

RIO 5-YEAR **MORA** REPORT

National Wildlife Refuge & Conservation Area

Today, it sometimes seems as though our world is a desert of division. But then, we find an oasis of refreshing cooperation that restores faith in what we can accomplish when we work together.

In 2012, I was the U.S. Fish and Wildlife Service Director, when the Rio Mora Conservation Area was established to help protect and conserve the globally important Rio Mora catchment. A keystone in this effort came from the vision and generosity of Eugene and Clare Thaw, who donated the land to establish the Rio Mora National Wildlife Refuge and funding that brought in the Denver Zoo and its creative and talented team. Over the past 5 years, their gift has nourished an amazing conservation and education partnership. A former cattle ranch is being restored. The iconic bison is being returned to the landscape. The culture of a native people, along with the essential ecological and hydrological function of the native shortgrass prairie, is being nurtured and sustained.

The partnership between the Service and the Zoo has been enriched by New Mexico Highlands University and the Pueblo of Pojoaque. So, what was already special has become a unique and powerful collaboration between a federal government agency, a premier zoological institution, a respected university, and a Native American people. This effort is showing us how we can protect and conserve wild life and wild places, how we can restore native species and preserve native culture, and how we can educate and inspire a new generation of conservation-minded citizens. And maybe, just maybe, we will show our nation the power of cooperation, and help rekindle the American spirit of community and collaboration.

Eugene and Clare Thaw have passed away, but their rich legacy lives on in the Rio Mora National Wildlife Refuge and Conservation Area. Their generosity is reflected in the work of volunteers, and the continued philanthropic donations to support this partnership. Their vision endures and expands with the herd of native bison and other animals that call this place home.

I ended my tenure as U.S. Fish and Wildlife Service Director, in January 2017, and began a new career journey as the President and CEO of the Association of Zoos and Aquariums (AZA). As an accredited AZA member, Denver Zoo is among the world's very best zoological institutions. I'm proud of the zoo's role in this amazing collaboration, and I hope it will be a model for an entire generation of zoo-park partnership. Let's work together to create that future!



