PERC

PROSPECTUS
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Paradise Valley **Brucellosis Compensation Fund Pilot Project Update**

Developed by the Property and Environment Research Center

Background

Yellowstone National Park hosts some 10,000–20,000 elk in the summer, with most migrating to lower elevations outside the park to winter. Montana's Paradise Valley hosts one of the largest wintering populations drawn both from Yellowstone National Park and the surrounding Gallatin and Absaroka Mountains.

Elk are critically important to maintaining the health, stability, and function of the natural environment, shaping the vegetation with their browsing and providing food for a wide range of predators and scavengers. Elk are also a favorite for wildlife watchers, and elk hunting provides important revenue to local economies and fills many a freezer.

The presence of elk on the private ranchlands, however, is not always welcome as elk compete for forage and hay grown for cattle, damage fences and other property, and bring the threat of disease.

Brucellosis

Of the financial uncertainties facing cattle producers, the impact of Bovine Brucellosis (Brucella abortus) is perhaps the most unnerving. Brucellosis is a contagious disease transmitted from bison and elk to cattle. Symptoms of bovine brucellosis include abortion of fetuses, weight loss, and infertility. A brucellosis detection in an operator's cattle herd brings sudden and potentially devastating financial consequences when the impacted herd is quarantined to prevent the possibility of spreading the disease to other cattle. One study estimated that quarantine for a herd of 400 cattle costs nearly $150,000 due to the extra hands and feed required to maintain the cattle during the quarantine period.[1] The serious financial loss and added stress to ranching families undermine the future viability of ranching in Paradise Valley and beyond while reducing a rancher's willingness to provide elk habitat.

Seeking to build flexible programs to assist ranchers with their wildlife-related impacts directly, PERC established the Paradise Valley Brucellosis Compensation Fund in 2023—the first of its kind in Montana—to help offset the costs of ranchers facing the hardships of quarantine from a brucellosis outbreak.

"If we improve habitat [for elk], we're basically shooting ourselves in the foot because of the increased brucellosis risk"

– Paradise Valley Rancher

Paradise Valley Brucellosis Compensation Fund

In January 2023, PERC launched the Paradise Valley Brucellosis Compensation Fund with generous financial support from Credova, Greater Yellowstone Coalition, Rocky Mountain Elk Foundation, and the Spruance Foundation II. The fund has two primary goals:

1) Provide a financial backstop to help producers "weather the storm" of a mandatory brucellosis quarantine, and

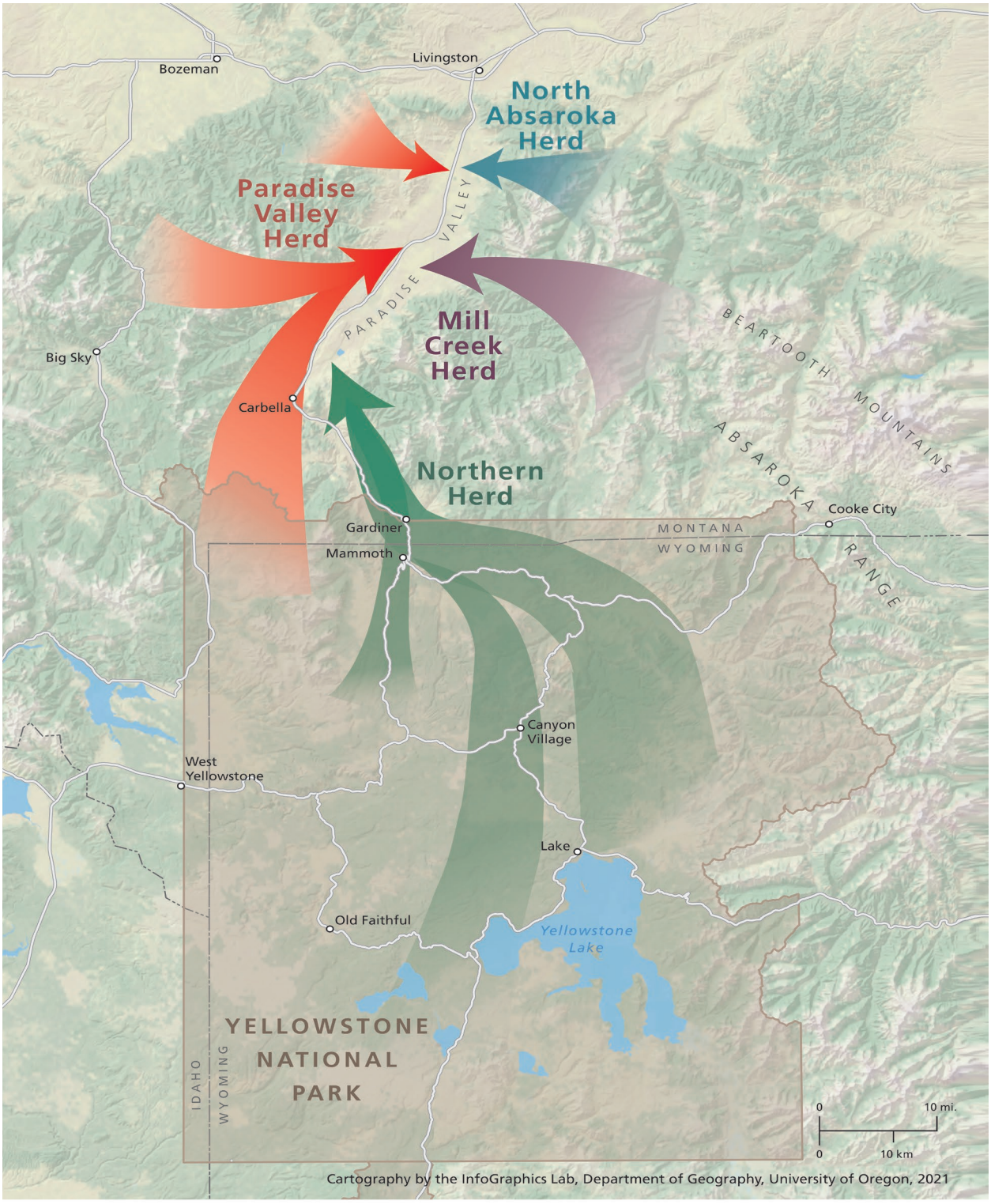
2) Provide a mechanism for hunters, wildlife-watchers, conservationists, and many others interested in supporting and enhancing elk habitat to share the cost producers bear when providing that habitat.

