

# **Pinedale Elk Herd Unit Test and Removal Pilot Project**

## **Year Two: Muddy Creek Feedground 2007**

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## Introduction

This report was compiled to comprehensively document efforts, expenditures, and results of the second year (winter 2006-2007) of the five-year pilot test and slaughter project in the Pinedale elk herd unit. The Wyoming Game and Fish Department (WGFD) initiated the pilot project in response to a recommendation developed by the Governor's Brucellosis Coordination Team (BCT). The goal of this recommendation is to measure the potential reduction of brucellosis seroprevalence in elk and reduce the risk of brucellosis transmission from elk to cattle.

WGFD operates three elk feedgrounds within the Pinedale elk herd unit boundary (Figure 1). The Muddy Creek feedground was chosen as the first site within this herd unit to implement the effort. WGFD has committed to expand the pilot project to Fall and Scab Creek feedgrounds within the five-year period of winter 2005-2006 to winter 2009-2010.

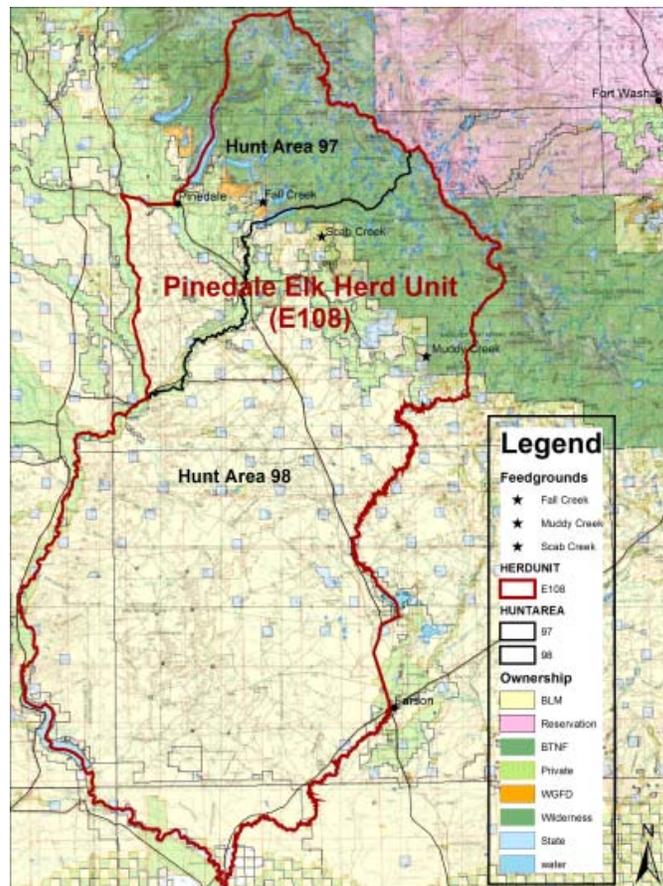


Figure 1. Hunt areas, elk feedgrounds, and land ownership of the Pinedale elk herd unit.

## **Methods**

### Portable elk trap

See 2006 report for a description and overview of the trap.

### Snow and Ice Removal

Snow removal is a necessary component of elk trapping efforts. Significant snow accumulation in the main corral effectively reduces the height of the walls and can permit elk to escape, and snow accumulation in all areas of the trap reduces traction and increases risk of injury to elk and trapping personnel. Additionally, the road into the feedground must remain passable to ensure personnel access to the trap and allow removal of selected elk via stock trailer.

A contract for snow removal was established, after a bid-process, with the Muddy Creek elk feeder to keep the road open and remove snow from accessible portions of the trap. Remaining snow in and on the trap was removed with roof-rakes and shovels after each significant snowfall and just prior to each trapping effort. Significant ice accumulated at the bases of the squeeze chute awnings, preventing operation of some sliding doors, and was removed regularly with pick, shovel and salt. An irrigation ditch was inadvertently left open this fall and the north alleyway of the trap filled with ~8" of ice, which was removed with a pneumatic jackhammer. The ditch was diverted and the head gate closed.

### Trap Acclimatization

The feeder at Muddy Creek feedground began baiting the main corral of the trap with hay approximately 10 days prior to the first trapping attempt in 2007. Feeding was also conducted earlier in the day than normal to acclimatize elk to a routine similar to when a trapping would be attempted. Bull excluders (17" wide x 68" tall metal guards placed over gate openings to deter branch-antlered bulls) were placed into position 3 days before the initial trapping. Hay was fed inside the trap with bull excluders in place until all trapping operations ceased. Snow accumulation during winter 2006-07 was relatively low, and native forage remained available on south-facing slopes above the feedground nearly all winter. This likely negatively influenced trapping success, as elk were less dependent upon supplemental feed.

## **Trapping**

### 17 January 2007

An orientation meeting was held the afternoon of the 16th to review the plan. A new WGFD statewide crew of 20 employees was created to supplement the workforce of Jackson/Pinedale Regional and Veterinary Services employees. Most statewide crewmembers had visited Muddy Creek feedground during the fall and were familiar with the trap. The orientation meeting was attended by 47 individuals; 42 WGFD employees, 2 University of Wyoming academics, 1 from Sublette County Sheriff's Office, and 1 each from USDA APHIS VS and Wyoming Livestock Board.

