Shape the Future

Canyon Chatter

Friends of Madera Canyon

August 2025

The Chiricahua Leopard Frog, *Lithobates chiricahuensis* (Platz and Mecham, 1979)

The adult body length of this leopard frog ranges from 57 to 95 mm. Adults have an incomplete stripe on the upper lip. Vocal sacs are external and tiny. The throat may have grey mottling that spreads to the chest. Its range is discontinuous, but it is in Arizona, New Mexico, Sonora, Chihuahua. Located between 1000 and 2600 meters above sea level, The Chiricahua Leopard Frog inhabits areas with permanent water with sufficient depth to escape predators. This frog is not found in the Canyon unless it's moving from one locality with permanent water to another. It is considered Threatened because the invasive American Bullfrog preys on it. JCM

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FOMC
PO Box 1203,
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From the President

August 2025

The Geography of Hope

The Friends of Madera Canyon are but one manifestation of the groups that "declare our dependence on the Earth and our responsibility to it." Wallace Stegner, Pulitzer-Prize winning novelist, wrote these words in an essay titled *It All Began with Conservation*. Stegner went on to state that "We are still in transition from the notion of Man as master of Earth to the notion of Man as a part of it."

Many of you have read such authors as Edward Abbey (*Desert Solitaire: A Season in the Wilderness*) and Aldo Leopold (*A Sand County Almanac*), luminaries in the literature about conservation and wilderness. Stegner was more well-known for his fiction: *Angle of Repose*, *Big Rock Candy Mountain*, *Crossing to Safety*, *The Spectator Bird,* among many other titles. But, beginning in the 1960s, Stegner also wrote prolifically about environmental issues. He brought to his essays, non-fiction books and novels a passion for the West unparalleled in the American literary scene.

In 1960, in the midst of the campaign to persuade Congress to pass The Wilderness Act which had been debated for years, Stegner wrote a letter to David Pesonen, a UC Berkeley professor charged with working on a portion of the Outdoor Recreation Resources Review Commission's report focused on the wilderness. The letter became known as "The Wilderness Letter," well-known to generations of environmental activists, and, in the 1960s, read on occasion by Interior Secretary Steward Udall as the text of speeches Udall gave in defense of public lands in general and wilderness in particular.

Stegner began: "If I may, I should like to urge some arguments for wilderness preservation that involve recreation, as it is ordinarily conceived, hardly at all. Hunting, fishing, hiking, mountain-climbing, camping, photography, and the enjoyment of natural scenery will all, surely, figure in your report. So will the wilderness as a genetic reserve, a scientific yardstick by which we may measure the world in its natural balance against the world in its man-made imbalance. What I want to speak for is not so much the wilderness uses, valuable as those are, but the wilderness idea, which is a resource in itself. Being an intangible and spiritual resource, it will seem mystical to the practical-minded—but then anything that cannot be moved by a bulldozer is likely to seem mystical to them."

In short, Stegner maintained that simply the *idea* of wilderness was valuable. To know that there are still great tracts of wilderness preserved is important for our spiritual well-being, even if we never set foot in them ourselves.

Later in his letter, Stegner proposed, "Something will have gone out of us as a people if we ever let the remaining wilderness be destroyed…never again [to] have the chance to see ourselves single, separate, vertical, and individuals in the world, part of the environment of trees and rocks and soil…part of the natural world and competent to belong in it."

Stegner's letter concluded: "We simply need that wild country available to us, even if we never do more than drive to its edge and look in. For it can be a means of reassuring ourselves of our sanity as creatures, a part of the geography of hope."

As members of the Friends of Madera Canyon, you and I have declared our commitment to "preserve, conserve, and restore" the Canyon, to the best of our abilities. Much of the work of the Friends since 1987 has focused on recreation, as Stegner described it above, particularly in the lower Canyon, below where the Mt. Wrightson Wilderness begins. In essence, the Friends have participated in facilitating visits by the general public whose main interest is to "drive to its edge and look in."