The Fund, currently capitalized at $150,000, is designed to cover 75% of a rancher's quarantine-related costs following a positive brucellosis test. The Fund provides a per head, per month, payment to help cover the costs of quarantine. The maximum payout for any one incident is $50,000, which ensures that the project is not depleted by a single incident. There is no formal enrollment process and no direct financial contribution requested from producers. Since the Fund's establishment, there have been no declared brucellosis events in Paradise Valley.

The fund is open to all cattle producers in Paradise Valley. To encourage continuation of best practices for brucellosis avoidance, producers must meet a set of basic eligibility criteria (Table 1). For example, ranchers must adhere to applicable rules associated with operating in the Montana designated surveillance area for brucellosis, including required vaccination and testing. They must also employ reasonable methods to prevent livestock from mingling with elk, including the fencing of haystacks, and avoid intentionally attracting elk to locations with cattle from March to May, the period when disease transmission is at its highest risk.

Figure 1

Elk Migrations of Paradise Valley



Paradise Valley hosts one of the largest wintering populations drawn both from Yellowstone National Park and the surrounding Gallatin and Absaroka Mountains.

Fund Structure

According to Montana Department of Livestock (DOL) regulations, if and when brucellosis is detected in a herd, all or part of the producer's herd will be put under quarantine on their home ground. The financial costs related to quarantine are dependent on the time of detection (e.g., fall or spring), the number of animals in quarantine, and the additional feeding and testing costs imposed by the confinement.

To prevent an infected animal from moving out of the Designated Surveillance Area (DSA) and to limit disease transmission, all sexually intact cattle must be tested prior to a change of ownership or movement out of the DSA.[2] A detection at this time will likely prevent the sale of all or a portion of that season's planned cattle sale (culls, heifers, bulls). In normal circumstances, ranchers put up the hay they need to feed the cattle they anticipate holding through the winter until green up, when they can put their stock out to pasture. Like having a savings account in the bank, they strive to have at least two years' worth of hay on hand. Under quarantine, ranchers must hold their cattle until quarantine is lifted, adding lost sale revenue, testing costs, and unanticipated supplemental feeding to the costs they were originally planning for.[3]

The primary focus for the Brucellosis Compensation Fund is to offset quarantine costs (primarily feed and testing) and make up for some lost revenue during quarantine from not being able to take calves and culls to market. To address these costs, the fund is set up to make payouts based on the following:

Basis for Payment

1. Feed Cost (cost of hay fed + consumption rate for one month)
+
2. Maintenance Cost (infrastructure maintenance, water provision, etc.)
=
3. Cost Index (monthly cost of raising one cow)
x
4. Duration of Quarantine (in 1/2 months)
x
5. Season (i.e., full herd or market herd)
=
Compensation Fund Support

Fund Summary

1. Feed Cost (cost of hay fed + consumption rate for one month)

A. **Cost of Hay Fed.** The Compensation Fund seeks to cover 75% of the cost of feeding hay based on the previous year's average hay price paid in Paradise Valley. The base price of hay is set annually at the Paradise Valley Working Lands Group's annual November meeting.

