

RUBY HABITAT FOUNDATION

ANNUAL REPORT 2016



*Dedicated to Innovative, Insightful,
and Responsible Resource Management*

Comments from the Executive Director

Two thousand sixteen will be remembered as a landmark year for the Ruby Habitat Foundation. Falling on the heels of several years of planning and discussing, the Board of Directors of the Foundation voted to place a portion of the Woodson Ranch under a Wetland Reserve Easement with the Natural Resource Conservation Service (NRCS). This easement, which was originally envisioned by Craig Woodson in 2010, will place perpetual protection on the wetland resources and associated uplands on the northern end of the ranch. The NRCS has accepted our application and we are currently working through the details. The terms of the easement will allow us to make progress on a decades-long need to make wetland enhancements to Clear Creek and its adjacent floodplain. Clear Creek is an eleven mile long braid of the Ruby River that runs along the west side of the valley floor and the Woodson Ranch. By reconnecting the stream to its floodplain we anticipate improvements to wildlife habitat, increased water retention in the soil profile and enhanced fisheries habitat in the stream while continuing to provide for the vital agricultural and recreational uses of the resource. Our neighbors and the other water users along Clear Creek, as well as several other organizations, are supporting this project and we are all looking forward to its design and implementation. We will keep you posted on our progress through our quarterly news letters, Facebook page and annual reports. It will be an exciting couple of years as we see this vision become reality.

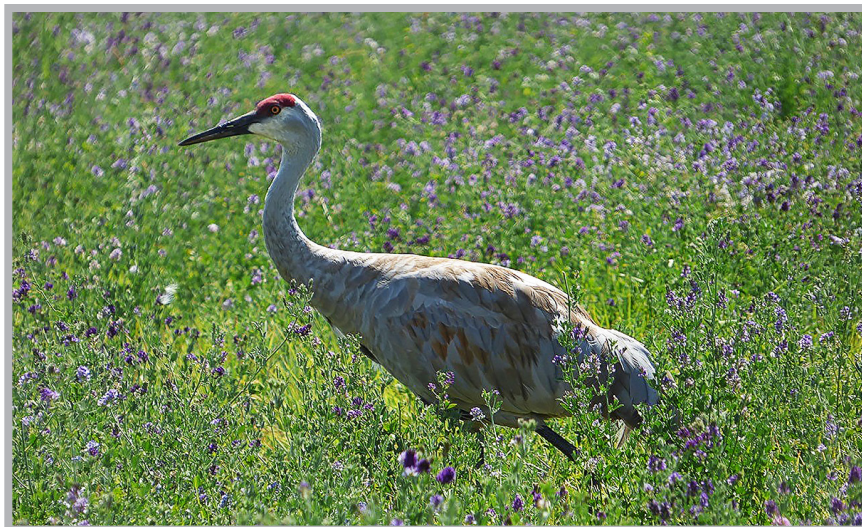


Spring approaches as I write these comments and we all delight in the promise of longer days and in the emergence of new life in the fields, meadows, forests and streams. Our planning efforts will soon transition into a busy schedule of farming, planting and irrigating as well as the cultivating and nurturing of our educational outreach efforts. We are pleased with the expanding reception to our outreach efforts and find great satisfaction in seeing Craig's vision fulfilled through our efforts and your support. Your generous support over the years motivates us to continue to do the good work of the foundation. Our gates are always open to educational tours and outreach events featuring the work we have been doing. The Woodson Ranch is a spectacular example of agriculture, wildlife, recreation and education coexisting on the landscape. Some of our efforts are featured in this annual report and others you will just have to come see for yourself.

Our association with the Montana Land Reliance (MLR) continues to prove invaluable. The alliance forged by the Woodsons and the MLR directors is strong and our mutual interests benefit Montana's conservation efforts. We are grateful to Craig & Martha Woodson and to the Directors, the Board and the staff of the Montana Land Reliance for their foresight, determination and commitment to Montana.

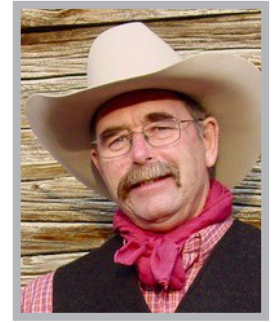
Please give this report a thorough review. The generosity and creative talents of Dr. Samuel Corl III have once again assembled this summation. As you read it, revisit with us the highlights of the past year and consider our progress toward accomplishing our purposes. On behalf of the Board of Directors I extend a heartfelt thank you for the support of our many friends over the years. We believe we are making a difference. There is however, much yet to achieve in our effort to preserve and enhance the conservation values of this great area. I hope you will choose to continue to partner with RHF as we strive to maintain the integrity of our western landscape and heritage.

