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Challenges and Opportunities to Facilitate Wildlife Movement and Improve Migration Corridors

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Wyoming is home to rich and diverse wildlife resources, valued by an equally proud and diverse constituency. Much of our wildlife habitats remain as they were in the 1800s, providing wide open spaces and wild country for iconic western big game species like mule deer, moose, pronghorn antelope and elk. These resources directly influence the quality of life of Wyoming citizens and encourage visitors across the nation, deepening the belief that wildlife and their habitats are worthy of conservation efforts. I am thankful to committee members for the opportunity to provide testimony on Wyoming's migration program and the importance of partnerships, science, policy and management actions.

Today, I offer the perspective of a Wyoming wildlife manager that works closely with private, state, federal and tribal land managers to conserve and protect wildlife. Our unique, open landscapes allow wildlife to move freely between seasonal ranges, providing protection and forage during spring and summer seasons and food to survive the harsh Wyoming winters. Wyoming values these wildlife migration patterns and is a leader in the research and implementation of migration management and conservation activities. Public passion for wildlife migration and an increase in new funding opportunities, paired with access to the latest science and technology has encouraged widespread conservation work.

Big game migration is important

Science shows us that long distance migrants are more productive, healthy and successful raising their young. Migration between winter ranges with less snow and higher elevation summer ranges with more productive forage resources enables survival and is fundamental to the health of Wyoming's big game populations. In addition, the management, abundance and quality of our wildlife resources are deeply intertwined with important components of the State's economy, including agriculture and tourism. Intact landscapes also benefit a wide diversity of wildlife from predators to pollinators. When one part of this system is reduced or removed the entire system can easily unravel.

Wyoming's model for success: using science and partner collaboration

Aside from southern Africa, the Greater Yellowstone Ecosystem (GYE) is one of the only places on Earth where long distance migrations of multiple species still follow the historical migration patterns of their ancestors. At just over 3,400 square miles, the GYE core is formed by Yellowstone National Park, but includes a diversity of federal, state, tribal and private lands that, collectively, support these populations. Wildlife use the landscape without knowledge of political or land ownership boundaries (Fig. 1) so we must collaborate across land jurisdictions to have success. Tribes have understood these dynamic migratory systems for generations. The Department routinely partners with tribal governments to improve landscape connectivity and shared management capacity.

