

Ground Truth



A Publication of the Diablo Trust – A Northern Arizona Collaborative Grassroots Land Management Team



The Diablo Trust is a 501(c)(3) land management team created in 1993 to promote the social, biological, and economic sustainability of 426,000 acres of intermingled federal, state, and private lands southeast of Flagstaff, AZ, by engaging in a collaborative stewardship process that is in harmony with the natural environment and the broader community.

The phrase "Learning from the land and sharing our knowledge, so there will always be a West" captures our mission.

Ground Truth is the publication of the Diablo Trust, mailed free-of-charge to everyone on our mailing list. If you would like to be added to or removed from the mailing list, please contact us at:

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Contributors are solely responsible for the content of their articles, and the opinions expressed in the articles, linked materials, and comments are not necessarily those of the Diablo Trust.

Bats: Plentiful, Diverse, & Threatened in AZ

by Jeremy D. Krones

Bats (*Chiroptera*) are an integral part of any landscape, especially in our corner of the Southwest. However, relatively little is known about them in Arizona.

Of the roughly 45 bat species in the United States, nearly 60% live in Arizona, and most of those live at least part of the year on the Mogollon Rim. Bats are predators, pollinators, seed dispersers, and ecosystem managers, and much of what we love about our landscape depends on these small, flying mammals.

Just ask Clarissa Starbuck, a doctoral student at Northern Arizona University focusing her studies on bats and the impact of wind farms on their migration routes.

For Ms. Starbuck, her passion for bats began at

seven when she wrote a short story about a bat. Her academic career has since led her to Northern Arizona University to work under Dr. Carol Chambers, professor of wildlife ecology in the School of Forestry, researching the habits and migration patterns of bats with relation to key landscape features, and if wind turbines would potentially be placed near those features.

The end goal of her current research project is to create a predictive map that will show what areas and landscape features of northern Arizona are going to have higher bat use than other areas. That map will then help wind energy companies plan their developments to best mitigate potential bat deaths from colliding with the turbines.

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From Generation to Generation, Pt. 1

Conservation and collaboration were tenets of the ranches long before 1993.

by Jeremy D. Krones

"Well, it just needs rest. It needs rest from livestock; it'll come back. It has lots of potential."

That's what Napoleon Warren "Boss" Chilson, Judy Prosser's grandfather, said when he purchased the property of what is now the Bar T Bar winter country, around Meteor Crater next to I-40, between Flagstaff and Winslow.

Conservation is defined by Merriam-Webster as, "a careful preservation and protection of something, especially planned management of a natural resource to prevent exploitation, destruction, or neglect."

Focusing on the 'planned management' part of that definition is exactly what the Diablo Trust advocates when it comes to conservation. The



Herb Metzger (L) of the Flying M Ranch and Ernest Chilson (R) of the Bar T Bar Ranch, at the Moqui cabin on Bar T Bar.

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Acknowledgments
Western Silhouettes by
Ace Reid, Jr., originally
published in "Rawhide
Bound," by Ed Bateman,
Sr., Moss Publishing Co.,
San Angelo, TX, 1950.

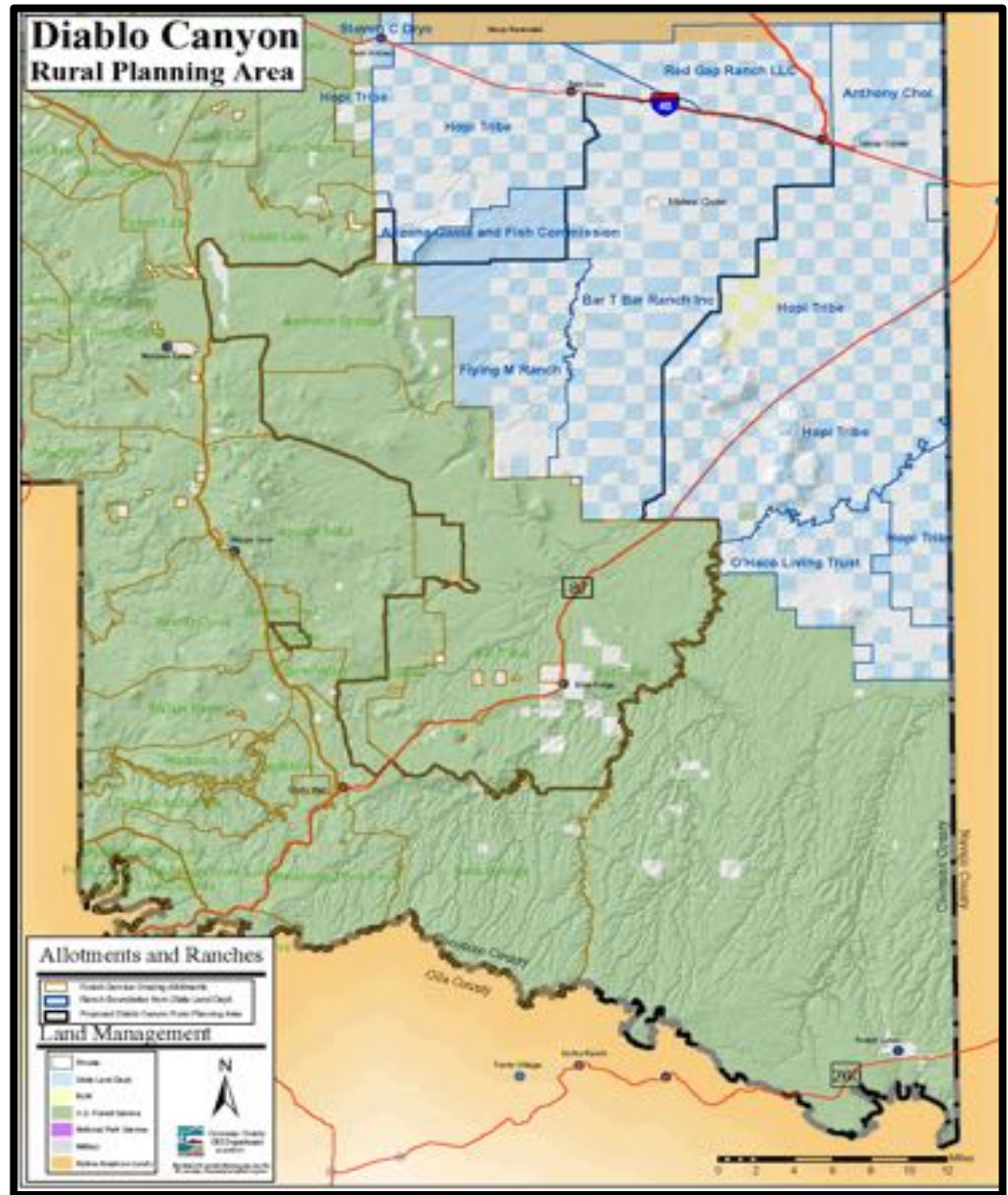
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Where We Are

