

Cows or Condos: Rancher and Land-Use Outcomes Following Compensated Federal Grazing Permit Waivers

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Cows or Condos

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University of Wyoming Ruckelshaus Institute of Environment and Natural Resources

The Whitney MacMillan Private Lands Stewardship Program within the Ruckelshaus Institute at the University of Wyoming focuses on a range of pressing issues affecting private landowners and private lands throughout the West through expertise and interdisciplinary collaborations across natural resource management, rangeland ecology, business and finance, law, decision-making, collaborative processes, and other fields.

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Introduction

On federal lands in the American West, conflicts between wildlife and livestock can impede coexistence on the landscape. Historically, land management prioritized livestock production over native wildlife, but changing societal values over the past several decades have resulted in significant efforts to conserve wildlife habitat and recover species of concern. This evolution of management priorities has resulted in conflict where certain wildlife species and livestock overlap, compromising both livestock operations and conservation goals. Disease transmission from domestic to bighorn sheep and depredation of livestock by large carnivores are two major sources of conflict on public lands used for livestock grazing. Significant overlap occurs on public lands in the American West due to their multiple-use mandates creating some areas with acute wildlife – livestock conflict (Regan et al 2022).

In the western United States¹ roughly 85% of federally owned land is grazed by domestic livestock for all or part of the year (CAST 1996). Most public lands grazing occurs on lands administered by the Bureau of Land Management (BLM) and the U.S. Forest Service (USFS). In Fiscal Year 2017, 154 million acres were administered for livestock grazing on BLM lands and 93 million acres on USFS lands (FY2017, CRS 2019). Ranchers grazing on federal lands are required to hold a permit to graze a defined area, known as an allotment. In FY2017, 16,357 ranching operations held a cumulative 17,886 grazing permits on BLM allotments. On USFS allotments, 5,725 operations held a total of 6,146 permits (CRS 2019). Since some operators hold both BLM and USFS permits, the total number of livestock operations grazing on public land is estimated at roughly 21,000 (Gentner and Tanaka 2002). While these numbers are dated, they are still likely representative of current public lands grazing statistics. Considering the number of permittees and the geographic scope of livestock grazing on federal lands, there are ample opportunities for wildlife – livestock conflict resolution.



Photo by Steve Ausmus, USDA/ARS

One strategy to address wildlife and livestock conflicts on public lands is to compensate livestock producers for voluntarily waiving their grazing permits without preference back to the land management agency. Through this approach, producers receive financial or other forms of compensation for waiving their grazing permit which may relieve these public lands of domestic livestock grazing pressure for the benefit wildlife. Compensated grazing permit waivers can follow several different paths depending on the permittee's needs and agency planning processes. Permittees may accept compensation for waiving their permit, funds may be used to facilitate a livestock conversion on the allotment pending agency approval, or a replacement allotment may be found for the permittee – or a combination of these options (see Table 1). Although we specifically address compensated permit waivers in this report, these transactions sometimes occur in the context of ongoing litigation by environmental groups or the potential for administrative closures by agencies which close allotments to grazing without compensating permittees (this may be with or without litigation). These broader dynamics and the potential for uncompensated loss of an allotment are important considerations for many permittees considering waiving a permit.

¹ We adopt the definition of western states used by CRS (2019), which include Arizona, California, Colorado, Idaho, Kansas, Montana, Nebraska, Nevada, New Mexico, North Dakota, Oklahoma, Oregon, South Dakota, Utah, Washington, and Wyoming.

Table 1. Potential pathways for changes in public lands grazing permits

Compensated permit waiver	Permittees accept compensation from an environmental organization or governmental agency to waive their permit back to the agency without preference to another producer
Livestock type conversion	Changing some or all of the type of livestock run by an operation or authorized to graze on an allotment (e.g., converting an allotment from domestic sheep to cattle to reduce risk of disease transmission from domestic sheep to wild sheep)
Replacement allotment	Permittee works with the environmental organization and agencies to move from an allotment with significant conflict to an equitable allotment with less conflict while the allotment with conflict follows one of the other pathways
Administrative closure	Closure of an allotment by an agency without compensation to the producer. This may be to mitigate disease transmission to wild sheep, or after the designation of a national park or other federal land designations.
Forage reserve	The removal of permanent grazing permits, but a potential for infrequent, temporary livestock grazing that meets management goals (e.g., improving forage for wildlife)

Federal public lands grazing also has a direct nexus with private lands in the West. Federal regulations require most permittees to own or control sufficient private land, known as a base property, to sustain their livestock for the portion of the year when grazing is not occurring on public lands (Regan et al 2022). In many western landscapes, ranchers graze their livestock on base properties and other owned or leased private lands at lower elevations during the winter and move livestock onto public land allotments at higher elevations during the summer growing season. Privately owned properties also tend to be associated with senior water rights which provide irrigation for hay and other crops. These linkages create integrated operations that span public and private property boundaries. Gentner and Tanaka (2002) estimate that 107 million acres of privately owned ranchlands in the United States are associated with livestock operations that graze on public lands.

Given the extensive private land associated with public land grazing allotments, scholars and ranchers have expressed concerns that livestock operations could be negatively financially impacted by reduced availability of public land grazing, resulting in subdivision, development, or other conversions of privately owned rangelands (Sheridan 2001,

Sagoff 2003, Talbert et al. 2007, Runge et al. 2017). According to Sheridan (2001: 141), due to “increasing political uncertainty over their access to public lands, many ranchers choose or are forced to sell their private land to real estate developers or subdivide it themselves.” Similar arguments also pervade popular media with public lands grazing framed as a “cows or condos” issue (Brook 1998, Knize 1999, Wuerthner 2010).

Many of these arguments address broader threats to public land grazing but the “cows or condos” logic is also argued to apply to voluntary and compensated grazing permit buyouts. For example, Sagoff (2003: 456) argues “if a rancher sells his AUMs on the public range to a conservancy group, he might sell the ranch to developers, since they are willing to pay the most for it. Environmentalists who wish to preserve the open landscape, then, may have an incentive not to get rid of cattle but to subsidize or otherwise keep the rancher on the land.” Although broadly referenced in academic and public discourse, as well as throughout the ranching community, this hypothesis has not been tested.

In this study, we empirically examined the “cows or condos” hypothesis as it relates to compensated public

lands grazing permit waivers. We were guided by the following research questions:

1. What are the motivations, concerns, and outcomes for ranchers that waived permits?
2. Are compensated permit waivers affiliated with subdivision, development, or land-use conversion of associated private lands?

Approach

To answer these questions, we used a mixed-methods approach that combined semi-structured interviews, a survey, and records analysis across permittees and properties in the American West (Fig. 1). We received a list of 51 permittees that participated in a compensated public lands grazing permit waiver facilitated by the National Wildlife Federation, a partnering conservation organization that has been one of the most active groups facilitating permit waivers. The shared list included records and contact information for all the permittees the organization worked with since 1999. From this list, we contacted permittees to participate in semi-structured interviews. In total, we spoke with 11 permittees during interviews that lasted between 30 minutes and two hours. We also engaged six individuals with diverse experiences related to compensated permit waivers to serve on an advisory group for the project. These individuals came from backgrounds in ranching, wildlife management, and market-based conservation and provided feedback and suggestions over the course of the project.

