



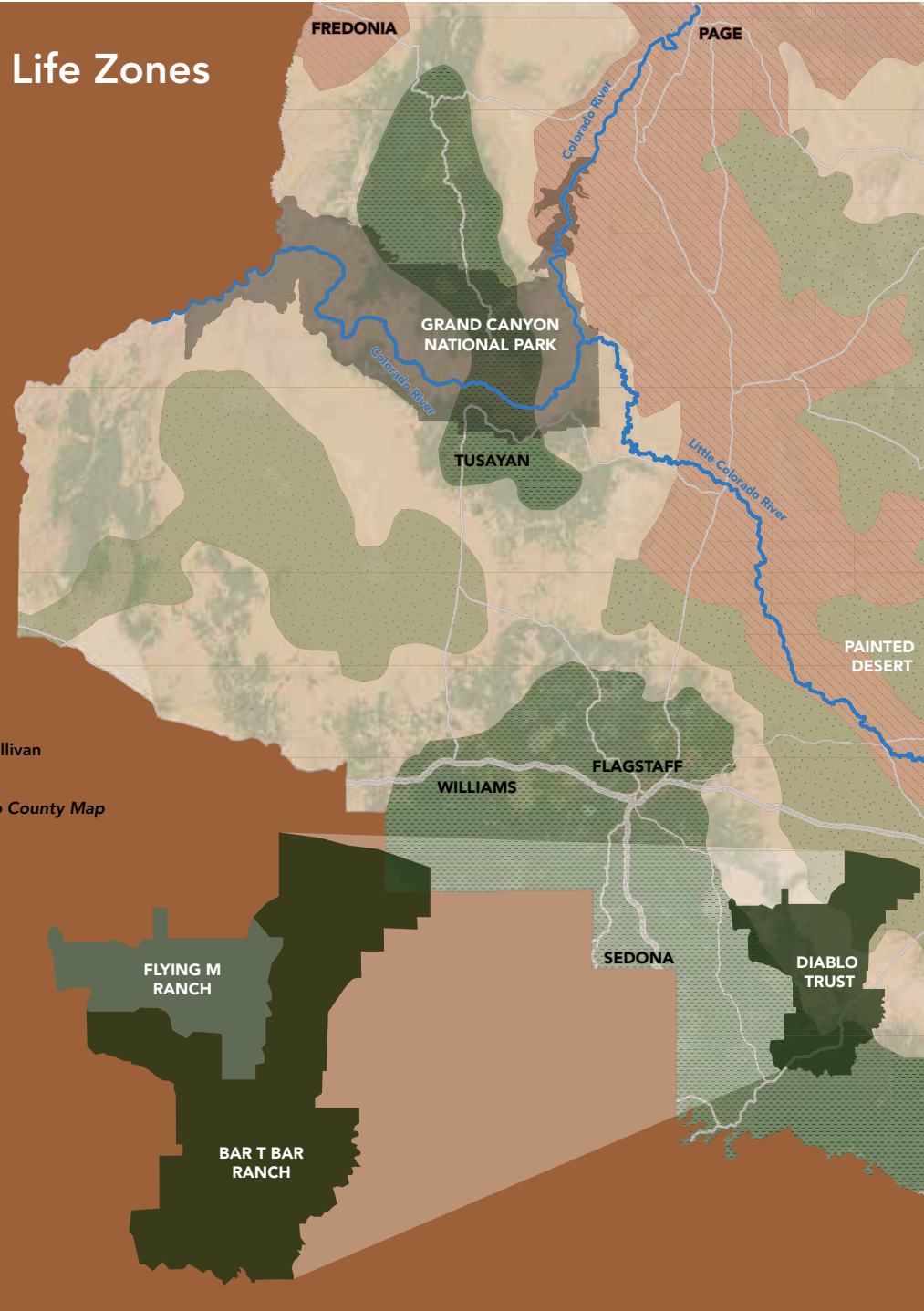
Keeping the Landscapes of Coconino County
Working and Wild

Coconino County Life Zones



The 426,000-acre Diablo Trust area includes two ranches, Bar T Bar and Flying M, that work in collaboration and partnership with public and private agencies to promote healthy, working, and wild landscapes.