We also know that the lower Canyon is the foyer to the wilderness where no man-made structure or excessive alterations are welcomed, where those who enter it choose to be "part of the trees and rocks and soil" and little else. As stewards of this point of entry, the Forest Service and the Friends collaborate to educate visitors to "pack it in, pack it out" and "take pictures and memories but leave only footprints."

For many, Madera Canyon might be the closest they will come to the "idea" of wilderness, in Stegner's words. Surely, the Canyon is, for many, a place of refuge from the bewildering world of modern life. It is a part of the geography of hope.

When you are in the Canyon, don't you stop and listen occasionally to the quiet or to the music of the birds? Don't you get a kick out of walking by the deer as they take note of you and then continue with their grazing? Don't you look up the mountainsides and marvel how grand the view and how small you seem in relation to it?

You and I live in interesting times. The geography in which we can find hope has transcended scores of "interesting times." If we are successful stewards in our time, it will transcend scores more. I find comfort in that connectedness—to the past, to the future, to the land.

Dan White

To Bear in Mind

VIS volunteers Bruce and Jean Sillers recently encountered a woman, a regular hiker in the Canyon, who saw a bear somewhere on the nature trail. Hiking alone, "she got spooked, took off away from the bear, tripped, and bloodied her knees. Bruce and Jean helped to calm her down, clean her knees and point her toward an Urgent Care Center," to quote another VIS volunteer, Debbie Gilliam.

Judy and I spotted a bear a few weeks ago near the Madera Picnic Area. Others have made similar reports. We were on the road; the bear seemed headed for the watering hole between Madera and Whitehouse.

The incident above prompted a lively exchange among our Monday morning crew about air horns, bear spray and the like. Included in the exchange was the advisory about bears from Arizona Game and Fish.

A reminder about bears is posted in several places from Proctor to Wrightson parking areas, including advice about what to do if you encounter one. Chances are that a bear has as little interest in meeting you as you do in meeting a bear. But we are in their home grounds, there is a creek that often has water, and bears need water. So, being bear-savvy and attentive to one's surroundings, including the presence of other critters, is prudent.

Thanks to Bruce and Jean for their help to the hiker.
Dan White

Announcement Update

In July, I noted our bench repair/replacement project, funded by the Greater Green Valley Community Foundation. Due to hard work by several FOMC volunteers, and especially the labors of Pablo Rocha and Mike Grambs of the Forest Service, we have nearly completed the project. Next will come a walking survey/assessment with District Ranger Jorge Enriquez to determine if it will be desirable to add back into the array of benches any in locations that we and the Forest Service have thought until now might be removed completely. Many thanks to Pablo, Mike, Rusty Lombardo and the other FOMC volunteers who have made this make-over happen.
Dan White

The Birding Page

SUMMER WALKS

Bob Pitcher

Grandma & the Birds

Mid-summer isn't the best season to look for birds here in Southeast Arizona, and I confess I haven't been out much to see any the last few weeks, in Madera Canyon or elsewhere. So this month's piece is a little different. I hope it pleases.

I'm sometimes asked how I got into birdwatching. I answer that it was in my family -- and that leads me to my Grandma Work.

Grandma and the Author, May 1950.

Ruth May Patterson was born March 5, 1878, in the farm town of Cresco, Iowa, in the northeastern part of the state. Her parents were James Freeman Patterson and Emmeline Darrow. Both were born in the East, both were descended from Scottish and English ancestors that had come to New England in the 1600s. Both their families came to Iowa during the 1850s when Iowa was the new frontier for farmers, and both families had prospered there. Grandma's father didn't farm; he was a bookkeeper, and Grandma's family lived in town. But her aunts, uncles, and cousins still farmed nearby.

Around the time she was ten, Grandma's family began to move as James looked for work, first to other Iowa towns, and then, about 1890, they took the big leap and moved to Chicago, where James found steady work downtown. The Pattersons lived on the South Side.