A map of the Diablo Trust land area: Flying M and Bar T Bar ranches



Money matters & your support makes a difference

www.diablotrust.org/donate



President's Message

by Norm Lowe

I am a natural resources management scientist and proponent of holistic management. Holism is the concept that the sum in living systems is greater than the parts. It gave me pause when I read my most recent Sierra magazine which informed readers that local ecosystems are self-contained and that harvesting livestock and game animals out of the system creates an entropic loss of carbon/minerals. It said to believe otherwise is not valid science and advocated that humans can't do better than leaving it all alone to heal.



Scientific observation of the ecology of our region indicates "leaving it alone" is bad practice. Life is about carbon and scientists are recording a persistent trend of desertification in the Southwest with carbon moving from land systems to the sky, with increasing populations of woody plants and decreasing populations of grasses (which better hold and build soil). As an example, Dan Dagget, a photographer, writer, and founding member of Diablo Trust, has spent the past decade analyzing the region around Sedona, where plenty of movies made there 50 years ago (at the time ranching ended there) showed abundant grasslands and open spaces with little soil erosion. Conditions around Sedona today show densely invading juniper trees and deep gullies replacing the few remnant grasses.

Holistic management is an alternative model to this closed-loop entropic mismanagement model. The scientific insight is that a plant is not made up of the limiting elements found in the soil where it grows. 95% of a plant's mass is from abundant CO₂ moving about in the air; the remainder is from rainwater, with but a minuscule amount of micronutrients coming from the soil. Goal-directed holistic management can achieve a "sum greater than the immediate parts" by directing grazing and land treatments to increase plant cover, thereby increasing solar energy capture to increase biomass, and thereby sequestering carbon back to earth. This process of speeding the mineral cycle slows down the water cycle to better grow plants, and improve soil pH to make more micronutrients available, in a soil and biodiversity building process.

Diablo Trust was started in 1993 to apply holistic management to bring decision makers together to synergistically build land health and prevent land fragmentation from land sales, and land deterioration from neglect and impacts from excessive public recreation. Diablo Trust has made great progress in opening up encroaching woodlands on one quarter of its 426,000 acre area and using the well-timed pulse effect of grazing and rest for full recovery to restore a mosaic of healthier habitats.

See the pictures on page 7 for a look at how improper management can negatively impact a landscape.

On April 18th both Diablo Trust ranches, NAU's Sisk Lab of

Continued on page 7

Office Notes

by Jeremy D. Krones

Every time I go out to the ranches and drive more than five minutes past the headquarters, I see wildlife. Not just rabbits and little birds: antelope, eagles, snakes, even once a lion! Those animals, besides being native inhabitants of this region, are there with the strength and vigor they have because of the efforts by the ranches to maintain healthy habitats and connected open spaces.



The ranches, now and for decades past, have been at the front lines of wildlife conservation. They might not always do what the general public think is right, but nor does the public always advocate for what the ranchers think is best. In the long term, however, management decisions come down to collaboration between all parties involved: the ranches, the agencies, and the public.

Collaboration, as so many active Diablo Trusters know, is one of the three key words of our community, and one I use when telling strangers and friends about the Diablo Trust: conservation, collaboration, education.

The two main articles in this issue, *Bats: Plentiful, Diverse, & Threatened in AZ*, and *From Generation to Generation, Pt. 1*, cover those three topics. In *Bats*, we read about the little flying mammals that, while being so integral to our ecosystem, are being threatened by development and the specter of the westbound white nose syndrome. In *Generation to Generation, Pt. 1*, we learn a little bit about the history of conservation on the ranches. Longer versions of these articles can be found online at www.diablotrust.org/news.

Through fundraisers like AZ Gives Day (p8), which this year raised more than \$1000 for us to donate to the Summer Agricultural Institute, regular meetings like the Book Club (p5), and insights into ranch life (pp4, 8), everyone involved can continue their education about the collaboration that supports our conservation (see what I did there?). Of course we also have semimonthly field trips, called Days on the Land, which take participants all around the region to learn more about the intricacies of working landscapes and the people, wildlife, and livestock who live "out there."

We have a great summer lined up, including our Sportsman & Recreation Day on the Land in July (p9), and our Annual Camp-out in August (p11). Consider joining our book club, attending a movie night, or just staying in touch with us! You can find us on Facebook, Twitter, and LinkedIn, and can find our schedule at www.diablotrust.org/calendar.

See you, and all sorts of creatures, on the land!

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Getting to Know . . . Jim Parks

Coconino County Supervisor, District 4

Jim Parks is a retired cowboy from Flagstaff, AZ. He is an Arizona native with ancestors arriving in the Tubac area from Spain about 1720. Jim's ancestors also came from Wales, Scotland, Ireland, England and some were native Papago or Tohono O'odham people in Southern Arizona.



Jim was born in Phoenix on October 11, 1949, the oldest of 3 children of Warren and Bette Parks, and has remained a resident of Arizona since birth. He came to Flagstaff in 1974, after serving 4 years in the U.S. Navy during the Vietnam War. Jim spent a couple of years studying at NAU, then became a working cowboy, and later a ranch manager, working on ranches all over Arizona during the next 38 years. Jim retired in 2015, after spending his last working years at Babbitt Ranches in Northern Arizona. Jim worked on the Bar T Bar Ranches in 1977, 1978, and 2012. He also did day work on the Flying M Ranch from 1990 to 2012.