Dan Ashe
CEO of Association of Zoos & Aquariums

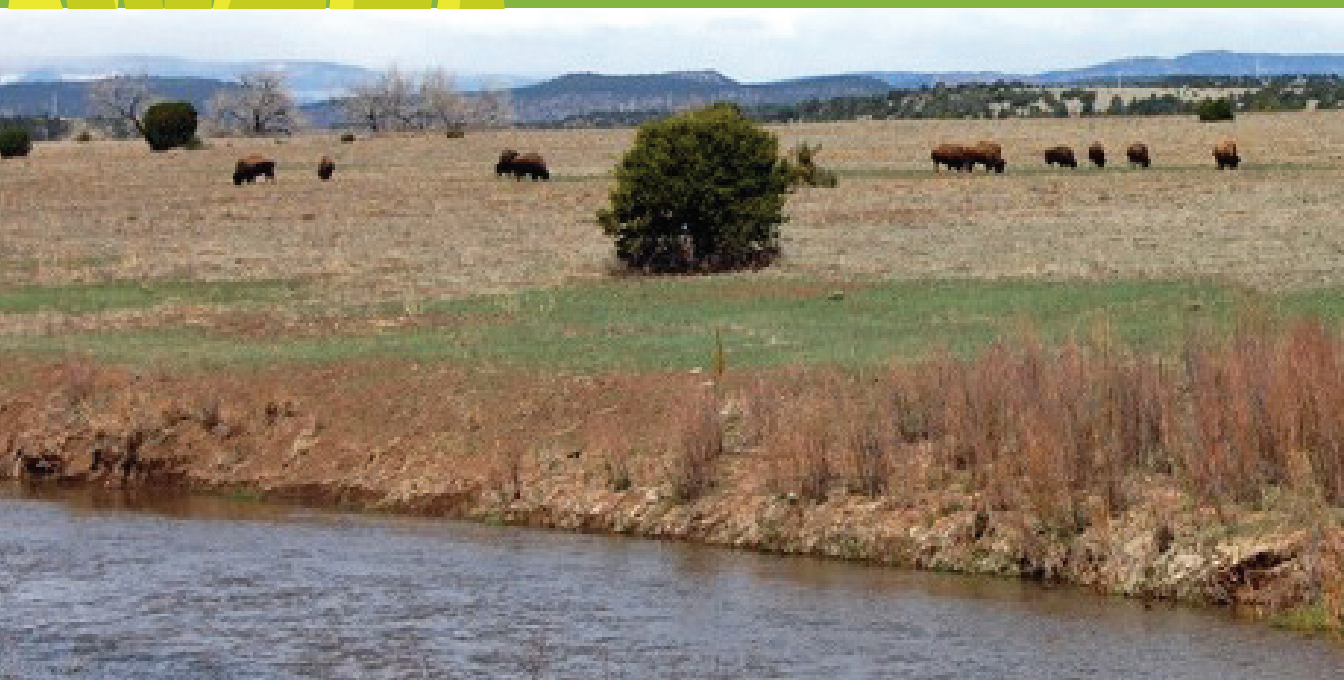


RIO MORA NATIONAL WILDLIFE REFUGE

In 2012, philanthropists Eugene and Clare Thaw donated their 4,224-acre New Mexico ranch to the U.S. Fish and Wildlife Service, establishing the Rio Mora National Wildlife Refuge. Shortly thereafter, they gifted 5 years of funding (\$1.7 million) to Denver Zoo to support research, restoration, land and facilities care, education, community engagement, and conservation of the new refuge.

The Case for Grasslands

Grasslands, such as those found at Rio Mora National Wildlife Refuge, are of high ecological and cultural importance. A functional grassland protects soil and water resources critical to human wellbeing, especially in the American Southwest. Grasslands are important for food production through their use for agriculture and ranching. Culturally, the grasslands of northern New Mexico are the homeland and ancestral hunting grounds of Native American tribes. Wagon ruts from the Santa Fe Trail - a trade route responsible for the economic development of the Southwest - are visible around the Rio Mora National Wildlife Refuge. Today, unbroken expanses of shortgrass prairie symbolize the untamed spirit of the West. Despite their importance, grasslands are one of the world's most endangered ecosystems.



MESHING MISSIONS

By early 2013, two additional key partners: New Mexico Highlands University and the Pueblo of Pojoaque (a Native American tribe), joined the partnership in an effort to develop the refuge as a model protected area that engages communities in land stewardship and watershed restoration across the 1-million-acre Rio Mora National Wildlife Refuge and Conservation Area, and beyond.



U.S. Fish and Wildlife Service (USFWS)

Manage a network of lands and waters set aside to conserve fish, wildlife and plants for the benefit of all Americans

New Mexico Highlands University (NMHU)
Education through teaching, research and service



Denver Zoological Foundation (DZF)

Secure a better world for animals through human understanding

Pueblo of Pojoaque (PoP)

Continue our traditions and practice our culture in these contemporary times



PUEBLO OF POJOAQUE



The partnership carries on the Thaw family vision for their beloved Wind River Ranch to further the conservation of wild landscapes in northern New Mexico through ecological restoration, research and education. Through the partnership – which is the first of its kind – their legacy will live on, protecting New Mexico’s Mora River watershed as a culturally significant and biodiverse ecological system.





RIO MORA

New Mexico's Newest National Wildlife Refuge

Located in northeastern New Mexico, the Rio Mora National Wildlife Refuge is right at the heart of the larger, 1-million-acre Rio Mora Conservation Area.

The Conservation Area is intended to:

- *Protect and restore the fragmented and degraded grasslands and riparian areas within the watershed.*
- *Build on existing partnerships to reduce threats, reestablish wildlife populations, and restore productivity to degraded ecosystems.*



Onsite Facilities

The partners work together to maintain Rio Mora National Wildlife Refuge lands and infrastructure – this is no small task and includes fencing, roads and buildings with associated utilities. The picture below shows a number of these facilities located within the Mora River Canyon.

The original Thaw family vacation home (a historic site) has been maintained and upgraded to provide high quality accommodations for VIP guests, as well as space for meetings and other work-related events. Near the Thaw VIP residence is a beautiful Morton Barn that has been converted to an education center. The large classroom space is fully equipped with audiovisual equipment, teaching supplies, flexible seating options, and a full kitchen.

Also available in the canyon is a well-equipped bunk house providing dormitory accommodation with lounge and kitchen for up to 13 visitors. A campsite furnished with a well, latrine and covered dining area is available if a greater number of visitors or students are onsite at any given time.

A program office located above the canyon is where the partners coordinate efforts, maintain a library of important publications related to our work, and can provide space and connectivity for visiting colleagues.