Chicago's South Side wasn't then what it is today. The Pattersons lived in those years close to 59th Street, west of Washington Park. The area was filling up quickly, but there were still patches of prairie and marshy spots still undrained. There were birds. Grandma hadn't left them all behind in Iowa.

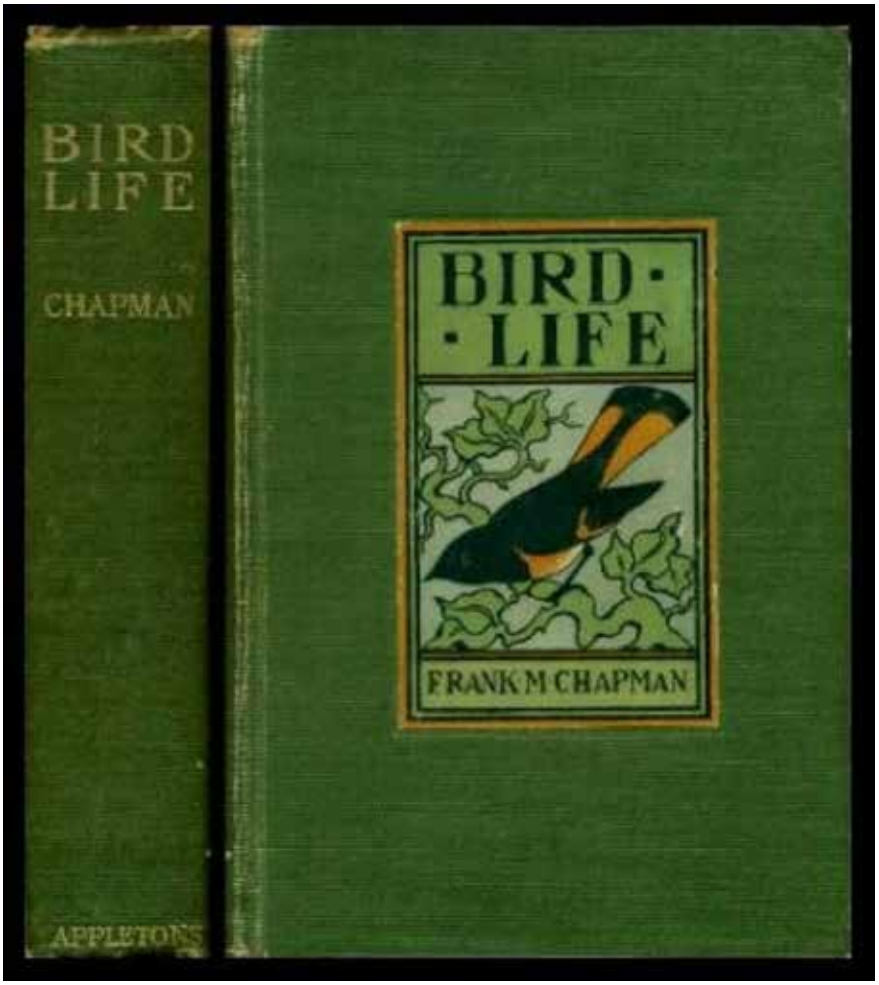
For some of the early years in Chicago, Grandma kept diaries, but not of the line-a-day variety; her early diaries (which I have) were each on a special theme. In the first, from 1893, she put down what she saw on each of her many trips to the World's Fair, the Columbian Exposition. She and her friends walked there after school, through Washington Park to what is now Jackson Park, to the Great White City. Very occasionally, Grandma notes a bird seen along the way. She seems to know them all.

The next diary, from 1897, is all about the birds of that year, seen in Chicago's parks or in the bits of Illinois prairie land still left. At the end, there's a list of the species Grandma saw that year – there are some fifty of them.

Many of Grandma's recorded outings in 1897 were taken with "Rob." Rob was Robert Gilbert Work. My mother told me the two met at a church (Methodist) picnic in Washington Park, very soon after the Pattersons moved to the big city. Rob was from a poor immigrant family, whose parents, Lawrence and Susannah Goudie Work, had come to Chicago from the Shetland Islands away north of Scotland in 1873, the year before Rob was born. He and Grandma shared a birthday, March 5.