Les Gilman
Executive Director
Ruby Habitat Foundation



Ruby Habitat Foundation 2016

Here in the Ruby Valley we have had a cold and snowy winter that has seemed plenty long. With the cold and snow has come one of the most beautiful seasons we have experienced in many years. Going out in the mornings I have been treated to that crunch the snow only makes when the temperature is below zero and the noise seems extra loud in the silence of the dead of winter. As the sun peaks over the Tobacco Root Mountains the sharp white brightness of the snow, that only the cold can express, is beyond amazing. What a harsh but beautiful season of the year. The part of this that is always amazing to me is how our wildlife neighbors that stay to brave the winter are able to survive through this season of the year. With that thought comes the realization that the only way they can is if they have the proper habitat and with that thought comes the realization that we as humans are in a large part responsible for the habitat that is available for them to survive the winter season.



Part of our mission statement at Ruby Habitat Foundation is to support the agriculture in the community to ensure the long-term viability of working ranches. Because of agriculture there is so much more forage available for wildlife in the Ruby Valley than when Lewis and Clark made their journey west. We are continuing to do various trials in support of working ranches. This past year we personally planted some cover crop cocktail that I first saw at the Woodson Ranch. This winter the pheasants and whitetail deer have been loving what is left after harvest. One of the best ways to maintain open space and provide wildlife habitat is to have a healthy agriculture community.

Our education and training to broaden the understanding of resource management issues continues to grow by being involved with all ages, from school children to adults, both near and abroad. Just a drive or a walk through Woodson Ranch reinforces the value of responsible management. We are really excited for the restoration of Clear Creek to begin. This will not only bring the stream back to a healthy functioning condition, but will be an opportunity for education with the before and after story that goes with the project.

Our relationship with Montana Land Reliance continues to be mutually beneficial. This has proven to be a valuable partnership and again shows the wisdom of our founder, Craig Woodson.

I want to thank our many partners that so generously support Ruby Habitat Foundation. You are a very important part of the work we are doing and sharing the message of what good stewardship looks like. Thank you.

Neil Barnosky
Chairman
Ruby Habitat Foundation

The Montana Land Reliance's partnership with Ruby Habitat continues to grow and mature. Hard to believe that 15 years have gone by since Craig and Martha Woodson approached MLR about exploring their ranch's future with The Montana Land Reliance in Ruby Habitat Foundation (RHF). We're proud to be part of an evolving vision as RHF becomes an essential contributor to the larger Ruby Valley Community. Onsite agricultural experiments are adding value for local agricultural planning and educational opportunities with the local schools by giving students an outdoor classroom, and the wildlife educational series that the ranch hosts annually adds value to the surrounding area. RHF is taking the lead on the restoration of Clear Creek, a natural braid of the Ruby River-turned irrigation ditch, and a major sedimentation problem for the Ruby River itself. It's easy just to look at the ranch as static, but thanks to the RHF Board and staff the ranch and RHF are as dynamic as the natural resources themselves. Thanks to all of the folks who visit and support Woodson Ranch and Ruby Habitat Foundation.



Rock Ringling
Managing Director
Montana Land Reliance

Martha Woodson Accepts Award

In April of 2016, the Ruby Valley Conservation District honored Martha and Craig Woodson for their conservation efforts by selecting them for their Annual Stewardship Award. This prestigious award recognizes landowners for their comprehensive approach to caring for their land. In accepting the award, Martha delivered this acceptance speech:

When Craig and I moved here, it was because of the beauty of the Ruby Valley but more importantly it was the people here who made us feel at home. This is an awesome honor and I am humbled that you think our efforts are worth this special recognition.

When we first moved up here, Craig knew that because of the distance from Texas we would need help managing the ranch. That help came in the friendship and support of Les Gilman. After Craig passed, Les continued through many projects to uphold Craig's vision through the Ruby Habitat Foundation and the Montana Land Reliance. The latest is the exploration of the restoration of Clear Creek. We also want you to know that we have eagles nesting again on the ranch; a much nicer venue than Washington, DC.

I want to send a special thanks to Logan Miller and Dan Durham for nominating us. Craig said it much better than I can... ***we have a higher obligation to be good stewards of our natural resources, sharing them today and preserving them for future generations. The decisions we make and the actions we take affect our own environment as well as that of the wildlife, our neighbors and future generations.*** We hold this to be true today.

