

ATLAS OF WILDLIFE MIGRATION: WYOMING'S UNGULATES



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Figure 1. Atlas production team reviews production goals and progress at AMK lodge (Matt Kaufman, Hall Sawyer, Matt Hayes, Emilene Ostlind, and Jim Meacham).

♦ OVERVIEW

For thousands of years ungulates have migrated between seasonal ranges in the vast and beautiful landscapes of Wyoming. From mule deer and pronghorn that travel across the Red Desert to the wilderness journeys of elk and moose in the Greater Yellowstone Ecosystem, Wyoming boasts some of the

longest and most spectacular migrations in North America. These epic, terrestrial migrations are to many a symbol of Wyoming's vast intact landscapes. And although these migrations are part of the region's cultural heritage, they are poorly understood and threatened by rapidly changing landscapes. Recent research at the University of Wyoming has broken new ground in our understanding of Wyoming's ungulate

migrations, raising awareness of the ecological benefits of these seasonal journeys, their rarity in a global context, and the threats they face amid accelerating land-use change. Although there is considerable interest in conserving ungulate migration routes in Wyoming and the West, a comprehensive story has never been told of Wyoming's extraordinary ungulate migrations.

The Wyoming Migration Initiative (migrationinitiative.org) is producing the *Atlas of Wildlife Migration* to help draw attention to the amazing journeys of Wyoming's migratory ungulates, to synthesize disparate spatial data on migration, and to elevate awareness of this ecological phenomenon as a means of advancing conservation and management efforts. The *Atlas* will draw upon a wealth of knowledge built through several decades of intensive study by biologists at the University of Wyoming, other state and federal agencies, and private firms, and it will benefit from the on-the-ground expertise of many of Wyoming's wildlife managers. We are partnering with the award-winning cartographic team at the University of Oregon Department of Geography's InfoGraphics Lab (the producers of the *Atlas of Yellowstone*) to bring their expertise in design to create new visualizations of these magnificent migrations.

Facing pages in the *Atlas* will cover more than 50 migration topics, ranging from ecology to conservation and management, illustrated with data-rich and visually stunning maps and graphics. Page pairs will illustrate topics such as the Teton bighorn sheep and their response to the loss of historical migration routes and the expansion of energy development in Wyoming and the challenge this poses for long-distance migrations. The *Atlas* will be published as a large format reference book. In addition, select migration stories from the *Atlas* will be accessible on a website in an interactive format (with animations, interviews, and other links).

The production team of the *Atlas of Wildlife Migration* includes Matthew Kauffman (senior editor), James Meacham (cartographic editor), Hall Sawyer (associate editor), Alethea Steingisser (production manager), Matt Hayes (spatial analyst), Bill Rudd (contributing editor), and Emilene Ostlind (text editor).



Figure 2. What an appropriate backdrop and historical setting for having this production meeting. The AMK lies in the center of many of the migration stories we are telling in the *Atlas of Wildlife Migration*.

✦ PRODUCTION TEAM ACTIVITIES

Members of the *Atlas* production team traveled to the UW-NPS Research Station at the AMK ranch during the middle of June 2015 to spend a few days to meet face-to-face to work on the *Atlas*. The production team led by senior editor Matt Kauffman and cartographic editor James Meacham met at the AMK to discuss production goals and timelines and to review content for the *Atlas*. Plans were made for a production timeline for completion of the *Atlas* and final publication.

During our time at the AMK the entire *Atlas* was laid out and reviewed with each page pair displayed in the order and chapters they will be presented. Each page pair will tell a unique story about ungulate migrations in Wyoming from the underlying science to the conservation of these magnificent movements by Wyoming's ungulates.



Figure 3. Page pairs are taped up to view the order of topics and content for the *Atlas*

Cartographic editor James Meacham and production manager Alethea Steingisser oversaw the development of the Atlas of Yellowstone, which was published in 2012. They bring a wealth of experience and expertise to the Atlas of Wildlife Migration project. Each member of our team brings a unique set of skills and experience to this project. The Atlas project provides a great opportunity to shine the spotlight on Wyoming's landscapes and ungulates.



Figure 4. Cartographic editor James Meacham overlooks some of the books organization as displayed on the walls of the historic lodge at the AMK ranch.

Dr. Kauffman hosted a meet and greet Bar-B-Q with funders and friends of the Atlas in order to discuss the production of the Atlas, review many of the topics being developed and have an opportunity to provide an informal get together at the ranch which provides such a wonderful setting and backdrop. This project would never have been possible without the support of our partners and funders.



Figure 5. Matt Kauffman and Steve Sharkey discuss one of the many migration topics presented in the Atlas.



Figure 6. Wildlife Migration Initiative Spatial Analyst Matt Hayes cooks up burgers for the Atlas team and guests.