modern day society as a representation of the natural world present before colonization and humans. The desire to preserve this wilderness likely drives the emotional connection and moral obligation that many people feel validates the reintroduction of the species to Colorado and other parts of America. However, reintroducing a species based on emotional connection rather than ecological function is counterintuitive to preserving the wilderness that we know and love. Moral obligation should fall to species in the area that can still be conserved, not to those that have been excavated almost a century prior.

Another positive impact listed by potential voters in the survey is tourism revenue. The introduction of the gray wolf would no doubt bring economic value through increased tourism to

the state as this presents a chance for the public to observe a species they have likely never seen before. Unfortunately, lack of time since the reintroduction in 2023 has limited the analysis of an exact monetary benefit to the state of Colorado. However, a study conducted by Dana Hoag in 2023, estimated that if the population of wolves were to reach 200, benefits would reach approximately 115 million dollars annually while only costing 2 million dollars per year to manage. However, costs following the 2023 introduction have proved that a population of 200 wolves would likely cost Colorado Parks and Wildlife much more 2 million dollars a year to manage. Evidence for this lies in the last two years of expenditures supporting the newly released wolves.

In the 2019 proposal, it was noted that “restoration of the gray wolf to the state must be designed to resolve conflicts with persons engaged in ranching and farming within the state” (Colorado General Assembly., 2019). According to Neimic’s survey, livestock loss was the major concern among the population about bringing wolves into the state, and for good reason. Usually costing between 2,000 and 3,000 dollars, a loss of multiple mature cows could heavily impact a ranch’s income (Branch, H., 2024). To compensate for this, Colorado Parks and Wildlife has worked to set up a fund dedicated to reimbursing ranchers that lose livestock killed by wolves. This fund is sourced from the state’s general fund, the Species Conservation Trust Fund, and other sources (Stone, S. A., 2025). Following the release of wolves in December of 2023, CPW has approved claims from two separate ranches in Grand County. These two reimbursements from claims made in the year 2024 totaled to a sum of \$343,415.37 (Blumhardt, M., 2025). Seeing as the fund was only allotted \$350,000 from the state of Colorado’s general fund and other funding sources, the two depredation events leave barely over \$6,000 left for the remaining reimbursement claims still currently being investigated for the year. At the time of these

depredation events, there had only been 10 wolves released in the state from the initial release in 2023, along with a few possible naturally occurring wolves (Colorado Parks and Wildlife, n.d.). This means that barely over 10 wolves cost the state of Colorado nearly 350,000, greatly exceeding preconceived estimates of compensation dollars towards the ranchers. If this 350,000 dollars per 10 wolves was scaled to the 200 wolf population hypothesized by Hoag, reimbursement to ranchers would greatly exceed the estimated 2 million dollar cost of population management by several million dollars. This exceedment of the estimated cost to manage such a population excludes additional management costs outside of reimbursement. These could include public education, community involvement, non-lethal deterrents, relocation, habitat management, staffing, and much more. Management costs all around the board could greatly taint the tourism revenue hoped for by the introduction.

Despite these costs, bringing wolves into Colorado still has potential to bring in revenue to the state. However, this revenue will be disproportionately distributed across Colorado as the monetary losses will be localized to a few parts west of the continental divide where wolves have been released. Assuming the distribution of benefits is proportionate to where “yes” voters reside, then 89.7% of benefits would be in the Front Range, where wolves have not and will not be released, and only 5.4% of monetary benefits would be on the Western Slope, where the wolves were and will continue to be released in the future (Hoag, D. L., et al, 2023). This means that only an incredibly small fraction of benefits acquired by the introduction of wolves will be redistributed to the area that is suffering the most losses by the same introduction. Such losses could have detrimental effects on the entire economy of western Colorado as it is wildly dependent on ranching and livestock (Colorado Department of Agriculture, 2023). These effects are not only monetary, but affect the lives of those present on the Western Slope. It is easy to

forget that behind the numbers reside real people and their families. Losses this large could affect these ranchers' entire livelihood and drive them and their families to bankruptcy. It is easy to conclude the unfairness of the situation to the people of the Western Slope, as voters that have called for the restoration of the wolf population in Colorado are not the same people that have to live with these animals and suffer the monetary losses they bring as a result.