Thank you.



Martha and Craig Woodson

Outreach Coordinator's Report

While the country convulsed its way through a tumultuous election cycle, Ruby Habitat Foundation remained a respite for approximately 1500 visitors in 2016. No relentless drumbeat of political sound-bites or 24-hour coverage of talking heads here. Instead, the deer gracefully leapt our wildlife-friendly fences; moose munched the branches from our abundant willows; yellow-headed blackbirds squawked their way around the managed wetlands; beavers did their best to confound our efforts to convey water from point A to point B; and finally, in November, brown trout spawned in a display of size and fecundity that caused visiting fly-fishers to gasp in amazement.

While 1500 may sound like a large number, and it is in comparison with previous years, it is a manageable flow of guests. The flow of folks was spread throughout the year in such a way that there were rarely more than 5 people on the ranch at any one time. For a place that's nearly 40% larger than New York's Central Park which typically holds hundreds or even several thousand people at a time, Woodson Ranch is hardly crowded. Of the 1500 visitors, some 600 came to fish, and the balance experienced the space here with other purposes in mind, from educational events to hiking and biking and other muscle & mind-enhancing ends.

Still, we are approaching capacity in some key areas. The requests for fishing access, which we closely manage to reduce stress on both the fish and the fishermen, exceeds available days. The Hill House occupancy rate was up some 50% over the previous year. Similarly, we can scarcely accommodate the number of hunting requests we receive in the Fall months. These examples highlight the hunger for spaces like Woodson Ranch, places where one can escape the maddening crowds and reconnect with more primal and natural experiences. At some point we may need to make some changes to ensure we afford access to as many people as possible.

In the meantime, it is worth noting that the vision of Craig and Martha Woodson, which lies at the core of the mission of Ruby Habitat Foundation, is alive and being fulfilled. They built it, and the people came. We will continue to reach out and invite folks to the ranch to see and learn how we approach ranching, how we balance it with wildlife, and how we encourage the use of this space for educational purposes.

In 2017, we plan to make a few enhancements. One thing to keep an eye out for is the "Nest" Camera. Thanks to the generous contribution of a donor, we installed this camera in January, before the eagles were even thinking about making eggs. It was quite the installation process as the nest is 65 feet off the ground. If you haven't looked at it yet, go check it out on our website—we hope you enjoy your "virtual visit." For your on-site visits, we will also improve some of the walking trail bridges and add another couple hunting blinds. Further, our efforts to improve Clear Creek and to protect the place with a Wetland Reserve Easement will reach a fevered pitch this year. Indeed, 2017 holds much promise on Woodson Ranch, and we look forward to your visit most especially!

David Delisi
Outreach Coordinator





Great Horned Owl



Cranes Dancing



Ground Squirrels (*Jeff Clarke*)



First to Fledge

Growing For The Long Term

Agriculture Experiment To Continue

In the spring of 2013 the Ruby Habitat Foundation set out to begin a new multi-year agricultural trial, comparing the economic, soil nutrient, and production factors of commercial fertilizer. In analyzing the effects of commercial fertilizer, we wanted to compare it to not only a control field, with no fertilizer application, but also to an increasingly popular organic alternative, made from fish bi-products. In the last couple of years we've encountered a few hurdles, specifically with application and product availability. This being said, we are now confident that moving forward we will have a fair and unbiased comparison of these three treatments. In a world that is becoming ever more dependent on chemicals, and artificial substitutes, we feel the need to challenge ourselves to test the alternatives, to justify our actions, or to help us make better land management decisions for the long term. Please stay tuned as we will be publishing our findings in the years to come.



No place compares to the Woodson Ranch early in the morning after the sun has just risen, with the birds celebrating each new day with song... Or in the evening, as the sun goes to rest beneath the horizon and the crickets sing it to sleep. The open landscape, rising mountains, stands of cottonwoods, tall grasses, and wetland areas teeming with life; the extraordinary quiet – pierced only by the call of an eagle, a red tailed hawk or sandhill cranes; the smells of freshly cut hay, warm, earthy moisture, and sweet breezes off the Rubies; the beautiful, abundant wildlife – so hearty, healthy, happy and comfortable enough to not rise from a resting place until the last second you are upon them... These are all the special moments and things that remind me what stewardship looks like, why I live here and do what I do, how blessed I am, and how beautiful life can be.

