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PRESIDENT'S MESSAGE



Mark W. Larson

I wrote my last message to you, the members of The Maricopa Audubon Society, on March 31st. Because of the danger of spreading or contracting infection, we had just cancelled all of our spring field trips, our April members' meeting, our annual elections of the Board of Directors, and our always much-anticipated Annual Banquet. Little did we know then that this was just the beginning of the dangerous, life-disrupting time that lay ahead.

Now, on the first day of July, I have not learned that any of our members have been afflicted with COVID-19. It is my fervent hope that this is true and will remain true. Yet, four months into this crisis there is still no indication of how much longer this threat will last.

In addition to the virus plague hanging over us, more than two hundred thousand acres of our nearby Tonto National Forest have burned as a result of the human-caused Bush Fire. Low intensity ground fires are a natural part of the ecosystem in the Ponderosa pine forest found in higher elevations of Maricopa County. But fires in the Sonoran Desert are not!

Instead, fires in our desert, often started by careless people and fueled by invasive grasses such as buffelgrass and red brome, can do long-lasting damage from which the ecosystem struggles to recover. Please take extra care not to start a fire when you visit the desert. It is a biologically rich treasure at our doorstep that is too easily taken for granted.

I read something recently that confirmed what I had known almost all my life, and that is that birding has mental and physical health benefits that go beyond mere exercise. I read this in a story about a 90-year old man who began birding in his 70s! Indeed, most of those who mentored me when I was growing up were retired, and all were happy and healthy until their last days.

We do not yet know when we can again gather for our informative meetings or when we can conduct our educational field trips. Nevertheless, I urge you to stay safe by minimizing risks. Live to revel in the exceptional natural world we have in Arizona! 🌵

Mark W. Larson

President

In Memoriam: Dwayne Fink, 1932-2020

Dwayne Fink was born in Albert Lea, Minnesota with a propitious name. Fink is German for finch and Dwayne became an avid birder. He served on the board of Maricopa Audubon Society as secretary from March 1992 to May 1994, then as vice-president until July 1995 followed by president until July 1997. His passion was urban habitat and population control. Fink was a founder of the Sonoran Audubon Society which split the metro area into two local chapters. He was interim treasurer of SAS until their elections, then membership chairman for four years. He passed away 25 June 2020, preceded in death by his wife Edna.

LETTER FROM THE EDITOR



David Chorlton

Fire and water are very much part of our state and it is important that we get to know them. Both elements are vital to our wildlife, whether giving life or threatening it, so it seemed well due that they appeared on these pages. Thanks to Jeri Young Ben-Horin for her expertise on our waterways, and once again to Gail Cochrane for writing about watersheds.

In 2014 I was part of a project bringing art and science together in a study and exhibition addressing fire: Fires of Change. It was a thorough learning experience to see forest in various stages from overgrown vulnerability to well managed with control burns. Used wisely, fire is not simply an enemy, but conditions in a changing climate create great dangers. See something of the exhibition at <https://flagartscouncil.org/2015/11/fires-of-change-gallery/> and meet Julie Comnick, who also participated, on the arts pages here. Sadly, fires today invariably grow to tragic proportions, leaving us looking back too late at mismanagement as well as conditions beyond our control. Vicki Hire has a special feature in this issue in which we learn about two outstanding volunteers helping wildlife in Australia; one of whom travelled from here in Arizona.

Outdoor activities remain difficult to plan, and in the absence of organized field trips we suggest looking up your favorite locations and checking with each one for conditions and any precautions you will be expected to take. Kathe Anderson takes her turn in The Turning Year series, telling us what we can see in different seasons at Boyce Thompson Arboretum.

We look forward to holding meetings again but sadly, we have to wait for safer conditions. Meanwhile, Maricopa Audubon's work continues and we hope our membership appeals in this issue touch your hearts! I hope the Wren•dition alone repays a member's investment with the quarterly delivery of information and pictures to the mailbox.

If ever there were a time to appreciate the birds that are common around us, this is it. Many of us have regular hummingbirds (we get Anna's and Costa's) as well as thrashers, flickers, woodpeckers, quail, towhees, finches, and doves. During walks along the street at dusk in summer, we see the Lesser Nighthawks cutting last light to shreds as they hunt for insects. I hope familiarity breeds affection for all of you whose birding this year has been localized.

We learn what we can in seclusion, some of us being better suited to it than others, and look forward to more social times and seeing many of you in person. Meanwhile, thanks to all our contributors for their knowledge and research, and to Brad Woodward for his work with the layout. 🐦

David Chorlton
Editor

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David Chorlton
480 705-3227

Maricopa Audubon Website
<http://www.maricopaaudubon.org>
Be sure to check it. You never know what you'll find!

The Earth has received the embrace of the sun and we shall see the results of that love.

Sitting Bull

An Investment in the Future

Bequests are an important source of support for the Maricopa Audubon Society. Your chapter has dedicated itself to the protection of the natural world through public education and advocacy for the wiser use and preservation of our land, water, air and other irreplaceable natural resources.

You can invest in the future of our natural world by making a bequest in your will to the Maricopa Audubon Society. Talk to your attorney for more information on how this can be accomplished.



Sign up for the e-newsletter!

To receive updates and supplements to *The Cactus Wren•dition*, sign up for the monthly (September to May) e-newsletter. No membership required. It includes meeting and field trip reminders, special events, and citizen science projects.

To subscribe, email: laurienessel@gmail.com

Note: We do not use the email list for anything other than the described purpose.

JOIN THE FLOCK

Maricopa Audubon Society is the sum of its members.

The work we do in conservation, education, and sharing our world with wildlife becomes more effective the more members we have. The basic \$20 fee brings you four copies per year of The Cactus Wren•dition. We won't protest if you see fit to send more, and anything above that \$20 is tax deductible. Under-eighteens and students can join for \$10. **You can join online: <http://maricopaaudubon.org>**

Or if you've seen more than enough of your computer screen during lockdown, you can fill in the form below and send a check made out to Maricopa Audubon Society to:

Vicki Hire/MAS Treasurer
PO Box 603
Chandler, AZ 85244

Now take a deep breath and try to recall whether you're up to date!

-
- Please sign me up as a new Member or
 I'm already a Member and want to renew

Name _____
Address _____
Email _____

Emails are used to send out monthly eNews and meeting announcements. We don't share your email with anyone.

Thank you. And remember your stamp is supporting the US Postal Service when it too needs to feel loved.



*Don't leave us
in the cold!*

Annual Election

Now that you're paid up, you are eligible to vote for Board members. We plan to hold our election when in-person meetings resume.

Be Social!

**Find MAS on
Facebook**

facebook.com/
MaricopaAudubonSociety

Conservation Update

by Mark Horlings

Verde River Cattle Grazing

Cattle are allowed to graze in upland stretches of the Verde River. The river itself is off limits to cattle, because it provides habitat for, among other species, the Yellow-billed Cuckoo, Southwestern Willow Flycatcher, and Loach minnow.

Ranchers with upland grazing rights are supposed to erect fences that keep cattle away from the river, fix fences when cattle break through them, and remove cattle found along the riverbank. A recent study shows that ranchers ignore these responsibilities, and that the Forest Service ignores the resulting damage. Only thirty percent of the river ran free from grazing harm; forty-four percent suffered moderate or worse damage from grazing. As a result, in March, 2020, Maricopa Audubon Society (MAS) and the Center for Biological Diversity sent Notice of Intent to Sue to the Forest Service.