In addition to the interviews with landowners, we conducted 8 interviews with individuals affiliated with agencies and organizations involved with compensated permit waivers including federal land management agencies, state wildlife agencies, not-for-profit conservation organizations, and livestock associations. These interviews

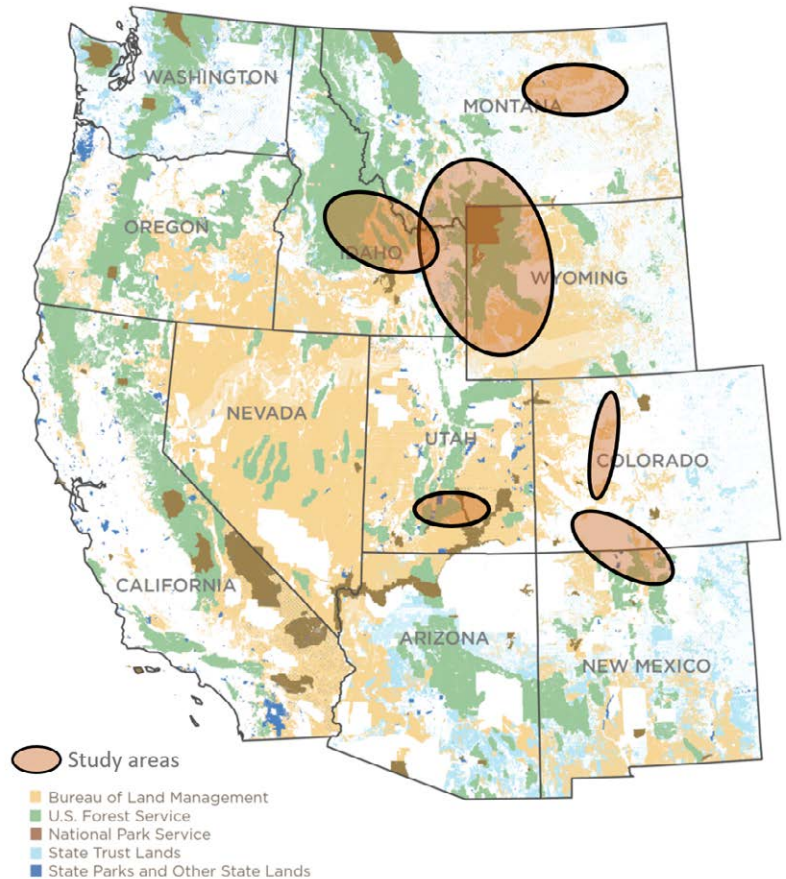


Figure 1. Study area locations in which we conducted interviews, surveys, and/or records analyses (map adapted from Regan 2018).

provided insights from a range of perspectives that added additional context on the issue.

We also conducted a survey of permittees to understand the permit waiver experience among a larger group of participants and to evaluate the extent to which themes from our interviews were applicable to other permittees. The questionnaire was developed following the bulk of the interviews and in consultation with our advisory group that has experience related to permit waivers. We sent the survey to all 51 of the permittees. After several mailings were returned to sender, we confirmed that at least four of the permittees were deceased.

Finally, we conducted records analyses to triangulate our results, assess outcomes for permittees we could not reach, and address concerns about non-response or survivorship bias in the data collected through the interviews and survey. These records analyses allowed us to examine possible land-cover changes on private properties associated with the waived grazing allotment and additional information about the livestock operation.

In total, we received 15 complete or mostly complete surveys for a 32% response rate from living permittees in our sample. Between the semi-structured interviews and survey, we had direct contact with 21 permittees (5 permittees participated in both interviews and the survey) which represents 41% of living permittees in our sample. We also conducted extensive records analyses for 37 permittees, including examining land-cover trends for the private and base properties affiliated with the vacated allotments. With our mixed method approach we were able to assess operational outcomes for 49 of the permittees, and outcomes for properties affiliated with all 51 permittees in our database (Fig. 2).

Limitations

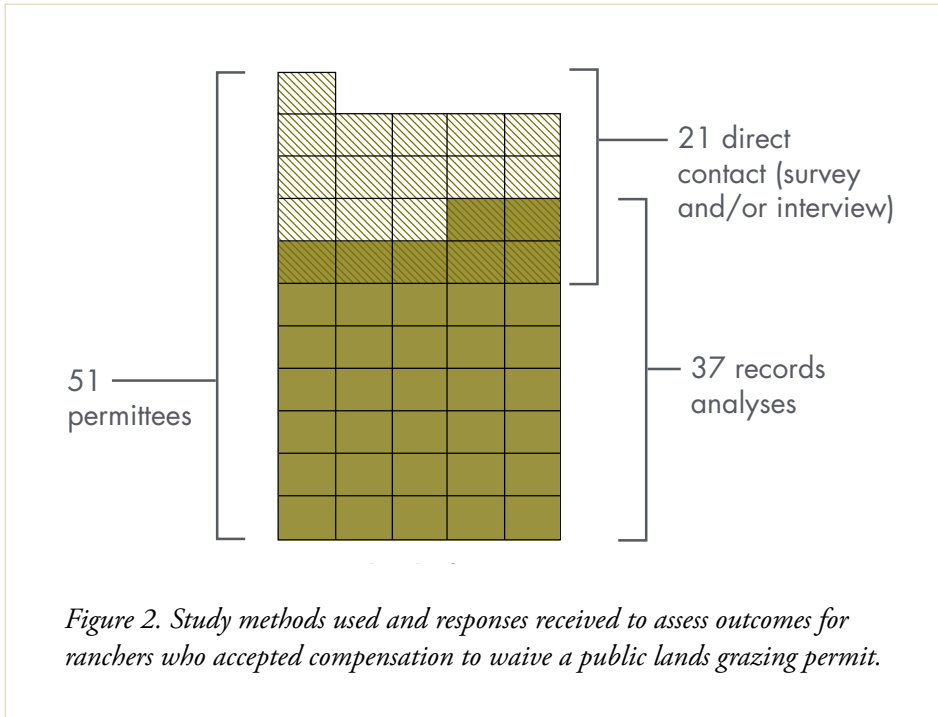
We must also acknowledge the limitations of our research methods. Producers that are still in operation are much easier to track down than producers who are no longer in the business, potentially creating a “survivorship bias” in our conclusions. Securing interviews and receiving survey responses was difficult and the resulting data may suffer from response bias that can occur when some individuals are more motivated to participate in the research. There are readily available property records for current landowners, but land sales are not as easy to identify. Additionally, some of the permit buyout transactions occurred 20 or more years

ago. Land sale records and aerial imagery (which informs the development and subdivision analysis) are difficult to access for deals that transpired decades ago. Additionally, several permittees were no longer alive to participate, may have been transitioning their operations regardless of the permit waiver, or may have been disinclined to participate in this study due to the contentious nature of wildlife and livestock conflicts on public lands. We incorporated multiple research methods and approaches to compensate for these gaps and biases, triangulated data from the difference sources, and vetted results with the advisory group to increase our confidence in the validity of the results.

Findings

Interviews

In the interviews we asked questions about the circumstances that led the permittee to accept compensation to waive their permit, their experiences with the waiver process, concerns regarding how permit waivers may impact ranching, and how they adapted



their operation following the waiver. We used an interview guide to provide structure and standardize questions across the interviews (the full interview guide is presented in the Appendix), but the format also allowed for follow up questions and opportunities to explore novel insights. In total, we spoke with 11 permittees during interviews that lasted between 30 minutes and two hours. The interviews provided insight on the wide range of issues and contexts relevant to our research questions. Although each livestock producer's situation was unique, we identified six themes that were relevant across interviews. We elaborate on these themes below.

