



JULY 2020

ELK IN PARADISE

Conserving Migratory Wildlife and Working Lands in Montana's Paradise Valley

BY WHITNEY TILT



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2048 Analysis Drive, Suite A, Bozeman, MT 59718 | (406) 587-9591 | perc.org | perc@perc.org
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TABLE OF CONTENTS

Summary.....	4
Recommendations.....	5
Introduction.....	7
Paradise Valley: A Sense of Place.....	10
Ranching and Wildlife: A Landowner’s Perspective.....	14
Landowner Survey Results.....	15
Discussion and Recommendations.....	26
Conclusion.....	39
Endnotes.....	40

LIST OF FIGURES AND CHARTS

Figure 1: Land ownership in Park County, Montana.....	10
Figure 2: Paradise Valley, Montana.....	11
Chart 1: How much land do you own or manage?.....	15
Chart 2: What percentage of your income is earned from agriculture?.....	16
Chart 3: How important are the following to you as a landowner?.....	17
Chart 4: For me practicing soil, water, and habitat conservation is	17
Chart 5: How would you characterize wildlife use of your property?.....	18
Chart 6: How concerning are the following wildlife challenges to you?.....	19
Chart 7: How much do you estimate your wildlife-associated costs to be for the following?.....	20
Chart 8: What barriers to participating in conservation programs concern you most?.....	22
Chart 9: Do you have sufficient support from government agencies?.....	23
Chart 10: Would you partner with government agencies to	23
Chart 11: How likely would you be to participate in programs that	24
Chart 12: How interested are you in receiving the following benefits through a conservation program? ...	24

SUMMARY

Montana's Paradise Valley is a rural landscape with deep-rooted ranching traditions, scenic views, and ample recreational opportunities located at the northern gateway to Yellowstone National Park. Surrounded by national forest lands, Paradise Valley and its ranching community support a range of wildlife including elk, mule deer, bighorn sheep, and pronghorn antelope. The region also hosts expanding populations of gray wolves and grizzly bears.

Much of the responsibility and financial burden of providing crucial habitat for these species falls on the valley's private landowners—yet landowners often feel their perspectives are not adequately heard. This report presents findings from an extensive survey and numerous discussions with landowners in Paradise Valley, which reveal landowner attitudes toward wildlife and point the way to solutions that can support landowners and wildlife in the valley.

Our results show that elk in particular present significant challenges for landowners in Paradise Valley—including competition with livestock for forage and hay, damage to fences, and disease transmission. As elk spend more time on private lands in the valley, and in greater numbers, tolerance often wears thin. Many landowners feel that the public benefits they provide are too often overlooked by the state and federal land management agencies, hunters, and the general public that often shape wildlife policies.

We found that Paradise Valley landowners are united in their interest in new approaches that can help preserve agricultural traditions, maintain open spaces, and conserve the valley's private working landscapes that support agriculture and benefit wildlife. Nevertheless, many landowners are increasingly leery of the potential for regulation and loss of property rights and want solutions that preserve their autonomy and provide tangible benefits for supporting wildlife.

For wildlife proponents, the message from this report is clear: The private working lands of Paradise Valley are vital for sustaining populations of elk and other wildlife. But to ensure those lands can continue to be counted on as part of a conservation portfolio, more work is needed to embrace private landowners as full and equal shareholders in a new era of cooperation. We offer a toolkit of strategies that landowners, conservationists, and policymakers could employ to help sustain the working lands of Paradise Valley and the wildlife they support.

RECOMMENDATIONS

LANDOWNER COORDINATION AND OUTREACH

1. Establish a Paradise Valley Working Lands Group
2. Tell the story of ranching and recognize its benefits to community and wildlife
3. Engage landowners as full shareholders in wildlife management decisions
4. Change the message and the messenger

FINANCIAL INCENTIVES

5. Work to develop a brucellosis risk-transfer tool
6. Enter into wildlife-use agreements, or “elk rents”
7. Establish an elk compensation fund
8. Offer priority or transferable hunting tags to landowners who provide wildlife habitat
9. Develop new funding sources to support wildlife conservation on working lands
10. Increase the amount of private lands available for public access through negotiation

RESEARCH AND TECHNICAL ASSISTANCE

11. Engage MSU Extension, FWP, and others in generating applied research, citizen science, and best practices that help landowners live with wildlife
12. Integrate landowners’ knowledge or citizen science into research and data
13. Provide regulatory and management flexibility

ELK IN PARADISE

Conserving Migratory Wildlife and Working Lands in Montana's Paradise Valley

INTRODUCTION

By Brian Yablonski

The history of Paradise Valley is one of movement. Located in Southwest Montana, Paradise Valley has long been a passageway not just for wildlife, but for Native Americans, trappers, hunters, and explorers. The first government-sponsored surveys of Yellowstone passed through the valley, as have subsequent generations of visitors to Yellowstone National Park. But the original travelers were wildlife, etching out ancient pathways between high alpine plateaus and the lush lower terrain along the Yellowstone River, called Elk River by the Crow Tribe because it was a migratory route.

The movement of wildlife in this region ebbs and flows with the seasons. Today, across public and private lands, seasonal migrations are the key to healthy elk herds, and scientists are learning that private landowners are increasingly the key to healthy migrations. According to research by ecologist Arthur Middleton, some elk herds can spend up to 80 percent of their time in winter on private lands, where the snows are not so deep, forage is more attainable, and conditions are more clement.¹ In recent years, the growing interest in the ecology and conservation of migrating ungulates including elk, mule deer, and pronghorn has captured the attention of policymakers, scientists, sportsmen, and conservation organizations alike, moving the issue to the forefront of conservation priorities in the American West. In Montana, Paradise Valley is ground zero.

Paradise Valley also has a rich history of cattle ranching. It started when an enterprising miner named Nelson Story sold his gold dust from the diggings in Adler Gulch for \$40,000 in post-Civil War greenbacks and headed to Texas, where he purchased a herd of 1,000 longhorn cattle. In 1866, along with 24 cowboys and 15 wagons, Story drove the herd along the new Bozeman Trail to grazing grounds in the Montana Territory, fighting Sioux war parties on the way. The 2,100-mile cattle drive was the first to Montana. Three hundred cattle were sent on to the goldfields of Virginia City while the remaining 700 wintered in Paradise Valley. The drive was the inspiration for Larry McMurtry's classic western novel *Lonesome Dove*.² Story would continue to use the Upper Yellowstone River valley as grazing land. His descendants still ranch in the valley today.

Today, this history is the backdrop for the recent science and conservation efforts involving wildlife migration corridors in Montana. GPS collars have enabled researchers to understand elk movements from summer to winter range in much greater detail than ever before. To date, the mapping of elk GPS data shows at least nine distinct migratory herds in the Greater Yellowstone Ecosystem. Paradise Valley and its ranching community provide critical winter range habitat for two of those herds: the Paradise Valley Herd and the Northern Yellowstone Herd. As a result, the valley has been identified by the Montana Department of Fish, Wildlife, and Parks as one of the state's four priority migration areas. Paradise Valley is also recognized by the state as a priority area for its other iconic migratory species, such as pronghorn and mule deer, as well as its connectivity to Yellowstone National Park.

The new, spaghetti-like migration maps for the Yellowstone elk herds and other migratory ungulates are an incredible resource for scientists, government agencies, and conservationists. But for ranchers, they too often cause additional anxiety and concern. Lines on a map often precede efforts to create official wildlife corridor designations, which can mean more regulation, oversight, and litigation for already-strained working landowners, most of whom are excellent stewards of wildlife. Unfortunately, landowners often feel as though they are the last to learn of these efforts.

In truth, elk can be hard on cattle ranchers. When the snow flies in the high country, the herds move down to lower-elevation pastures. On these ranches, the elk compete with cows for winter hay and irrigated alfalfa. They damage fences. They attract predators. And they can spread brucellosis, a disease carried by elk in the Yellowstone region that causes cattle to abort their unborn calves. It is brucellosis that keeps the Paradise Valley ranchers awake at night. The stress and costs take their toll, and many landowners say that their tolerance for elk is wearing thin. Since the mid-1990s, ranchers have reported seeing more and more elk on their agricultural fields, and they are staying longer. Many wonder if migratory elk aren't becoming residential elk, content to feed upon the valley's irrigated lowlands year-round.

In 2019, the Property and Environment Research Center (PERC) embarked on a multi-year effort to better understand landowners' attitudes and challenges with wildlife in Paradise Valley. In addition to conducting an extensive landowner survey, PERC hosted a one-day landowner workshop at Chico Hot Springs in Pray, Montana, which brought together nearly 40 members of Paradise Valley's ranching community. The workshop provided an opportunity for ranchers to discuss the survey results and possible economic and other incentives that could help them with their challenges of coexisting with elk. Ranchers also had the opportunity to interact with leading officials from Montana Fish, Wildlife, and Parks and the U.S. Department of the Interior as well as some of the nation's top researchers on elk migrations and private lands, including Arthur Middleton.

This report is a summation of the survey results, the workshop, and the many hours spent in conversations with working landowners in their kitchens or at local saloons. It puts forth a toolkit of ideas to support landowners, recognizing that if we help the landowners—if we find ways to economically preserve working lands—we help the wildlife. Recommendations focus on private landowner recognition and appreciation, research, technical and regulatory relief assistance, and economic incentives.

We are indebted to the ranchers and landowners of Paradise Valley who shared their time, experience, and opinions with us. This report would not be possible without them. We are especially indebted to Druska Kinkie, who was instrumental in opening doors and helping us better understand and appreciate the ranching community in Paradise Valley.

The goal of the project is to explore market-based approaches, economic tools, and other ways that can enable elk migrations to become more of an asset, or at least less of a liability, to private landowners, thereby preserving the working landscape nature of Paradise Valley and the habitat that migratory elk rely on. After all, wildlife are an important economic driver in the Greater Yellowstone Ecosystem, helping to generate enormous benefits from tourism and hunting opportunities around Yellowstone National Park—benefits that often do not accrue to the valley's working landowners who supply important habitat. And, in such a highly desirable region, the likely alternative to these private working lands is fragmentation and development, which would jeopardize the future of the valley's rural character, agricultural tradition, and the wildlife populations it supports. But it is not too late. There are those who value the conservation of wildlife migrations, and there are those who bear the costs of wildlife migrations. In between the two groups are solutions.

