

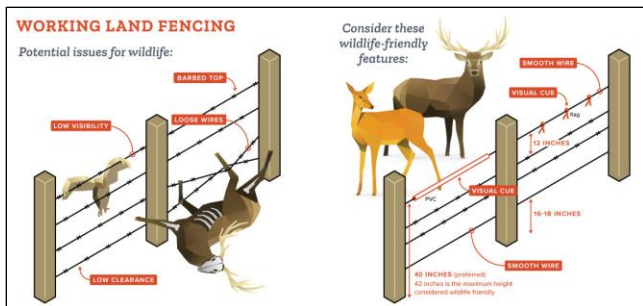
# Let Them Roam: Wildlife Friendly Fencing on Wyoming State Trust Lands

STUDY BY ALEC CECARDO, HANNAH JACKIM, DELSIE MCCRYSTAL, AND THOMAS SALERNO

## Why this study was needed

One of the largest obstacles to conservation efforts is the growing fragmentation of wildlife habitats brought on by infrastructural development. Large, open spaces are necessary for the migration of many ungulates; however, obstacles like roads and fencing obstruct these vital migrations, causing population decreases and higher mortality rates.

By identifying high-priority migration routes and suggesting techniques that strike a compromise between conservation objectives and land management requirements, our research aims to address this wicked problem.



Utah Division of Wildlife Resources

**Figure 1:** Comparative graphic of working land fencing and wildlife friendly fencing

## What the researchers discovered

Wildlife-friendly fencing should be no higher than 42 inches, as this is low enough for animals to jump over. The top two wires should be at least 12 inches apart to prevent animals' back feet from being caught in the fence. The bottom wire should be barbless and set at least 16 inches above the ground to allow animals like pronghorn to duck underneath. Reflectors or flagging on the top wire should be added for better visibility. See Figure 1.

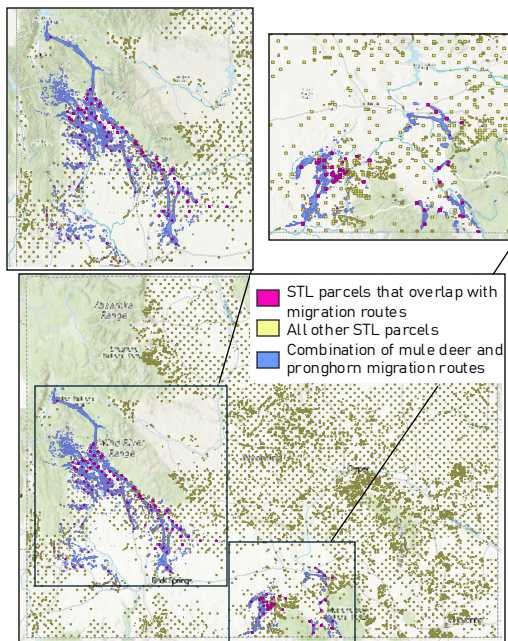
Wildlife-friendly fencing costs \$3.52/foot for average terrain and \$4-\$6/foot for difficult terrain. We propose state trust land (STL) lessees convert at least 200 feet of fencing on each side of their parcel, for a total of 800 feet. This would equate to \$2,816 to \$4,800 and is a much more reasonable cost than \$460,000 to \$760,000, which is what it would cost to convert an entire 24-mile STL parcel.

After conducting a Geographic Information System (GIS) spatial analysis, we identified 263 STL parcels that overlap with high-use pronghorn and mule deer migration routes. These parcels should be prioritized for fence modification. See Figure 2.

# Why it's important

Widespread fencing has caused the isolation of habitats and contributed to the loss of 76- 82% of grassland habitats. While fences are necessary for landowners, they can be rebuilt in a way where they continue managing livestock while also allowing for the safe passage of wildlife.

Roads and fencing are examples of anthropogenic landscape modifications that can alter wildlife behavior by making animals spend more time foraging around obstacles. These obstacles can also lead to ecological problems, like genetic isolation, which raises mortality and inbreeding rates and decreases the capacity to adapt to changing environmental conditions. Nonetheless, studies reveal that wildlife-friendly fencing reduces ungulates' crossing times by 54% and raises the likelihood of their safe passage by 33%.



**Figure 2:** Comprehensive map containing state trust land parcels, pronghorn and mule deer high-use migration routes, their overlaps, and the zones of high priority

# Resources for fence modification:

## Funding Sources:

- Wyoming Wildlife Natural Resource Trust  
<https://wwnrt.wyo.gov/how-to-apply/how-to-apply>
- National Fish and Wildlife Foundation  
<https://www.nfwf.org/apply-grant/application-information>
- Bureau of Land Management  
<https://www.blm.gov/services/financial-assistance-and-grants>
- Wyoming Landscape Conservation Initiative  
<https://www.wlci.gov/#/lpdt-resources>
- USDA Natural Resources Conservation Service  
<https://www.nrcs.usda.gov/getting-assistance/how-to-apply>

## Contractors:

- Jackalope Hydroseeding and Reclamation  
<https://www.facebook.com/JackalopeHydroseedingAndReclamation/>
- King Enterprises  
<https://www.fencewy.com/services-4>

## Additional Resources:

- The Absaroka Fence Initiative  
<https://absarokafenceinitiative.org/resources>
- Upper Green River Fence Initiative  
<https://www.sublettecd.com/wildlife-friendly-fencing>
- Wyoming Wildlife Federation  
<https://wyomingwildlife.org/habitat-water-improvements/>

## About the Authors:

**Alec Cecardo:** Haub School of Environment and Natural Resources

**Hannah Jackim:** Haub School of Environment and Natural Resources and Arts and Sciences at the University of Wyoming

**Delsie McCrystal:** Haub School of Environment and Natural Resources

**Thomas Salerno:** Haub School of Environment and Natural Resources

## Acknowledgments:

Temple Stoellinger, The Absaroka Fence Initiative, The Upper Green River Fence Initiative, Office of State Lands and Investments, Wyoming Game and Fish Department



Haub School of  
Environment and  
Natural Resources