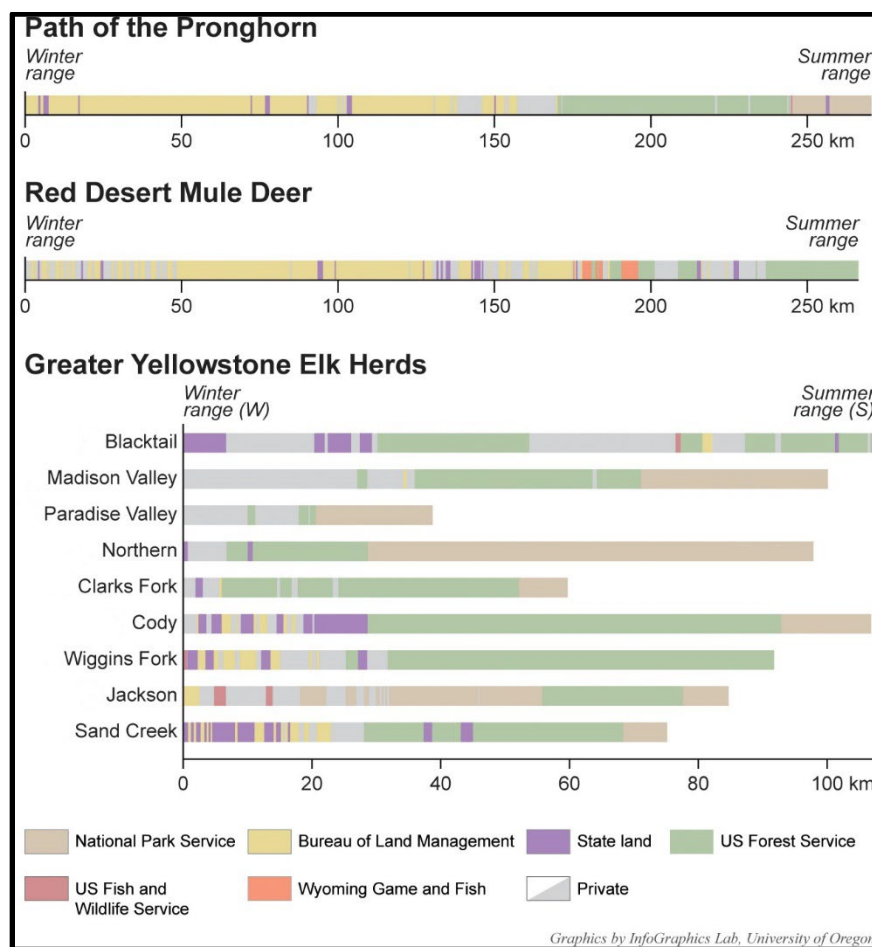


Figure 1. Land ownership within key pronghorn, mule deer and elk migratory routes in the Greater Yellowstone Ecosystem. Big game migrations depend on policy, management and stewardship working seamlessly across a wide variety of land ownerships.

Some of the first migration scientists worked on big game in the GYE. Scientists realized we had long distance migrants through neck banding elk in the 1960s and then better understood these movements with the use of Very High Frequency (VHF) collars by the 1970s. Global Positioning System (GPS) collars were used for the first time in 1994 to understand migrations, again in the

GYE. GPS collars communicate with satellites and record an animal's precise location with an associated date and time to provide biologists with extremely fine scale data. The wide-scale use of GPS collar technology revolutionized how scientists understand the details of big game movements.

Wildlife is in an era of big data, and we know a lot about what big game animals do. Our partnership with the United States Geological Survey and the Wyoming Cooperative Fish and Wildlife Research Unit at the University of Wyoming has been essential to better understand how big game wildlife use landscapes. Through this work, 182 migrations have been mapped throughout the western United States. In the GYE alone, 54 herds including over 2,600 individuals and 26,000,000 data points have been analyzed with additional work ongoing (Fig. 2).