Jim's life has always been centered around agriculture, being the grandson and great-grandson of ranchers, and the son of a farmer, agriculture has always dominated his life. He served as President of the Coconino County Farm Bureau and Cattle Growers Association, former Chairman of Coconino Natural Resource Conservation District, and member of Arizona Farm Bureau board of directors.

Jim's wife, Vickie, is retired from Coconino County and he has a family of two daughters, their husbands, four grandchildren and one great-grandchild.

Born in: Phoenix, AZ

Childhood Hero: Davy Crockett

Current Hero: Major Rick Spooner, USMC, Retired. Wounded in WWII, Korea, Vietnam

Favorite Hobbies: Fiddling, flying, hunting, shooting

Favorite Western: Junior Bonner

Favorite Westernwear Item: Hat

Currently Unrealized Life Dream: Restore my old Model T Ford

Favorite Quotation: "First they ignore you, then they laugh at you, then they fight you, then you win."

- Mohandas K. Gandhi

Talk from the

by Judy Prosser

Who is going to take over the family ranch?

Now there's a subject to make you quake in your boots. It's also one the Prossers have been wrestling with for over a decade. Every birthday cake reminds me that Bob and I are no longer "middle-aged."



Judy and Bob Prosser
(Credit: Julie Murphree, AZ Farm Bureau)

About ten years ago, when our boys were in college, and we couldn't sleep at night, we thought we had better come up with Succession Plan B in the event they didn't want to come home once they graduated and be 'slave labor' anymore. After much discussion, Bob (being the creative one) developed this plan that in the event he and I died together, a board of directors would take over, and hire a manager. We named the board and it included our kids, some past and present employees, and some brilliant minds from assorted backgrounds and professions. They would continue to manage the ranch into perpetuity unless it was just no longer feasible, and then they would have the option to sell it. But it clearly was a goal of ours to maintain it as a working cattle ranch for as long as possible.

Fast forward 10 years, and we no longer move nor think as fast. Suddenly we are not quite as excited about working 12 to 14-hour days! And although we aren't dead yet, we see no light at the end of the tunnel – yikes! Meanwhile, our kids are married, have great jobs in distant places, and seem to be fairly settled. They have no intention of fulfilling the old tradition of coming home and picking up where they left off as slaves to learn the finer points of management. It seems to happen in most families as a logical evolution: the next generation tends to not be as interested in doing the physical work themselves, when they can outsource it. A challenge this concept generates, however, is to find employees with management expertise that are affordable, because now we are adding one more family to feed and clothe.

Periodically our sons have suggestions about new ventures we could undertake that would add to the bottom line. In fact, it is a serious concern of theirs that the business expand enough to provide some economic incentive for them, as well as their children, to be involved. They do not want to be strapped with a business that cannot support more than one family.

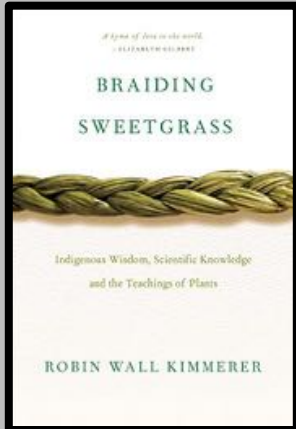
This brings us to the question asked by farmers and ranchers for many years: How do you support the next generation?

The answer has often been to sell the land off one piece at a time, or all at once. One has to look at the reasons why. The

Continued on page 8

Good Reads for the Western Life Book Club

Tuesday, June 27 @ 5:30PM



Braiding Sweetgrass
by Robin Wall Kimmerer

**Flagstaff Public
Library**

300 W. Aspen Ave
Flagstaff, AZ 86001

**Buy your book at Bright
Side Book Shop on N. San
Francisco and get 10%
off!**

March Book Review by Jeremy D. Krones

The Rites of Autumn
by Dan O'Brien

A short but detailed and emotional book, The Rites of Autumn gives readers an insightful look into the world of falconry through the eyes of the prolific writer, successful rancher, and avid environmentalist Dan O'Brien. The Diablo Trust book club read another of O'Brien's books last June, Buffalo For the Broken Heart. While that memoir was both longer and more detailed with facts and figures concerning cattle, bison, and the "settling" of the West by European colonizers, The Rites of Autumn is a more personal tale of a man's relationship with a bird, his bird. From the first scene of O'Brien watching as a golden eagle picks off three newly released peregrine falcons to the final summary of post-story events, readers travel the Continental Divide with O'Brien and Dolly, his adopted falcon, meeting occasional lovers, longtime friends, and strangers altogether.

Especially when paired with the Diablo Trust Day on the Land to the Vermilion Cliffs to see and learn about the California condors from a Peregrine Fund researcher, The Rites of Autumn is both an intriguing historical document and a valuable intellectual supplement to seeing firsthand the power of such amazing birds.

We highly recommend this book.

February Book Review by Juane Heflin

Soldier Sister, Fly Home
by Nancy Bo Flood

Classified as a children's book, Soldier Sister, Fly Home speaks to all ages. Set in northern Arizona and dedicated to the memory of Lori Piestewa, the first Native American woman to die while fighting overseas, a 13-year-old half-Navajo/half-white girl (Tess) struggles with her identity while coming to terms with life's unwanted changes. The talented author shows how internal conflicts vary dramatically when a person is young and contemplating the future, as compared to older adults who can reflect on the journey. Young readers will relate to Tess, who rebels against the seeming complacency of her elders, and older readers will empathize with her beloved shimá sání (Grandma), who sees the cycle of life repeating.

From the shocking prologue to the moving ending, the book makes a lasting impression and will be brought back to memory each time we see a raven, a veteran, an older woman wearing colorful tennis shoes, a running stallion, or hear someone quote Emily Dickinson. The book discussion with the author was fascinating, and we clamored for a sequel. We highly recommended the book.