Ruth and Rob married on that day, in 1901, and went to live a little farther south and west, in the Englewood neighborhood. This was very much on the city's outskirts in those days; although there was streetcar service, not all the streets were paved, and the sewer system was still going in, block by block. It was half rural.

Grandma was now certified as a teacher, having attended Chicago Normal School, with its innovative education program. She taught third grade in Englewood for several years, and collected both natural and art objects to give her pupils a broader view of life. Rob – Grandpa – was an apprentice architect with the firm of Jenney & Mundie (William Jenney is credited with the invention of the



This book undoubtedly encouraged many people to take up birding in the early 20th century.

skyscraper). Grandpa worked downtown.

Once she was married, Grandma quit teaching – perhaps the rules at the time required it. So 1902 was the first full year she would be at home, a housewife. She began a new diary. Though she doesn't say so, this one is modeled after two of Grandma's life-long favorite books, Thoreau's *Walden*, and *The Natural History of Selbourne*, by Gilbert White, both classics of natural history (though *Walden* is more than that).

In this diary, with an entry for most days of 1902, and on past the middle of 1903, Grandma notes the weather, the temperature, and any birds, wildflowers, or other natural phenomena she has seen or heard. She knows all the birds by ear as well as by sight. Although she mentions hardly anything else through these eighteen months or so – that is, the theme of the diary is successfully maintained – this was hardly a year without other incident. The entry for June 14, 1903, does mention the birth of her first child, June Roberta Work, my aunt June – and notes of the new baby somehow creep into the few remaining entries in this diary.

Grandma and Grandpa had three more children in the next seven years; Grandma had no time for more diaries until much later in life. In 1907, the Works made the move to the suburbs, to Barrington, Illinois, on the Chicago & Northwestern Railroad some thirty miles northwest of the city. Barrington was a town of 1,300, a farm town, half German half English and Scottish, but it was a farm town with a difference.

When they can afford to, urban Americans have always tended to become suburban. In those years, Chicago's North Shore was already filling up with successful professionals, and those coming behind them were looking for other likely areas to settle. Barrington, far enough outside of town to have unsettled countryside but close enough to commute by train, was such a place. My grandparents bought a farm of forty acres a mile west of town. My mother, Edith Frances Work, was born there in the old farmhouse in 1909.

Grandpa, whose architectural career progressed steadily, farmed the place for a few years, with hired help, but then the property was allowed to return slowly to nature. Nature in that part of Illinois is as the glaciers left it, low hills interspersed with marshes and small lakes – prairie vegetation and wildlife where the land it cleared, oak and hickory woods where the forest grows back. It's great for birds.

Early naturalists often ventured into the wilds of the New World and produced detailed descriptions of unknown organisms to bring back to Europe. Along with written notes, naturalists such as Mark Catesby (1683-1749) illustrated these new organisms as works of art so that others could see these animals and plants themselves. These expeditions led to the formal descriptions of a plethora of new species and began the earliest conservation efforts to protect our natural resources. Today a first edition of Mark Catesby's ***The Natural History of Carolina, Florida, and the Bahama Islands***. Is a rare find and could sell for $500,000 or more.

While Grandma lives the next forty years or so of her life – before I came along, that is – it's a good time to address the mystery: How did Grandma come to her fascination with and love of birds? How did she come to know the birds so well even in her teens? Who taught and encouraged her? The answer to all these is: I don't know.

It's true that those who live in the country tend to know the birds around them; hunters in particular know their gamebirds well. But distinguishing the dozens of warblers one sees in the East, or the tough sparrows and shorebirds? Birding is a thing now; there are sources galore available to birdwatchers both experienced and beginning. That wasn't so in the 1890s. Ornithologists had by that time described the birds of North America, but even the notion of amateur birdwatching was new, let alone the concept of field guides. Roger Tory Peterson's A Field Guide to the Birds, the first modern guide, didn't appear until 1934. Yes, Grandma had a copy of Frank Chapman's Bird Life, from 1897 (at least she had a well-used copy of it when I knew her), but Chapman is far from comprehensive and he employs an awkward key system for identification.