Untenable conflicts

All but two livestock producers we interviewed experienced significant conflicts that reduced the viability of grazing on the allotment. Not surprisingly, seven producers emphasized conflicts with wildlife which broke down into two distinct categories: (1) risk of disease transmission from domestic sheep to bighorn sheep, and (2) livestock depredation by large carnivores, particularly grizzly bears and wolves. Risk of disease transmission was especially challenging for sheep operations grazing on allotments near bighorn sheep range because of the difficulty in monitoring dispersing wild sheep that can intermingle with domestic flocks before returning to their herd. Domestic sheep often carry bacteria that causes a pneumonia-like illness in wild sheep that often leads to mortality and is easily transmitted among the wild herd (Carpenter et al. 2014, Highland et al. 2018). Although interviewees described strategies to mitigate against disease transmission, the potential created risk that lawsuits from environmental organizations may drive the agency to close or restrict use of the allotment without compensation to the producer.

For livestock producers with grizzly bears and / or wolves on their allotment, both the economic toll of livestock losses from depredation and difficulties managing their herds in the face of wolf harassment were primary drivers to waive their permit. In these cases, the conflicts were acute and continued to increase over time even with efforts to mitigate depredation and harassment through conflict reduction strategies. Although state and private programs provide compensation for verified livestock losses, these producers generally agreed compensation was not sufficient when considering unverified losses. The ongoing



Photo by Stephen Ausmus
courtesy of USDA/ARS

(and often increasing) losses made continuing to operate on the allotment financially unviable.

Three producers also emphasized increasing social conflicts on the waived allotment. This included challenges from increased recreational use, with one producer describing an exponential increase in recreation on his allotment in the decade preceding the waiver. Increase in recreational traffic often included off-leash dogs that chased cattle and a steady stream of hikers that left gates open. Collectively, these recreational impacts pushed cattle into less accessible parts of the allotment. As a result, producers spent significantly more time searching for livestock in rough or suboptimal grazing terrain.

Increasing subdivision and development pressures on private land surrounding grazed public lands also created challenges in accessing allotments. The increased population and associated traffic in the area created difficulties for ranchers trailing livestock between deeded ground and allotments. Some new residents, largely not from agricultural backgrounds, also objected to the livestock that inevitably wandered onto their properties during trailing or as a result of recreational traffic pushing livestock off the allotment.

Regardless of the source of conflict on the allotments, there was a general consensus among the producers we interviewed that it was unlikely conflict would be significantly reduced.

Agency restrictions

The challenges of working with federal public land management agencies were a significant factor influencing most permittees we interviewed. In some instances, permittees felt there was a change in the management goals within the agency administering their permit that made it more difficult to operate on the allotment. In some cases, these challenges restricted how the allotment was used including further limiting the season of use, stocking rates, type of livestock, or reducing flexibility such as the ability to construct new fences to better control livestock movements and forage use. For a subset of those that waived permits on lands in the National Wildlife Refuge System, administrative rules prevented them from transferring their permits to producers outside of the immediate family. These rules also required animals that are run on the permit be registered under the same brand the permit was issued for. Most of these permittees were not able to use the allotment due to their operation being located too far away to be feasible to graze on

the allotment, they had transitioned away from their parent's livestock business, or they were running cattle under a different brand; thus they were unable to use or sell the permit to another producer.

In other cases, permittees were concerned that an agency administrative decision would close the allotment to protect resources. This was a prevalent concern among sheep producers, several of which noted the U.S. Forest Service's closure of 70 percent of the sheep allotments on the Payette National Forest in 2010 to protect bighorn sheep populations (Ottoson 2014). Several sheep producers also questioned the science guiding agency actions, such as the models assessing the risk of disease transmission to wild sheep. In describing the skepticism of the science and resulting agency decisions, one permittee related "People that know nothing about anything are making laws limiting people who know a lot about one thing." Permittees shared a general skepticism of the science used in agency decision making and often felt it did not justify additional restrictions on allotments.

Operational transitions

Four permittees indicated changes in their operation or within their families were a significant factor leading them to accept compensation to waive their permit. One permittee was employed fulltime off the ranch and looking to downsize the operation anyway. After searching and failing to find other operators to purchase the leases, he decided to accept financial compensation for waiving the permits back to the agency. In two other cases, generational transitions contributed to the decision. In one case, the permittee inherited the permit from his father but had previously established his own livestock operation several hours away. It was not feasible to integrate his father's allotment into his existing operation, and National Wildlife Refuge System rules did not allow for transfer outside the family.

In the other case of generational transition, sheep ranchers had recently helped their son start his own operation and acquire a grazing permit on a U.S. Forest Service allotment. Growing concern of an administrative closure of the allotment due to proximity to bighorn sheep habitat, however, made the risk too much for a new operator without a financial cushion to



Photo by Jean-Pierre Lavoie, CC BY 2.5

adapt. In response, the parents purchased the allotment from their son so he could get out of the livestock business altogether. The parents then worked with the U.S. Forest Service and a conservation organization to waive the permit. In the last example, the permittee's advanced age and the difficulty of the terrain on the allotment made accessibility a concern. In response, and combined with other factors, he decided to substantially downsize his operation and waive the permit on the allotment.

Livestock conversions

Four permittees reported changing the type of livestock they run from sheep to cattle as a strategy to mitigate against disease transmission and the potential for uncompensated administrative closure. Some of the conversions were part of the permit waiver deal and included compensation from a 3rd party, others chose to convert livestock after the permit waiver. Some permittees were able to convert the type of stock permitted and continue operating on the same allotment. In these cases, compensation paid for or completed infrastructure development critical to the new livestock type, such as digging wells for water for cattle, or for lost forage use if cattle could not access portions of the allotment that were previously accessible to sheep. Some operations diversified by expanding into cattle or converting entirely from sheep to cattle while existing mixed livestock operations expanded the number of cattle they run and reduced the number of sheep. While this strategy was successful for several permittees, it also presented challenges. Allotments permitted for sheep were not always suitable for conversion to cattle due to the nature of the terrain, available water, forage resources, and administrative delays in conducting environmental analysis prior to approving the conversion. Other permittees described financial obstacles in converting their operations to cattle including expenses of adapting or replacing infrastructure such as corrals, fencing, and trailers suitable for cattle. One permittee described the unusable sheep infrastructure as "stranded assets" that would likely be unrecoverable as his operation will exclusively run cattle moving forward. While livestock conversion is a viable strategy in some instances, it is also dependent upon certain environmental and operational characteristics that are not present in all situations.