Cover: San Francisco Peaks. Photo Julie Sullivan
 Inset: Diablo Trust Archives
 Map: Claire Sipos. Adapted from Coconino County Map



Working and Wild Landscapes

Finding Sustainable Solutions

COCONINO COUNTY IN NORTHERN ARIZONA could be the backdrop for most any movie about the Wild West— it’s big land with big skies. But it’s also a very real place. At 12 million acres it is the second largest county in our country, largely rural and undeveloped. Within its boundaries are breathtaking canyons, high mountains, green forests and woodlands, and golden grasslands. The county’s land ownership is a mix of public, private, and Native American reservations.

There are enormous problems facing the health of these lands:

- Overcrowded forests pose huge fire hazards
- Grasslands are being crowded out by tree and shrub invasion
- Water is becoming scarce due to climate change and too much evaporation from bare ground
- Soil erosion is increasing from loss of plant cover
- Wildlife numbers and diversity are being lost to this habitat degradation
- Recreation is damaging many landscapes
- Wide open spaces are being lost to exurban sprawl as ranches are sold
- Local foods and jobs are lost as land deteriorates
- Taxpayer burdens are increasing as government is expected to fix and manage it all

These problems are even present on our park preserves and are mostly beyond the scope of government and their funding limits to solve.

However, an effective and affordable alternative exists in “working landscapes,” through progressive ranch operations, forestry, hunting, and other gainful work that provides the needed human stewardship to keep our lands open, wild, healthy, and productive.

Through grant funding from Coconino County Supervisors, this booklet has been produced by the Diablo Trust (DiabloTrust.org), a collaborative forum of ranches, businesses, agencies, and public volunteers to show examples of such working and wild landscapes. The Diablo Trust is a nonprofit organization started in 1993 by two ranches, Bar T Bar and Flying M, located in the southeast corner of Coconino County.

At the time there was an explosion of elk numbers overgrazing and degrading critical habitat areas of the ranches. No one had a solution and the ranchers were being blamed for something out of their control. One of their key goals in launching Diablo Trust was to get beyond the “cows versus condos” debate and find sustainable solutions to keep these spectacular lands both working and wild.



Above: "Doghair" thickets of dense pines choke out native grasses, deteriorate soil, and lead to devastating fires.

Photo: Tom Bean



Above right: Healthy, thinned forests encourage growth of native grasses, lessen catastrophic wildfire, and create favorable conditions for wildlife and plant diversity.

Photo: Tom Bean

Right: Mechanical thinning and other treatments help the forest floor recover and make room for grasses.

Photo: Julie Sullivan

Far right: Putting fire back on the land mitigates the chance of bigger, more destructive crown fires.

Photo: NPS Flickr



Restoring Healthy Forests

The largest continuous ponderosa pine forest in the world arcs across northern Arizona into New Mexico, millions of acres in four national forests and at higher elevations on private lands.

But that forest is not well now. Past logging of the biggest trees and suppressing all forest fires have fostered unhealthy conditions. Especially in the absence of fire– the forest’s housecleaner– ponderosas have grown dense and crowded with smaller trees, so dense that all compete for moisture and few thrive. Many studies have confirmed these conditions and the catastrophic crown-killing fires that are occurring with frightening frequency.

To restore the forest, the overgrown stands of trees are being thinned by hand and machine, prescribed or controlled burns are being used, remaining slash piles of branches are being burned and chipped, and native plants are reseeded and invasive species removed wherever possible.

The desirable outcome is to restore “presettlement” conditions to a more natural density of trees with open grassy areas in between. Rather than freezing at a snapshot in time, the goal instead is to nurture the processes that ensure a healthy forest.