As to who may have encouraged Grandma, once again I don't know. Grandpa, it's true, developed a liking for and knowledge of birds, but he pretty well had to. I know little of Grandma's parents personally. I have a few letters of James, her father, but they're unrevealing, and though I have nothing her mother wrote, I believe she was more likely Grandma's inspiration.

I was born in 1950. Our house stood on five acres of my grandparents' original forty; they lived next door, in the house Grandpa had designed and built to replace the farmhouse. My mother and I, and my brother, after he was born the following year, were at "Grandma's house" nearly every day. In my earliest memories of Grandma, she could still get around fairly easily, but arthritis in her knees and ankles soon limited her severely. This also limited her birding. But Grandma's house was built and situated in such a way that she could see a good

deal without much walking. There was woods, oak and locust, on two sides, and open country – fallow, weedy fields – on the other two. And plenty of windows, with bird feeders placed to take advantage of them, including a shelf feeder built onto the window Grandma faced when she sat at her desk in the library. She kept binoculars close at hand, and my Aunt Fern, who lived with her parents, shared the bird fever, and kept the feeders full.

Two other aspects of Grandma's life fed her interest in birds: She loved books at least as much as birds. And she was devoted to nature conservation. I haven't space here (or, in fact, the sources) to detail her work on the second, but Grandma grew up in the days of the early efforts to protect birds from the plume hunters and the establishment of National Wildlife Refuge system. When I knew her, she was, among many other things, much involved in the effort to preserve the Indiana Dunes, now a National Park. And she served until well into her 70s as the secretary of the Chicago Conservation Council, an umbrella conservation organization for the Chicago area.

But I have succeeded to Grandma's love of books – and to some (alas, too few!) of the books she had. Grandma's house was full of books, and it was a big house. Her books covered many subjects, but those on nature and natural history featured largely, with books on birds standing out. On most subjects, Grandma was more an accumulator of books than a collector, but she collected bird books, from Mark Catesby's Natural History of Carolina, and the second, octavo, edition of Audubon's Birds, to Thomas Bewick's History of British Birds, and W. H. Hudson's Birds of La Plata, Grandma had them all. And many others: I once attempted to count her books that touched significantly on birds, and stopped at three hundred. On the walls were framed prints of Audubon and John Gould.

So when I tell people that birdwatching was "in the family," I'm not kidding. How could I have avoided becoming interested in birds? Yet it might have been possible. My brother, instead of adopting birds, adopted wildflowers, Grandma's other great passion in nature, became an expert on the flowers of northern Illinois and quite a well-known flower photographer.

Is there any tie at all to Madera Canyon in this piece? I don't believe so. In 1947, when gas-rationing went off, Grandma and Grandpa took a tour by car of some of the western National Parks. Yes, birdwatching was involved, and Grandma took with her Peterson's second book, A Field Guide to the Western Birds. She put check marks beside those they saw, ??s beside those they might've, and where that was. And the closest they got was the Grand Canyon.

Climate: "Waiting for the Monsoon"

Doug Moore

Summer 2025 is again shaping up to be one of the hottest on record. With July upon us, locals anxiously gaze east for signs of clouds puffing up over the Santa Ritas. Anticipation builds for the coming days when china-white cotton tuffs appear, then suddenly darken and expand into rainy thunderstorms of Arizona's summer "monsoon" season.

The question these days is, "Will we have a good monsoon season?" Regional droughts and climate changes appear to be making our seasonal shifts less predictable and increasingly variable. The regional forecast calls for a "40% better than average 2025 monsoon", but into the second week of July there has been just one tentative monsoon surge so far.

Monsoon morning from the bajada. Photography Doug Moore

A significant surge is forecast for week three and appears to be manifesting.