Refocusing on private resources

Six permittees shifted their focus to private resources

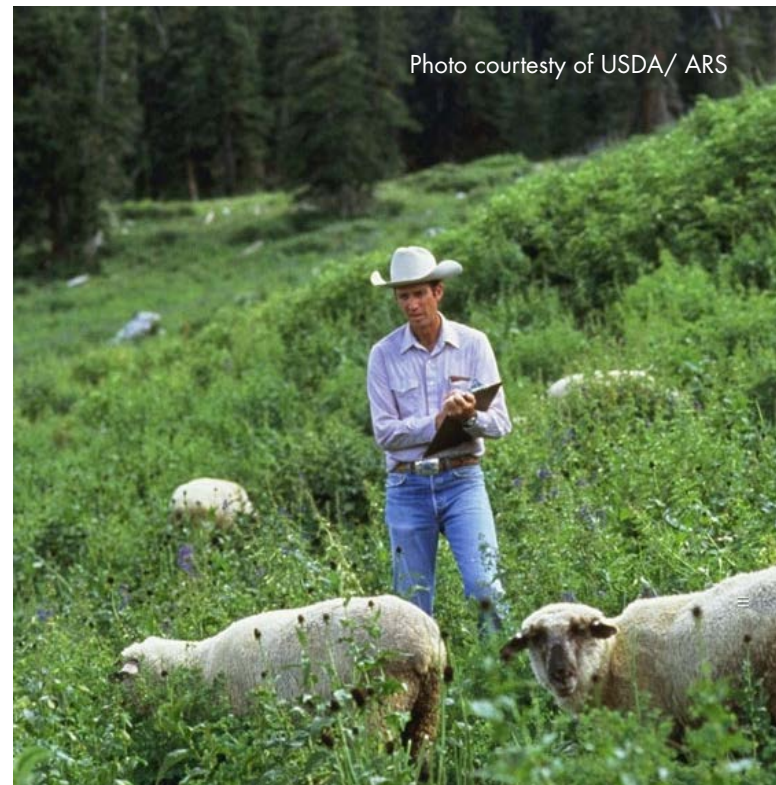


Photo courtesy of USDA/ ARS

to make up for lost grazing on the waived allotment. This took the form of leasing or purchasing private deeded ground from other landowners in the region or expanding hay production or purchases. This strategy had benefits and drawbacks and typically came with several years of experimentation to develop arrangements that worked for the operation. One livestock operator decided to sell their deeded ground following the permit waiver and relocate their operation to a different region of the state with fewer wildlife conflicts and less reliance on public land grazing. Another operation relocated summer grazing on a property owned by a private entity and developed a long-term lease agreement that seems more secure and collaborative than his experience grazing on the federal allotment. In another example, a sheep producer dramatically increased the amount of hay he purchased each year to account for lost forage and supplemental feeding is now his largest operational expense. Collectively, these operators felt the shift to private ground greatly reduced the bureaucracy and uncertainty of public land grazing but were typically more expensive than grazing on public land allotments.

Changing landscapes

Every producer we interviewed expressed concern for the future of ranching in the West and mentioned broader social changes that are compromising the sustainability of livestock production. Several permittees described changes in land markets over the past several decades. These market shifts have accelerated in recent years and resulted in an increase in residential development and non-agricultural buyers of ranch properties. As one permittee lamented the “People with money move to the area for the western ambiance and heritage and they destroy it.” These new landowners are acquiring ranches for the hunting, fishing, scenic, and other recreational and amenity values rather than for agricultural production. These dynamics have reduced the land base available for grazing and caused land values to increase substantially from their agricultural production value, making it difficult to purchase and maintain a working ranch.

The increased cost of suitable agricultural land, increasing operational costs, and the conflicts on and around public grazing allotments, has made it prohibitive for current producers to move to new grazing areas, to sustain or expand production, or for new people to get into livestock production. As one permittee lamented, “I have no clue how

the next generation is going to be able to afford it and be able to get into it, it’s just impossible...There’s no way you can buy land, cows, and equipment and make it work.” These broader land-use and social dynamics were generally perceived to be a bigger threat to ranching and agriculture than impacts from public land grazing permit waivers.

Interviewees also described their stewardship and care for the land, appreciation for the beauty of open spaces and healthy ecosystems, and commitment to maintaining western culture. Most of the producers we interviewed felt that the broader landscape changes and decline in agricultural stewardship would ultimately undermine the health of the land. A number of permittees also raised questions about how the absence of grazing would affect the ecological integrity of the allotments on which they waived their permits. They felt that their stewardship and grazing practices maintained healthy grazing systems by reducing the risk of wildfire and controlling invasive plants.

The six themes highlighted above related the motivations, adaptations, and concerns of producers that waived grazing permits on public lands. Although each situation was unique, they highlight important insights and challenges to better understand the shared experiences of permittees. Notably, every permittee agreed that they were glad a compensated permit waiver was an option and appreciated receiving compensation for agreeing to waive the permit. In many of these situations there was significant risk of administrative closure without compensation, or the permittees were unlikely to find another producer to purchase the permit. We also asked specifically about land sales, development, or conversion and found one producer had sold their base property and moved the operation to an area with less conflict, and another producer had transferred a property within the family. That property is now protected under conservation easement. While it is difficult to generalize based on the results of these interviews, we further examined these themes through a structured survey of permittees that we report on in the next section.

Surveys

The survey provided some novel insights while also verifying many of our findings from the interviews.