Rebecca Ramsey

“Nest Camera” Goes Live

Thanks to a generous donation, we now have a live-streaming camera positioned above a large nest at the north end of the ranch. This nest, which in the past two years has been used by a pair of bald eagles, has been taken over by a pair of Canada geese. While it was our hope to view the raising of eaglets, nature had other plans and the eagles have moved to a nest a couple miles south of the ranch.

Several biologists have told us that bald eagles will sometimes have multiple nests in an area and move from one to another. They also said that it is possible they will return to this nest next year.

That said, the interloping Canada geese were quite the surprise. First appearing toward the end of March, it seemed strange that they would land on a nest some 65 feet in the air. As the temperatures warmed, the geese began to spend more and more time on the nest. Then, on April 9, 2017, she laid her first egg. Over the next week or so, she laid 5 more.

In between laying the eggs, mama goose would sometimes stand up, cover the existing eggs with nesting material, and then leave the nest, sometimes for much of the day (or night). We questioned a biologist about this and were informed that geese will wait to incubate the eggs until all of them have been laid. This “starts the clock” for all the eggs at the same time, ensuring that they hatch on the same day. At the time she begins the incubation process, she also selects downy feathers from herself and “feathers” the nest. We observed this behavior around April 15.

Canada geese require some 25-28 days to hatch. We will be watching closely around May 9 to see what happens.

And for anyone who may be concerned that these goslings will have to make one giant leap to leave the nest, at a time when they are no where near capable of flight, take heart. It may be less common for a goose to choose an elevated nest platform, but it happens. And the goslings tend to survive the fall. Just search the Internet for “goslings leaving elevated nest” and you will find an endless supply of downy entertainment.

The camera on Woodson Ranch is supported by several solar panels and batteries which should provide enough power to keep the camera live even with up to four sunless days. The camera is a very sensitive infra-red instrument that will allow viewers to see the birds even in the dark of Montana’s darkest nights. You may view the live streaming camera directly on our web site, www.rhf.

It is our hope that this addition to the ranch will permit “virtual visits” by folks who cannot make it to the ranch for an actual visit. It also supports our strong, education-focused mission and nicely highlights the effectiveness of our efforts to improve the diversity of our flora and fauna. We hope you enjoy it, and share the link with anyone else you think may enjoy it!



Number and Species of Birds Spotted During the Audubon Society’s Annual Christmas Bird Count 2016-2017

Canada Goose (578).	Bald Eagle (1)
Mallard (154)	Northern Goshawk (2)
Common Goldeneye (35)	Northern Shrike (1)
Common Merganser (1)	Black-billed Magpie (42)
Hooded Merganser (2)	Common Raven (6)
Wild Turkey (8)	Black-capped Chickadee (18)
Great Blue Heron (1)	American Dipper (1)
Rough-legged Hawk (17)	Bohemian Waxwing (550)
Ring-necked Pheasant (1)	Townsend’s Solitaire (1)
Rock Pigeon (8)	European Starling (5)
Golden Eagle (6)	Belted Kingfisher (1)
Northern Harrier (6)	Song Sparrow (6)

*Our second Audubon Bird Survey revealed some interesting results. If you have visited the ranch, you will have been fortunate indeed to spot a Golden eagle. Six were spotted in this year’s count. Many birds, however, are seasonal during warmer months, so they were not counted in this middle-of-winter survey. We invite you to visit at any time of the year and see who is visiting the ranch.

These people and organizations contributed significantly to the vision and the work of the Ruby Habitat Foundation in 2016. Our gratitude is genuine, and inadequate as a measure of their loyalty and support.

Individuals

Nancy & John Acuff
Joseph Anderson
Kim & John Andrews
Gloria & Neil Barnosky
Patricia & Richard Barnett
Gregory R. Belcamino
Susan Cardenas & Bill Belobraidich
Neil E. Bergeson
Anne & George Alexander Bernhardt
Michael Bias
Allen Bjergo
Susan & Chris Bokeko
Donna R. Bombassaro
Jeanne Bombassaro & Mark Savinski
Thomas P. Bowler
R. B. & P. Bradley
Phyllis & William Breeden
Karen & Edward Brewer
Arlyne & Michael Brim
Sue & Patrick Brim
Dorothy Brown
Diane & Gary Brunell
David Buck
Deanne & Charles Cadman
Austin Cargill
Kurt Carlson
Heather & Scott Carr
Eric R. Carson & Family
Steven Chan
Mary Kay & James W. Cherry
Michele & Robert Christofferson
John W. Clark
William Clark
Sara & James Clarke
R. Brooks Corl
Kim & David Cook
Mina & Millard Cox
Cheryl & John Dale
Robert Demott
Lee Deshong
Gary W. Dietrich
Diana Dong & Jerry Wang
Barbi & Thomas Donnelley
Michael Durrer
Daryl Drake
Nancy Dyke
Thomas Ehlert
Richard Ellis
Carol & Mark Engebretson
Kathryn & Craig Engel
Janet & John Ethen
Robert B. Evans Jr.
Sherrie & Richard Fast
Tom Faure
Jack E. Favero
Dianne & Paul Felton
Tim Field