April Book Review by Juane Heflin

Beyond the Hundredth Meridian
by Wallace Stegner

There was a large turnout for a lively discussion of Wallace Stegner's classic Beyond the Hundredth Meridian. Ostensibly profiling the polymath figure in the subtitle (John Wesley Powell and the Second Opening of the West), the author chronicles Major Powell's influence in the Western frontier, but the bulk of the book provides an exposé of the vendettas of pork barrel politicians and legislation that shaped American's relationships with the country's natural resources, including the Antiquities Act of 1906 and Taylor Grazing Act of 1934. We agreed that reading and discussing this book was timely given the parallels between what was happening then and current events. Alternative facts, false news, and exploitation of water and land were as rampant then as they are now. As anomalous as it seems, the book incited a sense of hope that persistent advocacy and outside-the-box thinking by activists today might yet secure a promising future. It is a daunting read but well worth the effort. We highly recommend this book!

**For more book reviews and Book Club updates:
www.diablotrust.org/book-club • bit.ly/dtbookclub.**

Bat Research (continued from page 1)

Despite the height of wind turbines playing a large role in the debate between turbines and the impact on birds and bats, it is not part of Ms. Starbuck's research because she is not looking specifically at the effects of wind turbines. Ms. Starbuck explained, "It seems like turbines keep getting higher and higher all the time, because the higher you put the blades, the windier it is. But, it seems that the higher they are, the more bats are killed."

Ms. Starbuck is looking at the contiguous open spaces of the Bar T Bar Ranch to perform much of her research.

Research on the Ranches

The ranches are no stranger to such research; Ellen Parish, who now sells beef in Flagstaff for the Flying M Ranch, started her relationship with the ranch nearly 10 years ago as a researcher for Western EcoSystem Technology, Inc (WEST). WEST was contracted by wind power companies to survey the bat and bird populations on the ranches for wind towers.

Ellen's work required her to go out to certain sites once a month in the winter and once a week in the spring and autumn, to collect data.

This data was recorded and sent to the WEST labs for analysis. Sites were primarily around water tanks.

Both the contract and research ended in 2010. No wind turbines have been built on the Flying M or Bar T Bar ranches.

Dr. Chambers has been teaching at NAU for 20 years, and got into bats because her first graduate student was studying how the invasion of junipers into grasslands was affecting bats.

The student found that there was more activity around areas with higher tree and shrub density. That is probably due to the high population of bugs in and around trees, Dr. Chambers explained.

However, the high density of trees is not always a good thing:

"If you are removing trees from areas that were originally grasslands, then you're basically restoring that system. Yes, you might be removing habitat, but that proba-

bly wasn't habitat that bats had counted on in the past. It gets tricky when habitat has been shrinking because of development."

She also said that there is still a lot of piñon-juniper habitat in the region, so the grassland restoration the ranches do isn't doing much damage to the bats.

Landscape Features

An additional outcome of Ms. Starbuck's research will be more information about how bats move across northern Arizona. Not many specifics are known about the migration patterns of bats in this region, except that some bats will just migrate short distances based on elevation and others will travel farther, much like birds do.

Most bats use echolocation to communicate and navigate through the landscape, although Ms. Starbuck did say that despite 'common knowledge,' bats can see fairly well and echolocation is not always the best way to track bats.

She hypothesizes that bats might navigate using large landscape features that they can see, like cliffs, valleys, and rivers, as well as echolocation for smaller features.

The Mexican free-tailed bat (*Tadarida brasiliensis*) and the hoary bat (*Lasiurus cinereus*) are two species that migrate longer distances, and use those larger features as roosting sites.

Ms. Starbuck has a hypothesis that proximity to cliffs and waters could be major factors in where bats fly on their migration. Cliffs are good roosts for bats, and for water Ms. Starbuck explained, "It's kind of a dry place, but bats need water to live just like everything else."

Bats that fly longer distances are usually pretty fast, but not very agile. Dr. Chambers' first grad student would compare bats to airplanes: some are more like bombers, which move very fast but have a harder time maneuvering tight corners, whereas biplanes don't move nearly as fast, but are more adept at tight turns.

"If you look outside at a tree, imagine a moth or a butterfly flying up and flapping around the tree. Some bats have that type of agility. Other bats really don't," said Dr. Chambers.

Most bats don't like to land on the ground to capture bugs; they hunt bugs by

flying through the air and capturing them either in the air or by swiping them off of branches and leaves.

However, there are some species that do hunt from the ground, like the Pallid bat (*Antrozous pallidus*), which can be found at altitudes lower than Flagstaff.

Dr. Chambers gave a hint for how to identify a Pallid bat:

"If you have a porch outside your house and you see the remains of scorpions in a little pile during the summer, that might be a night roost for a Pallid bat having dinner."

The Threat of White Nose

One of the biggest fears of bat researchers in North America is the white nose disease.

Over six million bats have died from the disease, transported by a fungus of the same name, since its first discovery in 2006, in a cave in New York. Since then it has progressed west, to eastern Texas and Oklahoma. The fungus apparently 'jumped' to Washington State last year.

Researchers like Dr. Chambers and Ms. Starbuck fear that the fungus will be in Arizona very soon, and are scrambling to collect as much data on bats as they can before these populations are affected. Dr. Chambers explained that we know more about bats in the eastern US because those bats aggregate in larger hibernacula, which are the clusters in which bats sleep during the winter.

Arizonan bats collect in smaller hibernacula, which Ms. Starbuck says could contribute to a slower spread of the white nose disease, but also contributes to a lower level of understanding about bats in the Southwest because research and collection is more difficult.

With the specter of white nose looming, any data on bats is valuable to the greater community. For those of us not in the field, there are many ways to support bat research and conservation, including advocating the protection of their habitats and food sources.

Please contact the Diablo Trust office for links and documents to learn more. ▫



President's Message (cont'd from p3)

Landscape Ecology and Conservation Biology, and five rangeland professionals from several agencies met for seven hours to review our natural resources monitoring program. Effective monitoring starts with a healthy VISION and a set of GOALS which include sustaining beautiful wide open spaces and economic support for stewardship of the area from renewable carbon harvesting in the form of livestock and wildlife production. Achievement of land health goals is part of an active annual to daily cycle of detailed holistic PLANNING goal steps, ACTIVATING the plan, MONITORING conditions and effects, CONTROLLING deviations as they occur, and regular REPLANNING to keep the cycle on task. The ranch owners and their staff are the key to success as they are present 365 days a year keeping waters functioning for livestock and wildlife, moving livestock regularly, doing land improvement treatments and guarding against vandalism of all resources.

