WORKING REPORT

Public Perspectives on Wolf Reintroduction and Management in Colorado

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This document has not been subject to peer review for publication. Although unlikely, the information presented may change as a result of comments from peer review.

Executive Summary

We conducted a state-wide, online survey of 734 Coloradans in August of 2019 to understand public beliefs and attitudes related to wolf reintroduction and management. Our objectives were to determine: 1) the level of public support for wolf reintroduction and various wolf management options; 2) how support varies by demographics, geography, and identification with interest groups; and 3) whether and how Coloradans believe wolf reintroduction will affect their lives. We recruited participants through the online Qualtrics platform and obtained a stratified sample that represented the gender, age, and geographic distribution of the Colorado population.

Our results suggested that an estimated 84.0% of Coloradans intend to vote for wolf reintroduction, while 16.0% intend to vote against. Voting intentions were similar across the different regions of Colorado: 84.9% of Front Range residents, 79.8% of Western Slope residents, and 79.3% of Eastern Plains residents indicated they would vote in favor of wolf reintroduction. We found that support for wolf reintroduction was strong across demographic groups. Voting intentions were consistently high (>80%) among those who both did and did not identify as gun rights advocates, property rights advocates, hunters, and ranchers. Individuals who identified as wildlife advocates, animal rights advocates, and conservationists indicated greater support for reintroduction than those who did not, as did pet owners compared to those with no pets.

We found that an estimated 28.6% of Coloradans would expect wolves to impact them positively, 11.7% would expect wolves to impact them negatively, and 59.7% would expect no impact. A greater percentage of residents of the Western Slope (19.1%) believe wolves would impact them negatively than residents of the Front Range (10.4%). Arguments in favor of wolf reintroduction included: the ability of wolves to restore balance to ecosystems; the opportunity to view wolves in the wild; emotional or cultural connections to wolves; value of wolves' existence; a reduction in pest populations; and moral obligation. Arguments against wolf reintroduction included: the potential for wolf depredation on livestock; reduction in ungulate populations; loss of hunting opportunities; and concerns about the safety of people and pets.

Generally, respondents were split on opinions about various wolf management options. Slightly more than half of Coloradans believed it was acceptable to limit the number of wolves if they cause declines in deer and elk populations in certain areas, to compensate landowners for loss of livestock caused by a wolf, or to use a portion of state hunting and fishing license dollars to compensate landowners for loss of livestock caused by a wolf. Roughly half were in favor of lethal removal for livestock loss. Slightly less than half believed that it was acceptable to allow a recreational hunt of wolves once they have reached a population size that exceeds recovery goals, or to use a portion of state tax dollars to compensate landowners for loss of livestock caused by a wolf.

Overall, our findings suggest a high degree of social tolerance for wolf reintroduction in Colorado across the state. However, we also find that a portion of the public believes that

wolves would negatively impact their lives and livelihoods, primarily because of concerns of the safety of people and pets, loss of hunting opportunities, and potential wolf depredation on livestock. If wolf reintroduction occurs, an intensive stakeholder engagement process that involves a diversity of potentially affected groups in collaborative decision-making is needed to address these concerns and reduce social and human-wildlife conflict. Further, a greater degree of public outreach and engagement is needed to share evidence-based knowledge regarding the potential impacts of wolves and encourage a balanced portrayal of the diversity of potential positive and negative impacts of reintroduction.

Study Purpose and Background

The gray wolf (*Canis lupus*) was once common in Colorado but was exterminated by humans in the early 20th century. Today, some conservation organizations are advocating for wolf restoration to the state via a ballot initiative (Initiative 107) that would mandate that wolves be reintroduced to Colorado. A 1994 survey indicated a high degree of public support for wolf reintroduction (~70%) in the state at that time (Pate et al. 1996). Our objective was to collect more up-to-date information on public perspectives to inform the current discussion surrounding the potential for wolf reintroduction in the state.

We conducted a state-wide survey of Coloradans in August, 2019, to examine public beliefs, attitudes, and intentions relating to wolf reintroduction and various potential wolf management options that could be utilized.

We examined the following questions:

1) What is the level of public support for a ballot initiative to reintroduce wolves into Colorado? How does support vary by demographics, interest groups, and geography?
2) What is the level of public support for various wolf management options, if wolves were to be reintroduced?
3) To what extent, and in what ways, do Coloradans think wolf reintroduction will impact them?

Data Collected

We used a stratified sampling approach to obtain a representative sample of Colorado residents using geographic region (Western Slope, Front Range, and Eastern Plains; see **Figure 1**), age (18-34, 35-54, and 55+), and gender (male and female, with non-binary options) categories as strata. All participants were over the age of 18 and were recruited in August 2019 using Qualtrics (Provo, UT), a licensed online survey platform. Final survey and administration procedures were approved by Colorado State University's Institutional Review Board (protocol #19-8942H).

We set a target sample size of 200 participants for each region in Colorado--the Front Range (35 counties), Western Slope (11 counties), and Eastern Plains (18 counties)--to ensure sufficient samples (estimates within +/- 7% at the 95% confidence level) for comparisons across groups and between different regions of the state. We also stratified our sample by age and gender to mirror the American Community Survey (ACS) 5-year (2013-2017) estimates for Colorado. To reflect the ACS, our target age stratification was set with half our target sample as male, half as female, and with a third of the target sample between 18 to 34 years, a third between 35 to 54 years, and the remaining third at 55 years and older.

Upon providing Qualtrics the target sample sizes, Qualtrics project managers then recruited and screened potential respondents from existing pools of survey-takers contacted through panel partners. Qualtrics asked each potential respondent if they would be willing to participate in a survey; to avoid bias in responses, potential participants were not told about the topic of the survey before agreeing to participate. Participants were incentivized to participate in different ways depending on which panel they were recruited from; for example, panel partners compensate using monetary incentives, game points, gift cards, or other prizes. We first conducted a soft launch, in which we obtained 50 pilot responses. We checked open-ended responses to ensure participants' answers reflected that they had read the prompt and checked closed-ended responses for satisficing (i.e., participants selecting the same responses without considering the questions). After ensuring pilot responses were valid, we approved the remainder of the data collection. During data collection, Qualtrics representatives removed survey responses that exceeded the desired number of respondents for each stratum, that did not pass a speed check (i.e., took the survey too quickly), that did not answer "yes" to screener questions (which asked if they would agree to provide thoughtful and honest answers to questions), or that did not provide informed consent.