Doris L. Fischer
James C. Flood
Donna & William R. Fraser
Rodger D. Gaulding
Laura & Mike Geary
Michael J. Gentry
Mr. & Mrs Cary Gilbert
Brian Gladstone
Linda & Glenn Goldthwait
J. Barton Goodwin
William M. Gould, Jr.
Bruce Gottwald
Rita & Richard Graff
Renee & Gregory Granken
Dennis Grundman
Lori & Gary Hadley
Roger Hajosy
Eleanor & C. Barrows Hall
Leslie & Nick Hanauer
Paulette & Frank Hardy
Teresa & Mike Harris
Richard M. Heffernon
Gretchen & Cory Higgins
Jan & Frank Higgins
Bill Hill
Carl M. Hillendahl
David R. Hoffman
Yvonne & Noel Holland
John & David Hoover
Miranda Hunter
Judith Hutchins
John Iacopi
Masashi Imada
Bradley C. Isles
Susan & Duane Jacklin
Shirley & Walter Jakubowski
Linda & C. Todd Jessell
Richard J. Johnson
Steven J. Johnson
Gary D. Kasnett
K. C. & Bob Kaufman
Nobuyuki Kawan MD
Amy & Scott Kelley
Kathryn L. Kelly
Philip Kern
Karen & George Kimberly Jr.
Robert Kirkwood
Michael Klein
Jeff Koelzer
Carolyn Lakewold & Fredrick Goldberg
Paulette & Andrew Laszlo
Toby & Brian Laudenbach
William M. Legg
Steve Liebmann
Sue & James Lindley
Kuni Masuda
Susan & Terry McCallister
Jennifer & Patrick K. McClellan

Elizabeth Ann & Phillip McCrury
Susan S. McDowell
John T. McGuire
William C. McIvor
Seth McLean
Dean McNaught
M. Collins McNeill, IV
R. Kevin Mead
Margaret Merchat & James Johnson
Bob Melton
Susan & Alex McAlister
Michael C. Metzler
Kim & Charles Miller
Charles W. Mills
Robert S. Mizono
William R. Moll
Kim & Jeff Montag
Michael Morgan
Louise D. Morris
Susan & Furman Moseley
James S. Mossop
Christopher Mumme
D. K. & J. E. Mumme
Jim Murphy
Douglas Nation
Stephanie & Robert Nelson
William H. Neukom
Norm Nielsen
Susan & Michael Nienstedt
Bill Noonan
Sandra Nugent & Robert Ball
Roy S. O'Connor
Christopher OhmanGeorge S. Olsen
Carolyn & Terry O'Neill
Gail & Harry Parks Jr.
Judy & Steve Parks
Traute Parrie & Don Carroll
B. Thomas Parry
Michael B. Pearce
Janis & Terry Phillips
Pierrette & Roger Plourde
Frank Lee Porter
Theresa Prator
Jean & Jim Prough
Thomas A. Pruitt
Bethena & Robert Pugh
Christine & Donald Querna
Terry & Ginger Rathert
Lisa & Keith Reed
T. Leslie Reeves
Janice & Stephen Renock
John Rich
S.F. & Bruce Richards
Mark Robinson
Anne & Thomas Rodhouse
Louise & Alan Roy
Judith & Robert Rubin
Patricia & Stephen Sawczuk

Morio Sato
 Karen & Robert Schermer
 Miyoshi Shiozawa
 Barbara A. & Robert C. Schoenfeld
 Michele & Thomas Schroeder
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 Dick Seale
 Denise Selden & Bruce Bauman
 Estelle & Jim Shuttleworth
 Nancy & L. Pendleton Siegel
 Carole & Gary Sisson
 Nancy Smrcka & James Kramer
 Philip Staley
 Sharon & Eugene Steiner
 Sharon & Michael Sterbis
 Kathy A. Stevens
 Robert Sutherlin
 Henry D. Taylor
 Grace & Robert Thomas
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 Tim Tollett
 James Tracy
 Catherine & Normand Tremblay
 John H. Urbanowicz
 Edward VanBeek