The ranches, agency specialists and NAU researchers cooperate on monitoring.

I invite you to join us in this effort of “learning from the land, sharing our knowledge, so there will always be a West” that is open and healthy.



Norm Lowe, President
 Contact: president@diablotrust.org

Movie Nights:

Jun 20, July 18, Aug 22, Sept 19

6:00PM

The offices of Gail D. Lowe, CPA, PC
1600 W. University Ave, Suite 206
Flagstaff, AZ 86001

www.diablotrust.org/movie-nights

see calendar on back cover

These two photos are of the same location and direction on the Dry Creek Allotment west of Sedona, AZ.



1963. The grass is short, having just been grazed, but is maintaining soil stability. (Photo from USFS)



2012. After decades of rest from grazing, woody plants have increased and grass cover is insufficient to protect soils from gully erosion. (Photo from Dan Dagget)

Thank You to Our AZ Gives Day Donors!

Diablo Trust is a donation-funded organization, and much of what we do couldn't be accomplished without contributions from our caring community. This year, Diablo Trust contributed all of its AZ Gives Day donations, **\$1,110.49**, to the Summer Agricultural Institute (SAI), a week-long intensive for grade-school educators to teach them how to better integrate agricultural literacy into their classrooms. Diablo Trust partners with SAI every year for a presentation, and wanted to do more to raise a generation of Arizonans who are attuned to the natural and agricultural worlds around them: just what Diablo Trust does in our own community. There is no cost to participate, but there is a fee to apply. Diablo Trust dedicated its AZ Gives Day donations to help the participating teachers with their application fees!

Anonymous (2)
Sheila DeHaven
Bryan Friedman
Mary Gessay
Alysa Greenberg
Denise Hudson

Barbara Jones
Amanda Kapp
Diana Kessler
Jeremy Krones
Paula Pluta
Kate Radosevic

Arnie Schlittenhart
Ellen Vaughan
Allie Weintraub
Sarah Wilce



Summer Agricultural Institute

**Money matters &
your support makes a
difference!**



#AZGivesDay

Talk from the *-T-* (continued from page 4)

agricultural model in the U.S. was based on inexpensive labor. There is a higher standard of living today and people demand more . . . what used to be a "want" is now a "need."

Ranching has reached a point where labor has become very expensive.

Typically we ranchers and farmers have our value primarily tied up in land, so as costs increase and commodity values don't, expansion becomes more elusive and selling out is an easier fix for the generation that wants to pass on something to their heirs.

So – if we have established that selling the ranchland we all value as open space is a last resort, what are the alternatives?

What about conservation easements? In this part of the world, there is a low value for them, as so much of our land is leased, and what we do have does not typically

have riparian areas or endangered species.

Transfer of development rights: that sounds good, and we are open to it, but there are no examples in this neck of the woods.

I tend to think in black and white, and even after hours of frustration, seldom come up with much in the "gray area." And of course being asked the perpetual question by everyone, "Is one of the boys coming home to run the ranch?," does not improve the comfort level.

Now they are technically Millennials, so are prone to think differently. One of them voiced a profound thought recently. He said, "Someone told me that you can't go home and live out your parents' dream for them; you need to have your own." He followed with his own opinion, "It is not meant as a criticism to the previous generation, it is about getting up in the morning

and doing something you love and want to build." (Of course the fundamental problem I have is I cannot understand for the life of me why they don't absolutely love what we do every day.)

Perhaps you are thinking, "maybe she should get out more often...?"

I cannot tell you where this is headed, but I can tell you that Bob and I are trying to remain open-minded. This is a very hard thing to do! I am hoping that soon we will have some heart-to-heart discussions about everyone's needs, wants, and goals, and can find some common ground. It is inherently important to solve this transition problem.

We will keep you posted about this work in progress, but it would be helpful if you would pray for the parents that we may have patience, be open to new and creative solutions, be able to recall what it was like to be that age, and learn to think in the *gray*.

From Generation to Generation (continued from page 1)

ideals of the Trust and the ranches that founded it didn't just appear at the founding meeting in 1993: conservation was a central tenet to the ranching philosophies of both Herb Metzger and Ernest Chilson, the previous generation of owners of the Flying M and Bar T Bar ranches, respectively.

Now it's just as important to the current generation of ranchers: Kit Metzger and Diana Kessler on the Flying M, and Bob and Judy Prosser on the Bar T Bar.

Kit's general philosophy when it comes to conservation on the ranch is much like her father's: "Take care of your land and take care of your cattle."

Herb, she says, was always involved in landscape conservation, starting down in the Beaver Creek watershed, closer to Camp Verde than Flagstaff. There, he advocated removing the encroaching cedar trees, much like the ranchers do today on their land.

"Bare ground was – and still is – everybody's enemy," she says, referring to the 'clearing' effect of junipers (*Cupressaceae juniperus*) on the land: as they grow, the trees suppress understory growth and over time many grasslands can turn into large swaths of bare ground under the low canopy, which is not very well-liked by livestock or wildlife.

Bare ground is also a poor "sponge," Kit says, meaning that it does not allow for water infiltration.

Erosion and water run-off can be big issues in areas without diverse grasses, shrubs, and forbs on the landscape. They change the texture of the soil, which allows water to soak into the ground.

When Herb moved back up north to what is now the Flying M Ranch, which started with the original homestead at Ashurst Run, across Lake Mary Road from Mormon Lake, he acted quickly to revert it to healthy grassland.

Most of the homesteads in the area had been growing hay for the horses of the timber industry. When the industry went mechanical, the homesteads lost their primary source of income and had to sell, leaving behind pastures with little to no vegetation. Herb worked to grow native plants for his cattle.

Herb also accomplished this through what Kit calls "good water development." According to Herb, if you have to build a water stock tank, build a big one. That way you only have to build once, and you can leave much of the pasture undisturbed from the construction of new tanks.