– Brian Yablonski, CEO, PERC

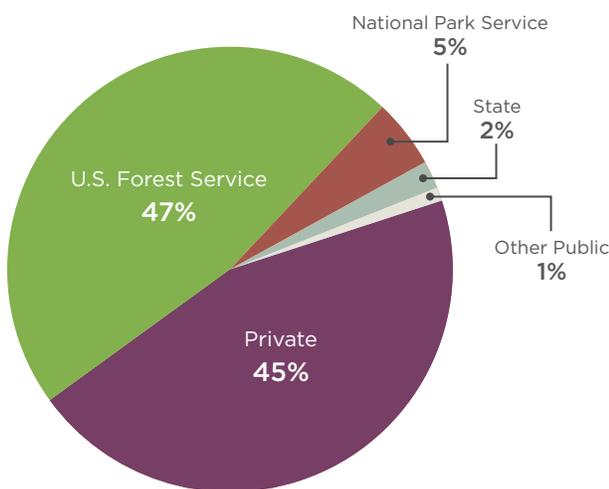


PARADISE VALLEY: A SENSE OF PLACE

The Paradise Valley of Montana is carved by the Yellowstone River and bounded by the Absaroka Beartooth Mountains on the east and the Gallatin Range on the west. The valley extends more than 50 miles from the town of Gardiner and the boundary of Yellowstone National Park north through the Gardiner Basin, Yankee Jim Canyon, Tom Miner Basin, and the broader Paradise Valley proper to the town of Livingston. It encompasses the communities of Jardine, Corwin Springs, Pray, Emigrant, and Pine Creek. Lying wholly within Park County, some 2,100 residents call the valley home.

The communities of Paradise Valley share an independent, resilient spirit sustained by a diverse mixture of agricultural, industrial, and commercial activities. The primary land use in the valley is cattle ranching and hay production. The valley's scenic views, ample recreational offerings, and position as the northern gateway to Yellowstone National Park also contribute to a robust tourism and recreation sector. For example, the upper portion of the Yellowstone River in the valley is world renowned for its blue-ribbon fisheries and is the most popular destination for resident and non-resident anglers in the state of Montana.³

FIGURE 1:
LAND OWNERSHIP IN PARK COUNTY,
MONTANA



Source: Headwaters Economics, Economic Profile System

Paradise Valley's open spaces and agricultural tradition work to preserve its rural character. These are essential parts of the local economy—both for what they produce (e.g., cattle and hay) and what they conserve (e.g., open space and wildlife habitat).⁴

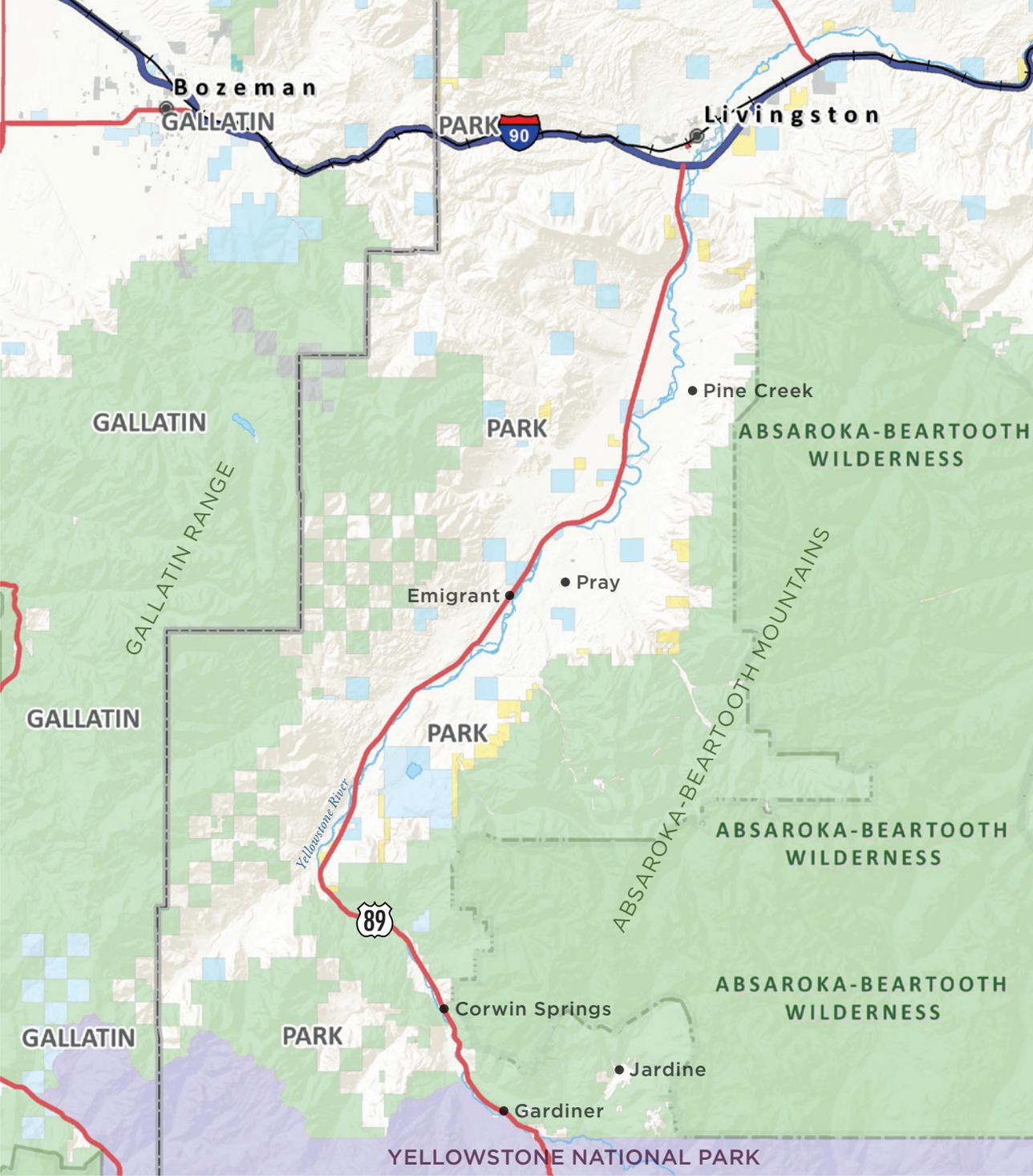
The Custer Gallatin National Forest encompasses 47 percent of Park County, making the federal government the largest landowner in the Paradise Valley (Figure 1). But although Park County has a large amount of public land, the most valuable lands in terms of soils, water, and biodiversity are found on private lands. This is the result of historical settlement patterns as the region was settled by ranchers and homesteaders in the mid- to late 1800s, claiming the best soils, access to water, and known mineral deposits (Figure 2). The remaining unclaimed lands were designated as national parks, national forests, and other public lands beginning in the 1870s.

Private land in Paradise Valley provides critical year-round and seasonal habitat for elk, mule deer, bighorn sheep, and pronghorn antelope, while the nearby Gardiner Basin also provides important winter range for bison. Indeed, many of the wildlife species that attract millions of visitors to Yellowstone National Park each year depend in part on these private lands—whether it's by providing winter habitat for migratory ungulates or sustaining the carnivores and scavengers that feed on the ungulates. The region also hosts growing and expanding populations of gray wolves and grizzly bears. Private landowners in the valley have provided this crucial habitat for more than 150 years, bearing much of the financial burden of living with such species.

Two of the Greater Yellowstone Ecosystem's nine distinct elk herds occupy Paradise Valley—the Paradise Valley Herd and the Northern Yellowstone Herd. In response to Secretarial Order 3362 issued by the U.S. Department of the Interior in 2018 to promote the conservation of big-game wildlife migration corridors, Montana designated Paradise Valley as a priority area, recognizing that the valley “hosts multiple iconic wildlife

FIGURE 2:
PARADISE VALLEY, MONTANA

■ National Forest ■ National Park Service ■ State Land ■ Bureau of Land Management □ Private





species and connects the world-renowned Yellowstone National Park with the adjacent Paradise Valley.”⁵

Montana Fish, Wildlife, and Parks (FWP) is responsible for managing elk in Montana. The department monitors elk numbers on an ongoing basis and sets annual harvest levels by elk management area. The state also has the overall responsibility to assess threats to the elk population and respond accordingly.

FWP manages elk under a state-wide Elk Management Plan. The plan seeks to balance the interests of hunters and other outdoor recreationists, landowners, and the general public with the perpetuation and protection of elk populations. The current plan also

expressly states that FWP management decisions will recognize that Montana’s agricultural community is integral to the management of Montana’s fish and wildlife populations and the habitats that support them.⁶ Montana is in the process of updating its Elk Management Plan, providing an opportunity to recognize and address many of the issues and opportunities highlighted in this report.

Current techniques used to assess the status of elk populations have “evolved from compromise among needs for accuracy, financial restrictions, and personnel availability.”⁷ In Paradise Valley, FWP relies on an annual aerial elk survey conducted on relatively



open winter ranges as weather and budget allow. The most recent data for Hunting Districts 313, 314, and 317—which span the entire Paradise Valley region—indicate that elk populations have generally been increasing from 2011-18, with numbers within or above targets.⁸

Of all the wildlife that landowners in Paradise Valley deal with, it is often elk that cause the most conflict. In conversations with ranchers from Paradise Valley and elsewhere across the state, elk are commonly named as the species that “keep ranchers awake at night.” Even in the face of living with grizzly bears, wolves, and other species of state and federal concern,

landowners often identify elk as the biggest headache due to the lack of flexible and cooperative tools with which to manage them.

The abundance of elk and other wildlife in Paradise Valley is not guaranteed in the future. The valley is facing, and will continue to face, development pressure and other threats as more people elect to live in attractive areas with natural landscapes, plentiful wildlife, and ample outdoor recreational opportunities. These pressures will be most acutely felt on private lands adjoining or close to public lands and water with high amenity values—the very definition of the Paradise Valley.