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 Patricia & David Welch
 Janet Wellman
 Carolyn & Thomas Wenrich
 Mary & Charles Wintzer
 Dianne & Joseph Whalen
 John David Wimberly
 Jenny & Steve Wood
 Twink & Jim Wood
 Sam Wood
 Dr. Michael Woods
 Nancy Woods-Kershner & Jeff Kershner
 Martha Woodson
 Christina & Donald Wright

Organizations

American Endowment Foundation
 Bessemer Trust
 The Comm. Found for the Nat. Cap. Region
 Craig Fellin Outfitters & Big Hole Lodge
 Elizabeth & Bill Childrey Family Fund
 Fidelity Charitable Gift Fund
 Kindred Spirits
 J.D.L. Construction
 Lewis & Clark Chapter of TU of SW MT

Lewis & Clark Expeditions
 McAlister Family Fund
 Missoula Bone & Joint Surgery Center
 North Carolina Community Foundation
 P & J Ranches
 Patagonia
 Ruby Springs Lodge
 Ruby Valley Lodge, LLC
 SaltChuk Resources, Inc
 Schwab Charitable Fund
 Janna & James Shennan Family Fund
 Silicon Valley Comm. Foundation
 SRI River Holding
 Suffolk Foundation
 Trade Wind Motel LLC
 Susan & William Taylor III Family Fund
 Trout Unlimited, Inc.
 Vibrant Enterprises Assc. Inc.
 John M. Warren, Inc.
 Wolf Electric, Inc.

In Memoriam

Bob Birrer
 Marie Marty Blair
 Bette DeWitt
 Bill Bucklin



Three Guys Fishing (*Image by Greg Weiss*)

Glyphosate Trial

In the fall of 2015, Ruby Habitat Foundation's management team decided to examine the use of glyphosate on the ranch as part of our ongoing effort to maintain agricultural productivity while examining, experimenting with, and comparing historic and innovative practices. The opportunity to initiate this trial came when one of our hay-fields required tillage. This field is flood irrigated, and the dikes controlling the flow of water were not allowing water to travel to all portions of the field, resulting in both inefficient water use and poor production. Therefore, reconstruction of the dikes was necessary. The starting point for this process is re-tilling the field, followed by dike construction and then re-planting.

Over the past 30 years, a common practice prior to tilling in the spring has been to spray the field the prior fall with glyphosate (aka Roundup). This rids the field of the current plant community and eliminates the competition to a new crop which is planted the following spring. Roundup is an organophosphorous compound, or an organic compound containing phosphorous. These compounds persist in the environment for shorter periods of time than some other pesticide alternatives. In 1970, Monsanto Corporation discovered that glyphosate was an effective herbicide and it was marketed as Roundup in 1974. It was quickly and widely adopted. As of 2007, it was the most widely used agricultural herbicide in the world. Prior to 1974, tillage, or plowing, was the method most widely used to manage the plant competition. Our trial will compare these two methods.

Up until just recently, glyphosate was thought to become inert rather quickly following application. Its use to manage vegetative competition has been advocated, and it has also been utilized to reduce multiple labor, fuel and equipment-laden tillage passes for that purpose. Multiple passes over a field also results in the loss of soil micro-organisms, structure and moisture, and leads to soil compaction. Heavily sod-bound crop fields and old hay stands are particularly difficult to prepare for a new seeding.

In our trial, we will treat one half of the field with Roundup and use only conventional tillage on the other half. We made our first application of glyphosate, at labeled rates, in the fall of 2015. In the spring of 2016, we plowed the entire field and seeded it to an annual crop. We will also farm and plant the entire field to an annual crop in 2017. There will be a follow-up application of glyphosate in the fall of 2017 prior to seeding the field back to a perennial hay stand. Fall applications are reported to have superior results in removing the existing stand and also allow natural processes to work in the fallow ground over the winter to make tillage easier in the spring.

This farming effort has already been informative. The half of the field without glyphosate required multiple passes because it contained viable sod which resisted breaking up and smoothing. These additional passes with the tractor consumed approximately 50% more time and fuel to plow than the field treated with glyphosate.

At the present time, California is moving toward labeling glyphosate a carcinogen, along with several other herbicides. A cursory search on the internet will reveal numerous other theories regarding its negative health effects. There is also some debate over its persistence after application; at least one study concluded that its half-life depends on the "physical, chemical and biological properties" of the soil where it is applied (source: <https://ehjournal.biomedcentral.com/articles/10.1186/s12940-016-0117-0>).

