



Targeted Elk Brucellosis Surveillance Project 2024 Post-Capture Report Highland Mountains

BRUCELLOSIS SURVEILLANCE

To increase understanding of brucellosis in elk herds, MFWP initiated a targeted elk brucellosis surveillance project in 2011. Brucellosis is an infectious disease caused by the *Brucella abortus* bacterium affecting some elk herds in the Greater Yellowstone Area. The presence of this disease in Montana elk herds is primarily a concern because infected elk can act as a reservoir for transmission to livestock. Naive elk and cattle may experience a high rate of abortion (Thorne et al. 1978); however, brucellosis is not considered a direct threat to the sustainability of elk herds in Montana. Sampling efforts are focused on 1 – 2 elk herds every year. Elk in targeted herds are captured and sampled to evaluate the spatial extent of brucellosis exposure in elk herds. GPS radio collars are deployed on a subset of elk to document elk movements, the extent of spatial overlap with livestock, and interchange between elk herds. This winter, elk capture and sampling efforts for the project occurred in the Highland Mountains south of Butte, Montana (HD340; Figure 1).



Highland Mountains

A total of **122 female elk** were captured and sampled in the Highland Mountains study area from January 17-21st (Figure 1). During captures, we obtained blood serum samples from all elk for brucellosis testing. Of these, **0 tested seropositive for exposure to brucellosis**, giving the study area an estimated seroprevalence of 0 (95% confidence interval: 0 – 3.1%; Table 1).

Of the captured animals, 30 female elk were fitted with GPS collars programmed to collect hourly locations for the next year (Figure 2). An automatic release mechanism will drop the collars for retrieval on 3/20/2025. Shortly after capture, 2 collared elk died from capture related causes: internal injuries and entangled in a fence. We are currently monitoring **28** collared elk in the Highland Mountains. A map of animal movements to date is shown below (Figure 2).

Blood serum from all collared females was submitted for pregnancy testing. Of the 30 adult females collared and sampled for pregnancy, 29 were classified as pregnant based on the level of PSPB (a pregnancy-specific protein which is released in higher quantities when a fetus is present) found in their blood. The percentage of pregnant adults in the Highland Mountains study area (97%) is above the state-wide average (86%).

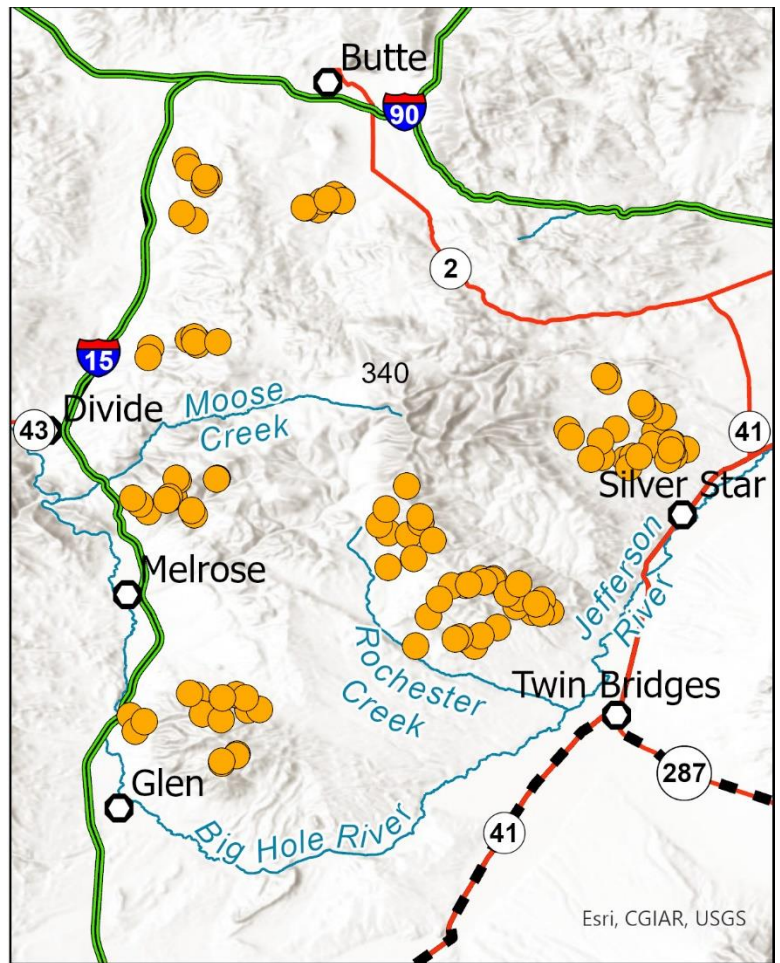


Figure 1. Capture locations of elk from HD340 in the Highland Mountains south of Butte, MT during January 2024. The Montana Department of Livestock brucellosis designated surveillance area (DSA) is shown as a black dashed line.