Is it possible to have both working and wild landscapes? Working landscapes are those that produce marketable products that pay for the kind of management that assures soils and vegetation are kept sound and healthy. Modern progressive foresters, ranchers, and wildlife managers are able to plan and time tree, forage, and animal harvesting to support a succession of grasses, shrubs, and trees. This will provide essential ecosystem services of clean water, clean air, carbon cycling, and good soil– that ultimately will keep the land both wild and working.

Goshawk: Photo: NPS Flickr

Making Room for Wildlife on Grasslands

The presence of all kinds of animals big and small is integral to healthy land, plus the public gets great enjoyment in observing wildlife in their natural habitats. Grasslands, for instance, provide places for smaller burrowing animals like prairie dogs, burrowing

owls, ground squirrels, gophers, and snakes to live. They also furnish food for larger, grazing animals like pronghorn, elk, deer, bison, and livestock.

Healthy, productive grass and rangelands display perennial native grasses, wildflowers, and shrubs, while the deep root systems of grasses bind the soil in place and help conserve moisture. But grasslands face threats in

the form of overgrazing; lack of fire; invasive species, especially cheatgrass; and tree and shrub encroachment. Woodland trees like pinyons and junipers are a valuable plant community throughout the Southwest. When those trees edge into grasslands they suck up moisture and crowd out native grasses.

Private landowners and public agencies are thinning pinyon and juniper to open up grasslands for wild and domestic grazing animals. In other efforts, a wildlife working group has studied declining pronghorn populations and helped develop a management plan on Anderson Mesa and several other areas in the county. Others are concerned that corridors remain intact for animal movements and migrations.

Pronghorn. Photo: Ken Folwell (NPS Flickr)

Right: Illustrations courtesy Jeremy Maestas and Maja Smith, Sage Grouse Initiative