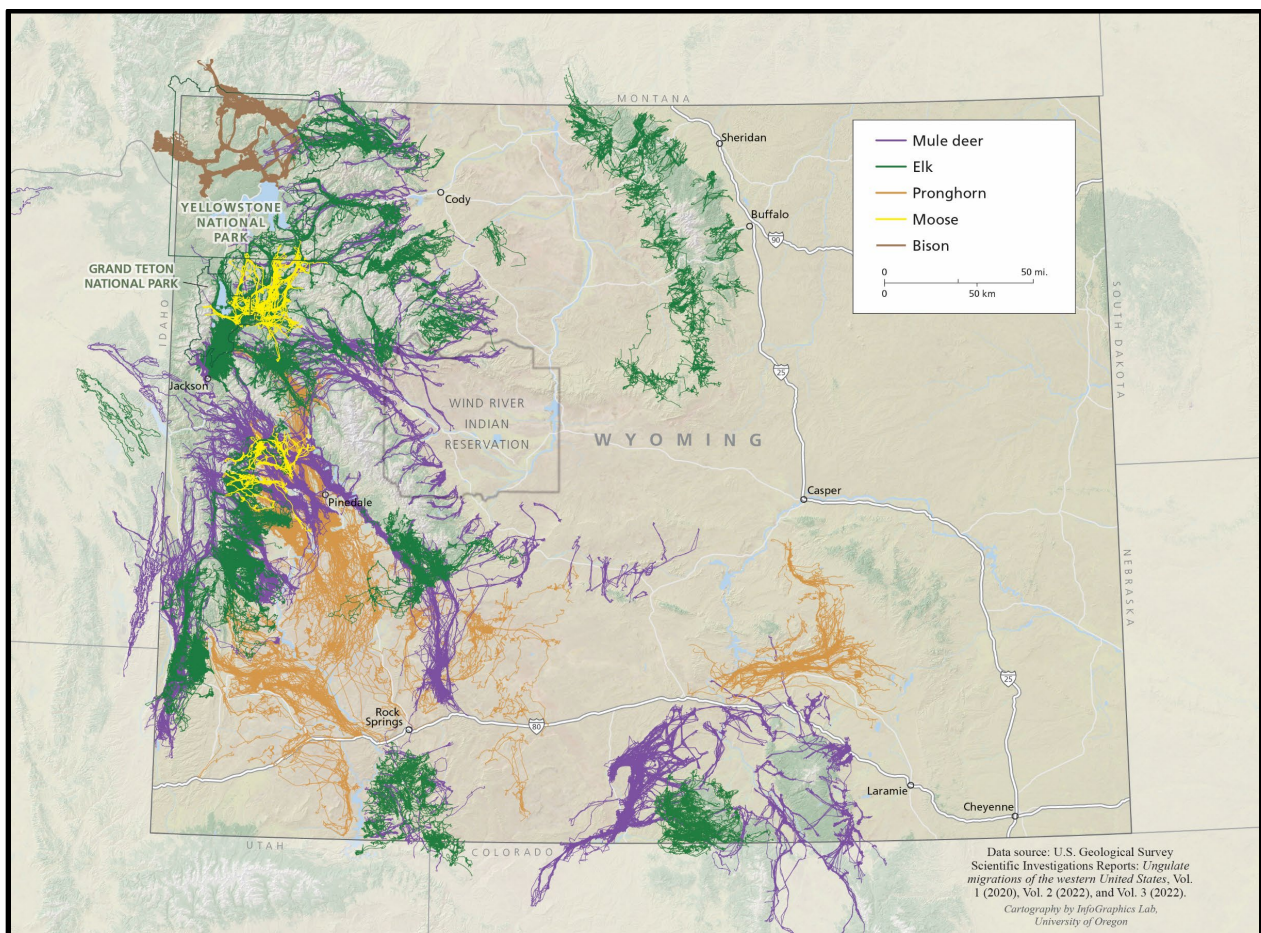


Figure 2. Big game migration routes in Wyoming that have been mapped through partnership with USGS, and are available through the Volumes 1, 2, and 3 of the Ungulate Migrations of the Western United States publications.

Managers use this data to delineate seasonal ranges including migration routes. In many places throughout the West big game migration data and science are being used to repair severed migration routes or target mitigation activities. However, in Wyoming we are able to prioritize conserving functional long-distance migrations that are still occurring. Wyoming is blessed with

extensive intact native landscapes and has several examples of mule deer and antelope populations with migrations that exceed 150 miles one-way between winter and summer ranges. It is much more effective to conserve the movements that we still have rather than trying to recreate them.

Although Wyoming and the GYE are still relatively intact, there are threats to connectivity. We have the science and the tools to minimize the negative effects of development, identify risks and mitigate threats better than ever before. For example, analysis of GPS collar data indicates there are thresholds of surface disturbance and development that are tolerated by wildlife, but exceeding these levels can decrease use and negatively impact connectivity and the nutritional benefits of migration.

State-led conservation measures

Migrations at the scale we have in Wyoming rely on private working ranch lands. In order to maintain open space we need to keep these agricultural producers in business so they can maintain open spaces from which wildlife benefit. Wyoming has worked with the United States Department of Agriculture (USDA) and other partners to develop the Wyoming-USDA Big Game Partnership. It is a flexible incentive-based program that puts the right practices in place that are relevant to the unique stakeholders and threats in each area. Even within Wyoming the threats to wildlife and needs for working ranchers are diverse. Our program works to accommodate those differences by providing a wide variety of conservation options that work together for landowners. For example, when ranchers enroll their land in the Grassland Conservation Reserve Program they are provided a payment per acre and in exchange agree to not develop this land for either 10 or 15 years. The program emphasizes support for grazing operations, plant and animal biodiversity, and grassland and land containing shrubs and forbs under the greatest threat of conversion. In our experience voluntary programs are a more effective approach than regulatory mechanisms. When federal funding can support state-led initiatives, private landowners have a greater level of buy-in and we are all successful together.

We have outstanding collaborations, including meaningful partnerships with federal land managers, private landowners and nongovernmental organizations. In 2022, the Wyoming Game and Fish Department (Department) spent \$4,666,000 on habitat conservation work and partners spent an additional \$10,187,000 for a total of \$14,853,000. This shows a clear commitment from our Wyoming Game and Fish Commission and a wide variety of partners. Wyoming Wildlife and Natural Resource Trust (WWNRT) is a great model of how to leverage state funding to match federal funds and maximize our overall effectiveness together. The Wyoming Legislature created the Wildlife and Natural Resource Trust in 2005. Funded by interest earned on a permanent account, donations and legislative appropriation, the purpose of the program is to enhance and conserve wildlife habitat and natural resource values throughout the state. The Department along with our partners have treated nearly 600,000 acres for cheatgrass and other invasive weeds. Our fence modification program has removed or converted over 6,000 miles of fences to wildlife-friendly standards to improve permeability and access to important habitat. And we have been implementing a variety of vegetation treatments including conifer reduction and aspen enhancements for over 20 years. A great deal of these projects have been completed on private

land, but most importantly we strive to develop projects that cross land ownership boundaries and treat threats on an ecological scale opposed to a scale limited by land ownership boundaries.