Yellow-billed Cuckoo Survey

MAS volunteers had planned to survey the Verde River below Bartlett Dam for nesting Yellow-billed Cuckoos during July and August, 2020. This stretch of the river has not been designated critical habitat yet but contains thick underbrush beneath a cottonwood and willow canopy, a habitat favored by nesting cuckoos.

If cuckoos are found this year or in 2021, the data can be used to nominate this stretch of the river as critical habitat under the Endangered Species Act. MAS volunteers can kayak or walk the river looking for the birds. Members interested in joining a survey team should contact Laurie Nessel, MAS' Program Chair.

Note: Wildfires have burned more than 224,500 acres this year on the Tonto National Forest. The Tonto National Forest has declared a Stage III Forest Closure from July 2 through July 31, 2020 due to dry conditions and massive fuel load. The Bartlett Dam cuckoo survey site is included in the closure. We hope to be able to survey once the monsoon season starts which will be the tail end of the nesting season.

We will send out a notice if surveys may resume.

Mount Graham Red Squirrels

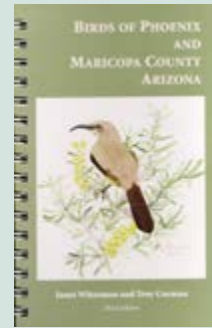
On June 11, 2020, MAS and two other conservation groups sued two federal agencies, asking the court to require them to honor previous agreements to re-evaluate critical habitat for the Mount Graham Red Squirrel and to remove summer homes and an abandoned Bible camp. Reduced to a total population of about seventy-five, the squirrels have been forced from their designated critical habitat to lower elevations by the Mt. Graham telescopes and wildfires.

The federal agencies' failure to honor earlier agreements to remove the Bible camp and summer homes at the lower elevation now threatens the remaining squirrels. The lawsuit, if successful, will force the Forest Service and U.S. Fish & Wildlife Service to designate new critical habitat and to clear that habitat for the squirrels.

MAS President Mark Larson issued a statement saying "For decades these rare squirrels have been chased from their homes by fire, construction and more fire. It's long past time for the agencies that are paid to protect endangered animals to step up and safeguard the last places they live." 🐿️

Field Trips

Although the ongoing coronavirus threat has persuaded us that organized field trip groups would be unwise, if you want to go out on a personal or family basis and take precautions as you hit a birding trail, there are several locations close to Phoenix that would be worth



your attention. Be sure to check where you can for any special requirements or advice in dealing with social distancing. Please remember to wear a mask even though you are outdoors on a trail, and stay alert. Boyce Thompson Arboretum has been limiting the numbers allowed in the park at one time, and the Gilbert Riparian Preserve is a popular family destination and therefore usually well populated. Be sure you stay

well so you can enjoy these places next year, hopefully under brighter circumstances.

Additional information about these, and many more birding locations can be found in *Birds of Phoenix and Maricopa County Arizona*. Page numbers in the following descriptions refer to the pages in the book. (<https://www.maricopaadubon.org/birds-of-phoenix-1>)

Tres Rios Overbank Wetlands p. 61

91st Avenue and the Salt River
You will need a parking permit from The City of Phoenix Water Services Department.

Veterans Oasis Park in Chandler p. 34

4050 E Chandler Heights Rd, Chandler

Tempe Town Lake p.27

550 E Tempe Town Lake, Tempe

Riparian Preserve at Gilbert Water Ranch p. 29

2757 E. Guadalupe Rd., Gilbert
Park Hours: 5:30 AM - 10:00 PM
Habitat area open dawn to dusk
This is a popular spot and you should be prepared for well populated trails.

Boyce Thompson Arboretum p.83

37615 E. Arboretum Way
Superior, Arizona 85173
520-689-2723
Check the website for visitor guidelines and <https://www.btarboretum.org/>

Hassayampa River Preserve p.81

49614 Highway 60/89, Wickenburg, AZ 85390
Email: eric.Hough@maricopa.gov

WATER CONNECTS US ALL

BY GAIL COCHRANE



A watershed is a crucible of life, a dynamic and interwoven entity made up of geological, atmospheric and biological forces. Within an area of land bounded by high elevation, precipitation is captured and then released. Capillaries trickle from mountain meltwater, meet in babbling streams and drain always downhill to arteries of rushing rivers. Along the way, water seeps into the soil, collecting in plant roots and underground rivers or aquifers.

Pathways of water etch into the landscape, creating washes, arroyos and canyons. These low areas further collect and channel water. While some watersheds are relatively small, others encompass thousands of square miles and may contain streams, rivers, lakes, reservoirs, and underlying groundwater. Cities, towns and farm lands are all embraced by watersheds.

Within watershed basins, life follows water, and biodiversity soars in verdant riparian hollows. In the Southwest arid conditions often erase surface water. Underground moisture can be extracted by trees such as Fremont Cottonwood, sycamore, ash and willow. Reaching leafy crowns into the sky, these trees also sink a network of roots into the earth. River

banks are fortified against erosion, and the multilayered canopy captures humidity, allowing riparian flora and fauna to flourish. Whether water flows year around or not, human impacts on watershed systems can be severe.

Land use practices can negatively affect a watershed and the quality of the water in it. Natural vegetation and soils are affected by urbanization, agriculture, mining, forestry, grazing and more. Water running over bare soil increases erosion, cuts into stream banks, and washes sediments downstream. In an optimal situation, healthy soils and robust vegetation slows the flow of water in a stream channel, allowing more moisture to soak into the ground, to be utilized by plants and to percolate into aquifers.

Clean water and healthy watersheds also depend on the reduction of pollution within the basins. Toxins leaching into streams, lakes, and rivers negatively affect local waterways and eventually, oceans. River estuaries are rich and important areas of biodiversity. Unfortunately, these areas at the mouths of rivers act as sieves collecting accumulated toxins. Upstream, noxious pollutants are discharged from single point sources such as drain pipes, ditches or sewers. Even more difficult to control, non-point pollutants come from diffuse sources, such as runoff from agriculture, urban streets, and abandoned mines.

Most all of the water in Arizona flows through the Colorado River Basin, which empties into the Gulf of California.

On its way to the Colorado, water in Arizona flows through sub watersheds. A number of these converge in the greater Phoenix area.

Bubbling springs give birth to the Verde River high on the Colorado Plateau. The resulting stream draws from the Big Chino aquifer, and swells with perennial tributary waters from Oak Creek, Wet Beaver Creek, West Clear Creek and the East Verde River.

The Verde merges with the Salt River in a turbulent roil of waters east of Mesa. The Salt River's headwaters trace back to the confluence of the White River and the Black River, which flow from the White Mountains.

The Agua Fria River is also a tributary of the Gila River, flowing from the Bradshaw Mountains near Prescott. The Lake Pleasant reservoir is fed by the Agua Fria. The Salt empties its tributaries into the Gila River in the southwest Valley at Tres Rios. Many stretches of these desert watersheds' rivers have no surface water except in times of big rain events.