A key limitation for the interpretation of our results is that the use of an online survey platform may have biased our sample toward individuals with high technology awareness who are more comfortable with internet use (Ranchhod and Zhou 2001). Past state-wide surveys of Coloradan perspectives towards wolf reintroduction have been conducted by mail (Pate et al. 1996); thus, it is possible that some portion of the difference in estimates between the surveys may be due to the differences in survey recruitment. Despite this limitation, however, we believe our sampling strategy retains a high degree of validity because our survey respondents were recruited independent of their knowledge or opinions of the survey topic, and our sampling approach was designed and weighted to ensure we obtained a representative sample of the Colorado population with regard to age, gender, and geography. Furthermore, a growing number of studies are using online platforms for data collection as technology awareness increases among the U.S. population. Reports show, for example, that nearly 8 in 10 U.S. households now have a computer and an internet service subscription (Ryan & Lewis 2017). Researchers are also more frequently turning to online alternatives given low response rates that are increasingly a challenge for U.S. public surveys, which have traditionally relied heavily on mail and phone (Keeter et al. 2017; Stedman et al. 2019). In addition, a growing body of literature on alternative survey methodologies indicates that some of the same limitations (e.g., response bias, violations of probability theory) associated with online panel surveys apply to

other commonly used survey sampling techniques (Rivers 2013) and that, regardless of the approach, data weighting procedures can be applied to produce accurate conclusions about public opinion and behaviors (Wang et al. 2015). Finally, research suggests that bias from relying only on online surveys may be small; for example, the Pew Research Center compared responses to surveys completed solely online to surveys completed both online and by mail and found that the bias caused by excluding participants who did not take online surveys was relatively small (Keeter and McGeeney 2015). Estimates between the online-only instrument and the full survey differed by less than 5 percentage points across 397 of the 406 survey items, and by 1 percentage point or less for more than two thirds of the items.

We obtained a total of 734 valid responses from our survey: 365 responses from the Front Range, 277 from the Western Slope, and 92 from the Eastern Plains (**Figure 1**). To accurately represent voting intentions or support for various management options across the entire state as intended it was necessary to weight the data based on the population distribution for each of the 3 regions, with 82.6% of the population in the Front Range, 14.1% of the population in the Western Slope, and 3.3% of the population in the Eastern Plains (American Community Survey, 2017). As weighting was based on region, we report unweighted values for within-region summaries. A full list of weighted and unweighted values is given in **Table 1** and, as indicated in the table, weighted and unweighted proportions displayed negligible differences.

Results

Level of Support for Wolf Reintroduction

We found that an estimated 84.0% of Coloradans would vote in favor of wolf reintroduction, while 16.0% would vote against (**Figure 2**). This indicates an increase over the 1994 survey (which found 70.8% would vote in favor), although caution is merited when comparing the two surveys because the methodologies used were substantially different.

Voting intentions were similar across the different regions of Colorado: 84.9% of sampled respondents in the Front Range, 79.8% on the Western Slope, and 79.3% on the Eastern Plains would vote for wolf reintroduction (**Figure 3**). The proportion that would vote in favor of wolf reintroduction was relatively similar among residents in cities, towns, or rural areas and individuals with and without children (**Figure 3**). Pet owners were more likely to vote for wolf reintroduction (88.3%) than those that did not own pets (76.4%; **Figure 3**). Voting intentions were broadly consistent across demographic categories, including gender, age group, income, and education (**Figure 4**). We did not analyze voting intentions by ethnicity because samples were insufficiently representative to make meaningful comparisons (White n = 602, Black n = 17, Latinx n = 43, Asian n = 10, Native American or Pacific Islander n = 11, Mixed n = 45).

Voting intentions were consistently high among those who both did and did not identify as gun rights advocates, property rights advocates, hunters, and ranchers (**Figure 5**). Individuals who identified as wildlife advocates, animal rights advocates, and conservationists

indicated greater support for reintroduction (89.4%, 90.4%, and 87.6%, respectively) compared to those who did not (70.5%, 70.8%, and 74.7%, respectively; **Figure 5**).

Support for Wolf Management Options

We examined the overall level of public support for various wolf management options, should wolves be reintroduced to Colorado (**Figure 6**). Generally, respondents were split on each of the proposed management options, but some relevant differences emerged. Findings suggest that slightly more than 50% of Coloradans believed the following management options were slightly, moderately, or highly acceptable: limit the number of wolves if they cause declines in deer and elk populations; compensate landowners for loss of livestock caused by a wolf; and use a portion of state hunting and fishing license dollars to compensate landowners for loss of livestock caused by a wolf. Approximately 50% believed that capturing and lethally removing a wolf if it is known to have caused loss of livestock was acceptable. Slightly less than 50% of Coloradans believed that the following options were acceptable: allow a recreational hunt of wolves once they have reached a population size that exceeds recovery goals; and use a portion of state tax dollars to compensate landowners for loss of livestock caused by a wolf.

Perceived Impacts of Wolves

Responses to the question of how wolf reintroduction would impact personal livelihoods or quality of life show that an estimated 28.6% of Coloradans would expect wolves to impact them positively, 11.7% would expect wolves to impact them negatively, and 59.7% would expect no impact. More residents on the Western Slope (19.1%) believed wolves would impact them negatively, compared to the Front Range (10.4%; **Figure 7**). Correspondingly, fewer residents on the West Slope (48.0%) believed that wolves would have no impact, compared to the Front Range (61.6%).

When the respondents that indicated wolves would impact them ***positively*** were asked to free-write the specific positive impacts they expected, the impacts mentioned were, in decreasing order of frequency (see **Table 2** for more detail):

- Wolves would restore balance to ecosystems, return ecosystems to a prior state, and/or improve the environment.
- Respondents would like to observe or listen to wolves in the wild; the presence of wolves would increase participation in outdoor recreation.
- Respondents felt an emotional or cultural connection to wolves or believed that wolves were beautiful or majestic.
- Wolf reintroduction is the morally right thing to do (e.g., wolf reintroduction can help correct past wrongs; wolves should have the right to live where they used to; humans should learn to coexist with nature; and preserving a species is the right thing to do).
- Wolves would control pest populations that affect people (e.g., coyotes, deer, rodents).
- Knowing wolves exist now or for future generations and/or the ecosystem is intact would increase happiness and satisfaction.
- Wolf reintroduction would increase tourism opportunities.
- Wolf reintroduction would increase environmental learning and care.

- Wolf reintroduction would increase the diversity or abundance of wildlife in Colorado.
- Wolf reintroduction in Colorado would enhance Colorado pride or make Colorado a better place to live.
- Wolf reintroduction would reduce ungulate disease

When the respondents that indicated wolves would impact them ***negatively*** were asked to free-write the specific negative impacts they expected, the impacts mentioned were, in decreasing order of frequency (see **Table 2** for more detail):

- Wolves would pose a threat to human safety and/or wander into residential areas and cause harm.
- Wolves would pose a threat to pets.
- Wolves would lead to a reduction in hunting opportunities.
- Wolves would predate on livestock.
- Wolves are killers/predators/cruel animals.
- Wolves will be poorly managed or difficult to manage (e.g., ranchers wouldn't be fairly compensated for livestock losses).
- Wolves would reduce diversity and abundance of wildlife, namely deer and elk.