Kit continues the effort by working with the US Forest Service, AZ State Land Department, and AZ Game and Fish

Department to remove junipers and restore the grasslands that generations of ranchers have relied on and generations more will value.

Juniper removal is also done on the Bar T Bar Ranch; aside from practicing proper grazing management like her father and grandfather did, Judy and Bob also

advocate partnership with their respective agencies. "[Ernest] was proactive with land, water, and infrastructure projects, and was always willing to pay his share of whatever the cost was. He was a really forward thinker."

One example of that was his foresight about fire suppression on the forest. Ernest felt there were too many trees and an encroachment of ponderosas, and that the Forest Service was allowing it by advocating fire suppression too frequently. He knew that too many trees would not only result in wildfires, but also reduce the amount of forage for livestock and wildlife, like the turkey and mule deer.

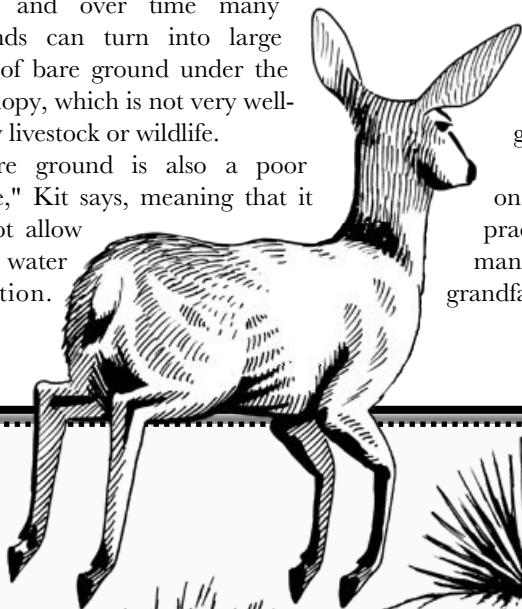
A modern solution to this issue is the Four Forest Restoration Initiative, a Forest Service-led restoration effort on over 2.4 million acres of the Kaibab, Coconino, Apache-Sitgreaves, and Tonto National Forests.

He had similar concerns about the high numbers of elk, which had been brought to the area from Yellowstone in the first half of the 20th century, and advocated on behalf of more native wildlife. Ernest just believed strongly in holistic management of the land, taking into account all users, ranging from the ranchers to the turkeys.

That belief permeates the generations, and there are many more lessons he and Herb taught their children about ranching, land and resource management, and conservation. Stay tuned for more! ▫

In the next Ground Truth, look for more about the ranches' relationships with the wildlife and the agencies that manage for them in Northern Arizona and beyond.

www.diablotrust.org/news



Day on the Land: Sportsman & Recreation

Sat, July 15 • 9:00 – 2:30

Lake Kinnikinick, Flying M Ranch

www.diablotrust.org/calendar/srday-17

From the Calendar: Spring 2017 Events

Annual Meeting: Conservation in Cattle Country February 17th

The 24th Annual Diablo Trust Meeting was on Friday, February 17th, at Thor-nager's on Kiltie Lane in Flagstaff. Over 50 people attended the meeting, ranging from agency officials to NAU students. The morning started with a welcome from Diablo Trust President Norm Lowe and then with introductions around the room.

Next were the Collaborators' Reports: updates from key players in the field of land and resource management in Diablo Country and throughout Northern Arizona. These updates cover past successes, future goals, and general news from the field, like calves born on the ranches or new technologies being tested for greater ease in land management (like new rain gauges).

A special award and gift of thanks was presented to Steve Cassady (AZ Game & Fish Department) for his support of Diablo Trust and the ranches; so many of our goals could not be accomplished without his help and guidance.

Our four featured presentations dealt with the theme of "Conservation in Cattle Country:"

- Chris Parish (*Condor Reintroduction Project Director, Peregrine Fund*) focused his talk on his ongoing work to eliminate lead bullets from the hunting world in order to further stabilize and grow the California condor population.

- Tom Mackin (*Wildlife Committee Chair, Diablo Trust*) spoke to what conservation means to different people, and how it is executed in the community and on the land.

- Randy Babb (*Watchable Wildlife Program Manager, AGFD*) presented on "watchable wildlife," which includes bats, rabbits, rodents, insectivores like the desert shrew, and small carnivores like foxes.

- Craig McMullen (*Region II Supervisor, AGFD*) gave a summary of the North American Model for Wildlife Conservation. This model was developed over decades around the turn of the last century, and is an effective way to enhance the efforts of conservationists of all stripes.

The final event of the morning was a Q&A session. Question topics ranged from lead and non-lead ammunition to whether the "watchable wildlife" Randy discussed were 'welcomed' on the ranches, to what members of the public could do to promote conservation if they weren't already intimately engaged on the land.

Supporting both local and national conservation groups is probably the best way to support conservation; Diablo Trust is one of those organizations – a group dedicated to education, collaboration, and conservation. This Annual Meeting was a great example of what we support and promote in the community. ▫

Day on the Land: Condors! March 25th

The first Day on the Land of 2017 saw nearly 50 people make the two-hour drive from Flagstaff to Lees Ferry Lodge, at the base of the Paria Plateau and in the shadow of the Vermilion Cliffs. The group of citizen scientists, employees from Northern Arizona University and the Flagstaff Unified School District, Sierra Club and Audubon Society members, and others gathered around to meet Chris Parish, the Director of the Peregrine Fund's Condor Reintroduction Project. The Project breeds, researches, and reintroduces the California condor into the wild.

After the regular group introductions, we drove to Navajo Bridge, the twin crossings across the Colorado River, upstream of the Grand Canyon. There we saw two California condors sitting on the trusses of the vehicle bridge, as we stood on the pedestrian bridge with our cameras, binoculars, and spotting scopes. Chris gave a short lecture on the history, biology, and threats to the massive, ancient birds. With a wingspan of 9.5 feet, these birds coexisted with the megafauna of the Pleistocene Epoch (Ice Age) between 2,600,000 and 11,000 years ago.