Hay prices vary widely from year-to-year depending on weather, production, quality, fuel costs, and demand. For example: 2021-2022, crop averaged $200-$225/ton in the stack and delivery costs, based on mileage, averaged an additional $20-40/ton. For 2025, hay prices estimated at $135-$150/ton, $130 in the stack, $160 delivered (delivery costs of $20-40/ton).[4]

For 2026, the base price of hay, per ton, is established at $160.00. The Compensation Fund, seeking to cover 75% of fed costs, sets its index price at $120.00 per ton and a per pound index price at $0.06.

For 2025, base price of hay, per ton = $160.00
Compensation Fund index price, per ton, @75% = $120.00
Index price, per pound = $0.06

B. **Consumption Rate.** To calculate consumption rates, the Fund assumes the Animal Unit Equivalents (AUE) and forage consumption rates presented in Table 2.[5] The Montana Department of Livestock will define the number and class of cattle in the affected herd and a consumption rate will be established for the affected herd at that time with the producer/herd owner.

Consumption Rates by class of cattle, adjusted for Paradise Valley	AUE	Forage Consumed/ Day
Mature cow (1,200-1,400 lbs.), with calf up to 6 months old	1.40	42 lbs.
Mature bull (>24 months)	1.50	45 lbs.
Two-year-old cattle (800-1,000 lbs.)	0.90	27 lbs.
Yearling (600-800 lbs.)	0.70	21 lbs.
Weaned calf (to yearling)	0.60	18 lbs.

Example: Feed Cost for one mature cow for one month (42 lbs./day x 30 days @ $0.06) = $75.60

2. Maintenance Cost (infrastructure maintenance, water provision, etc.)

The maintenance cost portion of the index is intended to capture ancillary and overhead costs. This rate seeks to capture costs associated with maintaining fences, checking stock water, providing salt, etc. calculated using data from reported grazing lease rates in the USDA's Annual Grazing Report.[6]

2025 Maintenance Cost, per head, per month = $15, at 75% =$11.25.

3. Cost Index (monthly cost of raising one cow)

Monthly Feed Cost for 1 Mature Cow (1AUE @ $75.60) + Maintenance Cost ($11.25) = $86.85

4. Duration of Quarantine (in 1/2 months)

The number of months calculated from the date Producer's cattle become designated an "affected herd" to the end of quarantine, with cattle returned to "normal" forage rotations (partial months rounded to the nearest half-month (15 days).

5. Season (i.e., full herd or market herd)

The primary unanticipated cost of undergoing quarantine is the expense of feeding additional hay. Accordingly, the Compensation Fund aims to provide monetary support for these costs, adjusted for "winter hay feeding" and/or "summer grass" operations.

A. **Quarantine during winter hay-feeding.** During the winter-spring, ranchers generally plan feed purchases for their herds, whether quarantined or not. Quarantine, however, imposes additional costs, principally in feeding cattle that would have been sent to market and thus would otherwise not have to be fed by producer. For this reason, compensation is directed to support quarantine costs associated principally with feeding cattle that would have been sent to market, specifically sell calves + cull cows, but not herd animals (kept cows + replacements

B. **Quarantine during summer grass.** Under normal operations during summer operations, cattle are out on grass. An affected herd, under quarantine, may or may not be allowed to go to grass. Under this condition, the fund will provide compensation for the affected herd (all quarantined animals) not allowed to go to grass. This could also include animals still in quarantine from previous fall detection.

Compensation Plan Payout Example

Based on a home herd of 75 and 25 market animals, quarantined for 6 months

WINTER HAY FEEDING OPERATION: Payout = $13,027.50 (25 cows @ $86.85/month, x 6 months)

SUMMER-HELD OFF GRASS SCENARIO: Payout = $39,082.50 (75 cows @ $86.85/month, x 6 months)

The maximum payout for any one quarantine incident is $50,000, to ensure that the fund is not depleted and capable of addressing subsequent quarantines. Payouts may be requested in writing on a monthly basis during quarantine, beginning one month after the quarantine is imposed.