In the arid Sonoran Desert watersheds cradle precious waterways that we all depend on for life. Management of watershed resources is a critical aspect of providing water to humans and wildlife. 🐦

Gail Cochran has lived in the Sonoran Desert for more than twenty years and is a frequent contributor to The Cactus Wren•dition.



Idyllic pond by Gail Cochrane



Upper Gila by Jeri Young Ben Horin

ARIZONA'S WATERWAYS

BY JERI YOUNG BEN-HORIN

Arizona, like so many southwestern states, has an ever-increasing population and an unquenchable thirst that relies on a significant amount of ground and surface water. In Arizona, surface water is sourced from large rivers, including the Colorado, Verde, Salt and Gila Rivers and their tributaries. This seemingly renewable resource makes up approximately 54% of the state's yearly water use. Groundwater makes up approximately 40%, and reused or recycled effluent makes up the remaining 3-4%. When planners and lawmakers decide who gets water and how much, the environment is the last "user" in line.

TYPES OF RIVERS

There are three main types of rivers in Arizona that are classified by their flow: ephemeral, intermittent, and perennial. Ephemeral streams or rivers usually only flow for a few hours or days, after a significant precipitation event. This sort of stream may be the most familiar to Arizona residents, as we have seen small streams or arroyos begin to flow not long after a winter storm event. Intermittent streams or rivers are linked to groundwater systems, and usually only flow for a few to several weeks. And lastly, perennial rivers tend to flow year-round and are connected to groundwater systems. Perennial rivers may stop flowing during prolonged drought. Figure 2, by The Nature Conservancy, shows the major rivers, such as the Gila River, that were once perennial, and now only flow when water is released from the large dams that impound the natural flow.

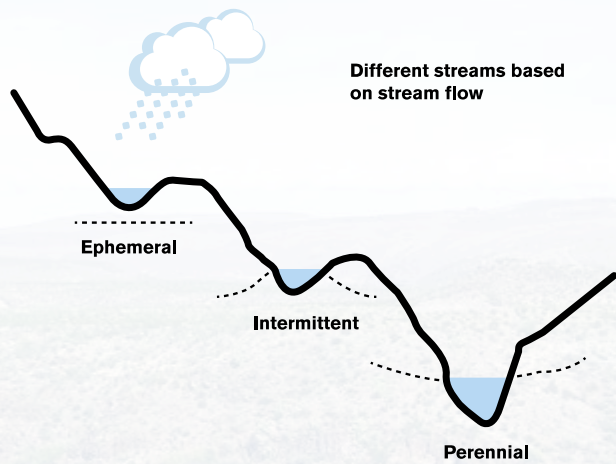


Figure 1: Schematic of general types of streams/rivers from <https://cals.arizona.edu/extension/riparian/chapt4/p3.html>.

Riparian areas, or “ribbons of life” are found thriving along perennial systems, as well as intermittent and even ephemeral streams to some degree. Riparian areas act as corridors for animals that migrate or travel long distances for food. Riparian areas also provide water and diverse and lush vegetation that are the foundational food sources for many animals. Although it is estimated that riparian areas only make up approximately 0.4% of Arizona’s lands, protecting these systems as a whole is necessary to ensure their longevity and health for future generations of animals and humans alike. This effort has been stymied by the water laws that govern surface and groundwater use.

WATER LAW IN ARIZONA

Water laws intended to govern water use in the arid southwest have been ever-changing, voluminous, and difficult to follow. Currently, groundwater laws, such as the landmark 1980 Groundwater Management Act, are written for designated “water using sectors” that include municipal, industrial, and agricultural sectors, leaving the environment out of the picture. Surface water law has been built on the age old “first in time, first in right” doctrine. Surface water can be “appropriated” if the water has not yet been allocated and the intention is to use it for “domestic, municipal, irrigation, stock water, water power, recreation, wildlife, including

fish, nonrecoverable water storage and mining uses.” This current law may appear to provide protections to wildlife, but when the applicants for water appropriations are entities like municipalities, or mining operations, water needs for environmental use are given the lowest priority.

Arizona water laws become even more entangled when the surface and groundwater systems are linked. In many large rivers, such as the Verde River, groundwater withdrawal decreases the river’s flow and can even cause water levels to drop below phreatophyte root systems in riparian areas.

Who is left out? Given the realities of climate change, with less surface water availability, and less groundwater recharge due to drought, pressures on riparian habitats have increased. Current surface water laws in Arizona have begun to address the needs of the environment, but because the environment is considered a newer entity in the allocation process, it will take vigilance by communities to keep the environment on the minds of lawmakers and administrators at the Arizona Department of Water Resources.

Jeri Young Ben-Horin has lived in Arizona for 20 years, originally from San Bernardino, CA. Jeri moved to Arizona to compete her doctorate in geology and specialized in earthquake faults. Currently, she is employed with the Arizona Geological Survey, at the University of Arizona, but works remotely from Phoenix. While working at the Survey, she has worked on groundwater studies, flooding and fault hazards, and operates the state’s seismic network. She enjoys mountain biking, hiking and practicing her violin.

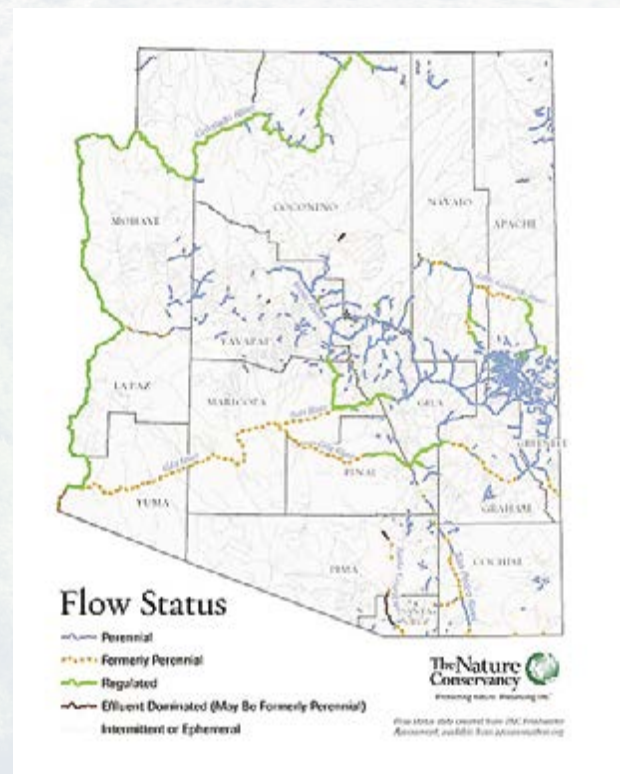


Figure 2: Map of Arizona’s rivers. Perennial, formerly perennial, regulated and effluent dominated (<http://azconservation.org/projects/water>).

Boyce Thompson Arboretum

through the Seasons

by Kathe Anderson

While many birders estivate in the desert summer (June – August), Boyce Thompson Arboretum hosts a rainbow of neotropical birds well worth getting out of bed early for. On the red end of the rainbow, Vermilion Flycatchers have nested in the picnic area in the past, but the Summer Tanagers steal the show. Orioles, Hooded and Bullock's, plus Black-headed Grosbeaks, fill the orange slice of the rainbow, while Yellow Warblers and Yellow-breasted Chats, both loudly vocal, dazzle like sunshine. Broad-billed Hummingbirds represent the rainbow's green and blue hues. Blue and violet can be represented by Purple Martins in June and July, and a Lazuli or Varied Bunting in August. Soaring as shadows in the sky, are the Turkey Vultures, with possible Zone-tailed Hawks intermingled.