On the other hand, diesel fuel exhaust, such as that produced by our sod-busting tractor, is also acknowledged to pose certain health risks. While diesel engines produce 15% less CO₂ than regular gas, they also give off four times more nitrogen dioxide pollution and 22 times more particulates (source: <https://www.theguardian.com/environment/2015/sep/22/the-rise-diesel-in-europe-impact-on-health-pollution>). In 2012, the World Health Organization's International Agency for Research on Cancer determined that diesel exhaust is a carcinogen (source: <http://www.bbc.com/news/health-18415532>).

This leaves us in a bit of a quandary and is part of the reason for our trial. The cost of 50% more diesel fuel and the time to employ someone to do the additional plowing, not to mention the additional wear and tear on equipment, exceed the cost of Roundup. The question of which carcinogen—diesel exhaust or glyphosate—is less toxic has yet to be answered. And which has a greater negative impact on the environment itself is also unknown. We will also attempt to determine if there are economic benefits from a longer lived, more productive hay stand as a result of less competition from the less productive invasive plants that tend to take over those stands.

Stay tuned as we continue to consider this topic, and if you'd like to weigh in on the subject with your own thoughts, please email Dave at dave@rubyhabitat.org.



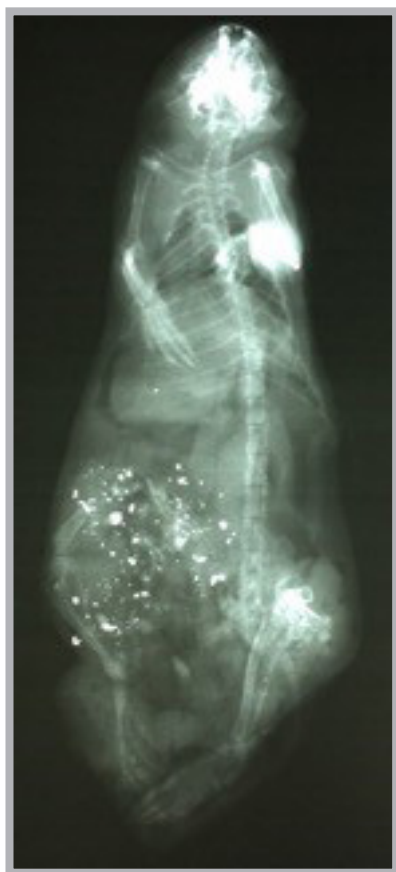
Glyphosate Trial Site Showing Treated Area (L) and Untreated Area (R)

Our friends left this morning, and he asked me to pass his thanks to you for access to the Ruby, which he enjoyed beyond description. As he told me, it not only felt good to be there, but it just plain felt good to see what was going on around him in terms of land use and conservation. The guy should know, he's trying to do the same thing for the entire Ross Sea. I second not only his thanks to you, but also his observations about the ranch as well -- the place is just amazing in every way, just really inspiring to see the developing connectivity in the mosaic of habitats taking new life there. Wow.

Bill Fraser

Lead, Raptors, Gophers, and Woodson Ranch

In 2015, the Ruby Habitat Foundation voted unanimously to phase in a no-lead policy for deer hunting to reduce the availability of lead to scavenging raptors. In autumn 2017, that phase-in period ends and folks will be expected to hunt with non-lead ammunition. Copper is currently the best alternative to lead and is widely available, affordable, and effective. In 2016, we partnered with MPG Ranch (www.mpgranch.com) in Florence, MT to understand the potential for raptors to ingest lead fragments from varmint carcasses. We also tested whether copper ammunition works as well as lead ammunition. To do this, we controlled ground squirrels (aka, “gophers”) by targeting them with various types of lead and copper ammunition in the .17HMR, .22LR and .223 calibers. Mike McTee from MPG Ranch collected the carcasses to analyze them for lead.



Xray image by Mike McTee

Millions of gophers, prairie dogs, and other varmints are shot annually in the United States. The carcasses are not always removed from the field because many of these species are exempt from wanton waste laws. The carcasses make easy meals for scavengers, but they can be tainted with pieces of lead that fragment from bullets. Raptors that ingest these toxic fragments can experience lethargy, blindness, or even death.

It is unclear how often raptors scavenge varmint carcasses; although raptors have been observed eating them, which may help explain why some raptors in western Montana have elevated concentrations of lead in their blood. Rob Domenech, the president of Raptor View Research in Missoula, MT has been studying golden eagles in the Bitterroot Valley since 2011, and in one study, found that 89% of them contained elevated levels of lead. Rob suspects that the eagles ingested bullet fragments that remained in gut piles and carcasses left in the field by hunters.