RANCHING AND WILDLIFE: A LANDOWNER'S PERSPECTIVE

In 2019, PERC undertook a series of conversations with ranchers and other landowners in Paradise Valley focused on ranching and wildlife. The project examined the impacts to landowners of coexisting with growing numbers of elk and other wildlife, probed avenues to mitigate the risk of wildlife-transmitted disease, and sought to identify specific approaches to increase the benefits to landowners who make a home for wildlife. Specifically, the project goals were to:

- 1) Assess landowner attitudes and behaviors toward wildlife, and specifically elk, on their land and gather landowner insights into tools needed to promote the continued economic viability of private working lands
- 2) Develop a needs assessment and specific set of recommendations that benefit working lands and wildlife through increased or improved cooperation, research, policy, innovation, and incentives

Assess landowner attitudes

As a first step, PERC conducted a survey of landowners in Montana's Paradise Valley engaged in ranching. A target list of 34 landowners was developed, representing an estimated 90 percent of the land used

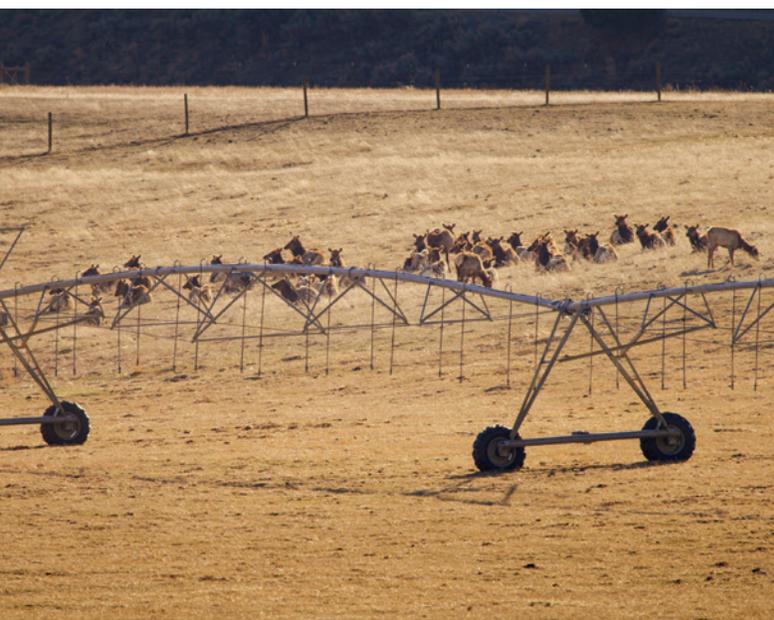
for ranching or agriculture in Paradise Valley. Respondents had the option to complete the survey in person, by mail, or online. (Find the full questionnaire at perc.org/paradise.) Soon after the survey began, it became apparent that some landowners wished to remain anonymous, so the survey design was revised to allow for that option.

As of February 2020, 31 surveys had been submitted, 22 of known origin and nine anonymous. We estimate that 29-30 of the targeted 34 landowners responded to the survey (a response rate of 85-88 percent). The remaining 1-2 submissions were other landowners in the valley who expressed interest in participating.

In addition to the survey data, more detailed information was gained from discussions with many of the targeted landowners. During conversations over the kitchen table, on the front porch, and elsewhere, detailed qualitative and quantitative information was gleaned to supplement the survey data. A glimpse of this oral contribution is presented as quotes from landowners providing anecdotes and personal insights into the survey results.

Assess landowner needs

Once preliminary survey data were tabulated, results were shared with participating landowners and the larger Paradise Valley community at a landowner forum hosted by PERC in December 2019 at Chico Hot Springs near Pray, Montana, as well as in presentations to the Upper Yellowstone Watershed Group and in face-to-face discussions with individual landowners. A goal of these discussions was to develop a Paradise Valley landowner-focused needs assessment with an emphasis on putting forth a menu of options and recommendations that can help better resolve conflict between landowners and wildlife.



LANDOWNER SURVEY RESULTS

Our survey shows that landowners with individual needs and preferences share underlying interests when it comes to managing migratory wildlife in Paradise Valley. Despite differences in priorities, our results show that landowners all value conservation, but wildlife can impose large costs, especially for those who rely on agriculture and ranching for most of their income. Our results also show that in the face of these costs, landowners want policy solutions that preserve their autonomy and provide them with benefits in return for providing habitat, rather than regulatory scrutiny and further financial burdens. These findings, discussed below, point the way to policy solutions that can support landowners and wildlife in Paradise Valley.

Despite differences, Paradise Valley landowners value conservation

Landowners who participated in the survey live throughout Paradise Valley. They own different amounts of land, use their land in different ways, spend varying amounts of time on their land, and view different aspects of their land as most important. All survey respondents, however, share an interest in improving soil and land health and consider conservation very important. This suggests that while there may not be a one-size-fits-all method for improving

wildlife habitat on private lands, landowners are interested in exploring new options.

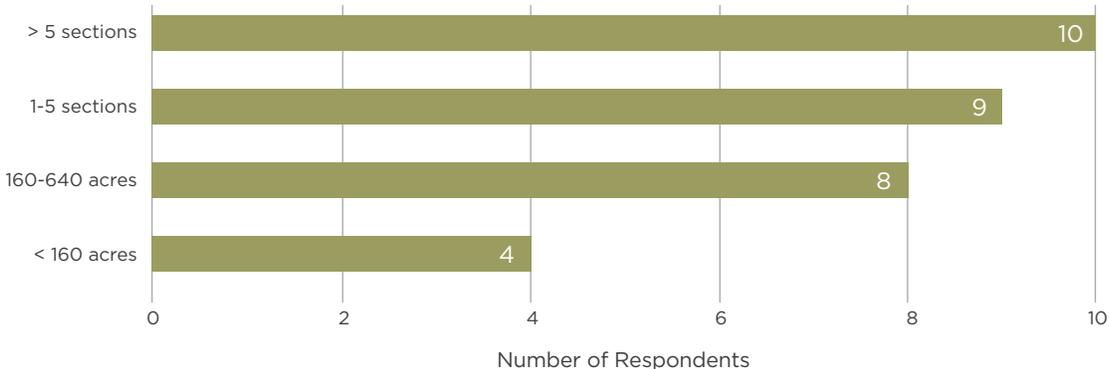
Most surveyed landowners own at least one section of land—640 acres—in Paradise Valley. Thirty-two percent own more than five sections, putting them in control of a large amount of potential wildlife habitat (Chart 1).

The predominant land use reported is grazing livestock, primarily cattle, with 90 percent of participants engaged in grazing of some kind. Twenty of 31 participants dedicate 80 percent or more of their land to grazing. The primary agricultural products produced are beef for market (84 percent), hay/grain (71 percent), and recreation such as lodging and outfitting (26 percent).

Ninety percent of the participants live full-time on their property, and half have been on their property more than 30 years. This long tenure coincides with the reported age of the participants, with 68 percent aged 56 or older. As one landowner recounted, “Our ranch is a fifth-generation ranch with the sixth generation waiting in the wings. The ranch has been added to over the years, with some of the ranch land dating over 100 years in the same family.”

When asked what they planned to do with their land in the future, 55 percent of participants indicated they intend to keep their land and pass it to their family. Some, however, are concerned about their

CHART 1:
How much land do you own or manage?



children’s continued interest in ranching, given the challenges currently posed by wildlife. As one told us, “As to the question of passing along the ranch, I have to ask myself, do my kids really want to do this for a living?”

Twenty-three percent of landowners indicated they intend to stay on the land as long as they are able, and 19 percent responded that they don’t know how much longer they will stay on the land. These responses suggest an uncertain future for the land. One respondent answered that they plan to keep their land only long enough to find a buyer.

While the vast majority of landowners we surveyed raise cattle and grow hay as the primary activities on their land, there is a distinct group of landowners who rely on their land for a living and a distinct cohort who do not. Chart 2 illustrates this bimodal distribution of percentage of income derived from these agriculture activities. Forty-two percent of participants report that 80 to 100 percent of their income derives from agriculture, while 39 percent report that 20 percent or less of their income derives from agriculture.

Analysis of ownership patterns in the Greater Yellowstone Ecosystem, which includes Paradise Valley, from 1990 to 2001 found an equal number of “nontraditional” owners—those who purchase land as an investment or to enjoy the area’s natural amenities—as conventional ranchers and reported overall acreage being more and more consolidated by the

nontraditional “amenity” owners.⁹ This potentially explains the reason for the reported bimodal distribution. These amenity owners in Paradise Valley still commonly run cattle and grow hay but are not dependent on agricultural production for their income.

When asked about their attitudes toward different uses of their land, landowners’ diversity in terms of amenity and conventional ranching resulted in a wide range of responses. As illustrated in Chart 3, there is a strong value placed on “continuing to own and maintain the property as working lands for future generations” and “protecting lands as open space while maintaining agriculture use,” which 84 percent and 81 percent respectively ranked as extremely or somewhat important.

But other land values were also extremely important. The most striking example may be the importance of the “appearance of your property and the perceptions of your neighbors and fellow citizens,” which 90 percent of participants described as somewhat to extremely important and which no landowners described as unimportant. This is not surprising as ranching commonly depends on neighbors lending a hand with branding and round-ups, looking out for lost cattle, and just being “neighborly.” Seventy-one percent also ranked “maximizing profits on the land” and “conserving fish and wildlife on the property” as somewhat to extremely important. Not surprisingly, when percentage income from agriculture is cross-

CHART 2:

What percentage of your income is earned from agriculture?

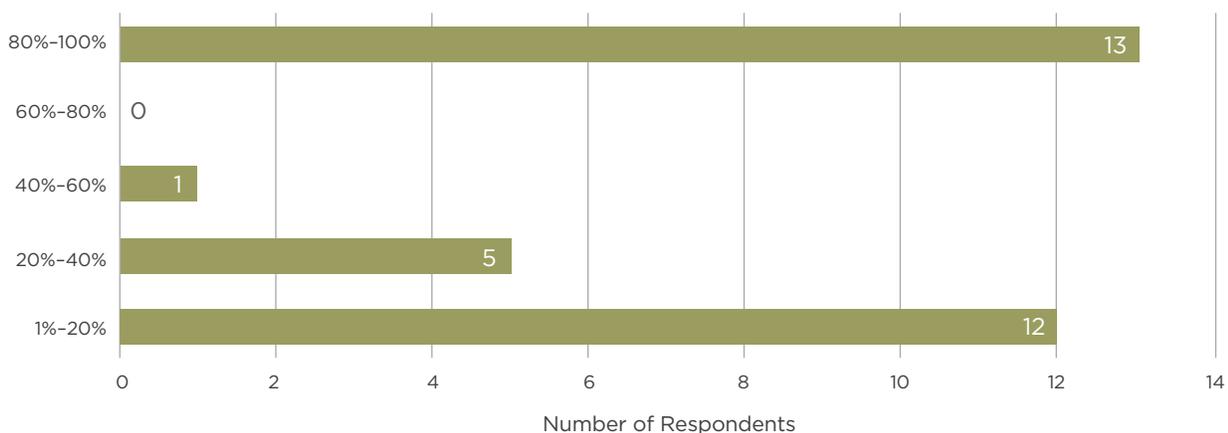
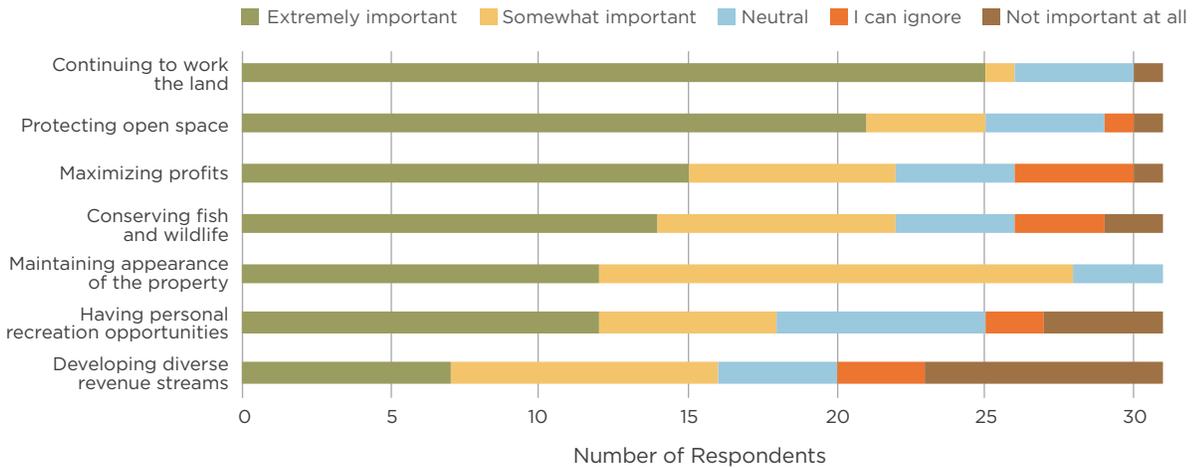


CHART 3:

How important are the following to you as a landowner?



tabulated with the question, “How important is it to maximize profits?”, there is a strong correlation.