As the summer becomes fall (September – October), the leaves start to turn crimson and gold on the pistachio trees, but the Western Tanagers that could be camouflaged in the pistachios have already passed through in abundance in September. They are replaced, as leaves turn coppery, by the russet-colored birds of autumn – Hermit Thrushes, American Robins, Spotted Towhees, and Northern Flickers. Sporting just a rusty cap, Green-tailed Towhees peak in early October.

In winter (November – March), the chestnut-colored birds are joined by less colorful species, including Bridled Titmice, Dark-eyed Juncos and sparrows. For every ten White-Crowned Sparrows, a possible Lincoln's Sparrow,

Fox Sparrow, Chipping Sparrow or White-throated Sparrow might make a skulking appearance. Ayer Lake is more likely to host water birds in the winter, along with the ubiquitous American Coot. Ring-necked Ducks and Pied-billed Grebes are the most likely winter visitors, but at least a dozen duck species have dropped by over the years, with the delightful surprise of Hooded Mergansers during the last few winters.

Ah, spring (April – May) – the season of endless possibilities! Starting around the equinox, but continuing with robust energy through the beautiful days of spring, migration brings new species. In addition to the rainbow of birds that settle in for the breeding season, flycatchers, vireos and warblers wander through, destined for higher elevations and northern latitudes. The Ash-throated Flycatchers lead the Brown-crested Flycatchers by about a month; both have settled in by May. Meanwhile, the pesky Empidonax Flycatchers

(Hammond's, Dusky, Gray and others) dribble through in April, and the Western Wood Pewees peak in May. Bell's Vireos arrive early and chatter incessantly in April and May,



Brown-crested Flycatcher by Cindy Marple



Yellow-breasted Chat by Cindy Marple



Black-headed Grosbeak by Matt VanWallene



Lazuli Bunting by Matt VanWallene

while the Cassin's and Plumbeous Vireos pass through, somewhat quieter. There's an overlap of the resident winter warblers (Yellow-rumped and Orange-crowned) with the resident summer warblers (Lucy's and Yellow) in spring, but chances for a bright MacGillivray's, Townsend's, Wilson's and other warblers passing through are especially good in spring.

It's hard to have a bad day at the Arboretum any time of the year. If it's a quiet birding day, there's still plenty to enjoy in the different habitats, from colorful flowers, towering trees and exotic cacti to skittering lizards and comic squirrels and chipmunks. Thanks to those who submit data to eBird which contributed greatly to this article! 🐦

Help MAS with an EMPLOYER MATCHING GIFT

Many Maricopa Audubon members aren't aware that their employers may include a matching gift program in their benefits package. Programs vary from business to business, but they generally offer a dollar-for-dollar match when an employee makes a personal gift to a nonprofit organization like Maricopa Audubon Society.

Please visit your human resources department or charitable giving department to see if this opportunity is available to you. You usually have to fill out and submit a form, which is sometimes done online. If you have already made a donation to MAS in the past year, you may be able to get a matching gift after the fact from your employer for up to 12 months later.

SUMMER TANAGER

by Cindy Marple





Wren•dition Revisited

In his article in a 2001 issue of the Wren•dition, Bob Witzeman pointed to fire-related issues that still concern us in Arizona.

conservation

BIRDS AND FOREST FIRE

by Bob Witzeman

'A land ethic changes the role of Homo sapiens from conqueror of the land community to plain member and citizen of it. It implies respect for his fellow members and also respect for the community as such."

—Aldo Leopold
Sand County Almanac

A consortium of the U.S. Forest Service, an NAU forestry professor named Wallace Covington, and others, are moving forward with their multimillion-dollar "fireproofing" of 100,000 acres of a Flagstaff area forest. They call it "pre-settlement restoration" or sometimes fire prevention but it has already been used as old-growth logging disguised as forest fireproofing. Proof of this is Covington's past pre-settlement "thinning" restorations at Mount Trumbull. Photographed at that site were 36-inch matriarchs being sold to logging companies—supposedly to pay for the cost of the restoration thinning. Sometimes enviros are able to set a 16-inch cap on these "pre-settlement" logging schemes, sometimes not. George Bush's new appointees will certainly oppose any logging size caps.

This pre-settlement scheme claims to protect homes from forest fire. In reality,



Buff-breasted Flycatcher: This bird is dependent upon forest fires which create mosaics of meadows full of insects, surrounded by unburned standing trees for nesting. —Jim Burns photo

most of those millions of dollars will be wastefully spent in forests more than the 0.5 miles from homes. Numerous studies have shown that if you wish to protect homes and property you are wasting money if you thin and manipulate the forest more than half mile from that wildlands-urban interface.

The "pre-settlement" approach embraces the Covington notion that by thinning the forests we can return them to a benign "pre-settlement" forest type characterized by slow, cool-burning forest fires which will hug the ground and not reach the canopy. In reality, fire burned in Arizona and throughout the West in every possible manner from hot to cool.

Since cattle are not permanently removed from our public forests following this "restoration" thinning, the cycle of dense conifer thickets and crown-fire laddering continues. Cattle, by removing grass, allow conifer seedlings to germinate in excess.

If we were to have only Covington's cool fires here in the West, it would be an ecological disaster. There are important ecological benefits from having both hot and cool burning fires. Many birds and other wildlife are dependent upon hot, stand-replacing fires, intermediate fires, and cool fires. This mix of fire intensity types results in diverse tree species and age classes, and many beneficial stages of forest succession—essential to dynamic, productive forest ecosystems.

Smokey's fire suppression policy has impacted a host of fire-dependent birds and wildlife. In Arizona these include Hermit Thrush, Hairy Woodpecker, and Olive-sided Flycatcher. That flycatcher needs severely burned forests. Under fire suppression Arizona and the West have lost much of its aspen. Aspen is valuable here for our Red-naped Sapsucker, Warbling Vireo, and various woodpeckers, and swallows.

Fire is indispensable for Arizona's Buff-breasted Flycatcher. That species depends upon fire-induced clear areas in pine forests. Aerial photos of most forest fires show a complex mosaic of heavily burned, partially burned and unburned areas. These burned/unburned mosaic interfaces with both living and standing dead trees become insect smorgasbords for bluebirds, swallows,

woodpeckers, etc. They capitalize on the copious, varied food supply of the burned and unburned habitats.

Fire is essential for the survival of various plant species, whether the flames open sealed cones to release seeds, or clear the ground to create conditions for germination. Harmful, exotic weeds brought in by the livestock industry, are reduced in number by fire.

Smokey has always told us how inimical bark beetles, dwarf mistletoe, gypsy moths, porcupines, and fires were to his tree farm mindset. These are, in reality, the beneficial forces. Like fire, they open up overgrown post-mature forests for wildlife and promote tree species succession. The latest issue of *Audubon Magazine* pointed out that some insect species actively search out fires, homing in on the chemical compounds in smoke. These fire-loving insects include wasps, wood-boring beetles, and robber flies. The black *Melanophila* beetles congregate at fires, arriving in time to lay their eggs in still-smoldering trees. These beetles apparently detect flames with a pair of infrared sensors on their thorax.