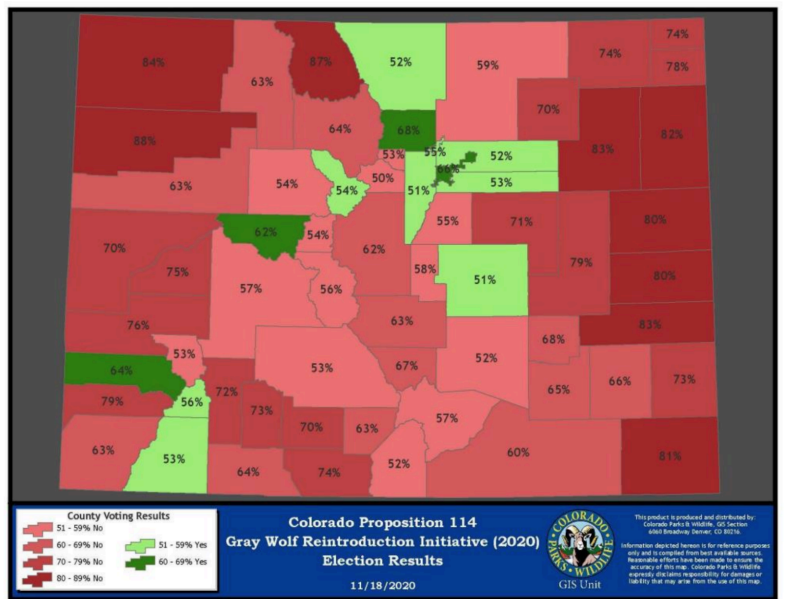
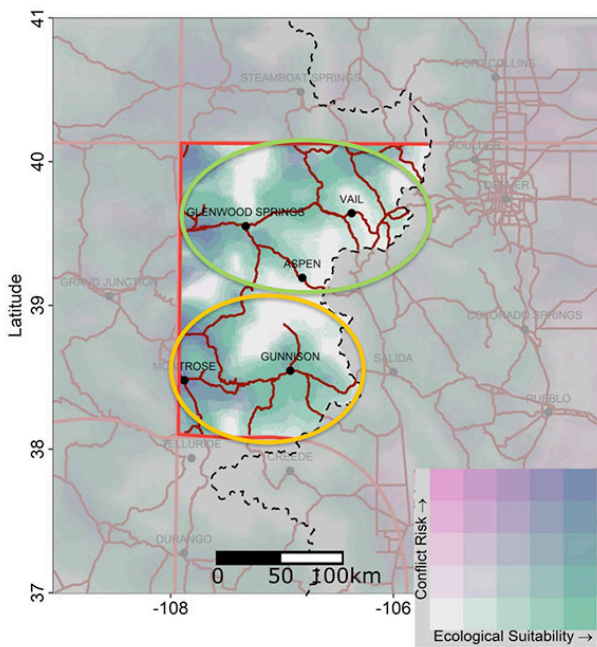
When the Rocky Mountain Wolf project first initiated the proposal of Proposition 114, its end goal was to land the initiative on a state-wide ballot for the residents of Colorado to vote on in the 2020 General Election (Ballotpedia., n.d.). As a statewide initiative, the proposition itself would need at least 5% of the total number of votes cast for all candidates for the office of secretary of state to be presented on the 2020 Election ballot, as laid out by the Colorado state constitution (Colorado Secretary of State., 2020). Going greatly above the number of signatures needed, the Rocky Mountain Wolf project presented the secretary of state with 215,632 signatures. Even though only 139,333 were considered valid after review, the signatures still went over the number required by 10% (Colorado Secretary of State., 2020). This landed the initiative on the ballot of the 2020 General Election as Proposition 114, where a “yes” would support the requirement of the Colorado Parks and Wildlife to create a reintroduction and management plan to release wolves by the end of 2023, and a “no” would oppose the creation of this plan (Colorado General Assembly., n.d.). This proposition would make history as one of the first wildlife initiatives decided by ballot, inviting future wildlife management decisions to be determined by the general public rather than by qualified wildlife biologists. This becomes an issue as the general public often votes based on political affiliation rather than taking the time to research themselves and form individual opinions.

Political and social identity is a significant factor in many legislature decisions, even when they seem to have little to do with politics. Trends among the direction of voting are often displayed in wildlife conservation measures around the country. For example, a survey conducted among Arizona and New Mexico voters asked whether they would support the introduction of the Mexican gray wolf into southwestern states, an initiative similar to that of Colorado's. The survey showed that an average of 84% of Democrats between the two states supported the introduction while only an average of 56% of Republicans supported introducing wolves (Tulchin, B., & Krompak, B., 2013). Whether led by blind support or by opinions formed through research, a relationship between political affiliation and support of the wolf reintroduction is clearly displayed. A study following a gray wolf reintroduction in Washington yields similar results. The strongest predictors of wolf support were found to be political affiliation, followed by gender. Voters that identified as Democrats were significantly more likely to hold positive attitudes toward wolf reintroduction as opposed to other parties (van Eeden, L. M., et al., 2021). This difference of opinion based upon political affiliation, while probably attributed to multiple factors, likely boils down to lifestyle values. Conservative republicans are historically more affiliated with the support of rural communities while liberal democrats may be more likely to overlook the health of rural communities in support of conservation.

Following Proposition 114 landing itself on the ballot in 2023, there have been several ballot measures regarding major wildlife decisions in Colorado, such as Proposition 127. Proposition 127 proposes the ban on the hunting of bobcats, lynx, and mountain lions (Colorado General Assembly., 2023). At first glance, this initiative may seem like a good idea to members of a political party heavily aligned with preserving and protecting wildlife, but simple research would tell these voters that the hunting of these species helps maintain healthy, sustainable

populations (Colorado Parks and Wildlife., 2020). But due to the negative connotations often associated with hunting, there is a chance that the management value that hunting these species will be overlooked and voted against, causing potential for overrun carnivore populations. This could negatively affect lower ranking members of the food chain, harming the wildlife that voters aim to protect. Despite falling prey to politics, Proposition 127 was rejected in final with a vote of 55% “no” to 45% “yes”, with an extremely close cast of votes, similar to that of Proposition 114. Despite Proposition 127 being laid to rest, there is room for future propositions to make their way to the ballot box. The turmoil caused by putting major wildlife decisions in the hands of voters rather than biologists removes ecology as the major discussion.

Following the 2020 General Election, the ballot of Proposition 114 was confirmed to receive a cast of 50.91% Yes 49.09% No (Colorado Secretary of State., 2020). This is an extremely close cast, despite Proposition 114 being predicted to receive 84% of the population’s vote (Niemiec, R., et al., 2020). This cast of votes officially enacted the initiative for Colorado Parks and Wildlife to create the plan to reintroduce wolves to Colorado by the end of 2023. These votes were distributed across Colorado unequally, with most counties voting “no”, especially counties in western Colorado, where the wolves were planned to be released (Colorado Secretary of State., 2020). On the other hand, counties in suburban areas with populations that greatly exceeded their rural counterparts mostly voted “yes”. These counties, mostly surrounding Denver east of the continental divide, would not have wolves released in the cities they reside in, while rural westerners that were outvoted would suffer the consequences in their own backyard.



Map of wolf release displaying western Colorado vs Voting turnout by county

(Woodruff, C. 2023 Pagosa Daily Post) left image

(McKee, S., 2024) right image

Despite all concerns and the extreme decline of support since the initial proposal, Proposition 114 was carried out in December of 2023 (Colorado Parks and Wildlife., n.d.). Colorado Parks and Wildlife sanctioned the release of 10 gray wolves obtained from Oregon into western Colorado. Several of these wolves conjugated and produced offspring, forming the Copper Creek wolf pack. Since their introduction, the number of issues have only grown, mostly concerning the growing number of depredation events from ranches on the Western Slope, where wolves are hunting and killing hundreds of thousands of dollars worth of livestock (Ross, T., 2025). The continuation of depredation incidents eventually led to the temporary capture of the Copper Creek pack in 2024, only a year after their release (Colorado Parks and Wildlife., 2024). Despite their capture, Colorado Parks and Wildlife has carried on with the plan to reintroduce

wolves to the state, even initiating a secondary release of 15 additional wolves sourced from British Columbia in January of 2025, along with the re-release of the remaining members of the Copper Creek Wolf Pack (Colorado Parks and Wildlife., n.d.). In the following years, CPW plans to annually release wolves until a sustainable population is met, showing that potential negative impacts hold no stature in the verdict. It seems that despite concerns and lack of evidence supporting their release, wolves will continue to roam Colorado with the support of management from wildlife officials across the state.

Controversial since the beginning, Proposition 114 has created an ongoing division among the people of Colorado since its proposal in 2019. Not only has the proposition caused a severance between wolf enthusiasts and wolf discouragers, it has further divided rural and suburban communities, ranchers versus white-collar individuals, and liberals versus conservatives. In addition to creating disconnect in an already divided America, Proposition 114 has implications for negative impacts ecologically, recreationally, and even economically. While values outside of these core three exist, such as aesthetics and emotional connection, they are not enough to combat the potential negative impact on concrete values with measurable attributes. As only two years have passed since the introduction of the bill, long term effects have yet to show themselves. However, based upon the current ecosystem in western Colorado, as well as prior research in similar environments, it is safe to say the wolf will likely serve no ecological purpose in years to come. This is not to say that all wildlife reintroductions are inherently harmful and serve no purpose. There have been, and likely will continue to be, successful and functional reintroductions, but there is little to no existing research to support the introduction of an apex predator into an ecosystem that has evolved around its extended absence. The gray wolf soon became a figure of politics and social stature hidden behind the so-called “ecological

function” that defended its new presence. In reality, the gray wolf is nothing more than another member of the ecosystem and, like all members of an ecosystem, should only be managed under humans in properly warranted situations. In the current condition of Colorado, the introduction of the gray wolf is an ill use of resources that could potentially lead to the partial deterioration of vital aspects of the state we all know and love.

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