BISON RESTORING ECOLOGY AND CULTURE

The partnership wholeheartedly supported the National Bison Legacy Act of 2016, designating the North American bison as our national mammal due to its key role in America's history, culture, and ecology.



Over the last 150 years, vast swaths of the American West were degraded as a result of unsustainable ranching and agricultural practices. The bison at the Refuge, like several other herds across the USA, act as ecological and cultural restoration agents, helping achieve watershed conservation outcomes while allowing Native American tribes the opportunity to re-connect with cultural traditions.

**HEALTHY
SHORTGRASS
PRAIRIE
ECOLOGY**

**NATIVE
AMERICAN
CULTURAL
SIGNIFICANCE**

The bison at Rio Mora, owned by the Pueblo of Pojoaque, help tribe members re-connect with ancient cultural traditions; for example, by breathing new life into traditional Pueblo Buffalo Dances that signify strength and abundance.

Ecological and Cultural Restoration

Bison re-shape the shortgrass prairie landscape by wallowing, using their horns to remove invasive plant species, and grazing; these behaviors help recreate a mosaic of critical plant communities that sustain a healthy, diverse suite of wildlife.



A MODEL FOR RESTORATION

Watershed and Grassland Restoration Across the Globe

Rio Mora National Wildlife Refuge has become a model demonstration site for restoration efforts across the Mora River watershed, throughout northern New Mexico, and in similar ecological systems across the globe – including a protected area in central Mongolia where Denver Zoo has been working for over 20 years.

Overgrazing and other unsustainable ranching and agricultural practices result in erosion and lower water tables, making it difficult for diverse natural ecosystems to thrive. In addition to returning bison to the landscape as restoration agents, rock structures being built at the Refuge are specifically designed to control erosion, increase water retention, and restore biodiversity.



ACTION

Build erosion control structures



The photo above depicts one of over **350 restoration structures** at the Rio Mora National Wildlife Refuge, each of which is designed to mitigate the effects of erosion through increased water and soil retention.