Clearly, landowners’ priorities in Paradise Valley are not all identical. But they do share many of the same values. As a group, landowners have a strong desire to maintain their properties as working ranches and agricultural land for future generations and to protect the land as open space while maintaining agricultural use. This is good news for wildlife such as elk, which depend on open spaces provided by landowners.

Maintaining a landowner’s property as working lands requires stewardship. When asked about various soil, water, and habitat conservation practices, the results were resounding (Chart 4). Nearly all participants described these types of conservation as good for their local land health, the right thing to do, an important part of being a good neighbor, and compatible with their goals for the land. These responses highlight landowners’ interest in conservation when conservation includes practices that are mutually beneficial for landowners and wildlife.

CHART 4:

For me practicing soil, water, and habitat conservation is ...

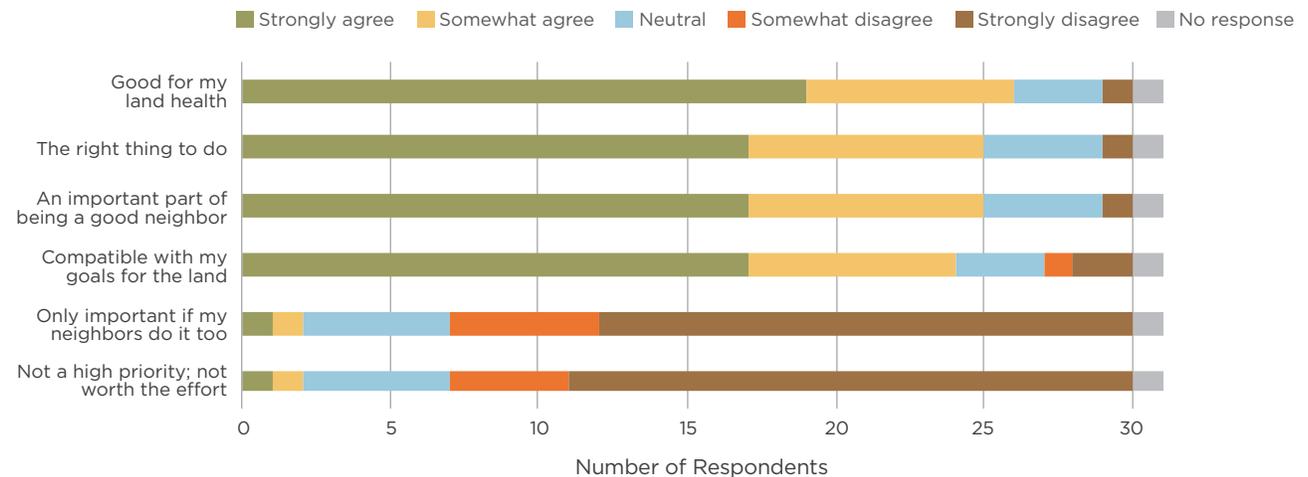
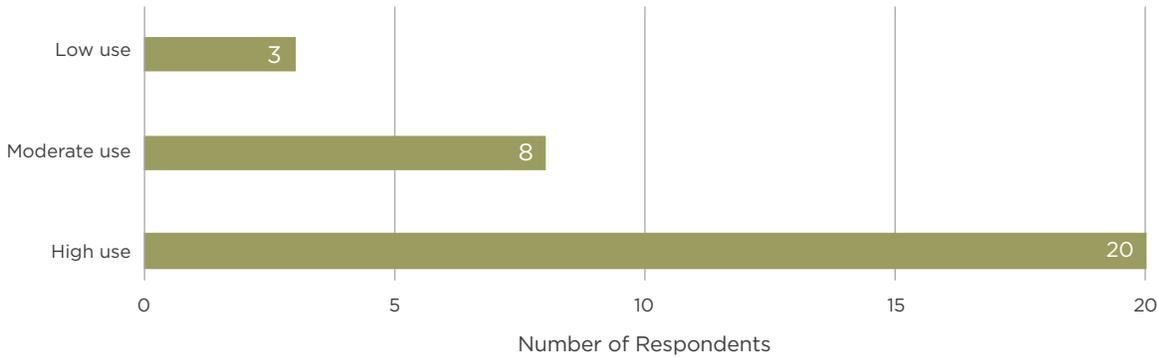


CHART 5:

How would you characterize wildlife use of your property?



Wildlife can be costly for landowners

Despite landowners’ interest in conservation, the survey results show that wildlife can impose costs on private landowners that reduce their financial stability. These costs take a variety of forms, including forage competition, damage to fencing, disease risk, and conflicts with hunters.

When asked to characterize wildlife use of their properties, 65 percent of participants reported “high use,” 26 percent “moderate use,” and only 10 percent “low use” (Chart 5). When these responses to wildlife use were cross-tabulated with the question, “Concerning wildlife use of your property would you like to increase, maintain, or decrease use?”, 12 of the 20 landowners reporting “high” wildlife use indicated an interest in reducing future use.

For ranchers and other landowners, wildlife use commonly translates to economic costs. When asked, “Do you suffer economic impact from wildlife on your property?”, 81 percent responded in the affirmative, and the species in question was predominately elk. Conversations with individual landowners add context to what “high use” means. The following quote reflects a personal experience from one landowner in the valley, but similar comments were heard from other landowners as well:

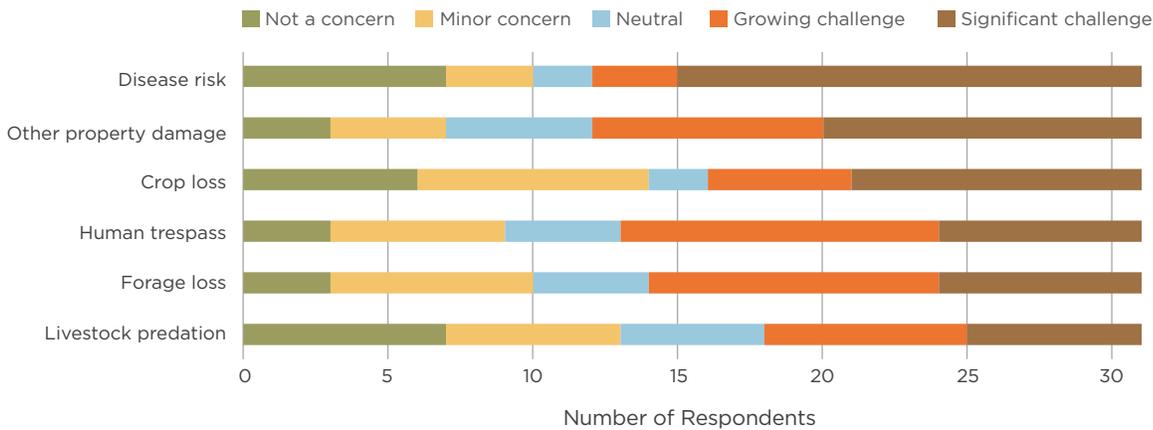
Elk are constantly knocking down fences, allowing our cattle into the wrong pastures. They come down at night right now and are decimating the pastures we reserved for October grazing for our cows. We have to buy more hay every year because the hay we produce does not feed them for the extended time we have to feed due to not being able to save grass for our cows. The elk herd on the ranch has increased considerably in the past 30 years.

Forage competition, as described above, is a major concern for Paradise Valley landowners. Eighty-seven percent of respondents reported damage to hay and crops, and 84 percent reported loss of forage and other damages. As another rancher described it: “Elk camped on the range pound anything that grows. To the outsider the range looks like it’s being overgrazed by cows, but the rancher could stop [cattle] grazing all together and the elk would still prevent recovery of range condition.”

Increased elk numbers also bring increased incidents of trespass. As borne out in survey results, there is growing concern over trespass attributed to increased hunting pressure, increased interest in antler hunting, and overall growth in population with newcomers not understanding how to respect private lands. Related to the pursuit of elk, new and helpful technologies such as OnX Hunt maps, while beneficial to hunters and landowners in delineating public

CHART 6:

How concerning are the following wildlife challenges to you?



and private land boundaries, can also unintentionally lead to cases of trespass where maps are unclear as to whether certain roads are public or private.

Finally, elk bring the risk of spreading brucellosis, a disease that can be devastating to ranchers if transmitted to their cattle herds. While the disease has been eradicated from other regions, it remains in the Greater Yellowstone Ecosystem, with elk serving as vectors of disease transmission to the region’s cattle herds. Cattle ranchers in Paradise Valley are in a designated surveillance area for brucellosis, which requires selected testing and vaccinations. Sixty-one percent of the survey respondents manage for brucellosis risk, and 85 percent of those ranked the additional time, energy, costs, and stress of doing so as a “major” (53 percent) or “moderate” (32 percent) concern.

Concern over brucellosis was a common theme in our conversations with ranchers. It is an issue that has helped isolate Paradise Valley ranchers from the rest of the state’s cattle producers and those of other states who don’t have to worry about their herds testing positive for the disease. Several ranchers we talked to have had brucellosis in their herds, leading to long quarantine periods, economic loss, and stress. For affected ranchers, the actual costs of brucellosis transmission depend on type of operation (e.g., cow-calf, seed stock) and other variables, but in addition to direct costs there is the energy expended attempting to keep cattle and elk separate and the potential for

lower prices for cattle that come from the designated surveillance area. In the face of these concerns, when the conversation turns to increasing overall elk abundance and their distribution in the region, one rancher’s view sums it up: “If we improve habitat [for elk] we’re basically shooting ourselves in the foot because of the increased brucellosis risk.”

Other costs are also clearly concerning to landowners. As seen in Chart 6, at least half of landowners consider five wildlife-related challenges to be significant or growing. Without further policy action, the costs associated with these challenges will only continue to grow.