Smoke may signal widely dispersed insects to gather, increasing their chance of finding a mate. Burned trees also provide food for growing insect youngsters as well as the birds that depend on these insects as prey items. In one wasp species, the mother lays her eggs under scorched bark, along with depositing a wood fiber-digesting fungus. Insectivorous birds thrive in hot fire areas with standing burned trees.

Let's protect homes and property by only fireproofing the well-studied, officially accepted half-mile wildland-urban interface distance. And let's not throw billions of tax dollars into the "pre-settlement" nonsense—even one inch outside the 0.5-mile wildland-urban interface.

The cool-burning "pre-settlement" forest type never even remotely characterized the West. The Covington prescription is nothing more than the foot in the door by a forestry professor to bring old-growth logging and even-aged tree farms back to the West. If you have any doubts about this, look how our pro-logging western senators are clamoring for this "fireproofing" charade. ♪

SO, HOW DID WILDFIRE AFFECT THE SKY ISLAND BIRD COMMUNITIES?

The following is an excerpt from the paper *Cactus Wren•dition* readers can find in its entirety at:

https://www.fs.fed.us/rm/pubs_journals/2018/rmrs_2018_miller_s002.pdf

Miller, Sue; Sanderlin, Jamie; Ganey, Joe. 2018. A feather in their cap: Using citizen monitoring to track post-wildfire bird communities in the Arizona Sky Islands. *Science You Can Use Bulletin*, Issue 31. Fort Collins, CO: U.S. Department of Agriculture Forest Service Rocky Mountain Research Station. 11 p

Like many of the recent wildfires that have burned in the Sky Islands, the Horseshoe Two Fire was highly variable in how it burned, with some areas burning very hot, and some mostly untouched. “We weren’t really expecting to see much in the way of species gains or losses across the whole region after the fire, but we did expect to see changes by species in their numbers and where they were found when looking at the local level,” explains Ganey. And in fact, their data show that total bird species present in the area were similar for both time periods (prefire versus postfire) across mountain ranges, while local colonization and extinction differed for individual species within the individual mountain ranges. The

fire created a diversity of altered habitats across the landscape, reducing tree densities and basal area across forest types. In general, fire increased the overall diversity of bird species found across the larger landscape. Time since fire, scale, and fire severity are all important in the landscape mosaic which influences overall bird diversity. Woodpeckers and flycatchers often become more abundant right after a fire due to the beetle colonization of dead trees. According to Sanderlin, “A species of concern in the region is the buff-breasted flycatcher; when there are fires you usually see more of these and other unique species that are associated with burned landscapes in the area.” Preliminary results indicate that the flycatcher has potentially expanded its range to include recently-burned landscapes. Bird tour guides key into habitat changes and know that, for example, a high-severity burn area is where they can take people to see woodpeckers, and likewise they would go to low severity or unburned areas to see species associated with the more mature forest. Birds that responded

positively following the Horseshoe Two Fire were more generally associated with cavities for nesting, and open conditions for foraging, such as the Western wood-pewee and the ash-throated flycatcher. Birds that responded negatively were generally associated with closed forest conditions for nesting, like the Grace’s warbler. But the burned landscape is dynamic and changes rapidly with dead trees falling, new seedling establishment and plant regrowth, and the bird populations respond to changes in foraging and nesting habitats and food sources. This makes birds great ‘indicator’ species for evaluating forest response to disturbance. 🐦

If Cactus Wren•dition readers have any questions, follow the link of this publication: https://www.fs.fed.us/rm/pubs_journals/2018/rmrs_2018_miller_s002.pdf and share with others that are interested.

NEW! Join a Virtual Social Event or Class using the Zoom video conferencing platform. <http://tucsonaudubon.org/news-events>

After you register, your link to join the Zoom social/class will be sent to you the day before. If you have any questions about using Zoom, please contact Luke Safford.

Makov Center

https://www.youtube.com/watch?v=x0sXWkp1_BM

Panama

<https://www.canopytower.com/fruit-feeder-cam>

Central Park video:

<https://www.youtube.com/watch?v=1FvoppCDT1k>

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AUSTRALIA'S OUTBACK FIRES

BY VICKI HIRE



Captain Sharon Field. Courtesy of Sharon Field.

MEET SHARON FIELD, CAPTAIN OF HER LOCAL BUSHFIRE BRIGADE

VH: *How many years have you been a firefighter?*

SF: I have volunteered for almost twenty years as a regular firefighter, a remote area firefighter (a little like US Smoke Jumpers, except that we get winched by helicopter into remote areas, inaccessible to firefighting trucks) and more recently I completed my training as an Air Observer (flying over fires in order to map them and provide intelligence on fire behavior back to the Incident Control Room). I was Captain of my local brigade for seven years responsible for an area of around 150 square miles. While my job was to ensure any fires in my brigade area were quickly contained, we also had a major role in community engagement – talking with residents to ensure they and their properties and animals were ready for the fire season.

VH: *What introduced you to firefighting – or why did you decide to become a firefighter?*

SF: Because I live in a rural area in New South Wales (NSW), I decided that it would be useful to know more about fire behavior and how to prepare myself and my property for fire events, so I joined the local brigade.

VH: *Do you have another job, and only volunteer as a firefighter? Are you “on call” only for emergencies?*

SF: When I first volunteered as a firefighter, I was a full-time public servant (civil servant), and now I am a full-time artist. In Australia, we volunteer our time and our services and do not receive any remuneration for what we do. The Rural Fire Service (a state-based government organization) provides local brigades with trucks, equipment, and personal



Two women's commitments, and a message for our desert southwest

protective equipment. The paid cohort of firefighters is trained primarily for urban fire events and this is their fulltime job.

VH: *What areas do you protect?*

SF: Local brigades deal with all fire-related incidents in their area, e.g., grass fires, bush fires, structure fires, motor vehicle accidents, and so on. However, during emergencies, we can be asked to go anywhere within the state or country to assist with firefighting efforts.

VH: *Are there many women firefighters in Australia?*

SF: Of 73,000 volunteer fire fighters in NSW, about twenty-two percent are women. Most women are at junior levels within the Rural Fire Service or in support roles rather than active firefighters. Very few women advance to more senior levels, but not because they do not have the capability.

VH: *During the crisis did you work many days without rest?*

SF: As a volunteer I can choose to go out on a call, or not. If we go on a deployment to wildfires in another area, we can work up to five

days (or nights) straight. Shifts are around twelve hours. If we are on a fire close to where we live, we have more flexibility in our workdays, although shifts are still a theoretical twelve hours long. For the recent fires, I chose not to be available every day, and went out on a shift probably every three days. The theoretical twelve hours on the fire ground can blow out if we have far to drive to get to the fire. I have been up to eighteen hours on a fireground.

VH: *Was exhaustion, smoke, visibility, or heavy equipment a problem?*

SF: Smoke is the worst part of fighting fires. If it gets into your eyes it causes dramatic tearing, and you must irrigate your eyes extensively and sit in a smoke free location until

your eyes clear up. While I have not experienced a severe case of smoke in my eyes (I make sure I wear goggles), by the end of a shift my eyes are always red, dry, and scratchy. Breathing in smoke is exhausting and can give you a sore throat and lungs by the end of a hard shift. Smoke can also affect visibility and a person's ability to understand clearly what is going on. One of the main difficulties on a fireground is communication. We have a good array of radios in the trucks, but terrain can often hinder clear communications.