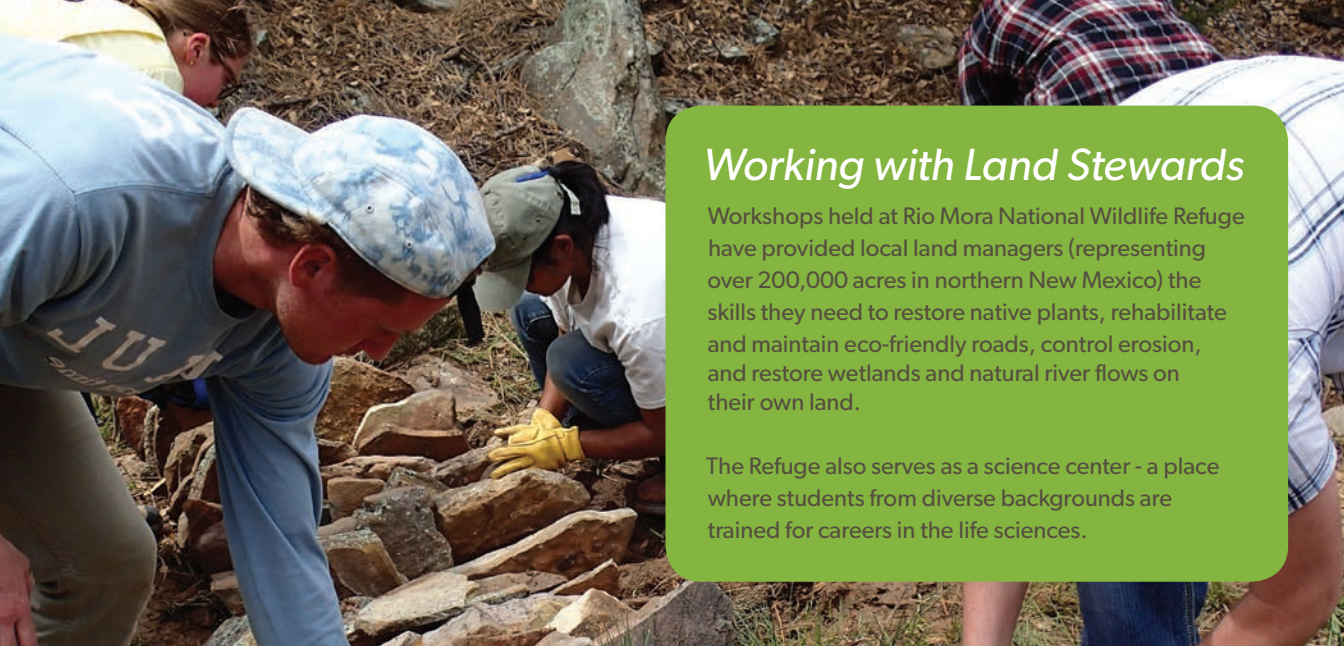
RESULT

Raise water table, retain soil, and restore biodiversity



In as little as **2 years**, rock restoration structures increase soil cover by up to **75%**, and this helps raise the water table restoring a healthy, drought-resistant and biodiverse population of native plants and animals.

By sharing restoration structure design techniques used at this site with ranchers, conservationists and other land stewards, the Refuge acts as a model for watershed restoration in New Mexico and around the world.



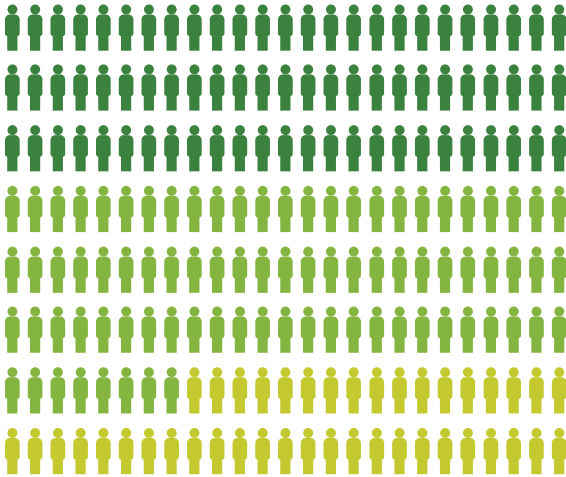
Working with Land Stewards

Workshops held at Rio Mora National Wildlife Refuge have provided local land managers (representing over 200,000 acres in northern New Mexico) the skills they need to restore native plants, rehabilitate and maintain eco-friendly roads, control erosion, and restore wetlands and natural river flows on their own land.

The Refuge also serves as a science center - a place where students from diverse backgrounds are trained for careers in the life sciences.

ENGAGING, EDUCATING AND INSPIRING

All four partner organizations recognize that securing the future of conservation requires training today's land managers, tomorrow's scientists and the next generation of environmental stewards.



4,000+

people have visited the refuge since the partnership began in 2013, including...

2,500+

students participated in programs; those who attended demonstrate a better understanding of their natural world.

33%

of college-level participants are now pursuing coursework for STEM (Science, Technology, Engineering and Math) careers.

46 INTERNSHIPS

in the last 5 years; over 50% are now pursuing conservation-related careers or graduate studies.