Conclusions

Our findings suggest a high degree of social tolerance for wolf reintroduction in Colorado across geographies and demographics throughout the state. We find that the Colorado public has a wide range of reasons for supporting wolf reintroduction, including promoting ecosystem balance, moral arguments, and emotional connections to the species. However, we also find that a portion of the public believes that wolves would negatively impact their lives and livelihoods, primarily because of concerns of the safety of people and pets, loss of hunting opportunities, and potential wolf depredation on livestock. If wolf reintroduction occurs, an intensive stakeholder engagement process that involves a diversity of potentially affected groups in collaborative decision-making is needed to address these concerns and reduce social and human-wildlife conflict. Furthermore, public outreach is needed to share scientific findings regarding the potential impacts of wolves and create a nuanced portrayal of the diversity of possible potential positive and negative impacts of reintroduction.

Future studies are needed to supplement these results, including surveys using different methodologies, such as mail, in-person, or phone-based recruitment. Alternative sampling designs may be particularly important for understanding the perspectives of populations that are less engaged with technology. In addition, a diverse complement of qualitative and quantitative work will be needed to gain the necessary depth of understanding on the perspectives of key stakeholder groups, such as hunters and ranchers, who may be impacted by wolf reintroduction.

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Figures and Tables

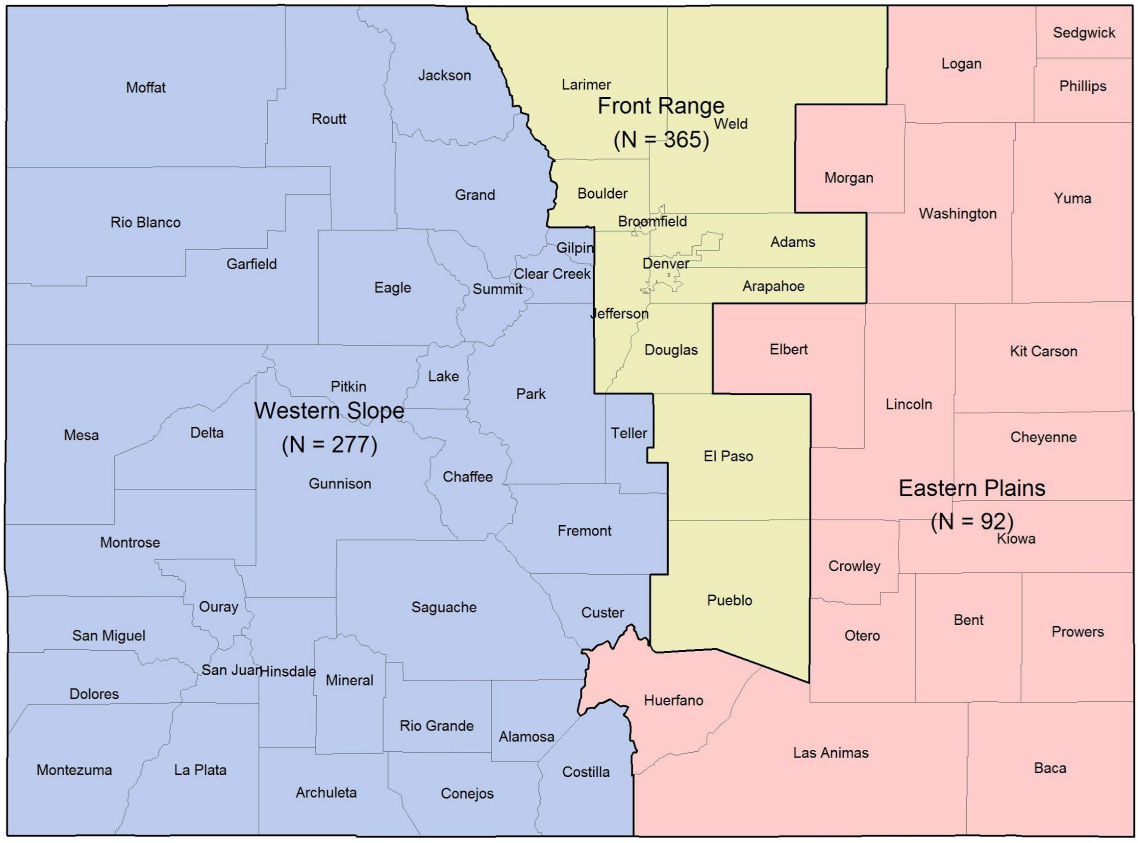

Figure 1: Colorado counties included within each stratified sampling region and final sample sizes: Western Slope (N = 277), Front Range (N = 365), and Eastern Plains (N = 92).

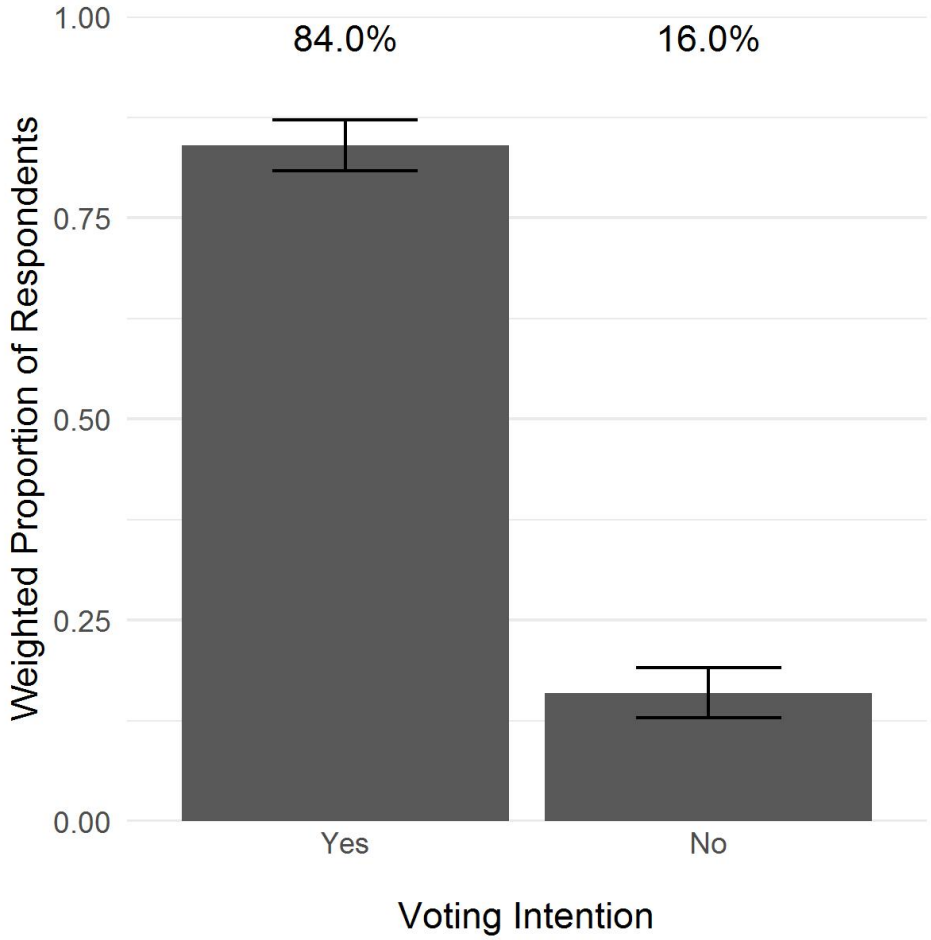

Figure 2: State-wide voting intentions related to wolf reintroduction in Colorado. Bars depict the proportion of responses in favor of reintroduction, weighted to represent state regional population, with 95% confidence intervals.