Photo by Kim Keating, courtesy of USGS

Reasons for participating in the waiver

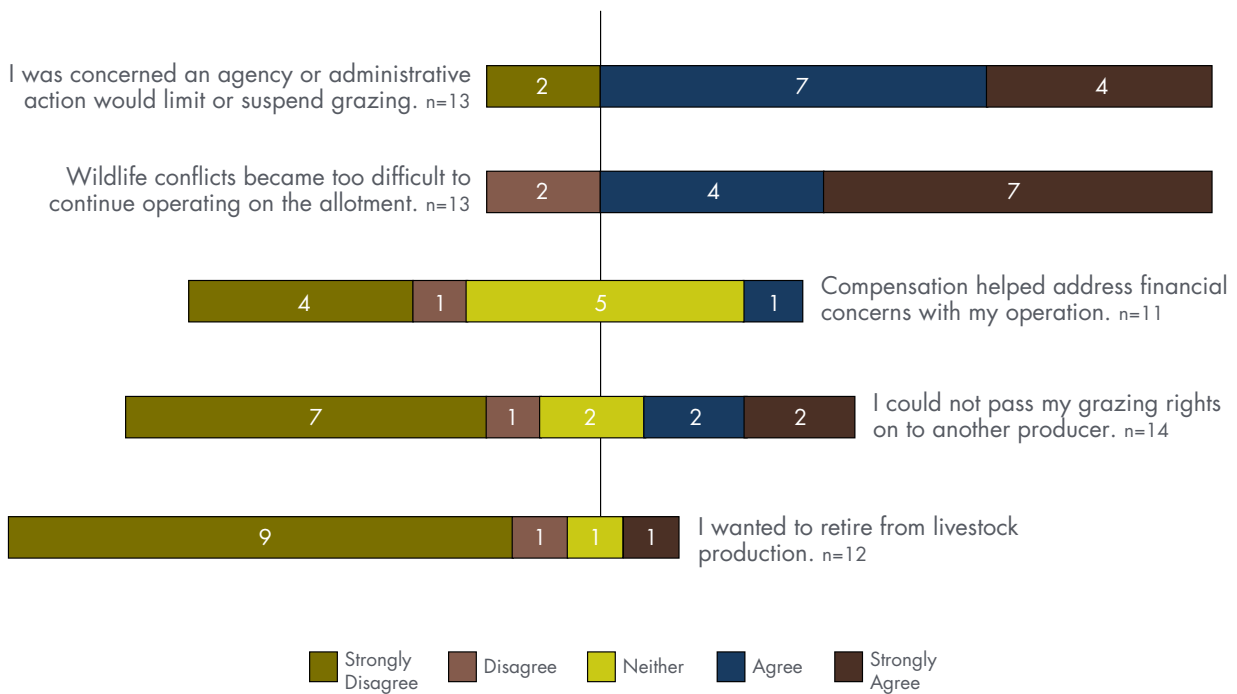


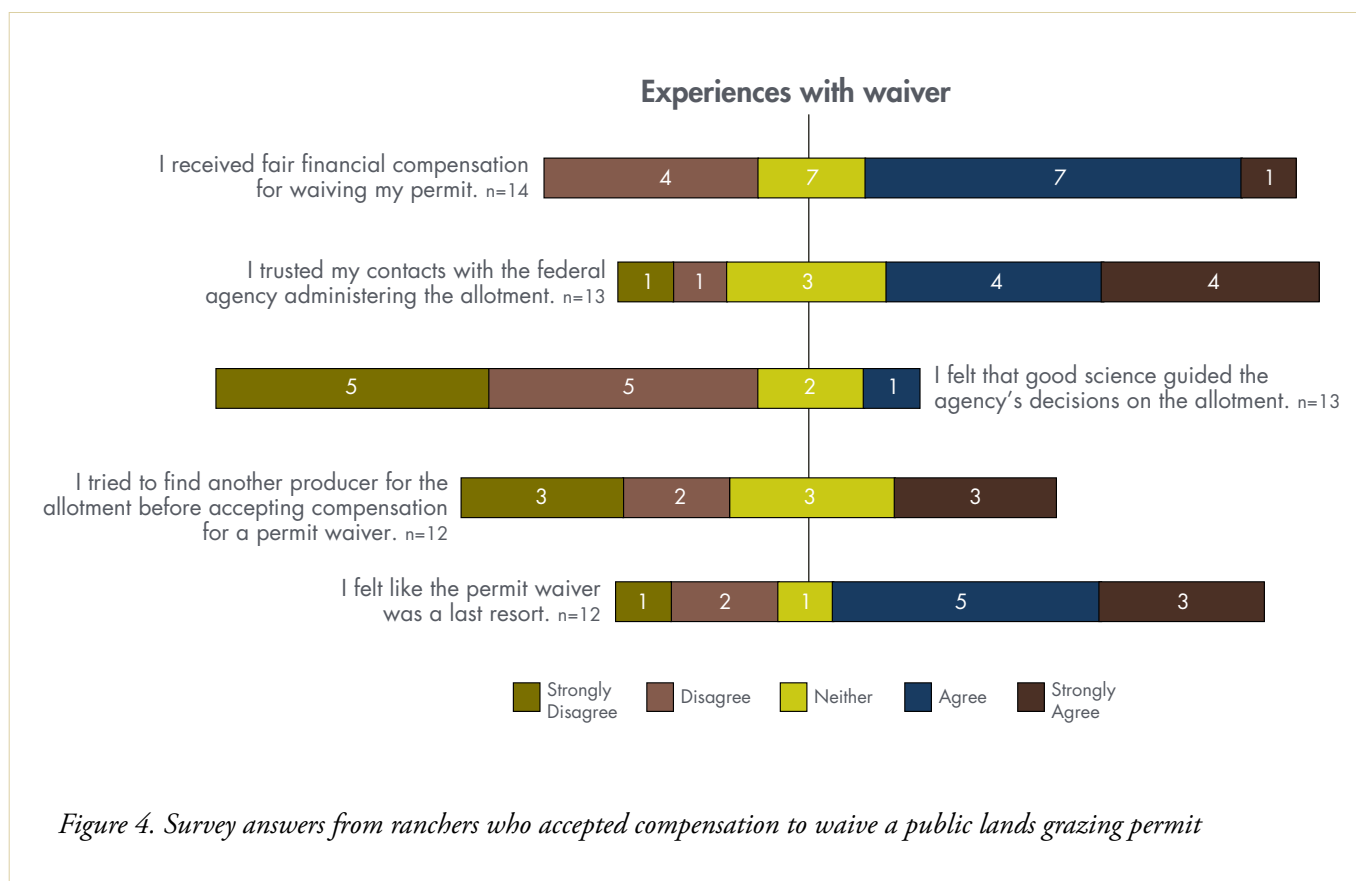
Figure 3. Survey answers from ranchers who accepted compensation to waive a public lands grazing permit

Simple multiple-choice questions were used to assess characteristics of the operation, allotment, and demographics of the respondent. We used a scaled response option for three sections of the survey – reasons for participating in the waiver, experience with the waiver, and outcomes and adaptations following the waiver. Each section included 6-8 questions. We provide the full questionnaire in the appendix. We sent three rounds of mailings to all 51 permittees in our data set, excluding individuals as we received responses or discovered they were deceased. A total of 15 permittees returned completed or mostly completed surveys out of the 47 living producers in our data set. While there were a variety of experiences and circumstances expressed, a number of questions in the survey elicited strong responses among a majority of respondents. Those questions are summarized below.

Reasons for participating in the waiver

Eighty five percent of respondents were concerned that an agency or administrative decision would close the

allotment without compensation to the producer. The same proportion of respondents also faced significant wildlife conflicts compromising the sustainability of grazing on the allotment. Only one respondent wanted to retire, while 83% of respondents indicated that accepting the compensated waiver was not an indication of a desire to retire from livestock production. When asked if the compensation helped alleviate financial concerns in their operation, respondents were split between a negative response and an ambivalent response. While 67% of survey respondents strongly disagreed when asked if residential development around their allotment was compromising their operation in some way, responses were nearly split between producers who were experiencing issues due to the increase in recreational activity on the allotment and those who were not. Finally, when asked if they participated in the waiver because they could not pass their allotment on to another producer, 57% of respondents disagreed and only 29% agreed (Fig. 3).



Experience with the waiver

When asked about their experience with the compensated permit waiver, 45% of respondents indicated they had not tried to find another producer for their allotment, while only 27% of producers had attempted to find another producer for the allotment. Fifty seven percent of respondents indicated they felt the compensation they received for the waiver was fair, and 67% felt that the permit waiver was a last resort. The same percentage of respondents trusted their contacts at the federal agency administering the allotment, but 77% of respondents disagreed that good science guided the agency's decision-making on the allotment (Fig. 4).

Outcomes and adaptations following the waiver

Respondents shared varied outcomes following the permit waiver, but 69% indicated that their livestock operation was negatively affected by the compensated permit waiver. Eighty six percent of respondents would have preferred to stay on the allotment if conflicts could have been mitigated, but 62% of producers agreed their stress had

been reduced since they no longer had to deal with the conflicts on the allotment, and the same percentage were glad they participated in the permit waiver. Every respondent is still in livestock production, and most still graze on some federal lands (Fig. 5).

In summary, we were able to extract some themes from the survey but emphasize that the experiences were highly varied among the producers we were able to contact. Producers were generally glad that the compensated permit waiver was an option, and the compensation was fair. A majority would have preferred to stay on the allotment if conflict could have been mitigated, but the same majority also agreed that it was unlikely for those conflicts to be reduced. The majority of producers said their livestock operation was negatively affected by the compensated permit waiver, but most also stated that, in retrospect, they were glad they accepted compensation to waive their permit. Two respondents reported selling deeded land or converting a property to a hunting retreat, but all respondents were still in livestock production.