A look back at our recent "precipitation history" reveals this variability. The Santa Rita Experimental Range (SRER), adjacent to Madera Canyon, has been keeping detailed precipitation records since 1922 (see Note 1). Recent July-Sept monsoon precipitation records show:

Time Period	Wet/dry ratings
July-Sept 2019	average
July-Sept 2020	driest on record
July-Sept 2021	wettest on record
July-Sept 2022	average
July-Sept 2023	below average
July- Sept 2024	5th driest on record

Monsoon downpour below Proctor Rec Area. Photography Doug Moore.

Just during the past six years, records show that monsoon precipitation varies widely from year to year. By the time this article appears in the August Canyon Chatter, we should be able to call Monsoon 2025 a boom, average, or bust!

For most of us, summer storms mean rain for parched yards and a break from punishing heat. For the many plants and animals living in our Sky Island mountain ranges, including Madera Canyon in the Santa Ritas, the monsoon brings relief and renewal- an essential element in completing lifecycles or simply ensuring survival itself. Most people may view June heat as a curse, but it is a necessary variable in driving the monsoon cycle equation.

The monsoon, or “wet summer”, begins with a seasonal shift in prevailing northwesterly winds to the south in late June or July. Tropical moisture is drawn into the region and the humidity rises sharply. Heated by intense sunlight over Sky Island mountain ranges the moist air rises rapidly, then cools and condenses to produce spectacular thunderstorms. Rainfall is usually local, but can be remarkably heavy, with higher elevations generally receiving more precipitation. Monsoon rainfall totals for the Santa Ritas and Madera Canyon are often two to three times the totals for the Santa Cruz Valley below during good years!

When the cycle is in full flow, humidity and precipitation stimulates rapid plant growth. Madera Canyon transforms into a sub-tropical wonderland. Trees, shrubs and grasses green up and sprout new growth, while a host of summer plants add to the verdant mix. Dormant tubers and bulbs, like Flame Flower, Melon Loco and Nodding Onion, awaken and stretch for sunlight. Seeds of summer

Proctor Trail vegetation pre-monsoon. Photography Doug Moore

annuals, like Morning Glory and Arizona Sunflowerweed, germinate only with the warm rains. Annual and perennial vines festoon shrubs and trees. Greens are the canyon shades of the season, punctuated with the bright colors of summer flowers.

Animals benefit from the monsoon also. Proliferating vegetation is a boon for canyon herbivores big, small, and tiny! For many animal species summer precipitation is actually a requirement to fulfill life cycles. Insects suddenly seem to be everywhere! Rain promotes the hatching of grasshopper eggs hidden in the soil since the previous fall. Torpid pupae "hatch" into butterflies, moths and beetles with the first substantial rains. Close inspection of leaves and flowers reveals all sorts of caterpillars, beetles, ants, bees, and other "bugs". Water beetles, back swimmers, dragonfly larvae and a host of other invertebrates inhabit creek pools. At night the air is filled with moths and beetles searching for food or each other. Scorpions, centipedes and spiders come out to hunt after dark. Many mammals, birds, reptiles and amphibians also become more active during the monsoon to take advantage of the seasonal food bounty, thus completing the complex canyon web of life.

Wide variations in the annual monsoon cycle, including "failures" as in 2020 and 2024, seriously affect Madera Canyon's plants and animals- including disruption of life cycles and food webs, even death, that can play out over seasons. Good precipitation years do go a long way to restoring balance and mitigating stress, but not if there are more below average or dry monsoons in between. Coupled with increasingly variable winter precipitation cycles (see Note 2 below), it becomes a slow battle of attrition… Future changes to our regional climate will be reflected in Madera Canyon. A drier, warmer canyon will result in significant changes to the habitat, as well as canyon plant and animal communities.

Proctor Trail vegetation growth from monsoon precipitation; primarily Arizona Sunflowerweed with Goldeneye daisies. Photography Doug Moore.