The Compensation Fund will treat all communications and transactions with the producer/herd owner as confidential. The producer/herd owner is responsible for any and all tax reporting and associated payments.

Fund Summary

FUND SIZE: $150,000

PAYOUTS: 75 percent of imposed quarantine costs
Payments conditional on producer/herd owners meeting eligibility standards and stated reimbursement rates.

Max Payout for a single quarantine event: $50,000

OPERATIONAL PERIOD: Six years, beginning January 2023.

The private working lands of Paradise Valley are vital for sustaining populations of elk and other wildlife. To maintain these lands, PERC has developed an integrated toolkit to compensate interested landowners whose lands provide benefits for elk and other wildlife, which subsequently benefits the public including hunters, wildlife viewers, conservationists, and others. Only by embracing private landowners as full and equal shareholders can we ensure those lands can continue to be counted on as part of a conservation portfolio.

For more information, please contact
Whitney Tilt, PERC Paradise Valley Coordinator at wtilt@perc.org

Table 1. Eligibility

The following eligibility criteria must be met in order to receive compensation from the Fund:

Pre-Infection

1. Cattle (the only animal covered by this fund) spent a portion of the year in the Paradise Valley DSA, defined for purposes of this fund, as Park County, south of Interstate 90 to Gardiner.
2. Producer/herd owner has adhered to applicable rules, promulgated by the DOL for operating in the Montana DSA (including required vaccinations, testing, or adherence to management plans) prior to the positive test.
3. Reasonable methods to prevent livestock from mingling with elk were used prior to the positive test. Fencing of haystacks with appropriate methods for preventing elk access is required.
4. There is no evidence of actions undertaken by the Producer/herd owner to intentionally attract elk to locations where cattle were during the season of likely transmission (March to May).
5. Producer's cattle become designated an "affected herd" to be quarantined by DOL.

Post-Detection

1. Producer/herd owner contacts the Paradise Valley Brucellosis Compensation Fund to request compensation.
2. Following contact, PERC provides producer/herd owner with a specific outline of offered compensation and producer/herd owner acknowledges the payout structure and offered disbursements in writing.
3. Producer/herd owner adheres to the "Affected Herd Plan" developed jointly by producer, DOL, and USDA aimed at resolving the quarantine as quickly as possible.
4. The Producer's/herd owner's cost of quarantine is not being compensated by a private insurance policy or other compensation mechanism (excluding testing reimbursement from the state).
5. Producer/herd owner requests reimbursement for costs from time of the quarantine order to the release of quarantine. Claims may be made every 1-to-3 months during the quarantine period and up to two months following lifting of quarantine.

Endnotes

1. Kari Boroff et al., "Risk assessment and management of brucellosis in the southern greater Yellowstone area (II): Cost-benefit analysis of reducing elk brucellosis prevalence," Prev Vet Med. 2016 Nov 1;134:39-48. doi: 10.1016/j.prevetmed.2016.09.025. Epub 2016 Sep 29. PMID: 27836044.
2. The Designated Surveillance Area (DSA) is an area in southwest Montana where brucellosis-infected wildlife (Yellowstone National Park wild bison and infected elk) exist and can expose cattle and domestic bison to the disease of brucellosis. As a result, cattle and domestic bison in the region are required to participate in Montana's brucellosis testing program.
3. Jessica L. Gordon, "Ranch-Level Economics of Adult-Booster Vaccination Against Bovine Brucellosis in the Greater Yellowstone Ecosystem," University of Wyoming, Department of Agricultural and Applied Economics (December 2020).Gordon estimated that 97 percent of costs were related to feeding during a 12-month quarantine.
4. Layne Klompien, per. comm.
5. The animal unit equivalent (AUE) defines forage intake on the basis of a "standard animal," most commonly defined as a grazing ruminant weighing 1,000 pounds, with or without its calf up to 6 months old (Society for Range Management Glossary). AUEs and forage consumption values based on John Lacey, "Forage Consumption Estimated Animal Unit Conversion," Montana State University, MT 911 (1991), and Miranda Meehan et al., "Determining Carrying Capacity and Stocking Rates for Range and Pasture in North Dakota," North Dakota State Extension R1810 (2018).
6. Maintenance costs calculated using the range of reported grazing lease rates in the USDA's Annual Grazing Report, including costs associated with maintaining fences, checking windmills/ponds/stock water, cattle, providing salt, etc.

If you are interested in partnering with PERC and other conservation and funding partners on the Paradise Valley Brucellosis Compensation Fund, please reach out to Brian Yablonski at brian@perc.org or 406-587-9591.

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