It was cloudy and cold for most of the morning, but right as we were about to go back to the cars for lunch, the clouds parted and the wind picked up: a perfect combination for the two condors we were observing to open their wings and fly! They flew under the bridge to a rock outcropping.

After lunch the group drove back to Lees Ferry Lodge to take a tour of the "Barn," the Peregrine Fund's research facility. Chris' crew performs surgeries and other rehabilitation for the birds here.

This Day on the Land was a unique one – not only was it not on either ranch, but it also showed participants a side of conservation not usually seen by the public: collaboration to improve the state of endangered species *in the wild*. ▫



The Q&A session at the end of the Meeting, with Tom Mackin, Chris Parish, Randy Babb, and Craig McMullen.

Read a participant's take on the Day on the Land on p11.
See photos from the Day on the Land on p13.

Condors Fly Again

by Melinda Bell, Flagstaff STEM City

One might suppose that the largest flying land bird in North America, that once inhabited almost the entire continent and survived the Pleistocene extinction, would have perfected its mating ritual as part of its arsenal of survival skills.

You would be right!

And the 42 engaged participants in the Diablo Trust's Condor Conservation Day on the Land on March 25th were privileged to witness that amazing event.

Led by the Trust's Program Manager Jeremy Kronos and The Peregrine Fund's Condor Program Director Chris Parish, we observed these magnificent birds from the Navajo Bridge at Lees Ferry. Chris shared details about condor biology, the rescue



and reintroduction efforts, and the continuing danger from lead bullets. As he spoke, the two condors we were watching slowly warmed in the morning sun, spread their long-feathered wings to gather the rising air, and lifted off the bridge struts, flying to the sandstone cliffs above the Colorado River.

Colorado River.

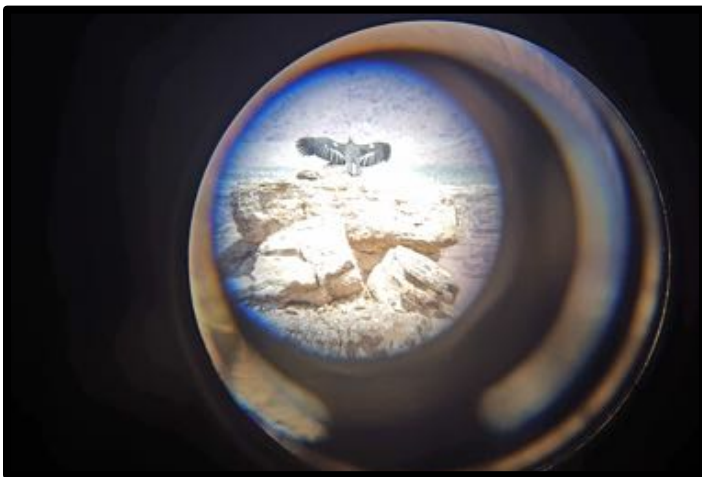
We pondered the scant probability and the remarkable story of how California condors went from a population of only 22 individuals in the wild in 1982, to a captive breeding program begun with a few survivors in captivity and none in the wild by 1987, to the hard-earned successes that followed. It wasn't until 2003 that the first young was born again in the wild, in a cave

above the Colorado River used by ancestral condors 28,000 years ago. Now, 29 young have hatched in the natural world; and over 200 condors range over parts of Arizona, Utah, California, and Baja, Mexico, where they have been reintroduced or begun dispersing on their own.

But the need for condor protection is not over. California condors are still critically endangered, and 53% of diagnosed deaths come from lead poisoning. Lead bullets fragment into sometimes hundreds of microscopic pieces, lodging in the animal remains that condors may consume. Hunters on the Kaibab Plateau are heeding the message and 87% of these hunters now use non-lead ammunition or remove the remains of lead shot carcasses from the field.

The Condor Conservation Day on the Land participants were fortunate to witness the remarkable and rare site of a male California condor slowly circling a female, with an almost ten-foot wingspan stretched to display the white underside. Our breaths were held as he mounted her, all silently hopeful that new life was being created. May this magnificent mating dance, evolved over millennia yet not seen in the wild during those dedicated years of captive breeding, continue to create more young condors and inspire future generations of conservation-minded folks to take a second look and have pride in saving a species from extinction.

The Diablo Trust slogan: "Learning from the land and sharing our knowledge, so there will always be a West," was clearly met on the Day on the Land. Special thanks to Jeremy Kronos and Chris Parish, and deep gratitude to all those working to ensure there is a safe and wild place for condors in the West. ✦



A California condor sunning on a rock, as seen through a spotting scope on Navajo Bridge.
Photo by Denise Hudson.



June 2017 1110 ©

Annual Campout:

Workday & Overnight at Yaeger Lake

Aug 19-20 • 12:00PM Saturday – 2:00PM Sunday

Yaeger Lake, Flying M Ranch

www.diablotrust.org/calendar/campout-17

A Cowgirl's Story: Tough Birth

by Sheila Carlson, Flying M Ranch

March 15, 2017



Had to pull a calf this morning that I thought was dead. Mama had been working at it, nose and swollen tongue were hanging out her backside. Got her in and pulled, sad that I didn't come down earlier. Got the head out and it made a noise. I thought at first it was just air escaping. But then that swelled up tongue twitched and an eye opened. I touched near the eye and it blinked. So back to work on getting it out with new resolve. When I had it on the ground, I spent time getting circulation going, especially that head and tongue. Brought mama in with her little fighter and was happy to see her go to work doing her part, cleaning and talking to her calf.

I'm counting this as one of the small victories...

Read more of A Cowgirl's Story on the Diablo Trust Blog:
www.diablotrust.org/news

Rust from the Range



We found this at an old sheepcamp on the Bar T Bar by Diablo Canyon. It has about a two-inch diameter, is perfectly circular, and even with the rust the middle piece is loose enough to move around. We published it last issue but didn't say what it was. But now, we will!

It's a cinch buckle!

Next time you see a saddle, take a look at the straps (called a cinch or girth) that go underneath the horse's abdomen (called the barrel). These straps secure the saddle to the horse. While everything changes with time, today's buckles are still very similar to ones like this one.