Outcomes and adaptations following the waiver

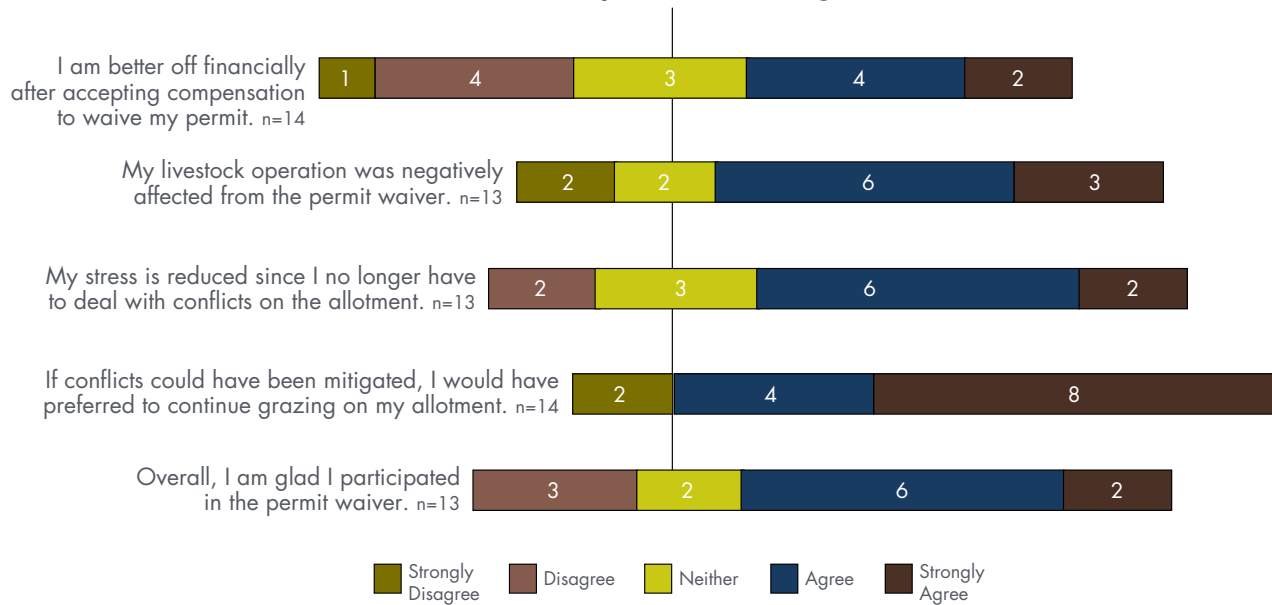


Figure 5. Survey answers from ranchers who accepted compensation to waive a public lands grazing permit

Records Searches

Roughly half of the living permittees elected not to participate in interviews or surveys, and we were unable to find current contact information for some of the other producers in our data set. To assess outcomes for permittees we could not reach directly, and to verify outcomes for some survey or interview respondents, we conducted extensive records searches. We conducted these analyses using county accessor's office parcel data and cadastral maps, internet searches of permittee and livestock operation names, and historic aerial imagery from Google Earth. We searched both individuals and businesses, and ultimately investigated properties related to 37 permittees, or 73% of the permittees on our original list

(Fig. 6). Nine of those permittees also participated in an interview and / or survey.

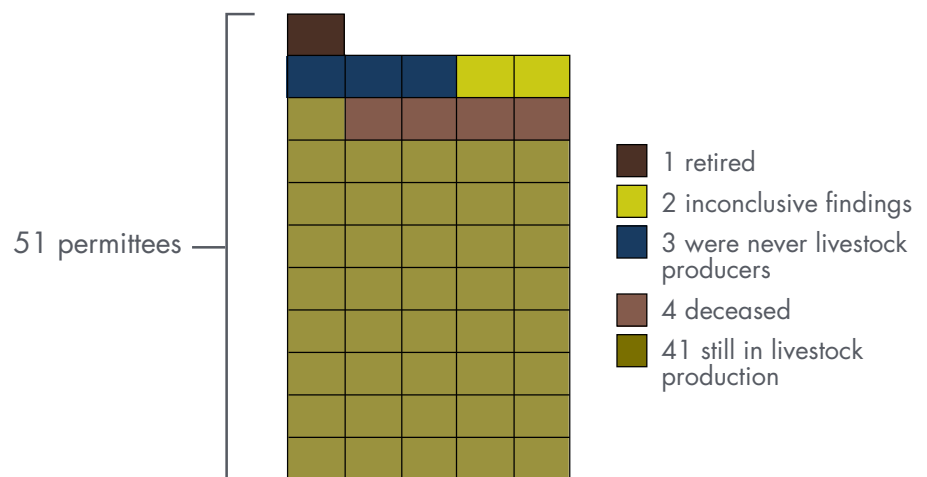


Figure 6. Outcomes for all 51 permittees in our data set who accepted compensation to waive a public lands grazing permit.

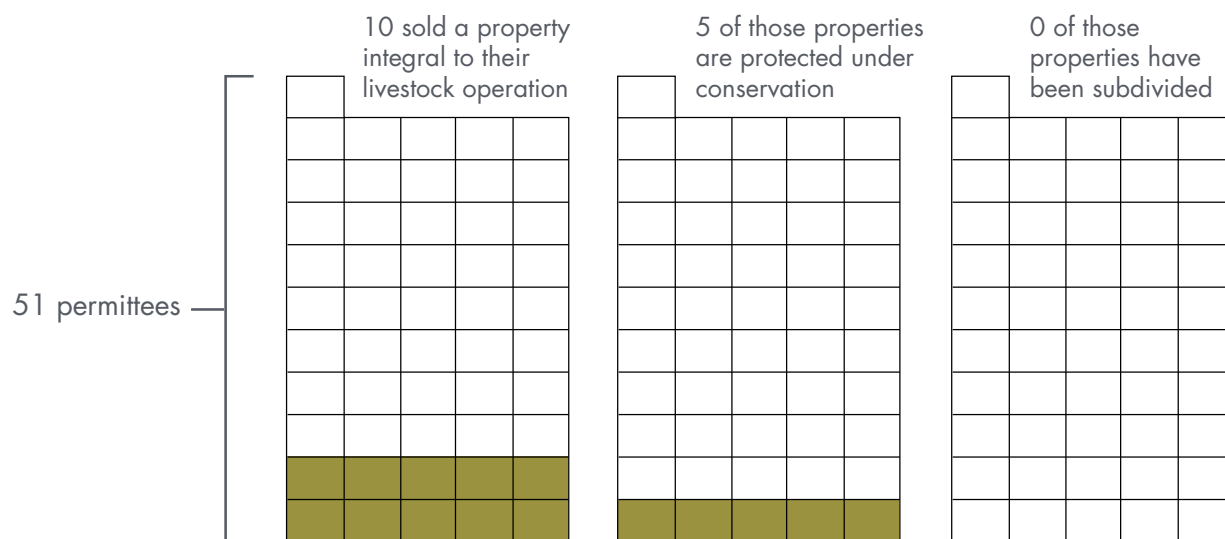


Figure 7. Private land outcomes for 51 permittees who accepted compensation to waive a public lands grazing permit.

We found 4 of the permittees are deceased and 3 of the permittees were never livestock producers – their permits were either inherited or acquired as part of a land purchase. Of the 44 living producers, 41 are still in operation, 1 is retired, and we had inconclusive findings for 2 producers (Fig. 6). While we observed 10 instances where producers transferred ownership of private land, we found no evidence of subdivision, significant development, or substantial crop conversion on any of the properties we investigated (Fig. 7). Notably, of the 10 properties that were sold following the permit waiver, at least five either had a conservation easement placed on the property prior to being sold or were acquired by a conservation organization.

Compensated permit waivers are nuanced, specific to each producer, and can span a wide spectrum of experiences. Three cases exemplify the variety of experiences: One producer integrated his operation with many others, compiling public and private grazing allotments and managing the grazing access among the group. As a result, all producers were better able to weather a wide variety of circumstances that compromised forage access including permit waivers, administrative closures, and wildfires. The producer we interviewed from this group said, “Ranching is all about

mitigating risk.” His means of mitigating a variety of risks is to collaborate with many other producers.

Another producer was negatively affected by his permit waiver. After six generations of sheep ranching, he now is unable to run sheep at all, unable to use ~30% of sheep assets for a new cattle operation, and he is juggling multiple jobs to make ends meet. He felt bullied out of the allotment, saying the U.S. Forest Service made it impossible for him to use the allotment at all, so the conservation organization compensated him for something he was going to lose anyways. This producer said, “Whoever has the loudest voice and the most money wins.”

