



## Colorado Science and Engineering Fair

## 2025 Individual Project Abstract Form

**Please print 2 copies of the completed form. Sign both copies, keep 1 for your notebook and submit 1 copy to your Regional Fair Director with your other paperwork.**

Title of Project: The Effects of the Transfer of Wolves and the Fertility Rate of Grand County Cattle

Finalist's Name: Teagan Bruchez

School and City: West Grand High School

Sponsor's Name: Penny Bruchez

Category: Animal Sciences

Division: Senior (grades 9 - 12)

Abstract (250 words or less):

Stress can cause cows to struggle to conceive. In my project, I am determining if the cows were under stress due to the new wolf presence. Many ranchers will find this information beneficial and become aware of how wolf presence can affect their livestock.

My hypothesis is if wolves are transferred to Colorado, then there will be negative effects on the fertility rates of cows. To gather my data, a veterinarian used an ultrasound to determine how many cows were pregnant. While this is happening, I used a pen and paper to take data about the ultrasound results, specifically on if the cow is pregnant or not.

In December of 2023, ten wolves were transferred into the Summit and Grand County areas of Colorado. I wanted to test how the cows would react to this change. The data collected did support my hypothesis. My study doesn't determine whether the stud bulls or heifers were affected by this stress. However, my data shows there was a steady fertility rate throughout the years 2021-2023. There was a spike from 2023-2024 for three of the four cattle populations tested. On average all rancher's cattle had an open increase between the years 2023-2024 of 9.2%. Ideally, ranchers want a 7% or less open rate for your cattle according to the T.R.A.C expectation. The 2024 fertility rate exceeded the ideal open rate, showing that there was stress in the cattle the year the wolves were transferred.

*I hereby certify that the above statements are correct and the information provided in the Abstract is the result of one year's research. I also attest that the above properly reflects my own work.*

Finalist's Signature:

Date:

In addition, all students must complete the ISEF Student Checklist (1A), Research Plan, Approval Form (1B), and Checklist for Adult Sponsor (1), and any other ISEF forms required for this type of project. See the International Rules and Guidelines for form requirements. Return COPIES of all of these forms to your Regional Fair Director with you Finalist Verification/Permission Form. **A signed copy of this form must be included in your notebook.**