VH: *Did you use water, or a fire retardant to put out fires? Did you run out?*

SF: On the trucks we carry water which we source from wherever we can: dams, streams, rivers, and hydrants in towns we travel through. We carry drums of foam which acts to smother flames and helps the water go further. If no water is available in the area to fight a fire, we rely on the Rural Fire Service in consultation with local councils to source water for us. This water is then brought as

close as is possible to the fire and put into buoy walls (a heavy rubber tank) from which we can replenish the water supplies on the trucks. Our largest tankers carry on average around 800 gallons of water, which does not last long on a wildfire. When we run out, we must leave the



Rescued Joey. Courtesy of Sharon Field.

fireground to find more water to fill the truck. Once replenished, we return to the fireground.

VH: *Did you see animals trying to escape from the fires?*

SF: Animals everywhere were fleeing the flames and many were unable to escape. I saw dead kangaroos, possums, birds, and snakes. Two images that remain vividly in my mind were first, of several kangaroos trying to flee a fire. They were confused and distressed by the smoke and noise and ended up being trapped on a fence where they died in the flames. The second was of a possum, fleeing across a road to escape a fire, caught in mid-stride and frozen. I think the super-heated air from the fires probably killed that possum. I saw burned kangaroos, sheep and dogs in obvious distress and pain. We sought professional assistance for animals that needed euthanizing. Less obvious were the small insects: beetles, spiders, moths, butterflies and so on which would have been vaporized by the heat and flames. Once the fire front has passed through, any surviving animals are faced with another round of threats with their food and water sources gone. Residents often put out bales of hay, food pellets and containers of water to help the creatures that managed to survive.

VH: *Did you see birds trying to flee?*

SF: Interestingly, I did not see birds trying to escape, probably because of the smoke hiding the sky. So many small birds were vaporized by the heat and fire in some areas: Blue Wrens, lyre birds, honeyeaters and wattlebirds. Some of the bigger birds could probably have escaped the fires just because

of their ability to fly distances and at higher levels than the smaller species, for example magpies, parrots, and cockatoos. However, their food sources were often destroyed by fire.

VH: *Have there been any issues with flooding in your area because of the fires?*

SF: We did have heavy rains after the fires, but they were welcome. In some areas, there were concerns about rain-washing ash into dams and rivers which had the potential to cause problems for the fish and frogs.

VH: *What trees or plants do you think will have the best chance of regrowth?*

SF: Many Australian native plants have evolved with fire. However, the fire needs to be “cool” and not too hot. While several of the eucalyptus trees will survive, the smaller plants will struggle to come back, particularly in areas where the ground was seriously scorched, taking out the fungi, worms, bacteria, and insects. Habitats will regenerate, but they will not be the same habitats, and their biodiversity is likely to be less complex and robust than before the fires.

VH: *When was the final day when firefighters were told the fires were totally contained or extinguished?*

SF: Because so many fires burned all along the eastern seaboard of Australia, we had no final day. During the worst times, many small fires joined up to become mega-fires, and different parts of those fires were managed by local brigades, as they were able. It was well into April before some of the fires in this area were deemed fully contained and out. Even after that, patrols still monitored potential hot spots. Local crews were still on the job for weeks after the fires stopped crossing the landscape. This is because fire was still present deep in the root systems of trees or smoldering in isolated gullies. Patrols went on for weeks and weeks to ensure nothing still smoldered.

MEET VALERIE MOTYKA, FOUNDER OF ARIZONA WILDLIFE RESOURCE AND LOCATED ON THE OPPOSITE SIDE OF THE GLOBE IN ELOY, ARIZONA



Valerie feeding animals at rehab.

Note: Arizona Wildlife Resource was previously featured in the Spring 2016 edition of The Cactus Wren•dition.

VH: *How did a wildlife volunteer from Arizona find herself at an Australian avian rehabilitation center?*

VM: A lot of people were drawn to help wildlife after reading a post by Todd Driggers, a veterinarian and owner of the Avian & Exotic Animal Clinic in Phoenix, Arizona about the plight of the animals suffering in the Australian bush fires. I just had to do something to help. Dr. Driggers put me in touch with an organization called Wildlife A.R.C. (The Wildlife Animal Rescue & Care Society Inc.) and Jacky Hunt who operates an avian rehab service from her home in NSW. I was able to obtain a discounted stand-by ticket from a friend and volunteer.

VH: *How long were you in Australia?*

VM: I flew out on March 2nd and returned March 26th. The following day, flights were restricted because of COVID-19. Jacky Hunt said, “Come on, we will take care of you.” I was able to stay at Jacky’s house the entire time. I was immediately immersed in the middle of a rainforest, not having to stay in a hotel, with the sounds of so many birds that had traveled to escape the fire-stricken areas.

VH: *What was your typical day like?*

VM: Rehab centers in Australia are like the ones here in Arizona, with people working out of their homes.



Tawny Frogmouths by Valerie Motyka.

Jacky had a separate building dedicated to the rehabilitation of birds. I volunteered to do whatever was needed because I wanted to be of value. I prepared food for the birds, and there was always something to be organized, cleaned, or folded.

VH: *Did you care for birds or animals that were burned?*

VM: Most of the birds and animals that we cared for did not arrive with a “fire injury”, but instead had “fire related” injuries, or were experiencing symptoms of stress from being displaced. Wildlife forced out of their natural habitat meant food scarcity, and we saw many animals emaciated or with parasites and coccidia because there were too many animals in one place. A Pacific Baza (Crested Hawk) with burn marks on his feet and a broken wing arrived on my first day at the rehab center, but unfortunately did not survive. Pacific Bazas are never seen on the ground as they hunt in treetops. Sometimes the burned animals had to be euthanized because recovery was impossible. Adult animals did not handle captivity well and were extremely stressed; younger animals had a better chance at survival.

VH: *Which experiences in NSW are especially memorable?*

VM: The thing that stood out the most about the trip was all the tweaked similarities. The Australians have issues with drought, fires, and habitat loss and so do we. We have Red-tails, bobcat, and coyotes and they have Tawny Frogmouths, kangaroos, and platypuses. It was amazing to see the diversity of species and realize that the rehab centers there are all going through the same situations as here. 8,000 miles away from my house, surrounded by strangers and completely different animals, and I felt like I had never left home.

VH: *Did you notice differences in rehab methods and equipment as compared to here in the United States?*

VM: I cannot really remark on different methods because there are so many different species that we do not have in the USA. However, I did find it interesting that the marsupials like kangaroo, wallaroo, and wombat babies stay with the caregiver and tend to get more interaction as they feel their rehab animals have better success rates this



Pacific Baza with burns, by Valerie Motyka.



Valerie with Rosie, a Galah Cockatoo by Valerie Motyka.



Emaciated Flying Fox bat by Valerie Motyka.

way and still wild up quite nicely in a soft release area. Regarding rehabbing raptors, I found it interesting that in NSW they are not allowed to prey train. That is a method to teach young birds that have been raised in captivity how to hunt live food before release. Peggy from Higher Ground Raptor sanctuary in NSW does have a stunning circular aviary. I think we have a few in this country but hers was the first one I have ever seen in person. They get a lot of wedge tail, sea eagles, and powerful owls.