The third producer initially regretted his decision to waive a permit on an allotment that was overrun by grizzly bears – indicating the new grazing lease he secured on private land owned by a non-profit was managed by people antagonistic to cattle ranching. Fortunately, management changed, and his experience has been fantastic since. Infrastructure is maintained by the organization he leases from, the cost of the lease is offset by the elimination of depredation events, and he has increased his operation ten-fold, from around a hundred head of cattle to over a thousand. He and his son quit

their off-ranch jobs and they are ranching full-time on better managed lands closer to their homeplace. Regarding his permit waiver, this producer said, “It was a catalyst for us to get bigger and better.”

These unique experiences underscore the nuanced nature of how producers adapt and the range of outcomes – some positive and some negative – for producers participating in a compensated permit waiver. We summarize our findings in the conclusion and provide several recommendations below for producers and organizations facilitating permit waivers to consider increasing the potential for positive outcomes.

Conclusion

While each producer’s experience was unique and nuanced, we are able to draw some broad conclusions from this research. Producers used a range of strategies to mitigate risk, including livestock conversions and shifting to private resources. While conflicts on the allotments leading to the permit waiver are generally compromising the stability of livestock operations, most producers were glad that compensated permit waivers are an option. We found no evidence that permit waivers are driving subdivision of private lands (Fig. 7), rather many producers indicate that the shifting markets and increased demand for residential land in the West is a significant source of conflict compromising the sustainability and future of livestock production. We elaborate on the findings to answer our two research questions below.

What are the motivations, concerns, and outcomes for participating ranchers?

Nearly every producer was dealing with a form of conflict that compromised the viability of their allotment, from predation, increased recreation and subdivision around their allotment, management decisions regarding disease transmission or vegetation monitoring, or a change in the agency administering the land. Many felt they had no choice, but many also felt they received payment for something they were likely to lose without compensation. In general, the permit waiver is not compromising producers’ ability to continue livestock production, rather permittees consider broader dynamics such as increasing subdivision and land costs to be more of a threat to

agriculture. Most producers indicate their livestock operation was negatively affected by the permit waiver, but the compensation is appreciated.

Are permit waivers associated with the subdivision, development, or land-use conversion on associated private lands?

Of the 51 permittees investigated, we found 10 permittees sold or transferred a property integral to the livestock operation after accepting compensation for waiving their grazing permit. Of those properties, five are protected under some sort of conservation status, which included conservation easements that protect the property from development in perpetuity and the sale of the property to a non-profit conservation organization that manages the property for conservation goals. While we documented minor changes to some properties, those changes generally involved development of infrastructure integral to operational changes on properties still used for livestock production, zoned for agriculture, and / or still owned by the original permittee. Some producers have increased crop production such as hay or corn. This may be on some of their original deeded lands or on newly acquired

Photo by Michael Gjellum



or leased lands. We did not find any cases of residential development or subdivision (Fig. 7).

Recommendations

While there is no simple summary of the outcomes for permittees who accept compensation to waive a public lands grazing permit, we have extracted some important themes. Nearly every producer indicated they felt pushed out, or that this was a last resort rather than a voluntary undertaking. Financial compensation is one critical tool to alleviate the impact of lost grazing on public lands, but facilitating livestock conversions or replacement allotments are also important considerations if producers are to maintain their livelihoods. Many producers trusted their contacts at both the federal agency and the organization facilitating the waiver, but most doubted the science guiding land management decisions. While most producers would have preferred to stay on the allotment, continued use of the allotment would have been contingent on reducing conflict, and there was little hope that conflict would be resolved another way.

Trust

Very few producers trusted the science that guided agency decision-making, or they felt that it was applied inappropriately. Particularly, the understanding of pathogens and disease transmission from domestic to wild animals is not well understood or trusted outside the scientific community. While science communication has come a long way, there is ample room for enhancing communication and incorporating collaboration with non-scientists when making management decisions that have such a significant impact on invested stakeholders and stewards of public lands. Increased transparency in the science and decision-making process is key to building trust with stakeholders.

Building trust between permittees and managers takes time. One concern expressed by producers is the rapid turn-around in agency personnel, and the apparent absence of agricultural producers in the agencies. Establishing systems that maintain more stability between key actors in public lands management may go a long way toward engendering good will and trust among stakeholders, including grazing permit holders.

Alternatives

While substantial resources are allocated for mitigating wildlife-livestock conflict on public lands, we still recommend continued research and funding aimed at supporting conservation and livestock producers wherever possible. Science is rapidly evolving regarding the impacts of removing livestock grazing in systems, like those of the Great Plains, that once supported millions of bison, and some managers and producers are recognizing the positive impacts of livestock grazing in certain areas. Early results from studies in central Montana are finding that wildflower diversity decreases in the absence of managed grazing, and producers and land managers both agree livestock grazing may be a critical tool in reducing fuels loads and thus wildfire intensity. While these insights may be limited to particular locations or circumstances and each site will respond differently to grazing regimes, we recommend continued efforts to seek solutions that capitalize on the ecosystem services provided by managed grazing in a manner conducive to conservation.

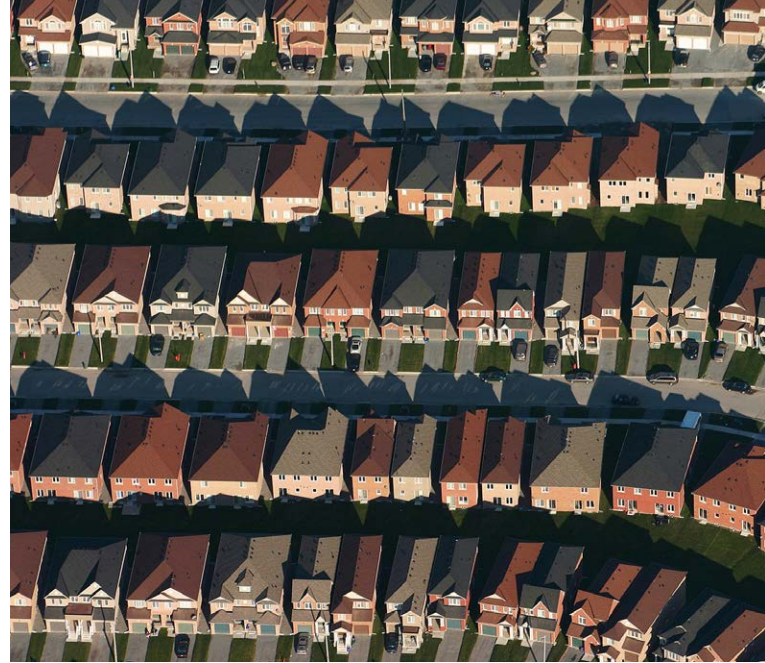
Finally, if removing livestock is the only solution, producers need somewhere to go. Significant effort has been made by the individuals facilitating these deals to assist ranchers in seeking other grazing access. We encourage land managers to develop more tools and methods that enable agricultural producers to maintain their operations while reducing conflict with wildlife. As one producer said, “It comes down to the people involved. You can have a really positive experience with waiving a permit as long as everyone is on the same page and has the same agenda. To make it successful you have to have at least as good of a place for the producer to go, or better.”

While compensated permit waivers are a polarizing topic, they are likely to remain a tool in the conservation toolbox for addressing livestock and wildlife conflicts on public lands. Our research did not find any evidence to support the often expressed concerns over unintended consequences of permit waivers, such as driving residential subdivision and development. Ongoing collaboration and creative strategies can help minimize negative outcomes for producers accepting a compensated permit waiver. Conservation organizations and livestock producers

acting in good faith and putting to use lessons learned from previous experiences can ensure a positive outcome for wildlife and agricultural livelihoods.