Wildlife crossing work has been another area where Wyoming has found success through partnerships and incorporating the best available science into our conservation work. We have, in partnership with Wyoming Department of Transportation (WYDOT), built 28 over- and underpasses for big game on Wyoming highways since 2012. We could not have experienced this level of accomplishment without federal funding, such as the Rebuilding American Infrastructure with Sustainability and Equity (RAISE) Transportation Discretionary Grant program. Through implementing these projects we have not only ensured wildlife are able to safely cross roadways and access necessary seasonal ranges, but we have made these same roadways safer for motorists by reducing vehicle collisions. The state held a Wyoming Wildlife and Roadways Summit in 2017 which brought together our Department, WYDOT, other government agencies, non-governmental organizations and the public to identify and prioritize future wildlife crossing work. A Top 10 list was generated from the 240 projects identified by attendees and serves as a basis for the collaboration between WYDOT and the Department on wildlife crossing work. In 2019, the Wyoming Legislature created the Wildlife Conservation License Plate program which allows drivers to pay an additional fee with annual vehicle registration which goes into an account to be used to implement wildlife crossing projects.

Policy support

In 2016 the Commission enacted the Ungulate Migration Corridor Strategy which directed the Department to designate migration corridors, including bottlenecks and stopovers, and consider them as vital habitat for management. The fundamental concept of making decisions based on the best available science and evaluating actions on a case-by-case basis are cornerstones of this document and are still in place today. Through this process the Commission designated three mule deer migration corridors, in which the Department has been able to prioritize conservation actions.

In 2018, former U.S. Secretary of the Interior Ryan Zinke signed Secretarial Order 3362, which calls for conserving, enhancing and restoring big game winter range and migration corridors used by antelope, elk and mule deer in Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington and Wyoming. The order relies on development of individual State Action Plans, developed by States and Tribes, in order to prioritize funding for targeted areas. Collaboration between all groups to improve these areas is an important step toward building trust between State, Tribal and Federal partners which ensures durability and effectiveness of this program. Our Wyoming State Action Plan is updated annually and has resulted in an important funding mechanism and expanded collaborations for our priority herds. In the last five years \$29 million from DOI agencies have been provided to States and Tribes as well as an additional \$4.4 million specifically from United States Fish and Wildlife Service Partners for Fish and Wildlife Program. This is an excellent example of a targeted approach that provides flexibility for states to customize conservation actions that directly address their greatest threats to big game wildlife.

In 2020 Wyoming Governor Mark Gordon enacted the Wyoming Mule Deer and Antelope Migration Corridor Protection Executive Order (EO). The EO compliments the Commission's

Ungulate Migration Corridor Strategy. The Executive Order outlines a state-led designation process that leans heavily on public stakeholder input and relies on the best available science to map migration corridors. Within designated corridors, new infrastructure, recreational use and development conditions are evaluated on a case-by-case basis in order to ensure functionality of the corridor will coexist with multiple uses. Bottlenecks, high use areas and stopovers are supported as the most important areas for conservation, based on science. The regulatory process outlined in the EO is not required on private land, which is an important component. There are extensive opportunities to voluntarily engage in incentive programs for those landowners who wish to work with the Department to implement conservation actions. For example, many landowners have received financial assistance from the Department or USDA to modify existing range fences to wildlife friendly specifications. These projects support the working ranch operations and improve permeability for wildlife to move between seasonal ranges and access important habitat. The Department is currently working through the public identification and designation process for the Sublette antelope migration corridor.

Summary

The Wyoming model for ensuring the persistence of big game migration has been successful. Our program is built on cooperation and collaboration between a wide variety of stakeholders, and is rooted in science guiding our management decisions. We want to continue to support durability and flexibility in our programs and lean on voluntary incentives to ensure private land continues to support big game migrations. The challenges are bigger than ever for conservation. We need to continue to adapt to the ever changing world around us. We appreciate the opportunity to share this information in an effort to increase the overall impact of conserving wildlife migration throughout the country.