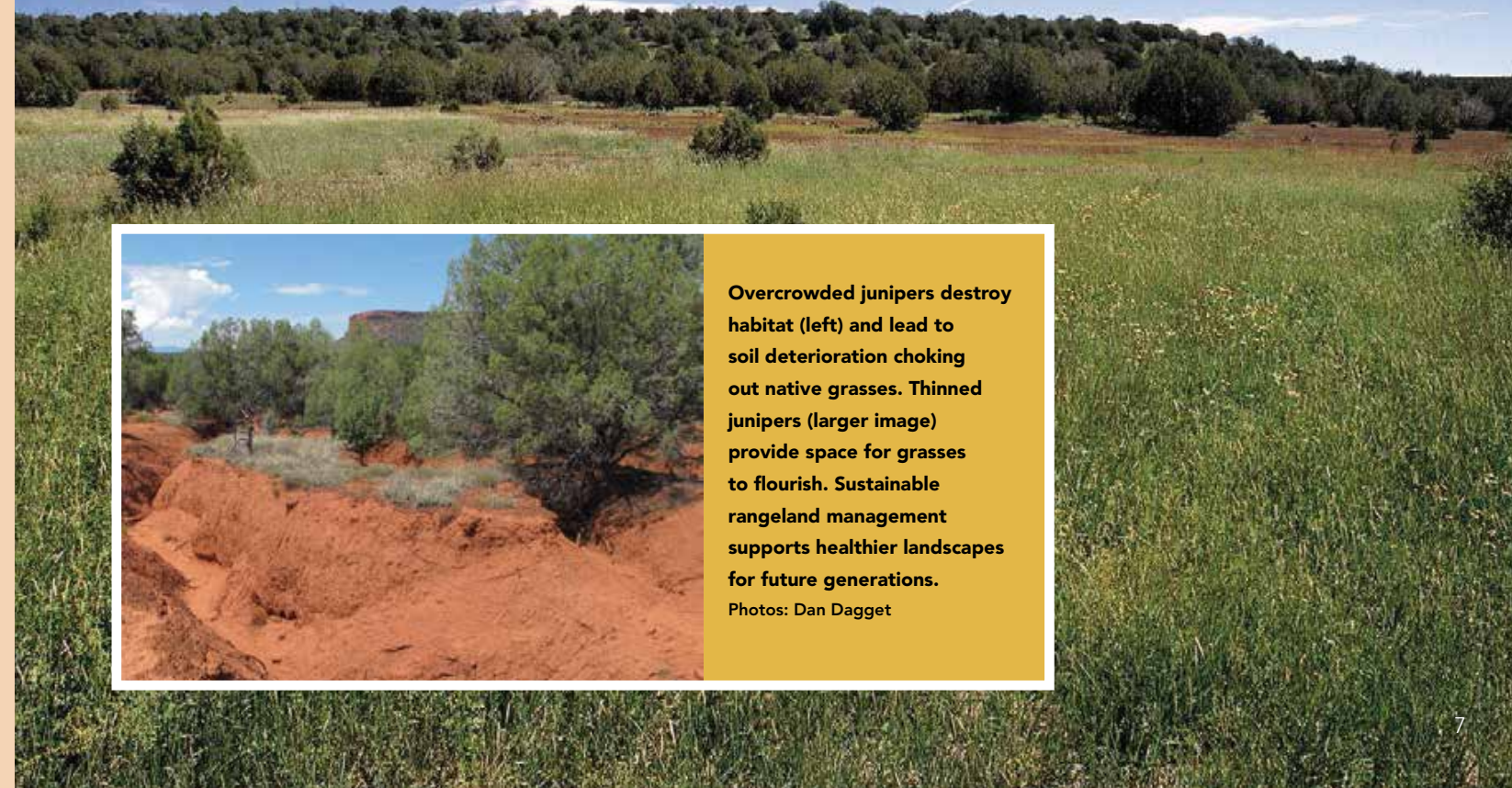


Native grasses have a deep web of roots that builds soil, slows erosion, and helps hold moisture. Encroaching junipers and shrubs push out native grasses, rob the soil of nutrients, hurt wildlife habitat, and obstruct animal movements across the land. When ranchers rotate livestock grazing with long rest periods, grasses recover and are healthier.

Photo: Julie Sullivan



Historically, livestock maintained grass cover.
Photo: Sedona Heritage Museum



Overcrowded junipers destroy habitat (left) and lead to soil deterioration choking out native grasses. Thinned junipers (larger image) provide space for grasses to flourish. Sustainable rangeland management supports healthier landscapes for future generations.

Photos: Dan Dagget



Above: Drought-ridden soils harm plant growth.
Photo: Julie Sullivan



Below: Scientists measure natural resource conditions to help assure management goals are met.
Photo: Dan Dagget

Opposite: Working lands restore grasses by improving water absorption, recharging underground aquifers, and reviving spring flow.
Photo: Tom Bean

Building Water and Climate Resilience

Water is life in Coconino County's high deserts. Though water and associated riparian areas occupy only about two percent of the land area, its habitat supports an astounding diversity of wildlife. Nearly eighty percent of water sources are in place due to the working landscape needs of ranches, so it's important to keep these large open space enterprises in business. Maintaining healthy grass cover is the key stewardship goal in minimizing erosion and producing a clean and abundant year-round water supply on the land.