VH: *What are your concerns for the future of Australia's plants and wildlife, and is there a lesson to be learned for Arizonans and the Desert Southwest?*



Baby Womba by Valerie Motyka.

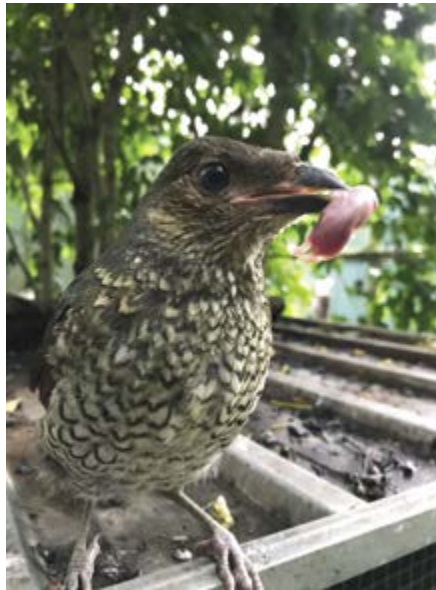


Jacky Hunt with baby kangaroo rescue by Valerie Motyka.

VM: The major concern is not just for Arizona or Australia, but for the entire planet. Globally we are seeing more extreme weather, increased habitat loss, use of poisons, increased diseases, and a decline biodiversity. We like to point our fingers at other countries for clearing so much land for development but we do the same thing here. We want to believe that there is some governing body protecting wildlife, but in reality, it is just a few committed individuals working their butts off to do whatever they can to save the future of the planet.

A Message for our Desert Southwest.

This year's fire season in Arizona has been particularly harsh with three times the acreage already burned as compared with 2019 according to the Arizona Forestry Chief Steve Millert.⁶ With eighty-five percent of US wild fires caused by humans⁷, and joined with the ominous climate changes occurring, there is a "red flag warning" to all of us to do what is within our reach to change behaviors and minimize our impact on the natural world. Educating ourselves and others, volunteering our time or providing financial support to organizations dedicated to protecting and conserving the nature that we all love is imperative. 🐾



Female Bower bird with pinkie by Valerie Motyka.



Eastern Grey Kangaroo Joey by Valerie Motyka.

Vicki Hire is the MAS Treasurer and usually contributes The Green Scene to our pages. The Green Scene will return next time around.

A special thanks to Gillian Rice for putting me in touch with firefighter, Sharon Field.

Further Reading

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Rainforest gully. Courtesy of Sharon Field.

Over 240 days, beginning in June of 2019, more than a million fires were detected in Australia's outback from space by NASA satellites.¹ The hardest hit state was New South Wales, whose Rural Fire Service declared it the worst fire season in history. More than 25 million acres were burned, destroying both fauna and flora indigenous to the area.

On April 23, 2020, species lists identifying 471 plants, 191 invertebrates, and 119 animals severely impacted by the fires and in need of urgent intervention were published by The Wildlife and Threatened Species Bushfire Recovery Expert Panel.² Of approximately 25,000 native plants in Australia, many considered threatened before the fires, are now at imminent risk of extinction due to stressors such as drought and disease.

University of Sydney ecologists estimated that a half billion mammals, birds and reptiles lost their lives, affecting 244 animal species not found anywhere else in the world.³ Animals that survived the fires may die from dehydration or starvation.

amazon smile

Maricopa Audubon Society is now registered on Amazon as a charitable organization. Go to the MAS Facebook page for details or use the following AmazonSmile link for Maricopa Audubon Society: <https://smile.amazon.com/ch/86-6040458> Log onto your Amazon account and a percentage of your purchase will go to MAS!

A FIELD GUIDE TO FIRE

I Lightning

The Navajo believes that if he comes within the influence of the flames he will absorb some of the essence of lightning, which will therefore be attracted to him and sooner or later will kill him.

Coconino Sun, Aug. 11, 1900

When darkness turns electric
and the sky descends
to where the ponderosas stand,
fire writes its name on air
with lightning five times hotter
than the sun.

One strike
sizzles; one strike bites
into bark; one strike sparks
a blaze; one strike holds back
and follows a man all his life,
waiting to have him know
the fate of trees.

V Wildfire

A wildfire differs from other fires by its extensive size, the speed at which it can spread out from its original source, its potential to change direction unexpectedly, and its ability to jump gaps such as roads, rivers and fire breaks.

“The Science of Wildland Fire.”

National Interagency Fire Center.

Beginning unobtrusively, this fire
climbs from fallen needles
when the forest floor is dry.

It likes
to hide while nobody notices
the first flame taste the pine cones
lying around it, and with an appetite
for more it rides a wind gust
until it reaches the crowns
of trees in its path, and takes
them without ever
looking back.

Faster uphill
than down, it outruns
those who would chase it,
and spreads itself wide
so as to make
itself visible for miles
although from distance it is impossible
to see how
it drinks grass,
chews trees,
and spits out broken boughs
when
even birdsong
is burning.

VII Control

*... the choice is not between two landscapes,
one with and one without a human influence;
it is between two ways of living, two ways of
belonging to an ecosystem.*

William Cronon, 1983

The slow smoke rising
signals where a fire crawls
along the forest bed,
crackling as it burns
the recent history away
of how the seasons brought
more heat than rain
and left the layered kindling
for the next storm
to ignite. It follows every rise
or ditch, flowing low
and holding to its purpose
though it strains sometimes
to stay within its means
the way a wolf might do
when scenting prey
in two directions.

XI Mythological

*The Navajos have a tradition that long ago
the God of Fire became sorely displeased with
the people of the earth and that in his anger
he set fire to the world, driving their ancestors
to the cactus country of the south.*

Coconino Sun, June 21, 1912

When time turns into wind
the trees stand helpless in its way.