The total cost of wildlife-related damage for private landowners can be significant. As shown in Chart 7, many landowners bear thousands of dollars of damage every year from living with wildlife. These annual costs could rise significantly during a year in which there is brucellosis transmission to cattle or if predator depredations disproportionately affect some properties.

As a result of these costs, only three of 31 participants responded that they want to increase wildlife use of their land, while 14 of 31 want to maintain the existing level of wildlife use, and the remaining 14 want to decrease wildlife use.

When the question of wildlife use of property is cross tabulated with the percentage of income landowners derive from their lands, the results show how much more burdensome wildlife can be for landowners

whose lands are their livelihood. Eighty-five percent of landowners who receive 90 to 100 percent of their income from agriculture wish to see decreased use of their property by elk and other wildlife. A similar response was found when landowners' view of existing wildlife use of their property was compared with the landowner's interest in increasing, maintaining, or decreasing use. Of the 20 participants who reported high wildlife use of their property, 60 percent wanted to decrease use.

The high cost of hosting wildlife and mixed support for increased wildlife use on private lands has created a need for new, flexible tools that reduce disease risk, alleviate costs, and, if possible, turn wildlife from a liability for private landowners into an asset.

Landowners want autonomy and benefits for providing wildlife habitat, not regulation and costs

Property owners have access to a variety of voluntary conservation programs designed to provide some degree of assistance to landowners who benefit wildlife, such as conservation easements, technical assistance, and cost-share programs. In Paradise Valley, however,

such programs receive mixed reviews. For example, when asked, "To what extent does engagement in programs benefiting wildlife affect your business?," 55 percent of participants found "no effect/some-what impacts/makes business more difficult," while 45 percent responded that such programs "somewhat benefit/benefit their businesses." This dichotomy was also found in landowners' levels of interest in potentially using one or more voluntary conservation tools in the future—52 percent had no opinion or were not interested, while 48 percent were "potentially" or "very interested."

Landowners' conflicting interest in conservation and concerns about the costs of wildlife presents an opportunity for policy action. But landowners have differing views of wildlife, are wary of regulatory scrutiny, and are not all confident in the ability of public land and wildlife management agencies to alleviate the challenges they face. This diversity of views reinforces the need for policy solutions that are cooperative in design, flexible in application, and adaptive to changing conditions. It also suggests that landowners themselves—an often-untapped source of innovation and expertise—must be included in the policy design process.

CHART 7:

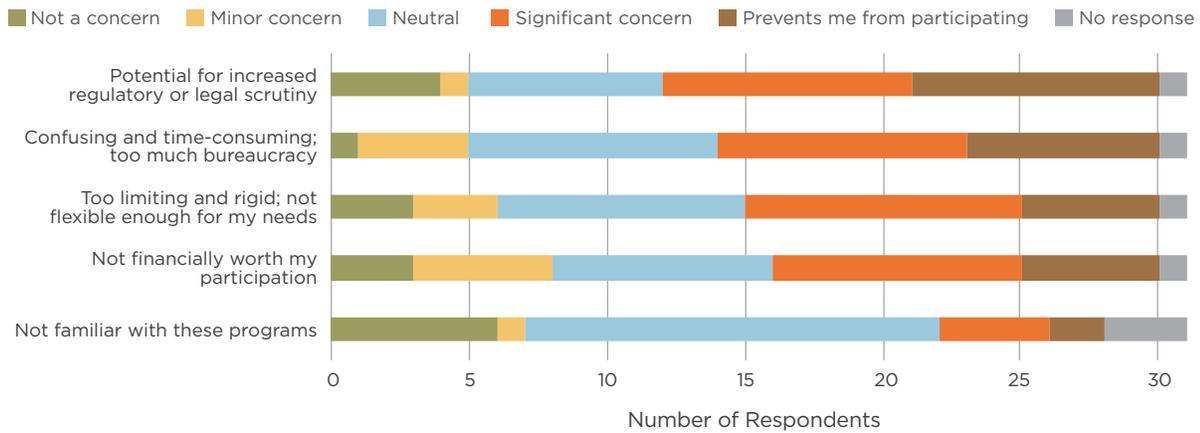
How much do you estimate your wildlife-associated costs to be for the following?





CHART 8:

What barriers to participating in conservation programs concern you most?



Landowners’ nearly universal support of conservation practices but hesitance to enroll in voluntary conservation programs can be explained by a number of potential barriers, including high costs and regulatory rigidity. While survey participants were generally familiar with potential programs, they expressed

concerns with the financial worth of the programs (45 percent) and concerns that such programs were too limiting and rigid (48 percent) or confusing, overly bureaucratic, and time-consuming (52 percent). Most concerning of all, to 58 percent of surveyed landowners, was the potential for increased regulatory and legal scrutiny from government agencies (Chart 8).



When the survey asked landowners, “Do you feel you have sufficient support and consideration from Montana Fish, Wildlife, and Parks, U.S. Forest Service, etc. to manage wildlife consistent with your wishes for the property?,” the responses were mixed. A majority of landowners (59 percent) indicated they have sufficient support and consideration (Chart 9). Comments included “FWP has been excellent to work with dealing with our large elk herd,” and “For the most part, FWP has been good to work with.” Some landowners expressed support but noted concerns including the trouble of managing migrating elk herds and not having support from FWP and other law enforcement regarding trespassing and harassment of elk. On the other hand, 12 of the 29 respondents (41 percent) said they did not have sufficient support from state and federal agencies. Landowner interviews reinforced a more general distrust of government agencies’ commitment to helping private landowners. The following comments are illustrative of those who feel this way:

“I am concerned about not having support from FWP and other law enforcement regarding trespassing and harassment of elk.”

“I think we have decent support [from public agencies], but it would be great to see that support more sustainable with open and honest communication.”

“Their lack of game management and forest health impacts our property.”

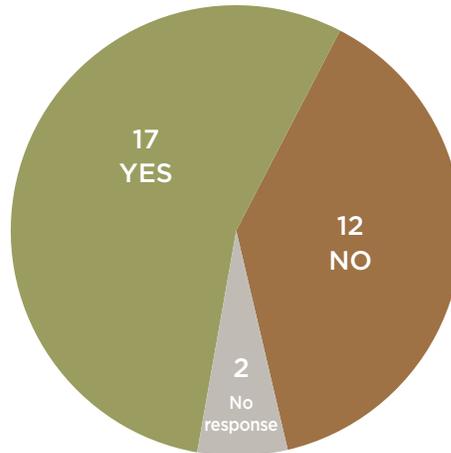
“We give access for the public and still can’t talk to a biologist.”

Follow-up discussions with landowners reflected this range of opinions. Some landowners indicated they had good relationships with the local FWP biologist or game wardens but experienced a lack of consideration from the regional office or headquarters. Others felt the opposite, citing good relations with the Bozeman and Helena offices but dissatisfaction with the FWP response on the ground in the valley.

When these landowner responses are cross-tabulated with wildlife-associated property damage, all 12 landowners who indicated they received insufficient agency support also indicated that they suffer economic impacts from wildlife. Typical of the diversity in landowner attitudes, however, 11 respondents who also suffered economic damage indicated they received sufficient agency support and consideration. This points to the need for relations

CHART 9:

Do you have sufficient support from government agencies?



with landowners to be cooperative, flexible, and adaptive to the needs of individual landowners.

While landowner faith in government agencies to manage wildlife may not be universal, the survey found that landowners are more interested in working with government agencies as partners to improve soil and land health (Chart 10). The distinction between these two potential roles for government agencies is critical: While government wildlife management is often done in a way that generates benefits for the public yet imposes costs on private landowners, improving land health actively benefits landowners while also providing public conservation benefits.

The strong support for developing practices that improve soil health and overall land health is further

CHART 10:

Would you partner with government agencies to ...

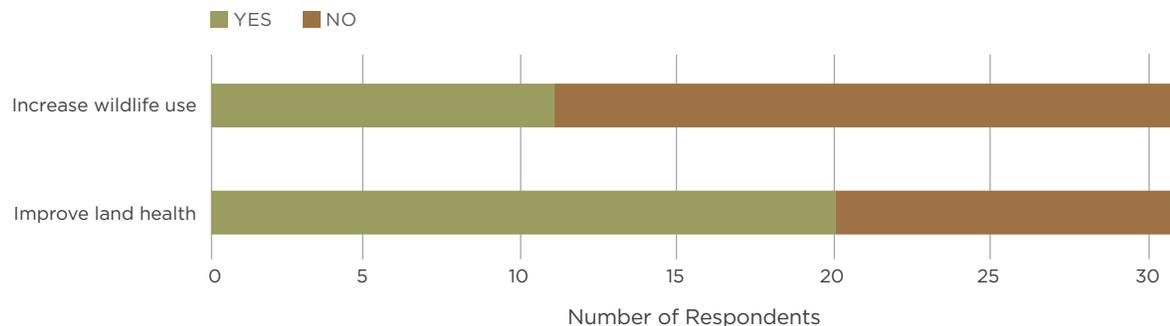
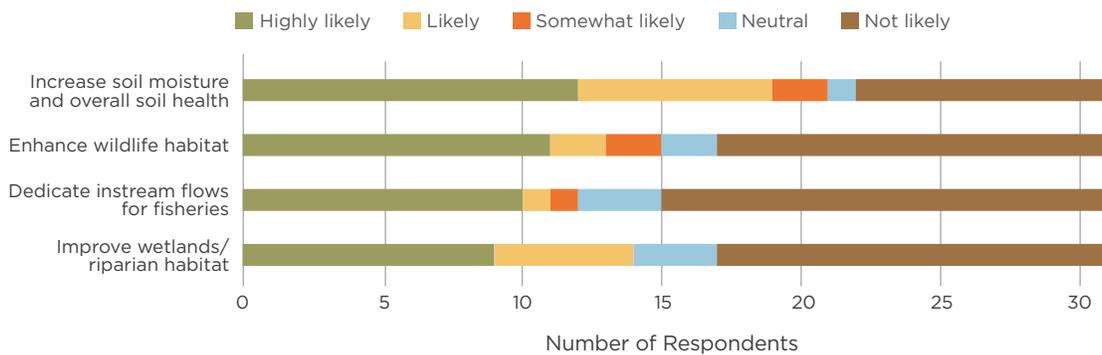


CHART 11:

How likely would you be to participate in programs that ...