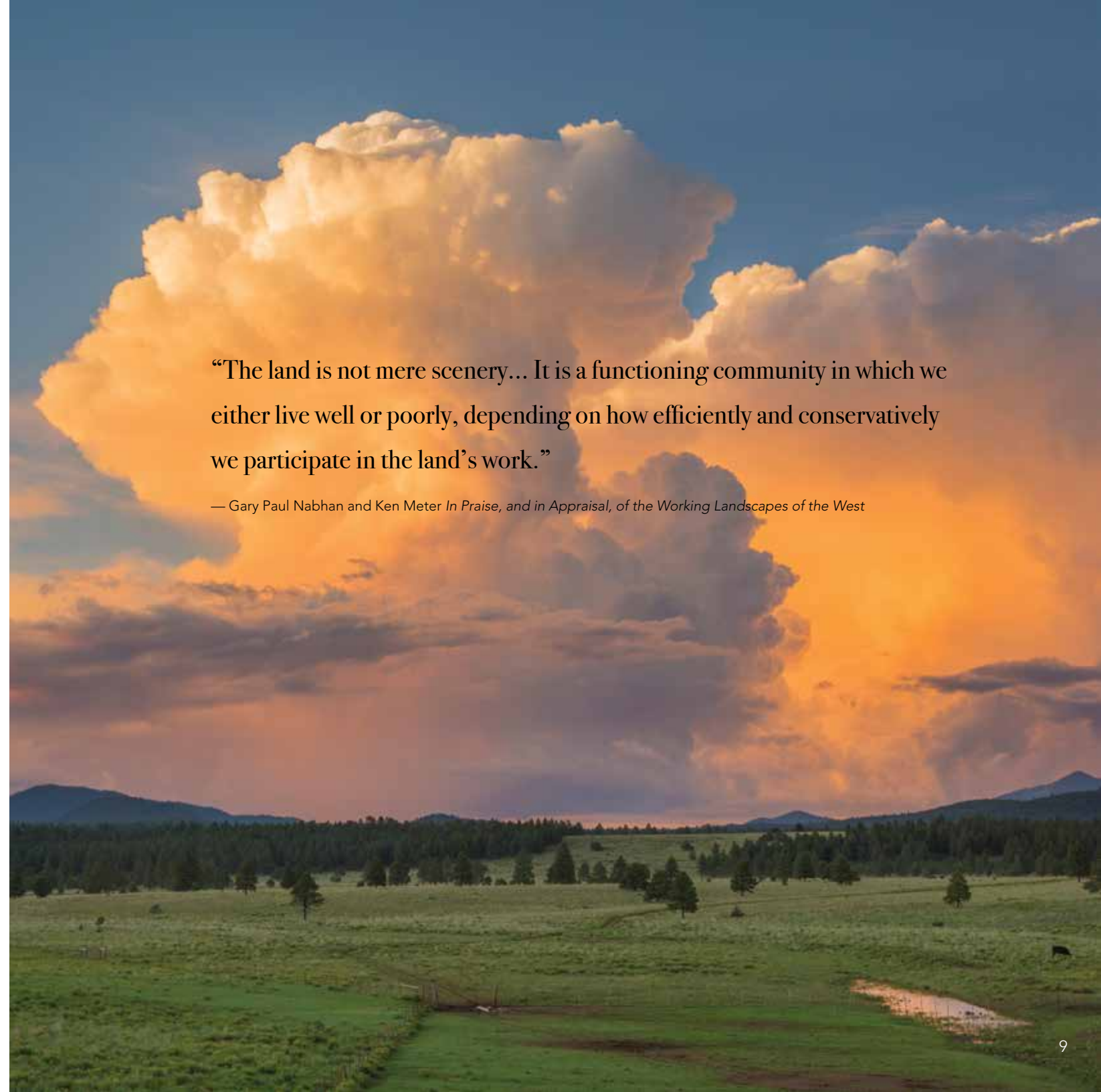
The global rise of carbon dioxide and other greenhouse gasses translates into warmer, drier conditions in the Southwest's already arid and semiarid climate. We see the effects of climate change here in the most precious resource of all— water. Reduced snowpack means less water in rivers and streams, gullying and erosion along watercourses, declines in the flow of springs and seeps, lowered water tables, and changes in distributions of plants and animals.

Climate change is long-term and cyclical, and we may not recognize the consequences until it's too late. Careful stewardship of water and land is needed so we can adapt and be resilient in the face of this uncertainty.

Diablo Trust and others are taking several proactive steps in the face of climate change. They are gathering baseline information about wildlife use at lakes and other water sources, hauling water and building tanks for wild and ranch animals during extreme drought, repairing springs and floodplains to slow down and allow water to filter into the ground, and maintaining fences at wetlands and riparian areas. These efforts benefit not only the cattle, but also wild animals who rely on these processes for survival.

“The land is not mere scenery... It is a functioning community in which we either live well or poorly, depending on how efficiently and conservatively we participate in the land's work.”