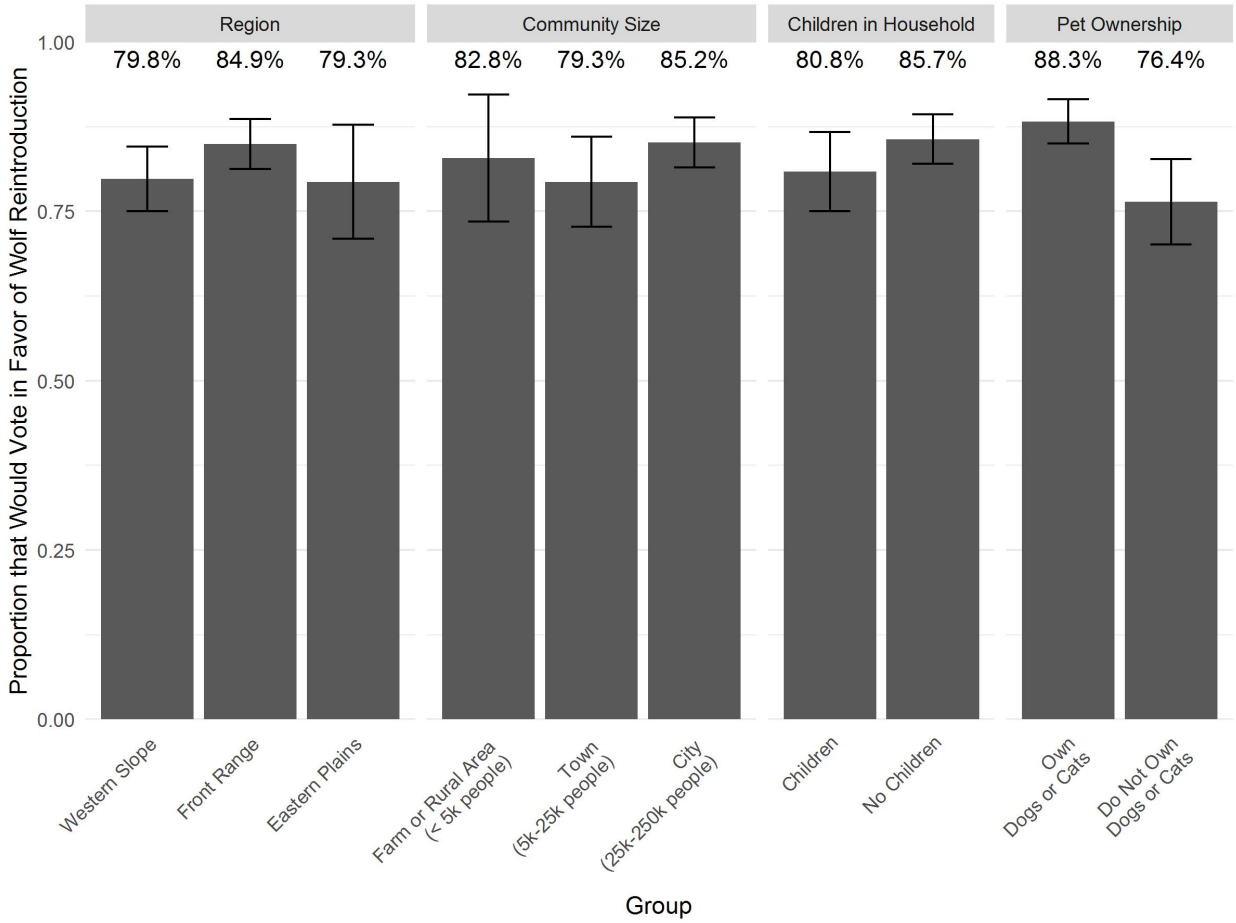

Figure 3: Voting intentions related to wolf reintroduction by region of Colorado, community size, presence of children in the household, and pet ownership. Bars depict the proportion of each group in favor of reintroduction (unweighted for region, weighted by region within other groups), with 95% confidence intervals.

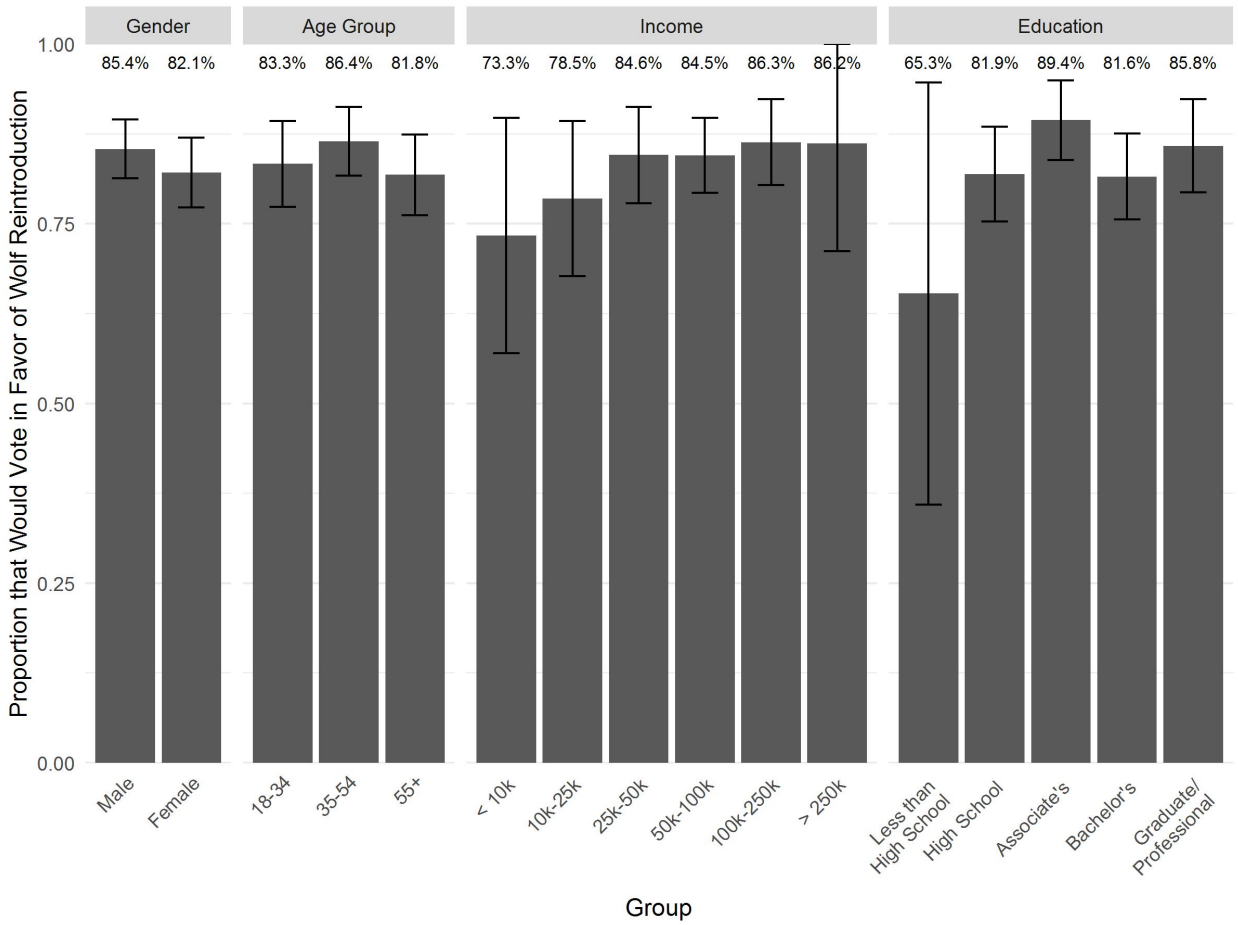

Figure 4: Voting intentions related to wolf reintroduction by demographic characteristics of gender, age group, income, and education. Bars depict the proportion of each group in favor of reintroduction (weighted by region), with 95% confidence intervals. Non-binary genders not represented due to insufficient data (*n* = 5).

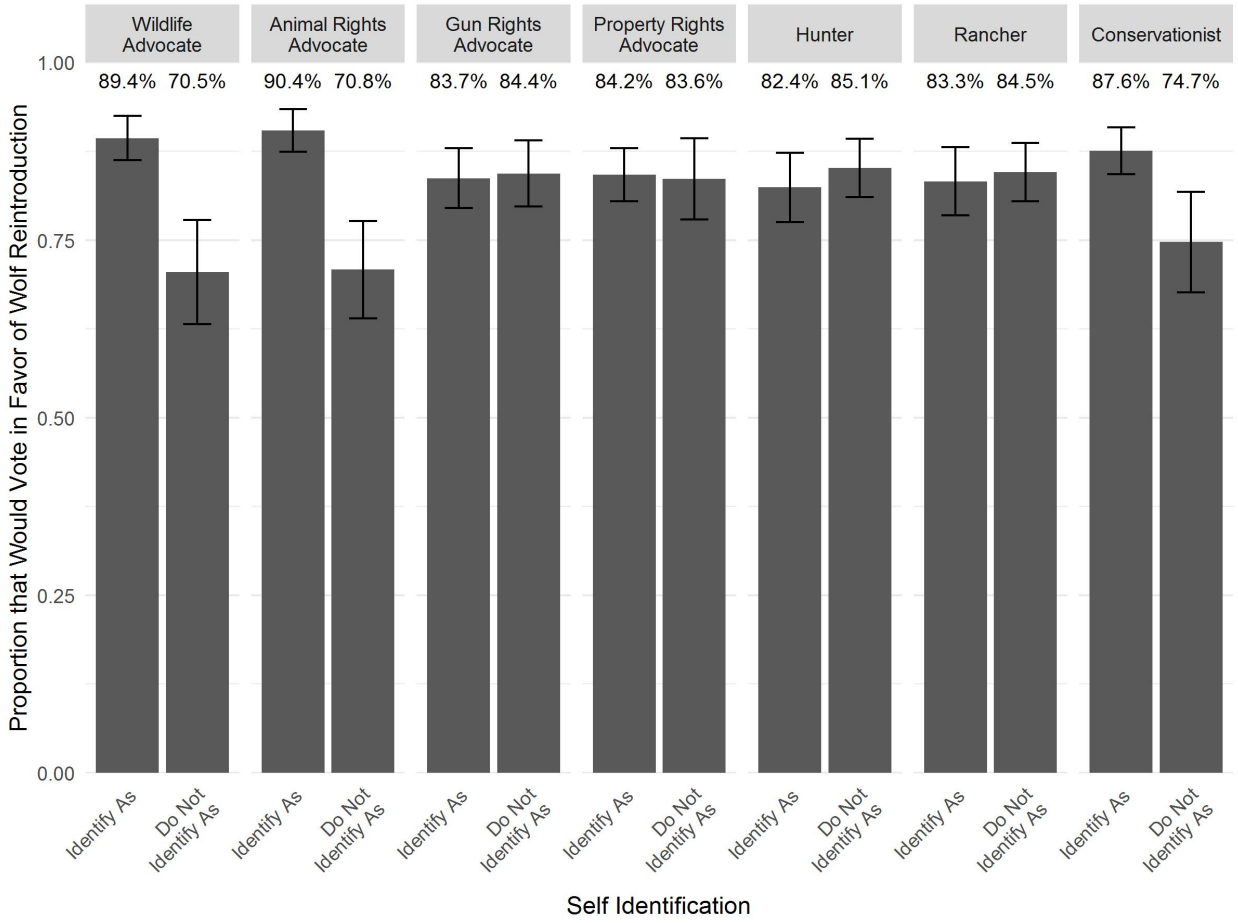

Figure 5: Voting intentions related to self identification with advocacy and interest groups. Bars depict the proportion of each group in favor of reintroduction (weighted by region), with 95% confidence intervals.