With a wink from the Fire God's eye

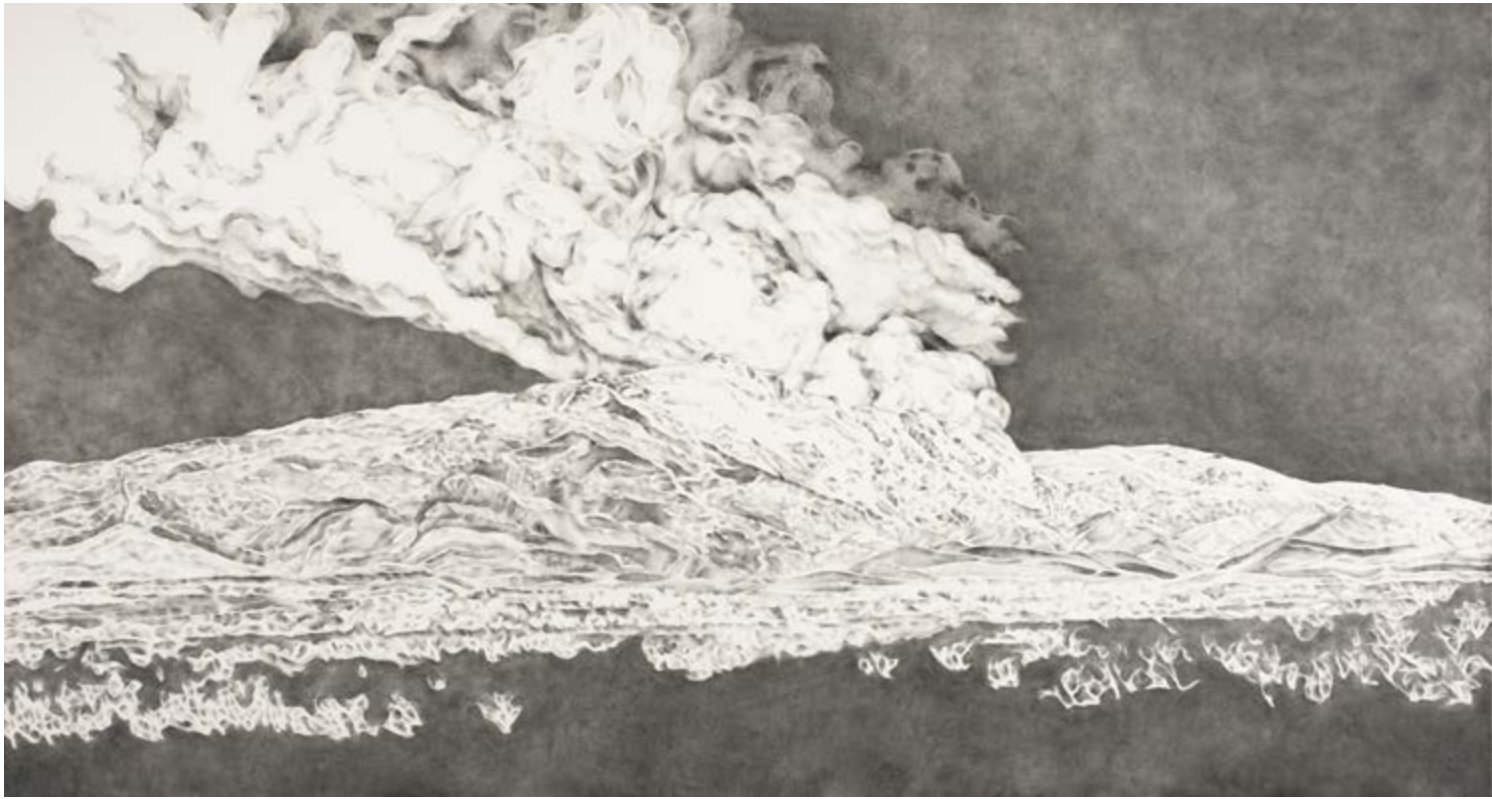
flames rise in beauty
saying *Come with us, become change, become
light.* And all

is changed
because men dismissed every warning

and ran until there was nowhere
else to run to.

David Chorlton

(from the book: *A Field Guide to Fire*)



The Art of Julie Comnick

Catalina-Rincon Panorama

Contrast. Inversion. Black and white. Negative and positive. Catalina-Rincon Panorama is one image that shows the contrast between two landscapes: one is inhabited by humans and wildfire is suppressed, and the other is not.

Catalina-Rincon Panorama is rendered with wildfire charcoal collected from wildfire sites on two adjacent mountains outside of Tucson, Arizona. The density of charcoal in the drawing reflects the relative frequency and severity of wildfires in recent history. The charcoal samples used to create the drawing are displayed in proximity to each wildfire site.

The Santa Catalina Mountains are Tucson's most prominent range with their highest peak being Mt. Lemmon (elev. 9147 ft).

The inhabited areas include Summerhaven, Ski Valley, and Sabino Canyon, accessible by the Catalina Highway (General Hitchcock Highway). The Rincon Mountains, by comparison, peak at Mica Mountain (elev. 8668 ft). The wilderness is vehicle-accessible only by Mescal Road (Forest Road 35), so the wilderness remains remote despite its close proximity to Tucson.

Herein lies the disparity that serves as the basis for this drawing. From a bystander's perspective, the Santa Catalina Mountains

appear green. The higher elevation range allows for diversity in the vegetation, ranging from saguaro to aspen forests. Due to human inhabitation, fires are suppressed. This results in dense vegetation capable of producing high severity mega-fires. The Rincon Mountain Wilderness, on the other hand, appears brown. At a lower elevation, the ecosystem ranges from desert chaparral to ponderosa pine. Since this is uninhabited wilderness, naturally occurring wildfires are permitted to take a natural trajectory. Vegetation is reduced through regular wildfire cycles so fires are typically smaller and manageable. Ironically, while the Santa Catalinas appear to be the healthier of the two ranges, the Rincon Wilderness is the more sustainable environment.

Ashes to Ashes

Ashes to Ashes is a series of drawings depicting recent Arizona wildfires, rendered with charcoal samples personally collected from each fire site. Each drawing is displayed with its corresponding charcoal sample. The collection represents fourteen significant wildfires from 1990 to the present, with archived photographs used as references.

While regular wildfire cycles are essential for the health of the ecosystem, they

are frequently accompanied by negative public perception of wilderness devastation and human disaster. The increased size and severity of recent fires—due to suppression strategies that began over a century ago, and the continual drought and warming trends resulting from climate change—have taken a toll on the environment and humans alike.

The use of charcoal, as an art medium, dates back to the earliest Paleolithic cave paintings. That it still prevails today (in a refined and compressed form) attests to charcoal's variety of applications and archival nature. Working with the unrefined, burnt remnants of Ponderosa Pine or Manzanita found at each wildfire site presented creative challenges such as achieving tonal range and detail on a small scale, and meeting contemporary expectations with an archaic medium.

The objective of these drawings is to reverse the public perception trajectory as viewers gain a renewed appreciation for the necessity of wildfire toward sustaining the longevity of our shared landscape. 🐦

Julie Comnick

See Julie's work, including more from *Ashes to Ashes*, at: <http://juliecomnick.com>



Rodeo-Chedeski Fire

Incident Type: Wildfire
 Cause: Human
 Date: 2002
 Location: Coconino / Gila / Navajo Counties, AZ
 Size: 468,638 Acres
 Vegetation: Ponderosa Pine / Pine-Oak / Juniper-Pinyon
 Management: Supressed

Schultz Fire

Incident Type: Wildfire
 Cause: Human
 Date: 2010
 Location: Schultz Peak, San Francisco Mountain near Flagstaff, AZ
 Size: 15,075 Acres
 Vegetation: Ponderosa Pine / Mixed Conifer
 Management: Supressed

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www.audubon.org/audubon-near-you

We send *The Cactus Wren•dition* to all current members of NAS if you are assigned to or choose MAS as your local chapter. NAS provides MAS \$3.00 per year for each member assigned to us.

To become a Friend of MAS, please pick up a form at the book sales table at our monthly meeting or visit our website, <http://maricopaaudubon.org>

For specific questions please contact our Membership Chair.

SUBMISSIONS

Copy for *The Cactus Wren•dition* must be received by the editor by email by January 15, April 1, July 1, and **October 1**. Articles not received by the deadlines may not appear in the upcoming issue. Some issues may feature a specific focus, so please feel free to enquire and take the theme into account. Email to: *The Cactus Wren•dition* Editor, David Chorlton: chorltondavid3@gmail.com

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