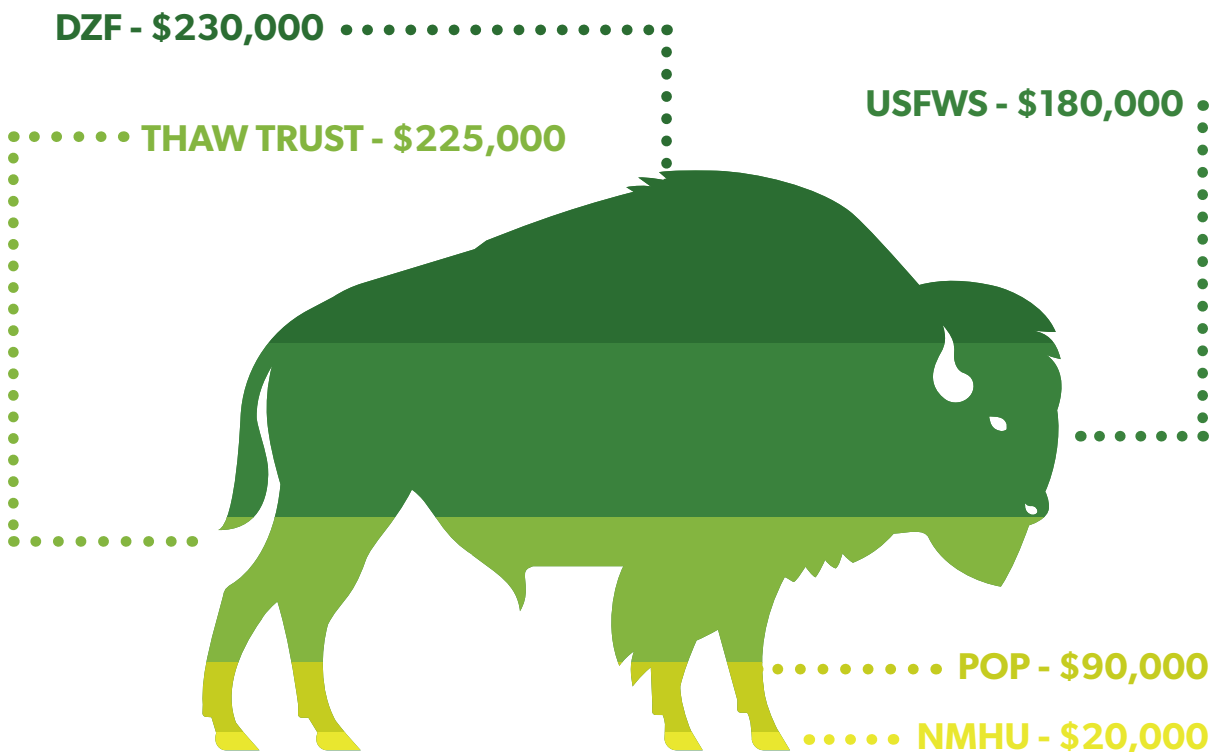
"It was inspiring to see professionals working in the field to get a sense of what jobs are out there for us. The things I learned at Rio Mora are going to stick with me."

WHAT IT TAKES TO SUCCEED

The development and implementation of a wide-reaching, sustainable partnership model at Rio Mora National Wildlife Refuge has been a significant undertaking.

Program implementation includes:

- *Land and facilities management*
- *Bison herd management*
- *Planning, execution and monitoring impact of restoration activities*
- *Developing, facilitating, and evaluating onsite and offsite learning experiences, including youth, interns and college students, local land managers and more*
- *Researching and testing land restoration methodologies for application far beyond the Mora River watershed*



Given their varying fiscal operating years, the four partners analyzed the cost of operations by pooling expenses (including both direct and indirect support) for calendar year 2016 – a stable and successful year that will act as a benchmark going forward. The total cost was approximately **\$745,000** for 2016.



SUCCESS BY THE NUMBERS

4 PARTNERS

Working together in an innovative partnership

4,000+ REFUGE VISITORS

2,500+ PROGRAM PARTICIPANTS

200,000+ ACRES
Being restored and protected by local land managers

46 INTERNSHIPS
Over 50% are now pursuing conservation careers

400+ PUEBLO OF POJOAQUE TRIBE MEMBERS
Have revived ancient cultural traditions

350+
RESTORATION STRUCTURES
Built at the Refuge

AS LITTLE AS

2
YEARS

75%
More Soil Retention

Healthy water table levels and restored biodiversity

OUR VISION

for Rio Mora National Wildlife Refuge

Over the last five years, Rio Mora National Wildlife Refuge has become an embodiment of the ways in which people can take part in the recovery of a disappearing landscape. Expanding on the Thaw family legacy, our unique partnership ensures that students and community members, including local indigenous stakeholders, have the opportunity to connect with the declining wild prairie landscape, understand its significance, and then contribute to its restoration.

We plan to grow our environmental education and outreach programming at Rio Mora by 25% over the next five years with a continued focus on nurturing the next generation of land stewards to whom this important work will be passed down.

Moving forward, with the Rio Mora National Wildlife Refuge acting as the model, additional goals are to continue to collaborate to develop a shared conservation action plan for the entire Mora watershed. We also plan to expand sustainable land use practices across the watershed's one million acres of public and private lands. This partnership will not only catalyze and inform grassland restoration throughout the great prairies of the American West, we believe its impact will reach well beyond – informing conservation work on the great steppe grassland ecosystems across the globe.

By re-awakening the cultural, economic, educational and ecological potential of this iconic landscape and similar vulnerable grasslands around the world, we can play our part in securing a better future for both people and wildlife.



PRIORITY 1

Secure additional partnership funding of at least \$200,000 per year



PRIORITY 2

Maintain success at the Refuge and throughout the 1-million-acre Rio Mora Conservation Area



PRIORITY 3

Replicate model programs and partnerships regionally, nationally and internationally