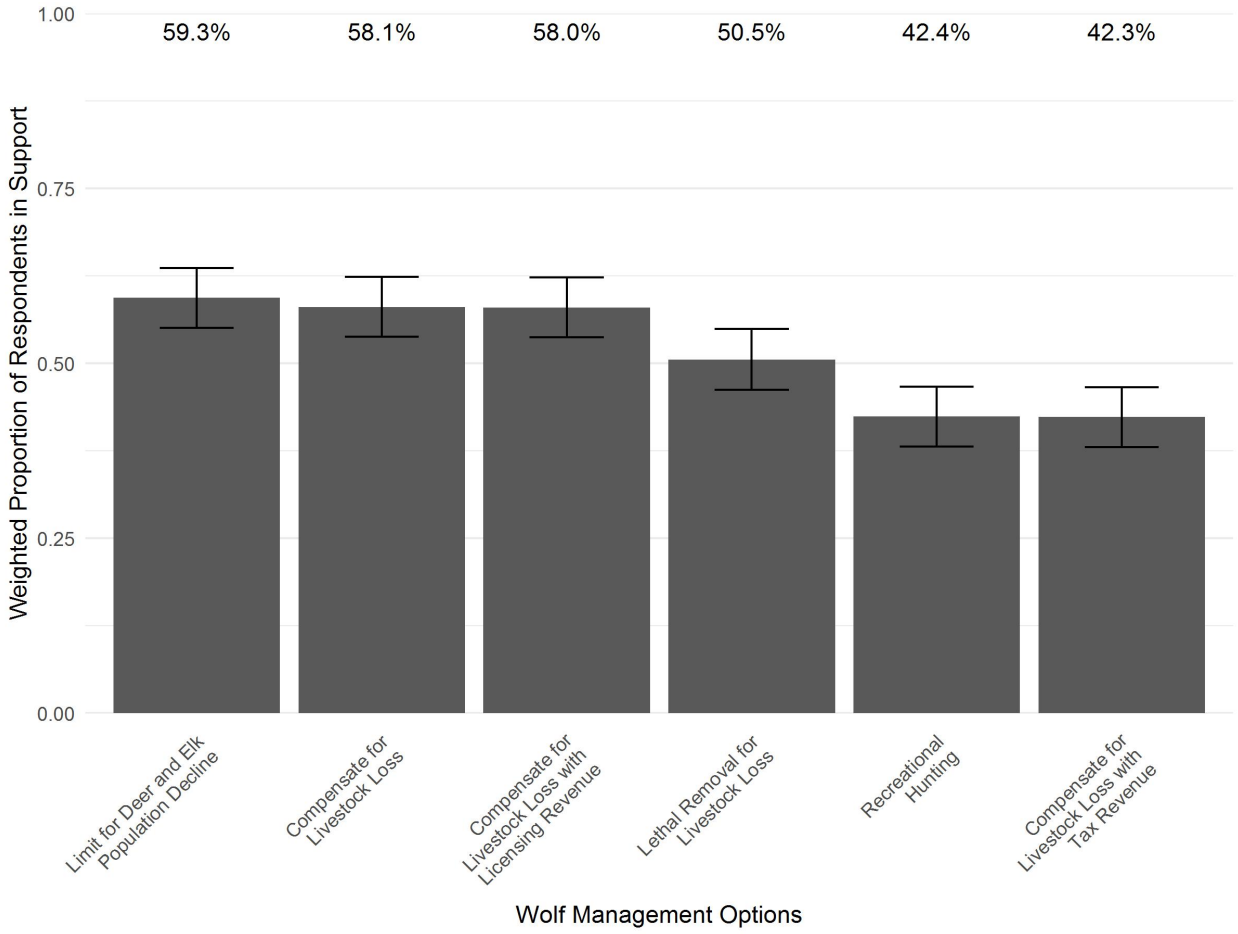

Figure 6: Support for various wolf management options, should wolves be reintroduced to Colorado. Bars depict the proportion of respondents who rate each management option at slightly, moderately, or highly acceptable (weighted by region), with 95% confidence intervals.

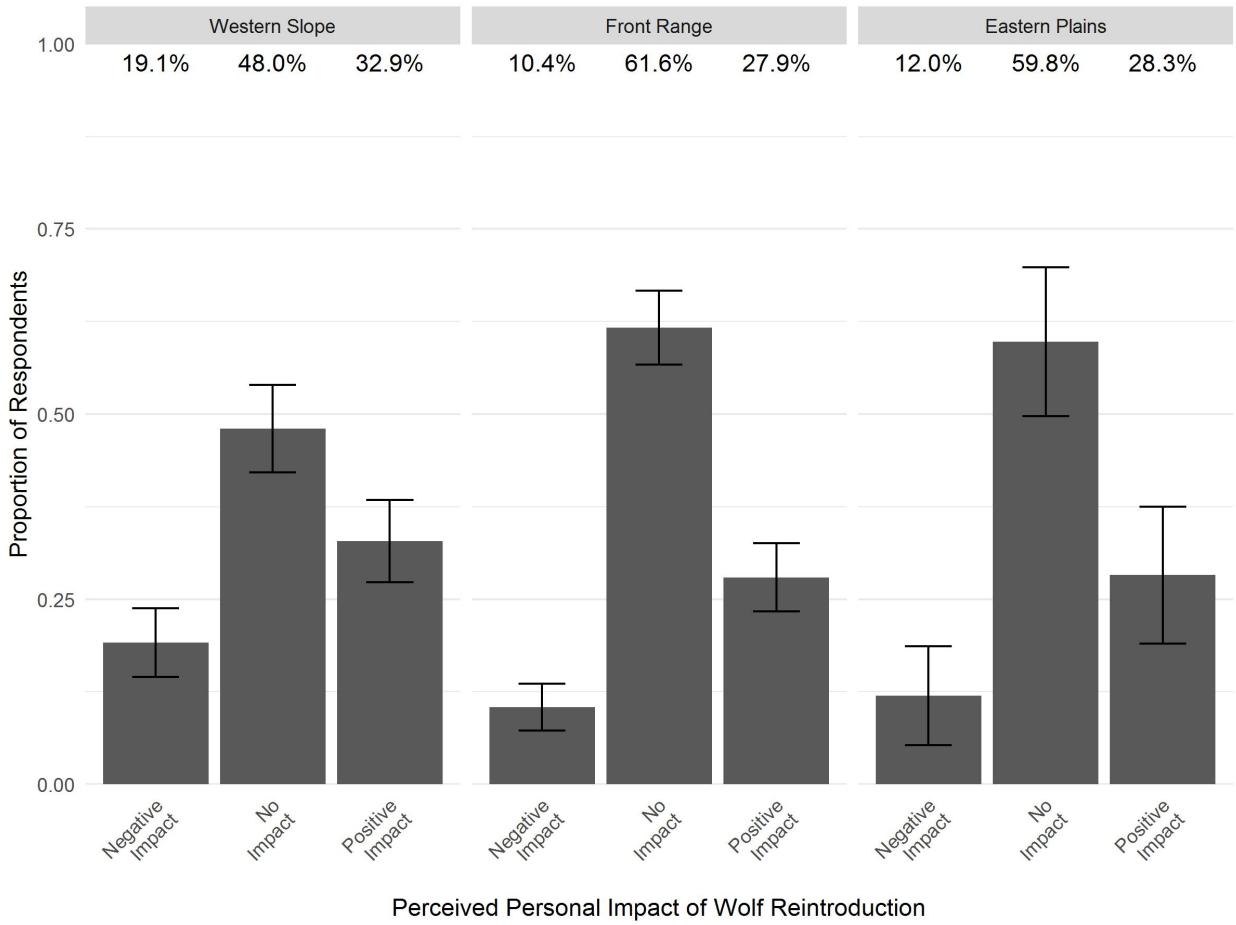

Figure 7: Perceived impact on personal livelihoods or quality of life should wolves be reintroduced, by region of Colorado. Bars depict the proportion of respondents within each region who report expectations of no impact, or expectations of slight, moderate, or strong negative or positive impacts (unweighted), with 95% confidence intervals.

Table 1: Survey responses on measures related to intent to vote for or against wolf reintroduction, support for management options, and perceived personal impacts, with comparison of unweighted proportions of responses and proportions weighted by state regional populations. Counts and proportions of respondents that gave a negative response to voting intention are not shown, but make up the remainder of the sample in each specified sub-group.