A possible solution would be for hunters to shoot copper bullets because copper is less toxic to raptors and fragments less than lead. Copper bullets are becoming more available in calibers suitable for both varmint and big game hunting, but hunters often question their performance. These questions were answered by the researchers who received the gophers from this experiment. The researchers also determined if some lead bullets fragment less than others, thus minimizing the availability of lead to scavengers.

To find these answers, the researchers x-rayed each gopher. Many images showed bright specks of lead dotting their bodies. However, some gophers held few, if any, fragments. This showed that bullets fragment differently when they hit their targets, likely depending on whether the bullet hit a bone. A subset of gophers had been analyzed for lead to confirm that the fragments were lead.

The study is currently under peer-review for publication. Although specific results cannot be shared until the study is published, we will share the results when MPG Ranch releases them. You can also visit their website (www.mpgranch.com) or contact Mike McTee (mmctee@mpgranch.com) to learn the results once they are published.

Co-authored by Mike McTee of MPG Ranch



Ruby Habitat Foundation Board of Directors

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President, Montana Land Reliance
Retired CPA - Helena, Montana
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Martha Woodson, Secretary
Rancher – Sheridan, Montana; Fort Worth, Texas
Leslie Vanderpool
Stephenville, Texas
Robin Mitts, Treasurer
Global Change Manager, Enterprise Architecture Program
Upstream Unconventionals - The Woodlands, Texas

Group C – Ruby Valley Community

Neil Barnosky, Chairman
Rancher – Sheridan, Montana
Bruce Peterson
Rancher – Alder, Montana
Steve Wood
Rancher – Sheridan, Montana

Executive Director

Les Gilman
Sheridan, Montana

Founder

Craig Woodson 1934-2011
Sheridan, Montana

Mission Statement

The Ruby Habitat Foundation is dedicated to preserving and enhancing the natural resources, and social and economic makeup of the Ruby Valley and southwest Montana by, among other things:

Supporting agriculture in the community and the diversification of agricultural operations to ensure the long-term viability of working ranches;

Working with landowners, educational institutions, foundations, and other entities to protect and enhance open space and wildlife habitat;

Encouraging education and training to broaden the understanding of resource management issues, and responsible management of private lands;

Promoting the concept of resource accountability and developing examples of minimal impact resource management for agricultural and recreational uses while protecting the environment.



“Ruby Habitat Foundation’s commitment to educating young and old is strong, and is reflected in these moments of inspiration and joy, featuring local school children at their ecological best.”



Ruby Habitat Foundation 2016 Financials

Foundation Operations:

Income	\$ 201,050
Expenses	193,008

Net Income \$ 8,042

General Fund Cash & Investments: \$ 127,413
(Pays the day-to-day expenses that finance the operation of the foundation.)

Rural Heritage & Open Lands Fund: 71,283
(Designed to provide funding for outreach and land conservation efforts.
general fund surpluses and designated gifts create the balance of this account.)

Hill Education & Outreach Endowment: 57,628
(Income from this endowment finances conservation education and outreach
to landowners and the general public. These funds come from designated gifts.)

Visitor Center Building: 41,173

Foundation Operations Assets as of 12-31-16 \$ 297,497

Woodson Ranch & Endowment:

Income	243,444
Expenses	166,456

Net Income \$ 76,988

Fixed Assets

Improvements & Equipment	\$ 726,563
Land	7,564,311 ¹
Woodson Ranch Endowment	5,883,514 ²

Ranch & Endowment Assets as of 12-31-16 \$ 14,174,388

¹Restricted land donation subject to life estate

²The income from Woodson Ranch Endowment is used for the operation and maintenance of the Ranch, to ensure its protection and continued viability.

Ruby Habitat Foundation Combined Total:

Net Income 2016	\$ 85,030
Total Assets as of 12-31-16	\$ 14,471,885

RHF is a 509(a)(3) tax-exempt support organization to the Montana Land Reliance, a 501(c)(3) corporation. Our Tax identification number is 45-0487621. Each entity is audited annually and independently. Audit copies are available upon request.



Landowners and resource managers are inherently bound to a high level of resource accountability. We are bound by law to protect the environment and prevent resource degradation, but we have a higher obligation to be good stewards of our natural resources, sharing them today and preserving them for future generations. The decisions we make and the actions we take affect our own environment as well as that of the wildlife, our neighbors and future generations.

Charles Craig Woodson [1933-2011]
Founder



Image by Ben Nardi

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