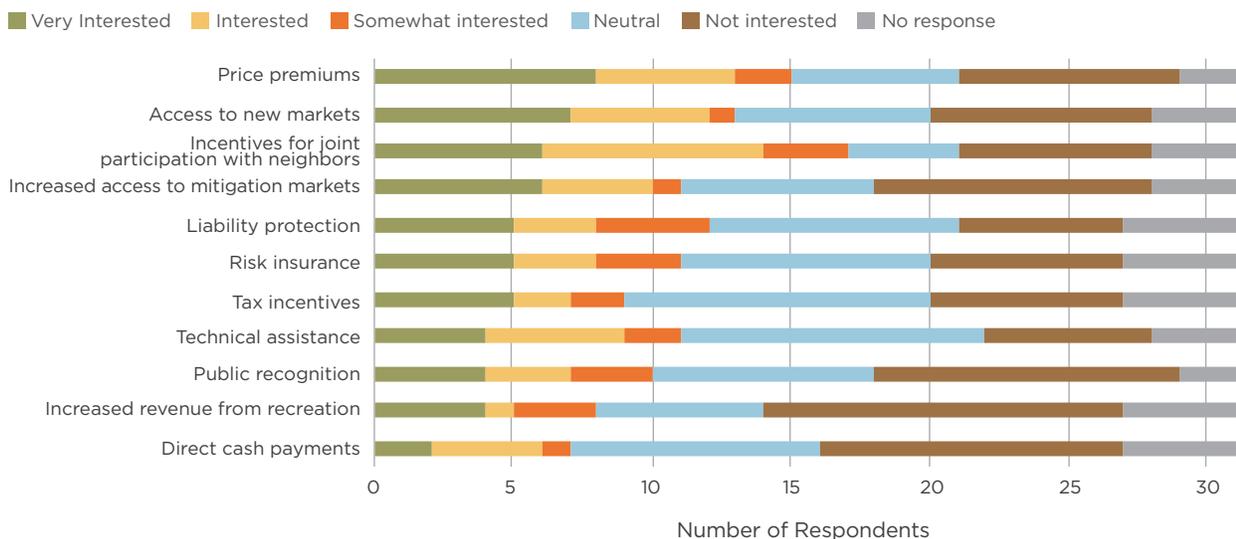
evidenced in responses to a question of willingness to voluntarily participate in programs benefiting soil health, wetlands, and fish and wildlife (Chart 11). Again, the support for improving overall land health is evident, while a narrower focus on improving wildlife habitat and dedicating instream flows for fisheries on their properties found less support—not because landowners are necessarily anti-wildlife, but because many of them feel they are already doing their fair share feeding and housing resident and migratory wildlife.

A recurring theme in discussions with landowners was a concern for protecting their existing property rights—in land, in water, and in deciding who has access to their land under what conditions. When pressed as to the source of their concern, it commonly came down to simply a lack of trust and a general suspicion of motivations.

Landowners expressed the highest level of interest in participating in programs that preserve their property rights and autonomy and that provide

CHART 12:

How interested are you in receiving the following benefits through a conservation program?





incentives to work jointly with their neighbors. They also expressed high levels of interest in earning price premiums for their products, gaining access to new markets, and exploring approaches to mitigate risk and liability concerns (Chart 12).

Overall, it's clear that landowners are willing to implement conservation practices as long as they

preserve individual autonomy and support rather than diminish their financial stability. Differing landowner opinions of government agencies and regulatory rigidity also highlight the need for multiple, flexible solutions that landowners can take an active role in designing and selecting for themselves.

DISCUSSION AND RECOMMENDATIONS

Once preliminary survey data were tabulated, the results were shared with participating landowners through a landowner forum hosted by PERC, as well as through presentations to the Upper Yellowstone Watershed Group and in-person discussions with individual landowners. With a goal of developing a toolkit of potential solutions to better address these issues in the future, the following discussion and recommendations are presented around three central themes:

1. Landowner Coordination and Outreach
2. Financial Incentives
3. Research and Technical Assistance

These findings and recommendations have strong correlations with similar work in other regions of the western United States where wildlife and ranching coexist.¹⁰



Landowner workshop at Chico Hot Springs in Pray, Montana

LANDOWNER COORDINATION AND OUTREACH

Recommendation 1

Establish a Paradise Valley working lands group

The viability of working ranches in Paradise Valley is important for agriculture, the local community, and wildlife populations. Yet today there is no local landowner or stockgrowers group to help drive a bottom-up approach in the valley.

The creation of a “Working Lands Group” would be a primary mechanism to improve communications and cooperation among the agricultural producers in Paradise Valley. It is the manner by which landowners can gather and summarize information, as well as identify gaps and other needed information. It is a primary method to work with neighbors, realize a price premium for their agricultural products, gain access to new markets, and determine avenues to gain protection from potential legal liabilities that our survey identified as top priorities for landowners (see Chart 12).

As one example, a “Working Lands Group” in the valley could help landowners coordinate to access new market opportunities that enable them to better adapt to today’s economic realities. Most ranchers in Paradise Valley run cow-calf operations that produce calves for sale in the fall to a feedlot. As the meat processing system has become more consolidated, Paradise Valley ranchers have less control over their product, and they sometimes face the reality of having to sell their cattle at low prices or being left without a buyer. A local landowners’ group is integral to developing a stronger marketing presence to take better advantage of potential avenues for “Paradise Valley” branded beef in local and regional markets, including direct-to-consumer sales.

Indeed, formation of a Paradise Valley Working Lands Group is a vital step for addressing each of the following recommendations.

Recommendation 2

Tell the story of ranching and its benefits to community and wildlife

“Ranchers are the original conservationists. We have to take care of the land to produce a premium product (calves). We are always looking at ways to diversify income through hunting, fishing, and new markets for our product.”

As southwestern Montana grows and becomes more urbanized, the need to tell the story of ranching and its benefits to the local economy, regional culture, wildlife, and open space grows more pressing. Neighboring Gallatin County is one of the fastest-growing counties in the nation, and enrollment at Montana State University-Bozeman continues to increase. This brings many new faces to the region and translates into more and more people seeking recreational opportunities in surrounding areas, including Paradise Valley. But as recreational demands from new residents increases, the appreciation and knowledge of ranching often declines. Challenges of this growth are seen in increased trespass on private lands, including poaching, shed hunting, and uninvited ATVs on private ranch roads (Chart 6). One approach is for Paradise Valley to produce its own “Code of the New West,” similar to what has been developed in Madison County.¹¹ The first step is for the valley residents to write their vision for the future and present the social norms and culture that underlies the sense of place and community. Once produced, the code would be shared via social media, schools and universities, realtors, partnerships with MSU Extension, and others.

The needed outcome of this recommendation is a greater appreciation by agencies, conservation organizations, and the general public for ranching and its public benefits. Part of that appreciation is finding appropriate ways to recognize ranchers for their contributions to open space, habitat, and wildlife. As Chart 12 illustrates, most ranchers are not looking for

public recognition per se. In conversations, they made it clear they do not seek plaques and platitudes but are interested in being engaged as full shareholders.

Ranchers are a diverse group with a broad range of attitudes and motivations. There is also a great deal of variation in how, when, and for how long wildlife use their property. It stands to reason, therefore, that one method of recognition or compensation may be appropriate and appeal to one group of landowners but not others. This reality runs counter to many existing landowner programs, such as conservation easements and cost-shares, that are limited in scope and flexibility. For example, many Natural Resource Conservation Service grants only provide short-term funding for projects that require long-term support if they are to succeed. As research from around the country has documented, a “one size fits all” approach for engaging private landowners in wildlife conservation programs is likely to fail because of the wide range of attitudes and behaviors among landowners, both locally and nationally.¹²

As Chart 2 illustrates, there is no such thing as a “typical” Paradise Valley rancher. What is needed, therefore, is a flexible toolkit that can provide assistance and recognition to landowners who are actively conserving or enhancing wildlife habitat. Such tools

can range from simple acts of gratitude from conservationists or the hunting community that recognize the public benefits provided by landowners in the valley to more formal compensation programs that help address the costs associated with living with elk and other species.

Recommendation 3

Engage landowners as full shareholders in wildlife management decisions

“I’m more than just another stakeholder; it’s my land, and my livelihood.”

Engaging landowners early and often is the first recommendation in the Western Landowner Alliance’s recent report on landowners and wildlife in Colorado and New Mexico’s Upper Rio Grande river basin, and it holds the same importance in Montana’s Paradise Valley.¹³ But to be successful, relationships with wildlife managers need to improve in a way that recognizes the unique role of landowners in wildlife management. Ranchers stressed that as owners of the habitat and land, they should be treated as more than just stakeholders in the process—rather, they should be seen more as shareholders who directly feel the impacts of wildlife and therefore should have a larger voice in management decisions. As one rancher remarked, “[FWP] show[s] up at a meeting, say they want to help, and that’s the last we see of them.” Another landowner observed, “They tell us what to do, not ask how they can help.”

Discussions with landowners in Paradise Valley repeatedly confirmed their interest in and demonstrated their success at being good stewards of their land and their desire to work their lands in a manner that sustains their families while providing for wildlife. However, while many government agencies and conservation organizations offer services to landowners, few have the capacity to engage landowners beyond initial contact. For example, an agency might hold a soils workshop, and the result is that a few



dozen people attend. But when it comes to achieving certain desired outcomes, few organizers can demonstrate a commitment to a “ladder of engagement”—a process that moves from initial contact through planning, implementation, and monitoring.¹⁴ This disconnect is not peculiar to Paradise Valley but can be found nationwide. Successful engagement is a long-term commitment that relies heavily on people skills; as such it is a challenge when state and federal agency personnel often come and go due to frequent staff reassignments and new landowners replace long-time members in the ranching community. This is further exacerbated by the fact that both the agency personnel and new landowners may not come from rural and ranching backgrounds.

In addition, effective engagement needs to address the priority concerns of landowners (not merely the priorities of the agency or nonprofit organizations). Engagement needs to be two way. Lastly, because landowners are often busy working their lands, meetings and other forms of engagement need to be scheduled at times convenient to ranchers (not just the agencies and non-governmental organizations).

Recommendation 4

Change the message and the messenger

This report, and others cited in this work, highlights the need to change and diversify both the message and the messenger. For example, a message delivered by FWP that concentrates on increasing elk numbers to benefit public hunters at the expense of private landowners is unlikely to be received warmly or result in much voluntary action by property owners. Conversely, a message delivered by MSU Extension about how agencies and conservation organizations can help landowners increase their land health to the benefit of their ranching operations and wildlife alike is likely to be more warmly received and have a greater likelihood of success.

Ranchers and farmers work in their communities, participate in local and county governance, and



support local programs like Future Farmers of American and 4H. They serve on school boards and are active in church and other local civic groups. When they want information, they look to their neighbors, cooperative extension agents, and agricultural industry representatives. They do not generally look to environmental and conservation organizations—many landowners simply do not trust these messengers, nor do they trust their message. While 90 percent of landowners surveyed indicated they volunteered in the community (e.g., school board, church) in the past five years, only one-third stated that they belong or gave money to conservation or environmental organizations. A more telling result is that of the 13 landowners that rely on their land for 90-100 percent of their income, only one indicated support of conservation or environmental organizations.