Measure	**Sub-Group and Response Choice**	**Total in Sub-Group With Response Choice**	**Total in Sub-Group**	**Unweighted Proportion with Response Choice**	**Proportion with Response Choice Weighted by Region Populations**
Voting Intention Overall	Overall:Yes	604	734	0.823	0.840
Voting Intention by Region	Western Slope:Yes	221	277	0.798	NA
	Front Range:Yes	310	365	0.849	NA
	Eastern Plains:Yes	73	92	0.793	NA
Voting Intention by Community Size	Farm or Rural Area:Yes	65	83	0.783	0.828
	Town:Yes	188	241	0.780	0.793
	City:Yes	351	410	0.856	0.852
Voting Intention by Children in Household	Children:Yes	198	247	0.802	0.808

	No Children:Yes	405	486	0.833	0.857
Voting Intention by Pet Ownership	Own Cats or Dogs:Yes	424	497	0.853	0.883
	Do Not Own Cats or Dogs:Yes	180	237	0.759	0.764
Voting Intention by Gender	Male:Yes	300	358	0.838	0.854
	Female:Yes	296	367	0.807	0.821
Voting Intention by Age Group	18-34:Yes	189	229	0.825	0.833
	35-54:Yes	223	262	0.851	0.864
	55+:Yes	192	243	0.790	0.818
Voting Intention by Income	< 10k:Yes	45	95	0.789	0.733
	10k-25k:Yes	76	95	0.800	0.785
	25k-50k:Yes	151	177	0.853	0.846
	50k-100k:Yes	182	229	0.795	0.845
	100k-250k:Yes	128	150	0.853	0.863
	> 250k:Yes	20	24	0.833	0.862

Voting Intention by Education	Less than High School:Yes	12	19	0.632	0.653
	High School:Yes	171	211	0.810	0.819
	Associate's:Yes	142	162	0.877	0.894
	Bachelor's:Yes	163	204	0.799	0.816
	Graduate/Professional:Yes	116	138	0.841	0.858
Voting Intention by Identity	Wildlife Advocate:Yes	451	513	0.879	0.894
	Not Wildlife Advocate:Yes	153	221	0.692	0.705
	Animal Rights Advocate:Yes	424	479	0.885	0.904
	Not Animal Rights Advocate:Yes	179	254	0.705	0.708
	Gun Rights Advocate:Yes	322	402	0.801	0.837
	Not Gun Rights Advocate:Yes	282	332	0.849	0.844
	Property Rights Advocate:Yes	418	508	0.823	0.842
	Not Property Rights Advocate:Yes	186	226	0.823	0.836
	Hunter:Yes	254	323	0.786	0.824

	Not Hunter:Yes	350	411	0.852	0.851
	Rancher:Yes	245	309	0.793	0.833
	Not Rancher:Yes	359	425	0.845	0.845
	Conservationist:Yes	431	507	0.850	0.876
	Not Conservationist:Yes	173	227	0.762	0.747
Support for Management Options	Limit for Deer Population Decline	439	734	0.598	0.593
	Compensate for Livestock Loss	434	734	0.591	0.581
	Compensate for Livestock Loss with Licensing Revenue	417	734	0.568	0.580
	Lethal Removal for Livestock Loss	382	734	0.520	0.505
	Recreational Hunting	327	734	0.441	0.424
	Compensate for Livestock Loss with Tax Revenue	324	734	0.446	0.423
Perceived Personal Impact	Negative Impact	102	734	0.139	0.117
	No Impact	413	734	0.563	0.597
	Positive Impact	219	734	0.298	0.286

Perceived Personal Impact by Region	Western Slope:Negative Impact	53	277	0.191	NA
	Western Slope:No Impact	133	277	0.480	NA
	Western Slope:Positive Impact	91	277	0.329	NA
	Front Range:Negative Impact	38	365	0.104	NA
	Front Range:No Impact	225	365	0.616	NA
	Front Range:Positive Impact	102	365	0.279	NA
	Eastern Plains:Negative Impact	11	92	0.120	NA
	Eastern Plains:No Impact	55	92	0.598	NA
	Eastern Plains:Positive Impact	26	92	0.283	NA

Table 2: Detailed results of qualitative coding of participant responses to the following question: "Briefly describe why you feel wolves would (negatively/positively) impact your life."

Code	Example Quote(s)	Percent of Survey Respondents (Who Indicated Wolves Would Impact Their Life) Who Discussed Each Code
Open-Ended Responses for Positive Impacts (*n* = 216)		
Balance Ecosystem: Wolves would restore balance to ecosystems, return ecosystems to a prior state, and/or enhance ecosystem/environment health.	"It would make everything healthier by having the wolves back in Colorado." "Bringing wolves back into the ecosystem of Colorado would result in a healthier balance to nature."	19.4%
Observing Wolves: Would like to observe or listen to wolves in the wild; would increase participation in outdoor recreation if wolves were present.	"I would try to see them in the wild, which would result in me getting out into nature more. Being in nature has been shown to have huge health benefits." "[I'd] be much more interested in hiking." "I think wolves could positively impact my livelihood and quality of my life because it could inspire me to be out in nature more."	15.6%
Emotional Connection: Loving wolves (or animals more generally), believing wolves are beautiful or majestic, or feeling an emotional or cultural connection to them.	"My spouse and son love wolves and their happiness would make me happy." "Wolves are part of my culture so I feel a bond and close relationship to them." "Wolves have been a favorite animal of mine since childhood." "Wolves are majestic creatures."	10.3%

Moral Arguments: Wolf reintroduction is the right thing to do; it makes up for past wrongs; wolves deserve to exist; humans should share our space with other beings.	"We wouldn't be the cause of their down fall anymore." "Because they were here first. We are the intruders." "It is always good to preserve species." "I think animals should be in their natural environment, not displaced for human greed." "Any move to [...] reverse some of the damage humans have caused is a positive thing for all humans (including myself)." "Living in Colorado you have to share your space, as the wildlife shares theirs with people." "Would bring a great feeling that we are righting a wrong."	9.38%
Control Pests: Wolves would control pest populations that affect people (e.g. coyotes, deer, rodents).	"It would reduce the rodent populations." "Wolves would help control rabbit, coyote, and other wildlife populations naturally." "Decrease chance of hitting deer/elk on roadways." "The deer population is out of control in my opinion and having a natural predator to curtail that population would be a good thing."	6.88%
Existence Value: Knowing wolves exist now or for future generations and/or the ecosystem is intact would increase happiness and satisfaction.	"Because my child would grow up knowing wolves existed." "Knowing that wildlife is comfortably thriving around me." "Knowing they are possibly going to be reintroduced into Colorado gives me positive feelings." "I would like to know that wildlife can still live and thrive where they belong." "It would feel good to have them a part of Colorado."	4.38%

Tourism Revenue: Wolf reintroduction would increase tourism opportunities.	"It would increase tourism." "Wolves would increase tourism and help with jobs."	2.19%
Learning and Environmental Awareness: Wolf reintroduction would increase environmental learning and care.	"Cause more attention to protecting them and their habitats." "I believe wolves would help me learn more about them when seeing them in nature. Wolves are different in captivity." "It would make me appreciate the wilderness even more." "Heighten my appreciation of wilderness knowing there are wolves there."	1.88%
Increase Wildlife Diversity: Wolf reintroduction would increase the diversity or abundance of wildlife in Colorado.	"It's always wonderful to have more wildlife around you." "Increase the variety of wildlife." "It is important they contribute to the biodiversity of this area." "There would be more native animals around."	1.88%
CO State Pride: Wolf reintroduction would enhance Colorado pride and/or make Colorado better.	"It would put Colorado in good news for being responsible to correcting a [sic] environmental wrong." "It would increase the wildness of Colorado." "It would make me feel better about the place I live." "It would be cool to be in a state that supports their reintroduction."	1.56%
Disease/Ecosystem Services: Wolf reintroduction would reduce ungulate disease or provide other ecosystem services to people	"Currently there is a large population of mule deer that wander the neighborhood of Colorado Springs. Introducing wolves could help control this population reducing car accidents and deer wasting disease." "We would seldom see sick or dead animals that were the wolves prey out in nature."	1.88%