The trap trigger team arrived at the feedground, loaded the feed sled, distributed hay throughout the trap and trailed a light line to the bedded elk. Elk appeared to not be

hungry, and numerous tracks were observed on the south-facing slope above the feedground. Animals consumed the light line of hay, and advanced toward the trap gates, but soon lost interest, and returned to the bedding area. The trigger team then fed another line of hay in a further attempt to lure elk into the trap. Approximately 60 cow elk entered, but soon spooked. The trigger team again fed another line and nearly 66 cow elk entered. It was determined a larger number of test-eligible (yearling and adult female elk) animals was desired than had entered the trap thus far, as trapping success typically decreases after the initial attempt. The decision was made to terminate the effort and try again the next day. Trap gates were closed and elk were not fed additional hay.

#### 18 January 2007

The trap trigger team again arrived at the feedground, loaded the feed sled, distributed hay throughout the trap, and trailed a light line to the bedded elk. Elk appeared hungrier and entered the trap more readily than the day previous. However, after approximately 120 elk had entered, a magpie flew over and spooked them all from the trap; the elk moved back to the bedding area. Another light line of hay was then trailed and the elk soon followed and began entering the trap. Around 150 total elk, including 70 cows, had entered the trap when approval to close the gates was issued, but the elk spooked once again seconds before the gates could be triggered. More hay was fed both in and outside of the trap several more times before the effort was terminated for the day. Due to logistics with the slaughter facility, another attempt could not be conducted the following day.

#### 29 January 2007

The trigger team repeated the feeding and trap setting process and the elk immediately began entering the trap. An estimated 70 cows were observed inside, approval was granted, and the gates were triggered around 0935. Elk were soon distributed among the three pods by the trigger team. The advanced team arrived at the trap and two branch-antlered bulls were chemically immobilized. Animals were then herded from the pods into the alleyways and sweep boxes, bulls were reversed and turned loose, the rest of the trapping crew arrived, and processing commenced around 1035. Both chute sides completed elk processing at 1225. All elk worked through chutes were sexed, aged, and permanently ear tagged (Table 1). All yearling and adult females were bled, ear tagged, collared with unique letter-number markings and herded back into the large corral to be held overnight while serologic testing was conducted.

#### 30 January 2007

The entire trapping crew met at the staging area at 0700, elk were divided into two pods, and processing commenced on both chute sides around 0800. Serologic tests completed the evening before revealed 13 cows positive for *Brucella* exposure (Table 1). Both collars and eartags were read to identify and sort animals; positives were retained and negatives released. All 13 seropositive elk were loaded onto a horse trailer and hauled to the slaughter facility in Idaho, unloading at 1330.

### 12 February 2007

Four separate baiting attempts were conducted to lure elk into the trap and all were unsuccessful. Only about 50 animals, mostly calves, entered the trap at any one period. Unseasonably warm ambient temperatures and very windy conditions appeared to contribute to recalcitrant elk. Additionally, fresh wolf tracks from a single animal were observed along the USFS boundary fence. Efforts terminated at 1115.

### 13 February 2007

Approximately 80 elk, including 25 cows (most were collared), had entered the trap nearly an hour after the first baiting attempt, but all elk soon ran from the trap for unknown reasons. After two additional baiting attempts and two subsequent 'blowouts', elk appeared very wary. Weather conditions were again unseasonably warm and south-facing slopes above the feedground were mostly bare and tracked, indicating native foraging. The day's efforts were terminated around 1100 and a decision was made to end the 2007 trapping effort for the season around 1200.

Table 1. Numbers of female and male elk, same year recaptures, newly captured elk for the year, total elk bled, and number of elk testing seropositive for exposure to brucellosis captured during winter 2006-2007 on the Muddy Creek Feedground.

Trap Date	Females				Males				Recaps	New Elk	Total Bled	# Sero +
	Adults	Yrlng	Juv	Total	Adults*	Yrlng	Juv	Total				
01/29/07	54	25	22	101	1	35	37	73	0	174	79	13**

\*does not include 2 adult males chemically immobilized, reversed and released

\*\*Includes 11 Adults and 2 Yrlngs; 3 Adults and 1 Yrlng were sero- when tested in 2006

### **Meat Donation**

A total of 13 brucellosis seropositive elk were processed by the USDA approved slaughter facility in Idaho. Approximately 3,009 lbs of boxed and wrapped burger, steaks, and roasts were donated to and picked up by Rocky Mountain Food Bank for distribution to food banks throughout Wyoming.

### **Expenditures**

A large amount of time, effort and money were again expended on the test and slaughter project during year two. Expenditures associated with the test and slaughter project were tracked by WGFD Fiscal Division using a unique project code (Table 2). A total of 13 seropositive elk were removed from the population at a cost of approximately \$22,563/elk. *Brucella* was successfully cultured in preliminary attempts from 8 of 13 seropositive elk (Table 3). Subsequent efforts may reveal additional culture positives, but these 8 elk were removed at a cost of \$36,664/elk.