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Middle: Photo by Michael Gjellum

Bottom: Photo by John Way, courtesy of USGS

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Appendix A – Questionnaire and Results Summary for Each Question

Compensated Public Land Grazing Permit Waivers: A survey of your experiences

Hello! We are researchers at the University of Wyoming conducting research related to compensated public land grazing permit waivers – sometimes referred to as allotment retirements. Compensated public lands grazing permit waivers provide compensation to a producer to waive their permit without preference. These deals are a tool used to mitigate conflicts on public lands such as livestock losses due to predation or preventing disease transmission between domestic and big horn sheep. We are conducting this research to understand your experiences with a compensated permit waiver. Your participation is entirely voluntary and anonymous. This survey will help us to better understand this issue and the outcomes for producers. Your responses will only be used for this study and reported in aggregate. We will not share or report any individual responses and no individual responses can be linked to you. Your voluntary completion and return of this survey indicates that you give your consent to participate in the this study. This survey should take 10-15 minutes. We very much appreciate your response!

Your Allotment(s)

1. Have you participated in a compensated public lands grazing permit waiver in the past?
☐ Yes
If yes, what kind of compensation did you receive (check all that apply):
13 Financial
3 Replacement allotment
1 Other: _____
☐ No. If no, you do not need to complete the remainder of the survey and please return.
2. What agency administered the allotment(s) (chosed all that apply):
12 U.S. Forest Service
3 Bureau of Land Management
0 U.S. Fish and Wildlife Service
2 National Park Service
1 Other _____
3. What type of livestock did/do you raise?
5 Cattle
8 Sheep
2 Mixed cattle & sheep
0 Other livestock: _____
4. At the time of the permit waiver, did you graze on any other federal allotments?
13 Yes
If yes, how many? **Average = 3.167**
2 No

Reasons you participated in a compensated permit waiver

5. In this section we would like to know more about the reasons you decided to participate in a compensated permit waiver. Please state the extent to which you agree or disagree with the following statements.

I agreed to a waiver because:	Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
I was concerned an agency/administrative action would limit or suspend grazing	2	0	0	7	4
Wildlife conflicts became too difficult to continue operating on the allotment	0	2	0	4	7
Concerns about litigation compromised my operation	3	1	3	4	1
Compensation helped address financial concerns with my operation	4	1	5	1	0
Increased residential development around my allotment was compromising my operation	8	0	2	2	0
Recreational traffic on my allotment was compromising my operation	4	2	1	5	0
I could not pass my grazing rights on to another producer	7	1	2	2	2
I wanted to retire from livestock production	9	1	1	0	1

Please explain if there were other reasons for why you participated in a waiver:

Experiences with the waiver

6. Please state the extent to which you agree or disagree with the following statements about your experiences with the compensated permit waiver process:

	Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree	Not Applicable
I received fair financial compensation for waiving my permit	0	4	2	7	1	
I trusted my contacts at the conservation group facilitating the waiver	0	2	5	5	0	
I trusted my contacts with the federal land management agency administering the allotment	1	1	3	4	4	
I felt that good science guided the agency's decisions on the allotment	5	5	2	1	0	
I tried to find another producer for the allotment before accepting compensation for a permit waiver	3	2	3	0	3	
I felt like the permit waiver was a last resort	1	2	1	5	3	

Outcomes and operational adaptations following the permit waiver

7. Please state the extent to which you agree or disagree with the following statements:

	Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree	Not Applicable
I am better off financially after accepting compensation to waive my permit	1	4	3	4	2	
My livestock operation was negatively impacted from the permit waiver	2	0	2	6	3	
My stress is reduced since I no longer have to deal with conflicts on the allotment	0	2	3	6	2	
My ranching peers reacted negatively to me participating in a compensated permit buyout	2	0	6	3	2	
Overall, I am glad I participated in the permit waiver	0	3	2	6	2	
If conflicts could have been mitigated, I would have preferred to continue grazing on my allotment	2	0	0	4	8	

8. Are you still working in livestock production?
- 0 No, I no longer produce livestock.
- 4 Yes, the permit waiver did not significantly change my operation.
- 10 Yes, but my operation was significantly modified due to the permit waiver.
Please explain how you have modified your operation: _____
9. Do you currently graze on federal public lands?
- 11 Yes.
If yes, how many federal allotments do you currently graze on? **Average = 4**
- 3 No.
10. Did waiving your permit lead you to change your livestock type or quantity?
- 3 No.
- 6 Yes – I run fewer animals.
- 1 Yes – I run more animals
- 3 Yes – I run a different type of livestock.
Please explain: _____
11. Did waiving your permit lead you to sell any of your deeded land?
- 12 No.
- 2 Yes.
If yes, approximately how many acres and what percent of your holdings?
Acres: _____ Percent of holdings: _____
If yes, do you know what has happened to that land? _____
12. How did you use the financial proceeds from the permit waiver? (check all that apply)
- 4 I invested in more private / deeded land for my livestock operation
- 2 I purchased a lease on another public land grazing allotment
- 2 I leased more private / deeded ground for my livestock operation
- 2 I invested in non-land related expenses for my livestock operation
- 2 I paid down existing debt
- 4 I invested it for retirement or other financial accounts
- 3 I used it for other personal or household expenditures
- 0 Not applicable
- 0 Prefer not to say

Background Information

In this section we would like to learn a little bit more about you. We would like to remind you that all of your answers to this survey are strictly confidential and will be used for statistical purposes only.

13. What year were you born? 1942, '43, '44, '46, '48, '49, '50, '50, '51, '59, '60, '60, '60, '74
14. What is your race?

- 12 White / Caucasian
0 Black / African American
0 Asian American
1 Latinx / Hispanic
0 Native American / Indigenous
0 Other: _____
15. What is your gender?
13 Male
2 Female
0 Prefer not to say
16. What is the highest level of education you have completed?
0 Less than high school
1 High school graduate or GED
4 Some college or technical school / associate's degree
5 College graduate (Bachelor's degree, technical degree)
2 Postgraduate (Master's degree, Doctoral, Law degree, other professional degree)
17. What is your approximate total household yearly income? **Average = \$118,090.9**
Min = \$25,000
Max = \$500,000
18. What percentage of your income comes from agriculture? **Average = 90%**
Min = 25%
Max = 100%
19. Which one of the following best describes your political attitudes?
7 Very conservative
6 Somewhat conservative
1 Neither conservative or liberal
1 Somewhat liberal
0 Very liberal
0 I do not know / Prefer not to say
20. Is there anything else you would like to share with us that you think is important about your experiences on this topic? _____

Appendix B - Producer Interview Guide

1. Do you still raise livestock? If so, could you tell me about your livestock operation (e.g., type livestock you run, where do you operate)?

If not: When did you leave the business and what led to this change?

2. Could you tell me about your experience waiving a grazing permit, such as what led to the waiver and why did you agree to it?
3. How did waiving your permit(s) affect your livestock business? What operational changes have you undertaken following the waiver (eg. Are your employees still with you? Have you shifted your livestock to other grazing locations, such as another allotment or by leasing private ground?)

If not: What factors lead you to stop producing?

4. Is the base property affiliated with your waived permit still in your possession?

If not: Do you know what happened to that property?

5. What type of wildlife conflicts have you dealt with while raising livestock? Do you experience similar conflicts on your private land as you did/do on public lands?
6. How do you feel about the future of ranching and land use in your community/region? Do you think the allotment retirement has impacted your community, socially or economically?
7. Looking back on your permit waiver experience, would you do anything differently?
8. How do you think vacating the allotment has affected the land?
9. Is there anything else I didn't ask you about that you think is important for me to know?



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