	"Help remove sick animals that could spread disease to humans."	
Open-Ended Responses for Negative Impacts (*n* = 104)		
Human Safety: Fear of wolves posing a threat to human safety and/or wandering into residential areas and causing harm.	"I would be afraid to walk around outside. I would be afraid wolves would get into trash cans, backyards, public areas. I would be afraid a wolf would bite or attack me." "As they get established they will multiply and move into residential areas, just as bears, mountain lions, etc, have done." "I would be slightly more afraid of being in wilderness areas." "I would stop doing outdoor activities and would always be afraid of going outside."	19.1%
Pet Attacks: Fear of wolves posing a threat to pets.	"We live in the mountains at 7300 feet and would be cautious about walking our gravel road with our little dog." "I would worry about my pets being outside." "I have 2 dogs that I walk every day near a Colorado Wildlife Area. I am extremely concerned about coyotes, snakes, and mountain lions. Adding wolves to that population doesn't thrill me."	4.06%
Hunting Opportunities: Reduction in hunting opportunities.	"Because it might ruin my chance to fill my tag during hunting season." "Being a hunter there are just a few opportunities to hunt in Colorado, and wolves would greatly reduce that." "Hunting is a big part of my family. If having wolves made it harder to get tags for hunting it might push us to move." "I hunt deer and elk for food for my family. If they are reduced in numbers it will be harder to feed my family."	5.00%

Livestock Loss: Concerns about depredation on livestock and threats to ranching income.	"We are a farming family, live on a farm, main source of income comes from farming [...] All of these things are impacted by a wolf population." "Many of the local ranches would be impacted by wolves being reintroduced to Colorado. My family buys local meat, which could be affected." "They would attack livestock."	3.75%
Wolves Are Killers: Concern that wolves are killers/predators/cruel animals.	"They hunt and kill." "Knowing these animals that attack and kill for pleasure and not for surviving." "Because they are mean."	1.88%
Compensation/Management: Wolves will be poorly managed or difficult to manage.	"I have seen this first hand in Wyoming, Idaho, and Montana. The government stopped paying for wolf killed livestock. They claim they will pay but make it impossible to get compensation." "The government will not pay for livestock because they say 'it could have [been] killed by something else.'" "States have had nothing but trouble with wolves and have even had to permit wolf hunts to help control the size of the wolf packs."	1.56%
Reduce Wildlife: Wolves would reduce diversity and abundance of wildlife, namely deer and elk.	"I feel like wolves will decrease the population of other animals and can possibly harm humans too." "Me and my father like to hunt deer and elk, and I believe the elk and deer population would decrease or relocate."	2.19%

Appendix: Survey Instrument

Below are copies of the survey questions discussed in this report.

To what extent do you feel that wolves would have a direct impact on your livelihood or quality of life?

- ○ They would have a strong negative impact (1)
- ○ They would have a moderate negative impact (2)
- ○ They would have a slight negative impact (3)
- ○ They wouldn't have an impact (4)
- ○ They would have a slight positive impact (5)
- ○ They would have a moderate positive impact (6)
- ○ They would have a strong positive impact (7)

Briefly describe why you feel wolves would (negatively/positively) impact your livelihood or quality of life

_____
_____
_____
_____
_____

If wolf reintroduction were to occur and wolves became reestablished in Colorado, is it acceptable or unacceptable in the future for wildlife management agencies to....

	Highly unacceptable (1)	Moderately unacceptable (2)	Slightly unacceptable (3)	Neither (4)	Slightly acceptable (5)	Moderately acceptable (6)	Highly acceptable (7)
Limit the number of wolves if they cause declines in deer and elk populations in certain areas? (1)	○	○	○	○	○	○	○
Capture and lethally remove a wolf if it is known to have caused loss of livestock? (2)	○	○	○	○	○	○	○

Compensate landowners for loss of livestock caused by a wolf? (3)	○	○	○	○	○	○	○
Use a portion of state hunting and fishing license dollars to compensate landowners for loss of livestock caused by a wolf? (4)	○	○	○	○	○	○	○
Use a portion of state tax dollars to compensate landowners for loss of livestock caused by a wolf? (5)	○	○	○	○	○	○	○
Allow a recreational hunt of wolves once they have reached a certain population size that exceeds recovery goals? (6)	○	○	○	○	○	○	○

If you were given the opportunity to vote for or against reintroducing the gray wolf into Colorado, how would you vote?

- ○ I would vote for reintroducing the gray wolf (1)
- ○ I would vote against reintroducing the gray wolf (2)

Please indicate the extent to which you identify yourself as a/an... (Please select one for each)

	Do not identify with group at all (1)	Identify with group a slight amount (2)	Identify with group a moderate amount (3)	Identify with group a great deal (4)
Wildlife advocate (1)	○	○	○	○

Animal rights advocate (2)	○	○	○	○
Gun rights advocate (3)	○	○	○	○
Property rights advocate (4)	○	○	○	○
Hunter (5)	○	○	○	○
Rancher (6)	○	○	○	○
Conservationist (7)	○	○	○	○

Are you....?

- ○ Male (1)
- ○ Female (2)
- ○ Non-binary/third gender (3)
- ○ Prefer to self-describe (4)
- ○ Prefer not to say (5)

How many people under 18 years of age are currently living in your household?

_____

Do you have any pets in your household? (Select all that apply)

- ❏ Dog (1)
- ❏ Cat (2)
- ❏ Other type of pet(s) (3) _____
- ❏ No pet (4)

What is your annual household income before taxes? (Select one)

- ○ Less than $10,000 (1)
- ○ $10,000 to less than $25,000 (2)
- ○ $25,000 to less than $50,000 (3)
- ○ $50,000 to less than $100,000 (4)
- ○ $100,000 to less than $250,000 (5)
- ○ $250,000 or more (6)

What is the highest level of education you have completed? (Select one)

- ○ Less than high school (1)

- High school diploma or equivalent (e.g., GED) (2)
- 2-year associate's degree or trade school (3)
- 4-year college degree (4)
- Advanced degree beyond 4-year college degree (5)

How would you describe your current residence or community? (Select one)

- Large city with 250,000 or more people (1)
- City with 100,000 to 249,999 people (2)
- City with 50,000 to 99,999 people (3)
- Small city with 25,000 to 49,999 people (4)
- Town with 10,000 to 24,999 people (5)
- Town with 5,000 to 9,999 people (6)
- Small town or village with less than 5,000 people (7)
- A farm or rural area (8)