Did you get it right?

Plant Spotting



<http://www.swbiodiversity.org/seinet>

Common Name:
Fendler's flatsedge

Scientific Name:
Cyperus fendlerianus

Family:
Cyperaceae

Duration:
Perennial

Ecology:

Found in clearings and along meadows in pine forests & juniper woodlands, 2,000-6,000 ft; flowers from July-September

On the Ground with Diablo Trust

Visit www.diablotrust.org or our Facebook page for more pictures. Articles about some events are on page 10.

FRSG Monitoring: March 21-31, 2017



Jackie Thomas, the AZ State Land Department Flagstaff Range Resource Area Manager



Kit Metzger (Flying M Ranch), Joey Dahms (NRCS), Jackie Thomas (ASLD), and Gus the Dog



Steve Cassady (AGFD) observes the forage on Raymond Wildlife Area

Day on the Land: March 25, 2017



Nearly 50 people came out from all over Northern Arizona to the Vermilion Cliffs for a day of conservation biology, sightseeing, and bird-watching!



Chris Parish, Director of the Peregrine Fund's Condor Reintroduction Project at the Vermilion Cliffs, explains the basic biology of the California condor.
Photo by Mindy Bell.



Chris Parish preparing a tour of the Barn, the condor research facility at Lees Ferry Lodge.
Photo by Mindy Bell.



A few participants overlooking the Colorado River at Badger Point, across the highway from Lees Ferry Lodge and the Vermilion Cliffs.

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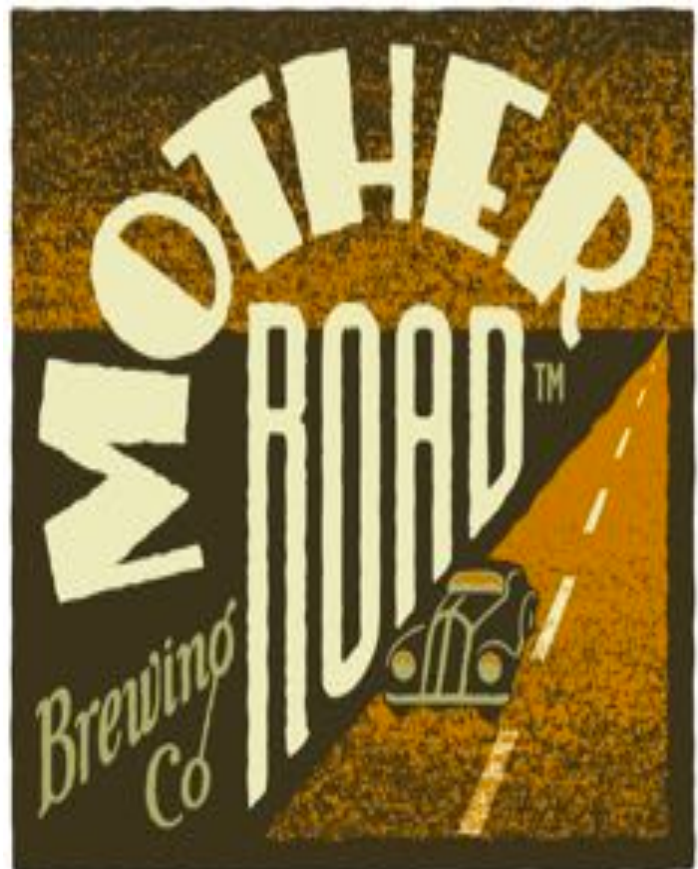
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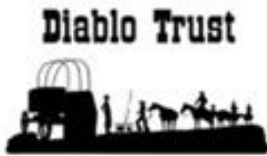
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***"Learning from the land and sharing our knowledge . . .
So there will always be a West"***

Upcoming Community Events

- Sun, May 14–Oct 15: **Flagstaff Community Market** • City Hall, 211 W. Aspen Ave, Flagstaff
- Mon–Thurs, June 19–29: **Forage Resource Study Group** • AGFD Office, 3500 S. Lake Mary Road, Flagstaff
- Tues, June 20: **Movie Night** • 6:00PM - 8:00PM • Gail D. Lowe, 1600 W. University Ave, Suite 206, Flagstaff
Grasslands
- Tues, June 27: **Book Club** • 5:30PM - 6:30PM • Flagstaff City Library, 300 W. Aspen Ave, Flagstaff
Braiding Sweetgrass, by Robin Wall Kimmerer
- Sat, July 15: **Sportsman & Recreation Day on the Land** • 9:00AM - 2:30PM • Kinnikinick Lake, Flying M Ranch
- Tues, July 18: **Movie Night** • 6:00PM - 8:00PM • Gail D. Lowe, 1600 W. University Ave, Suite 206, Flagstaff
On The Wild Edge: Hunting For a Natural Life
- Tues, July 25: **Book Club** • 5:30PM - 6:30PM • Flagstaff City Library, 300 W. Aspen Ave, Flagstaff
A Thousand Deer, by Rick Bass
- Sat–Sun, August 19-20: **Annual Camp-Out** • 9:30AM Saturday - 2:00PM Sunday • Yaeger Lake, Flying M Ranch
- Tues, Aug 22: **Movie Night** • 6:00PM - 8:00PM • Gail D. Lowe, 1600 W. University Ave, Suite 206, Flagstaff
Hanna Ranch
- Tues, Aug 29: **Book Club** • 5:30PM - 6:30PM • Flagstaff City Library, 300 W. Aspen Ave, Flagstaff
Claiming Ground, by Laura Bell
- Tues, Sept 19: **Movie Night** • 6:00PM - 8:00PM • Gail D. Lowe, 1600 W. University Ave, Suite 206, Flagstaff
Ridin' for the Brand
- Tues, Sept 26: **Book Club** • 5:30PM - 6:30PM • Flagstaff City Library, 300 W. Aspen Ave, Flagstaff
Rancher, Farmer, Fisherman, by Miriam Horn

Stay tuned for information on events still in the works: <http://www.diablotrust.org/calendar>
If you have suggestions for events, books, films, presentations, or field trips, please do not hesitate to contact us: