



*Fox Ranch Team on the ground evaluating potential stocking rate.*

### Introduction

The Colorado Chapter of The Nature Conservancy (the Conservancy) and the Savory Institute (SI) agreed in 2011 to work together to advance the joint strategic interest and desire to enable enhanced conservation, restore ecological functions, and safeguard biological diversity of the seasonally dry grasslands of the world through the use of Holistic Management. The parties have been working together to improve the use of the best available science to enhance, better inform, and enrich the holistic planning processes and their outcomes. In order to develop and test the delivery of triple bottom line outcomes in these grassland environments, the parties are working to assemble a “Pilot Portfolio” of ranches.

*“Livestock, if properly managed, can be the most powerful tool for restoring grasslands, mitigating climate change, enhancing food and water security, and contributing to the livelihoods and prosperity of pastoralists around the globe. The Fox Ranch pilot and our work with The Nature Conservancy is crucial to informing a scientifically robust, economically viable, and socially sound scale up strategy for global impact.”*

- Daniela Ibarra-Howell, CEO and Co-Founder, Savory Institute

In 2012, the Conservancy’s 14,000-acre Fox Ranch Preserve in northeastern Colorado became the first pilot project. The strategies used by the team focus on delivering triple-bottom line outcomes for conservation, financial performance, and social well-being at the Fox. Specifically, the Conservancy was seeking to maintain or improve the Fox Ranch conservation outcomes at the ranch while also improving the financial and quality of life outcomes for the organization and the private rancher, Nathan Andrews, who leases the Fox for his cattle business.

*“Restoring the world’s grasslands is an important strategy for the conservation of its many species as well as the well-being of mankind. This joint project has demonstrated that by working together we can generate plans that improve the chances of having a future with thriving ranching communities and the natural communities on which they depend.”*

- Chris Pague, Senior Conservation Ecologist, The Nature Conservancy

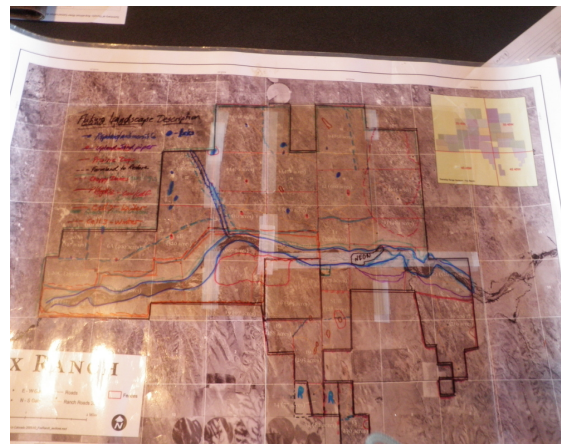
The Conservancy acquired the Fox Ranch in 2000 because of its outstanding natural aquatic, riparian, and prairie values. Recognizing the importance of the Fox's agricultural values, the Conservancy also leases the ranch for the production of beef cattle. The lessee is, therefore, challenged to manage the land for both conservation and agricultural values. The Conservancy was convinced that Holistic Management was an appropriate framework for integrating the full suite of outcomes and in 2011 SI began leading Holistic Management planning and implementation at the Fox. This case study provides background on the project and an account of the process, learning, and outcomes of the parties' first year of collaboration.

## The Process

The Whole Under Management at the Fox Ranch includes the people, plants, and animals that live and rely on the native prairie and riparian habitats of the Fox. The Conservancy identified rare and declining species and globally imperiled habitats as key reasons for acquiring the ranch. Some of the last large herds of bison occupied the landscape prior to their local extermination in the mid 1880's. Consequently, livestock grazing was determined to be a highly appropriate tool for managing the preserve. The decision makers include the Conservancy and the Andrews family in conjunction with SI. Information relevant to the planning effort included data collected on the Fox by the Conservancy, research conducted by the Colorado Natural Heritage Program, knowledge of Colorado Parks and Wildlife staff, and input from the Savory Institute and other experts. The Conservancy retains ultimate responsibility for the management of the ranch.



*Holistic Land Planning*



*Land Planning Overlay*

Over the course of 2012, the team developed, implemented, and adapted financial, land, and grazing plans. The 2012 drought required the team to respond rapidly to avoid adverse impacts on livestock and the land, and Holistic Management allowed them to do this successfully.

*“Some folks might think it is obvious that there would be a big gap in understanding and goals between a private rancher and an owner like The Nature Conservancy, but it is my experience that many private owners and their lessees discover they have gaps in understanding and expectations just as big and that they learn just as much – and mutually benefit just as much – when they sit down and engage in Holistic Management through the planning process.”*

– Byron Shelton, Savory Institute Associate Consultant

## Fox Ranch Operations

The Andrews lease and operate the Fox Ranch as part of their cattle business. They typically run two herd types on the ranch: cow-calf and yearling stockers. To date, the cow-calf operation has relied on the river pastures during the dormant season and the other pastures south of the river during the growing season. The yearlings have been run in the sandsage pastures north of the river during the growing season. The use of the various pasture types on the ranch is likely to change over time, following the changing needs of land and the whole under management, but the Andrews anticipate continuing to operate both herd types for the foreseeable future.

*“The world’s population is growing. Our productive land base and our natural ecosystems are shrinking and, in many places, degraded. People have got to figure out how to produce enough food to feed the world while taking care of the land base and every living thing that relies on it. This effort at the Fox is an experiment and attempt by the partners to learn, find common ground, and contribute to this endeavor.”*

- William Burnidge, Eastern Colorado Program Manager, The Nature Conservancy

## Natural Resources

The Fox Ranch is home to high-quality examples of native prairie and streamside plant communities that support a diverse range of wildlife. It supports a broad array of declining migratory and resident grassland birds along with deer, pronghorn antelope, ornate box turtles, and other prairie species. Rare fish and amphibians, like the orange-throated darter and the plains leopard frog, also reside in the Arickaree River, which flows through the ranch.

The Arickaree is an example of a relatively free-flowing plains river, and livestock are being managed to assure the long-term conservation of the resources that it supports. With the Ogallala aquifer providing its base flow, the Arickaree is narrow, shallow and slow-moving. The lush, green cottonwood forest within the floodplain of the Arickaree provides a welcome oasis in the midst of the surrounding prairies and cultivated lands.

The three major habitats of the ranch include: sand sage prairie north of the Arickaree River; mid-grass prairie breaks with loess soil shortgrass prairie south of the river; and riparian “savannahs” of cottonwood trees and tall grasses in the riparian zone near the river.



*Sand Sage Prairie*



*Mid-Grass prairie*

## Species of Concern and Ecological Monitoring

In Colorado, the historic range of the Greater Prairie Chicken species included the sandhills of northeast Colorado. Due to a variety of factors, these birds became rare in Colorado, but they have made a tremendous comeback through reintroduction and management efforts by the state. Their continued success in Colorado is a priority for the Conservancy. The prairies of the ranch also support several other grassland birds that are known to be declining throughout their ranges which are therefore also conservation priorities. Through Holistic Planned Grazing and the resulting properly managed livestock, the Fox Ranch team is working to maintain and hopefully enhance the prairie habitat, with a focus on Greater Prairie Chicken indicators, which consists of a mixture of forbs, grasses, and shrubs that maintain medium-tall cover for the birds over significant portions of the sandhill pastures on the ranch.



*Members of the Fox Ranch Team*

In addition to the monitoring of species and habitats of concern that TNC conducts, the Fox Ranch team also established monitoring transects that will help identify the state and trend of health of the four ecological processes (water cycle, mineral cycle, energy flow or photosynthetic activity, and community dynamics). This monitoring is being conducted by a third party and will aid in decision making and re-planning. It should also provide indications of how Holistic Management: (1) contributes to improving the ecological processes on the ranch; and (2) leads to improved animal performance, rising profits, enhanced wildlife habitat, and overall landscape resilience.

*"I have really enjoyed learning the Holistic Management process, and gaining an in depth knowledge of advanced ranch planning. The results we saw in 2012 were very positive, but I expect to see even more improvement in 2013 and beyond. I also expect to become more skillful at implementing the entire process and am very excited about how that will positively impact the future of the Fox. This is a tremendously exciting process."*

- Nathan Andrews, Fox Ranch Lessee

## FIRST YEAR RESULTS

<b>Yearling Stocking Rate</b>	<p>Increased 93% from 2011 to 2012. Replanning enabled the lessee to retain the full yearling herd on the ranch for 90% of the planned grazing period despite the 2012 drought. Further, this was accomplished without unduly compromising the ranch's ability to recover from the drought in terms of wildlife habitat and range condition.</p>
<b>Animal Performance</b>	<p>Weight gains in the 2012 yearling herd increased by 37% over 2011 despite the drought. Note: 2010 and 2011 yearling weight gains were unacceptably low at the Fox. Further improvements in animal performance are anticipated.</p>
<b>Financial Performance</b>	<p>Lessee paid himself a salary and earned 50% of his planned profit despite the historic 2012 drought.</p>
<b>Business Lines</b>	<p>Lessee tested his cattle enterprises to identify those that could provide the highest net social, financial, and ecological returns. As a result, significant changes were made to the family operation, which enabled the lessee to focus on developing a business that would provide the highest triple-bottom line returns.</p>
<b>Monitoring</b>	<p>The team initiated monitoring of the vegetation and bird communities, and will continue Greater Prairie Chicken monitoring with the Colorado Division of Parks and Wildlife to verify that the changes in management are supporting the planned goals for the wildlife and natural communities. In addition, the Conservancy initiated overall vegetation production assessments through the use of remote sensing and Normalized Difference Vegetation Index (NDVI) analysis. These results will be assessed after 3-5 years of application of Holistic Management and will allow for comparisons to conventionally managed properties.</p>
<b>Joint Success</b>	<p>Holistic Management enabled the Conservancy and the Andrews Family to identify key business and operational challenges and address them without either party compromising their goals. The partners will conduct monitoring of indicators and progress toward goals to learn, adapt, and facilitate further success.</p>
<b>Infrastructure Investments</b>	<p>According to the Holistic Land and Financial Plans, in 2012, the Conservancy invested significant capital in developing fence and water infrastructure and anticipates additional investments in 2013 and 2014. This initial upfront investment will certainly impact the speed in which change can happen. It should be noted that many ranches take decades to achieve this level of infrastructure development and still achieve remarkable results. Still, it remains significant that the Conservancy projects that these capital investments will be recaptured by 2016 or before based on reasonable projections of increased lease revenue from increased stocking rates at the Fox. Starting in 2014, the lease revenue from the cattle operation is projected to be approximately 82% over the average of 2007-2011 revenue.</p>