A cautious view of environmental and conservation groups is not limited to Paradise Valley or even rural Montana; it can be found throughout much of rural America. For example, research by Robert Bonnie and colleagues found that distrust of environmental and conservation groups among rural voters suggests that those groups should engage and partner with trusted sources of information such as farmers, scientists, and even some government agencies to deliver

environmental science and other information.¹⁵ When one matches an untrusted messenger with a “you need to do more for wildlife” message, the less-than-enthusiastic response from landowners to the idea of increasing wildlife use of private lands in the Paradise Valley is predictable.

In addition, many landowners expressed their conviction that representatives from environmental and conservation groups, often living and working in urban centers apart from rural lifestyles, don’t understand or respect the work ranchers undertake to make a living on the land. “A lot of people around us seem to think there’s a problem,” one rancher told us. “But the problem is that no one’s talking to us—the landowner—and when they do talk it’s likely to be, ‘Do this, don’t do that.’”

That said, there are market-based opportunities for conservation with the potential to bring conservation organizations and landowners together. In addition to long-standing easement programs, the elk rent or elk occupancy proposal, brucellosis financial risk instrument, and elk compensation fund recommendations all present opportunities for conservation

organizations and landowners to transact in ways that benefit both wildlife and ranchers. Such approaches would enable conservation organizations to use their resources in ways that directly benefit wildlife and the landowners who provide habitat. That could go a long way to improving relations between landowners and environmental or conservation groups.

Additionally, Paradise Valley survey results and conversations with landowners indicate a willingness to work with neighbors and local entities. Landowners who have yet to participate in conservation-related program (such as those outlined in Chart 12) are more likely to work with local organizations, such as the Park Conservation District, MSU Extension, and Future Farmers of America, than more distant state and federal agencies or nonprofit groups. Researchers from the University of Oregon found similar dynamics in the Interior Northwest in 2014, concluding that local entities have the greatest chance to help bridge the trust gap between landowners and state and federal agencies and open up additional conservation opportunities for landowners.¹⁶



FINANCIAL INCENTIVES

Today in Paradise Valley, landowners are not compensated for the costs associated with living with elk, deer, and other ungulates that compete with livestock for resources (e.g., forage and hay). But there is an opportunity to develop solutions to compensate or offset costs to interested landowners whose land management provides tangible benefits for these species. Such incentives in turn provide public benefits.

Any solution, however, will need to address the barriers to landowner participation identified in the Paradise Valley survey (Chart 10) and in other nation-wide analyses.¹⁷ These include concern for increased legal and regulatory scrutiny, inflexible and overly bureaucratic processes, and inadequate reward given the time and effort landowners must expend to qualify. The following six recommendations take several new concepts as well as several already existing approaches and adapt them to Paradise Valley.

Recommendation 5

Work to develop a brucellosis risk-transfer tool

With brucellosis as the landowners' number one concern and brucellosis prevention techniques limited in their effectiveness, ranchers need an additional tool that can reduce the cost of brucellosis in the unfortunate case of an infection.¹⁸ Financial risk-transfer tools (e.g., insurance) can provide this much-needed cost assistance, and offer a variety of potential design options, but have so far received little attention in the context of livestock disease management.

At the most basic level, a financial risk-transfer tool reduces the impact of sudden and severe financial losses by transferring them to a lower-cost and/or less risk-averse holder. A third party could, for example, alleviate the financial burden of brucellosis by sharing the disease costs that ranchers bear by having elk on their property. This sharing could be in the form of directly reimbursing ranchers for wildlife-related costs or, more likely, in the form of paying the premiums for an insurance mechanism that would reimburse

ranchers for brucellosis-related losses. The third party could be any public or private entity—or combination thereof—who benefits from elk and is interested in improving elk habitat on private lands.

This third-party role is an important feature from the perspective of many ranchers, who feel that the people who directly benefit from wildlife conservation should share in the costs that wildlife impose. A conservation group, state agency, or individual could, for example, agree to share in the costs of brucellosis risk as a method of compensating or rewarding ranchers for maintaining elk habitat.

Designing, pricing, and implementing a financial risk-transfer tool will require further research in a variety of areas. First, there must be an updated assessment of the cost of brucellosis to ranchers who own infected cattle and to nearby ranchers, who may experience a price discount due to their proximity to an infection. The most recent assessment in 2016 shows that the cost to the former group can be very high—as much as \$150,000 to quarantine a herd of 400—but this cost must be updated to reflect current market conditions and to account for collateral impacts to neighboring ranchers.¹⁹

Next, precise pricing of a risk-transfer tool will require understanding the relationship between observable natural conditions and the risk of brucellosis transfer. In other words, what measurable changes in weather, land-use, and regulatory conditions can predict disease transmission risk in a given year? These connections are not yet clear but are essential for clearly defining brucellosis risk and designing a tool that can adapt to changing risk over time.

Contract structures must also be reviewed and selected according to what best suits brucellosis risk and what landowners find acceptable. Currently, some landowners are concerned about contractually binding themselves to conservation organizations due to a lack of trust. This hurdle can be overcome by including them in the design process to ensure that contract structures fit their needs and preferences.²⁰

Completing these steps will require engaging financial institutions, landowners, conservation



groups, and other potential third parties who are willing and able to share the costs of brucellosis. By tapping into this pool of expertise, we can create a brucellosis risk-transfer tool that not only alleviates burdens on Paradise Valley landowners but that also provides a model for resolving other wildlife conflicts throughout the West.

Recommendation 6

Develop a model for wildlife-use agreements, or “elk rents”

Many species of wildlife, be they elk, shorebirds, or monarch butterflies, do not depend on a single piece of habitat but rather a mosaic of habitat pieces across landscapes on daily and seasonal timescales. Movements from feeding grounds to secure areas may involve a daily trip of a few miles, while movements from breeding areas to wintering areas may require migrations of hundreds of miles. In these cases, protection of habitat through fee-simple purchase and easements is both expensive and rigid (i.e., boundaries cannot be adjusted if the wildlife use changes) but could be better addressed through short-term habitat “rental” arrangements or “occupancy agreements.”

These agreements would recognize the temporal nature of migrations and winter ranges by paying ranchers for temporary habitat arrangements.

For example, in California’s Central Valley, conservation groups are working with farmers to transform off-season rice fields into temporary wetlands for migratory shorebirds. The Central Valley is an extremely important agricultural area, but that productivity comes at a cost—90 percent of the valley’s historical wetlands have been lost. Traditional conservation tools of habitat acquisition and restoration yielded some success, but their expense and inflexibility proved limiting. The Nature Conservancy and partners came up with an approach of renting habitat to benefit shorebirds. Rice farmers typically flood their fields from November through January to help decompose stubble from the previous year’s crop. Working with willing landowners, “BirdReturns” pays farmers to flood their fields earlier in the fall and maintain the water later into the spring, providing “pop-up” wetlands for use by shorebirds. The program has resulted in a significant increase in shorebird densities on agricultural land in the valley—and at a fraction of what it would cost to buy the land outright.²¹

The concept of “elk occupancy” agreements in Paradise Valley would work in a similar manner. The agreements could compensate ranchers for the costs of allowing elk to migrate across their lands or of separating elk and cattle during calving season. Such an “elk rent” program could be funded with private funds raised by willing conservation interests and organizations that support wildlife migrations or by a public-private partnership and would be guided by real-time observations of elk movements, densities, and occupancy times. In the process of developing a model for wildlife-use agreements, the ecological, financial, and policy dimensions of such agreements need to be carefully considered and incorporated into their design. Paradise Valley is a logical area to focus this work given the valley’s high wildlife diversity and abundance, the apparent interest among landowners, and the region’s well-resourced conservation community.

Recommendation 7

Establish an elk compensation fund

The Greater Yellowstone Ecosystem has undertaken two major restoration efforts of large carnivores—the grizzly bear beginning in the 1970s and the gray wolf in the mid-1990s. Given the propensity of these two predators to kill livestock and, in the case of the grizzly bear, to endanger human lives, these restorations were not without controversy. Such efforts have been termed “coexistence-with-conflict” scenarios, where the general public gains the existence, economic, and ecosystem value provided by these animals while local communities bear the direct and indirect costs of living with the predators. To help address this inequity, compensation programs—or “payments to encourage coexistence”—have been established to help remunerate landowners for livestock and other property loss. In the 1990s, Hank Fischer of Defenders of Wildlife worked to establish a compensation fund that paid ranchers for the value of livestock killed by gray wolves in Montana. Reflecting on “who pays for wolves,” Fischer noted:

Many ranchers tell me, “I don’t mind having wolves around, but I can’t afford to have them killing my livestock.” In a sense, we are attempting to make a contract. Our side of the contract is that wolves that kill livestock will be controlled (moved, relocated, or killed). Their side of the contract is to tolerate wolves that do not kill livestock. ... In sum, the people who support wolves need to take economic responsibility for them. But this program is about a lot more than money. It’s about respecting what the ranchers do.²²

Elk in Paradise Valley can be just as burdensome for landowners as wolves and bears, if not more so. As with the original wolf compensation fund, members of the general public who have an interest in sustaining elk and other ungulates—for example, hunters, conservationists, local businesses, and tourists—

could help share the costs of providing habitat for them. An elk compensation fund could be funded by private conservation organizations, sportsmen, access fees, and/or other sources to provide some financial compensation to landowners who demonstrate economic losses from elk. In developing such a tool, however, it is equally important to learn from past experience and ensure that the program is responsive and adequately funded.

Recommendation 8

Offer priority or transferable hunting tags to landowners who provide wildlife habitat

Elk are valuable big-game species, and hunters will pay in excess of \$10,000 in many areas to hunt them. Transferable landowner hunting tags allow landowners to benefit from the presence of elk by obtaining a market value for hunting opportunities on their land. Rewarding landowners who provide important wildlife habitat with some form of priority or transferable hunting tags is a method successfully used by other states to help manage elk and other species.²³ In Montana, landowners may qualify for preference in the license/permit drawings for deer,



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elk, and antelope. Individuals owning “640 acres or more of contiguous land, at least some of which is used by elk,” may be eligible to draw for a special elk permit subject to a number of conditions established by FWP based on elk populations, number of applications for elk permits, and other considerations. In Paradise Valley, access to such permits has been extremely restricted even in the face of increasing elk populations.

At present, Washington, Oregon, California, Nevada, Utah, Colorado, and New Mexico offer some form of transferable landowner tags designed to match state elk management goals with those of private landowners.²⁴ Colorado and California have programs that provide landowners with transferable tags in exchange for habitat improvement and/or public access. For example, Colorado’s Habitat Partnership Program provides funding to farmers who provide forage to wintering wildlife on irrigated pastures and cropland, while its Ranching for Wildlife Program allocates transferable tags and provides longer hunting seasons for landowners who take specific actions to benefit habitat and species.