Table 2. Test and Slaughter General and Non-General Fund and Total expenditures incurred by the WGFD, July 1, 2006 to March 31, 2007.

<u>Description</u>	<u>General Fund Costs</u>	<u>Non-General Fund Costs</u>	<u>Total Costs</u>
Portable Elk Trap Expenses	\$153,730	\$0	\$153,730
Personnel Salary and Fringe*	\$26,873	\$62,829	\$89,702
Travel Expenses	\$14,793	\$0	\$14,793
WGFD Lab and other supplies	\$15,903	\$316	\$16,219
Vehicle Usage**	\$3,166	\$12,910	\$16,076
<u>Meat Processing and Storage</u>	<u>\$2,794</u>	<u>\$0</u>	<u>\$2,794</u>
<b>TOTAL</b>	<b>\$217,259</b>	<b>\$76,055</b>	<b>\$293,314</b>

\* 3,373 personnel hours recorded conducting test and slaughter

\*\* 40,357 total miles driven for test and slaughter efforts

### Culture Results

Eight of the 13 brucellosis seropositive elk were found to be culture positive on preliminary cultures. Of the 8, 5 had strong reactions (titers) on the 6 standard brucellosis serological assays. As a general rule, the higher the titer, the more likely the animal will be culture positive. During slaughter, lymph nodes most likely to harbor *B. abortus* were collected for culture and analysis. The results below (Table 3) are preliminary and are based only on cultures of fetal fluid (or uterine tissue) and internal iliac lymph nodes.

A graduate student at the University of Wyoming is conducting an investigation of the relationship between serology and culture status from elk killed during the test and slaughter pilot project. The student is planning a thorough culture of the remaining elk tissues during summer/fall 2007, and might identify additional positives.

Table 3. Preliminary culture results from Muddy Creek feedground seropositive elk.

<b>Trap Date</b>	<b>Total Elk Cultured</b>	<b>Total Fetuses Cultured</b>	<b>Positive Elk</b>	<b>Positive Fetuses</b>
1/29/2007	13	8	8	0

The student is still in the process of completing cultures on the animals slaughtered in 2006. Thorough cultures of the tissues collected at slaughter have yielded an additional seven positive animals for a total of 25 culture positive elk from the 2006 test and slaughter project (56 total seropositive animals cultured). Caution should be exercised when interpreting these results, as these are preliminary findings. *Brucella* culture is very complex; final interpretations must wait until bacteriologic identifications are complete.

## Preliminary Results

BCT members determined that capturing a large proportion of the total female elk within the feedground population is imperative to achieve the objective of the test and slaughter project, which is to achieve a statistically significant reduction in seroprevalence at a 95% confidence level. Only 60% and 35% of total yearling and adult females counted on Muddy Creek feedground were captured and tested in 2006 and 2007, respectively, and seroprevalence decreased from 37% to 16% (Table 4.). However, 10% of females recaptured in 2007 (also captured/tested in 2006) seroconverted (Table 4.), indicating an exposure event likely occurred during winter/spring of 2006. Additionally, 3 of the 4 elk that seroconverted were culture positive, potentially indicating recent exposure. A detailed examination of the results of the pilot test and slaughter project will be conducted after the cessation of the 5-year project in 2010.

Table 4. Total numbers of yearling and adult females and % of total females and recaptures counted, bled, seropositive, killed, recaptured, and seroconverted of elk captured during winter 2006-2007 on the Muddy Creek Feedground.

MUDDY CREEK FEMALE RECAPTURE SUMMARY																
Year	# Females on Feedground	Total Bled			Seropositive			Killed			Recaptured			Seroconverted		
		Adults	Yrlng	% total females	Adults	Yrlng	% total females	Adults	Yrlng	% total females	Adults	Yrlng	% total females	Adults	Yrlng	% total recaps
2006	263	147	10	60%	56	2	37%	56	2	37%	NA	NA	NA	NA	NA	NA
2007	228	54	25	35%	11	2	16%	11	2	16%	24	16	18%	3	1*	10%

\*bled as juvenile in 2006

## Future Efforts

Numerous logistical challenges pertinent to the mechanical success of the pilot test and slaughter project still lie ahead. Muddy Creek feedground is arguably the easiest of the three feedgrounds within the Pinedale elk herd unit on which to implement the effort. Access roads into Fall and Scab Creek feedgrounds are much longer, steeper and more winding, and may present extreme snow removal challenges to keep roads passable. Fall Creek feedground will be trapped during winter 2007-08, and plans are underway to secure sufficient snow removal equipment on a contractual basis to ensure this occurs, but costs may be exorbitant.

Additionally, the Bureau of Land Management owns and manages the land on both Fall and Scab Creek feedgrounds suitable for elk traps. Special Use Permits to erect the portable elk traps have been requested for both sites, and a decision is expected during June, 2007. However, significant rock removal and site preparation must occur at the Scab Creek site for the trap to be functional and safe for the elk. The BLM has decided an EA is likely necessary. The duration of this process is unknown.