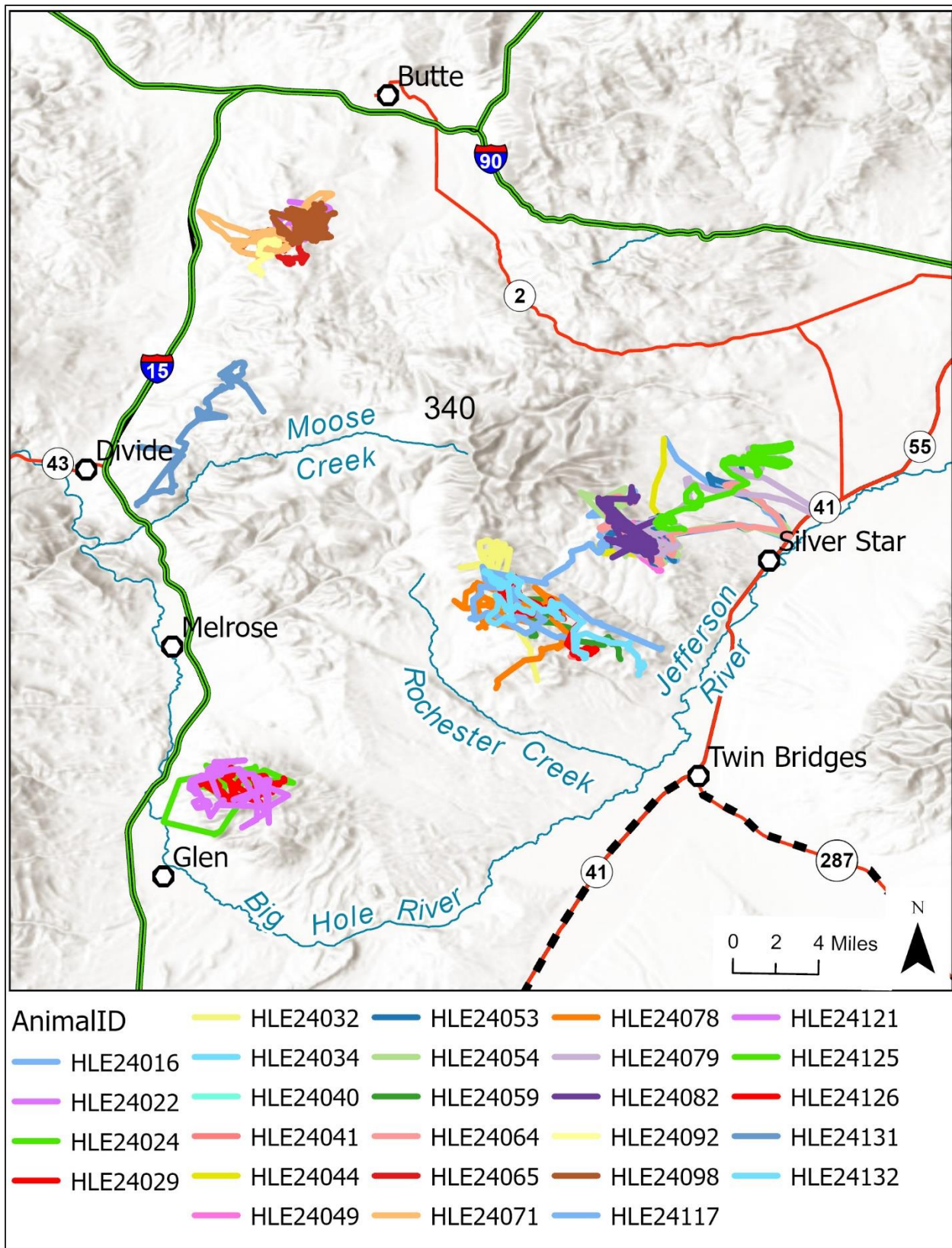


Figure 2. Lines showing movement since capture of collared female elk in the Highland Mountains.

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References

Thorne, E. T., J. K. Morton, F. M. Blunt, and H. A. Dawson. 1978. Brucellosis in elk. II. Clinical effects and means of transmission as determined through artificial infections. *Journal of Wildlife Diseases* 14:280–291.

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