In the southeastern United States, many states with an abundance of white-tailed deer have deer management assistance programs designed to manage populations, improve age distributions, increase the quality of antlered buck harvests, control property damage, and build relationships between state natural resource agencies and landowners, often in exchange for more flexibility in hunting seasons and method of take on enrolled private lands. Florida’s Private Lands Deer Management Program, for example, offers landowners with at least 5,000 contiguous acres greater flexibility for hunting season dates and method of harvest in exchange for furnishing data on deer populations and providing youth hunting opportunities.²⁵ Such programs offer promising elements for developing appropriate landowner incentive programs in Paradise Valley.

While transferable tags are not a panacea due to varied distribution of desirable age and sex classes of elk during the hunting season, this is one strong

additional tool to have in the toolbox alongside the others identified in this report.

Recommendation 9

Develop new funding sources to support wildlife conservation on working lands

As made plain by a number of investigations, there is a need for more sustainable funding to support working lands, wildlife conservation, and outdoor recreation across Montana and the Greater Yellowstone region. According to Headwaters Economics (2019), 36 states have adopted programs to creatively invest in wildlife, working lands, and recreation. The three states of the Greater Yellowstone region—Idaho, Montana, and Wyoming—are currently absent from that list, but a number of efforts are underway to develop new funding sources in these states.

In 2018, the Wyoming legislature passed a resolution calling for a “Yellowstone conservation fee” to help pay for wildlife conservation efforts in the states surrounding Yellowstone National Park. In presenting his resolution, Rep. Albert Sommers reasoned: “We have to maintain [our wildlife] and be responsible for impacts that can happen to them and because of them. So why not ask American citizens to pony up and contribute to that?” While the resolution lacks detail and cannot compel the National Park Service to impose such a fee, its intent to start a conversation with the park and the surrounding states to examine how to raise dedicated funding to support migratory wildlife is timely.

In reaction to the resolution, ecologist Arthur Middleton and his coauthors recently examined a number of related wildlife conservation funding approaches, including the conservation fee concept and several tax-based alternatives, including expansion of state lodging and sales taxes in Yellowstone National Park. While acknowledging the various legal, political, and governance challenges such novel funding approaches present, Middleton and his coauthors estimated that a conservation fee of \$10 per vehicle

that enters Yellowstone National Park could generate up to \$13 million annually.²⁶ Tax-based approaches could generate considerably more, with such resources possibly helping to fund a brucellosis risk-transfer tool or underwrite an elk rent or other elk compensation fund.

Recommendation 10

Increase the amount of private lands available for public access through negotiation

“We’ve allowed FWP to define access. Access should be defined by the private landowner.”

Many landowners in Paradise Valley expressed support for allowing public access but stated that such access needs to be on their terms, not terms imposed by FWP or other parties. Add to this some landowners’ experience with unethical hunters, property damage, and increased trespass. Two new programs are working to address several barriers commonly

cited by landowners, including landowner liability, managing access requests from the public, and hunter behavior.

Inspired by emerging sharing economy platforms such as Airbnb, ventures like LandTrust (www.landtrust.com) and EntryG8 (<http://www.entryg8.com>) are working to match properties that offer recreational opportunities such as elk hunting, antler hunting, and fishing with people interested in those experiences. The online reservation system is landowner-friendly, and all aspects of schedule, cost (if any), and behavior (e.g., where to park) are set by the landowner. Similar to Airbnb, individuals interested in reserving services must do so with identification and a credit card, so there is accountability.²⁷ And in the case of LandTrust, landowners are covered by \$1 million in general liability insurance.

The Montana Master Hunter Program, developed by One Montana (1MT) and the Common Ground Group, is in its third year of developing highly educated, thoughtful hunters who are committed to understanding landowners’ concerns and how hunters can help improve relations and assist with wildlife management issues. 1MT matches these hunters with landowners who want help managing elk and other big-game species on their property. As such, this program is also proving to be an effective solution to address declining access for hunters.

For any financial incentive program, we heard from many landowners that it is important to place habitat and wildlife considerations first and to avoid tying landowner participation to provision of general hunting access. Many of the landowners surveyed in Paradise Valley routinely provide access to hunters and the public but are concerned that most discussions concerning elk and other wildlife center on providing more access. The same concern was identified in the Upper Rio Grande, where several regional habitat partnership committees conditioned funding on allowing hunting access by the general public.²⁸ For some landowners, required general public access simply ends what could be a much more productive conversation.



RESEARCH AND TECHNICAL ASSISTANCE

Recommendation 11

Engage MSU Extension, FWP, and others in generating applied research, citizen science, and best practices that help landowners live with wildlife

Supported by university research and cooperative extension, FWP and other state and federal agencies need to take the lead on addressing applied research needs of landowners as they relate to coexistence with wildlife and communicating results to the community. Examples of needed research identified by Paradise Valley landowners during the forum include:

HABITAT CONDITION

There is currently limited useful data on the overall habitat condition and carrying capacity of public and private lands in Paradise Valley, including the Custer Gallatin National Forest. While this is largely the result of a lack of funding and staff, such basic foundational information is central to determining elk population targets and other data-driven decisions.

WILDLIFE POPULATION DYNAMICS

As the number and distribution of large predators (specifically, gray wolf and grizzly bear) have expanded, public-lands hunting has increased, and habitat conditions have changed, there is little corresponding growth of research on how these changes have affected elk and other ungulate species in the area. As an example, several landowners observed that elk appear to be spending more time at lower elevations, becoming less migratory and more resident in their behavior. Available research documents elk with increased access to irrigated hay and alfalfa fields exhibiting reduced migratory behavior. Such behavior may also be in response to predation pressure (from both large carnivores and human hunters). There is

a clear need for additional research to explore these observations further.

BRUCELLOSIS

The disease is a major concern for ranchers in Paradise Valley and throughout the Greater Yellowstone Ecosystem. Yet access to *Brucella abortus*—the pathogen that causes brucellosis—for research purposes is extremely difficult due to its inclusion on the federal Select Agents and Toxins List. There is an increasingly strong argument for removing this restriction and providing more opportunities for safe research that can lead to innovative solutions, including vaccine development, testing procedures, and other ways to limit brucellosis transmission.

Recommendation 12

Integrate landowners' knowledge or citizen science into research and data

At present, information is commonly compartmentalized and not widely shared. Whether it is population estimates for elk or Yellowstone cutthroat trout, prices for beef, or trends in land tenure, data is often generated by universities, agencies, and elsewhere and is available only to those who know it exists and how to access it. In many cases, needed data is nonexistent while existing data is incomplete or out of date.

The alternative is to create a community knowledge base where landowners and other local community members work with agencies, nonprofits, and academia to design, collect, and analyze information of common interest. The integration of local knowledge and observations into research design and its conduct is an essential component.

As the information is collected on a neighborhood scale, local landowners can work with the full range of community interests to broaden the effort to the entire Paradise Valley. For example, discussions with landowners and business owners identified the need for greater cross-communication to better integrate their interests and involvement. Collectively the effort

would be ongoing and iterative, working cooperatively with county, state, and federal partners to develop a “Paradise Valley Landscape Snapshot” with ranchers, other landowners, and local businesses as full partners. Part of the plan’s goals would be to identify needed tools and appropriate implementation steps. Examples of topics to be addressed could include:

- **Development of a conifer encroachment, weeds, and fuels cooperative**
- **Hotspots for livestock-wildlife conflict**
- **Local habitat improvement projects**

There is a saying, perhaps apocryphal but nevertheless apt, that it is “okay to bring a gun to a meeting, just don’t bring a map.” This is a commentary on privacy concerns and who has access to private property data. Landowners are reluctant to have certain information mapped for fear of regulation or other ways the data and maps might be weaponized against them.



Commonly, local landowners have not been part of the map creation process until they are presented with the final product. A similar discord exists for wildlife studies where researchers conduct their research without any input from landowners; finalize the work within their agency, university, or organization; then present it to the affected community as a final product. In each case, landowners examine the work, find one or more inaccuracies (perceived or real), and pronounce it dead on arrival, regardless of the product’s actual worth. Successfully integrating landowners’ knowledge and citizen science into research and data not only improves the quality of the data and resulting research, but it also promotes greater cooperation among neighbors, increases networking across agency and community boundaries, and better targets limited resources to areas of highest priority.

Recommendation 13

Provide regulatory and management flexibility

FWP uses a variety of tools to manage elk populations and behavior in Paradise Valley, including setting general hunting seasons, shoulder seasons, game damage/management hunts, and hazing. Each of these tools can be successful in increasing hunter harvest, keeping elk and cattle separate, and reducing property damage. But success relies on the tools being flexible enough to adapt to where the elk are, having hazers on site and available when elk need to be moved, and having solid FWP-landowner cooperation so there is a constant back-and-forth flow of information. Discussions with landowners frequently turned to frustration over the availability of these tools when they were needed and the overall lack of flexibility for these tools to adapt to actual conditions on the ground. The linchpin in solving these issues is to have an FWP wildlife biologist on site who has solid working relations with landowners and the necessary support and resources available from Montana Fish, Wildlife, and Parks to be successful.

CONCLUSION

In the 1930s and 1940s, renowned ecologist and conservationist Aldo Leopold became a leading voice in understanding that private landowners were vital to wildlife management for the simple reason that they were the only people who reside on the land and have complete authority over it. Leopold wondered, absent some form of incentive, why would landowners continue to manage their land to benefit wildlife?²⁹

Landowners in Paradise Valley support wildlife every day. They may not consciously set out each morning primarily to conserve wildlife and its habitat. Rather, by maintaining open space as pastures, irrigated hay fields, and rangeland, the same land that supports cattle and other livestock provides forage and security for wildlife. Some landowners proactively include wildlife in their management plans, but virtually all Paradise Valley ranchers who invest time, energy, and money into raising cattle are also investing those same assets into providing for wildlife.

The culmination of our survey work, discussions with landowners, and direct observations in Paradise Valley points to the need to try something new. If we start with two assumptions: (1) the future of sustainable herds of elk and other wildlife is tied to having continued access to high-value habitat currently found on private lands, and (2) we need to view working landowners as providers of a set of goods the public wants (open space, wildlife, environmental services, and meat), then there is a negotiation and exchange among equals to be had.

For wildlife proponents, the message coming from our research is clear—we need the private working lands of Paradise Valley as a vital part of sustaining populations of elk and other wildlife. But to ensure those lands can be counted on as part of a conservation portfolio, much work is needed to embrace the private landowner, in Paradise Valley and elsewhere, as a full and equal shareholder in a new era of cooperation.



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Whitney Tilt is a PERC impact fellow, a principal of Conservation BenchMarks, a consultant on natural resource conservation, and a partner in High Country Apps LLC, developing interactive field guides for smart phones and tablets.

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