— Gary Paul Nabhan and Ken Meter *In Praise, and in Appraisal, of the Working Landscapes of the West*



Recreating for Land Health

Coconino County boasts some of the nation's most beautiful and interesting landscapes, from the Grand Canyon to Oak Creek and everything in between. People come from all over the world to enjoy that beauty and the solitude of the wide open spaces, and to recreate in many forms.

But recreation that leaves land fragmented or damaged can jeopardize wildlife movements and harm land health. Many of the county's ranchers, in cooperation with federal, state, and local agencies are helping to regulate smart recreation that reduces human impacts while keeping lands working and wide-open spaces intact.

Hunters, hikers, bicyclists, OHVs, and other recreationists are asked to follow these "Rules of Etiquette:"

- Practice Leave No Trace ethics– avoid social trailing and making new fire rings, and do not litter
- "Don't bust the crust"– a living biocrust covers the ground surface in many places. It's easily damaged by vehicle tracks and footprints and can take many years to repair itself. Once broken, soil quickly washes and blows away. Visitors are asked to use established trails, stay on slickrock, and avoid the crust
- Camp a respectful distance from water sources
- Observe private property boundaries and leave gates open or closed as found
- Enjoy watching wildlife but don't harass, chase, or harm
- Do not disturb cultural sites or remove any artifacts
- Bring water and come prepared for all kinds of weather and road conditions; cellphone coverage is not guaranteed



Above: Diablo Trust members enjoy a campout complete with a fine dutch oven dinner after a day of working and learning about the ranch.

Photo: Diablo Trust Archives

Below: Along with spectacular views and exhilarating hiking, Marble Canyon offers a great opportunity to glimpse California condors and other wildlife.

Photo: Diablo Trust Archives

Seeking Land-Based Knowledge

The goal for working landscapes is to sustain the natural processes that create and protect the health and resilience of the region's remarkable open landscapes, to support diverse, flourishing plant, animal, and human community life. To



accomplish this, it is essential to build community understanding of how local ecosystems work.

Land-based knowledge is acquired through scientific inventories, condition and trend monitoring assessments, and data sharing. This involves cooperation between government

land management agencies, agricultural producers, educational institutions, environmental organizations, and the general public.

The Coconino County Comprehensive Plan provides strategies for protecting the health, vitality, and integrity of the county's biotic communities and ecosystems, which includes minimizing the fragmentation of large contiguous areas of habitat, to assure wildland connectivity.

The Diablo Trust ranches are a unique and effective example of a collaboration of diverse people working together to meet county management objectives.

In 1999, the Diablo Trust collaborated with agencies to create a comprehensive Range Management Plan, covering management of all land jurisdictions across all five life zones, from tall pines on Forest Service land down to desert grasslands on State and private



The land benefits when ranchers and government agencies cooperate on resource monitoring. Photo: Dan Daggett

Healthy land is good for pollinators too. Photo: Jack Haskell, NPS Flickr

lands. The plan describes detailed desired landscape conditions for each life zone, including management steps for high ground cover of a diversity of plants to increase water percolation and vegetation growth. Planning includes on-the-ground monitoring projects for land and wildlife improvement. Among them is long-running research by Northern Arizona University scientists and agency scientists. Since 1987 they have been documenting grazing effects on native plants, wildlife, general ranch health, and shedding important insights into the complex interaction of grazing and climate change.

Scientific monitoring is required at many levels. It can verify that current management produces healthy resources results, provide immediate feedback to daily management actions, and secure trust among the many stakeholders who guide management decisions.



The following organizations share the goal of healthy, sustainable, wild and working landscapes:

Diablo Trust

Coconino County Board of Supervisors
Coconino County Parks and Recreation
Coconino Natural Resources
Conservation District
Arizona Game and Fish Department
Babbitt Ranches
University of Arizona Cooperative
Extension
Willow Bend Environmental
Education Center

You are invited to visit the Diablo Trust website to participate:

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Credits

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Diablo Trust's slogan is simple but profound:

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