Notes:

1) There is no weather station in Madera Canyon, accurate precipitation records do not exist.

2) For yearly SRER precipitation records since 1922, the Standard Precipitation Index shows a persisting dry period since 1996- nearly 30 years! Additionally, in the last 20 years, there have been 4 of the driest Nov-May periods since 1922, 2005-06 driest and 2024-25 2nd driest, essentially failures of our winter rainy season!

Sources

Mcclaren, Mitchel P., email, University of Arizona, SRER Precipitation Data Base & Standardized Precipitation Index analysis of SRER data since 1922.

University of Arizona, SRER website, Precipitation Data Base.

The Editor's Desk

Thoughts on the Loss of Science

Science is not merely a catalog of facts, nor is it just a method or a discipline reserved for the laboratories of the world. It is a way of viewing the universe—a habit of mind that insists on wonder, scrutiny, and the humility to accept that the world is far larger, stranger, and subtler than our instincts might suggest. To consider the loss of science is to evaluate the erosion of these habits and, with them, the slow fading of the luminous clarity with which we can understand the world and ourselves.

Our ancestors, whether they wandered the savannas or fashioned tools in the shadows of ancient forests, were compelled by curiosity. They pressed seeds into soil and watched them sprout, mapped the stars above, and puzzled over the flight of birds. These early inklings of scientific thought—observation, experimentation, the careful tracking of cause and effect—were woven into survival itself. With time, science became formal: an inheritance passed from one generation to the next, each discovery building upon the last.

To lose science, then, is to risk losing a fundamental thread that connects us to our origins and our future—a thread spun from curiosity and a willingness to be surprised by what the world reveals.

When the spirit and practice of science fade, it is not only knowledge that evaporates but also the mechanisms by which we question and test our ideas. The loss is quiet at first—a subtle dimming of curiosity, a waning willingness to ask "How?" and "Why?" Instead of exploring, we accept what is given, and what remains unexplored becomes invisible.

Ignorance and superstition rise in the vacuum left by science. Without the discipline of evidence and the challenge of skepticism, easy answers take hold, and nuance is abandoned. Shadows grow longer, and the monsters of the unknown—once banished by understanding—return to fill the gaps left behind.

The simplicity of assumption replaces the beauty of complexity. Consider the amphibians and reptiles of Arizona's sky islands, adapted to a network of microhabitats shaped by converging deserts and mountain ranges. Each species, each variation in color or call, tells a story of evolutionary improvisation. If we lose science, these stories are silenced, replaced by indifference or myth. The delicate balance between Rana chiricahuensis and its watery refuge, the intricate relationships that allow life to persist in the harshest of places—all become invisible, their meaning lost.

Ironically, the threat to science does not always come from scarcity, but sometimes from abundance. Surrounded by technology—smartphones that can summon any fact, satellites that photograph the furthest galaxies—we can be lulled into believing that science, as a practice, is no longer necessary. The answers are all there, ready-made, and the journey of discovery can seem obsolete.

But science is not the accumulation of answers; it is the process of finding them. The loss of science is not a loss of information, but a loss of the ability to discern which information is accurate, relevant, or mean-

ingful. In a world overflowing with data, the skills of skepticism, critical thought, and methodical inquiry are more essential than ever.

Science does more than reveal what is; it expands our sense of what could be. It teaches us to imagine other worlds, other lives, other futures. When we lose science, we lose not just knowledge, but the very tools that allow us to connect our experience to that of others—across time, space, and even species.

Consider the naturalist, hiking through the Santa Rita Mountains or kneeling at the edge of a desert spring, notebook in hand. Through careful observation and the patient accumulation of evidence, they enter a relationship with the land and its inhabitants—a relationship built on humility, respect, and a sense of shared destiny. In the absence of science, such empathy becomes harder to achieve. The world becomes flattened, less textured, and ultimately less real.

At the societal level, the loss of science manifests as distrust and division. The shared language of evidence and reason gives way to the Babel of opinion, and it becomes harder to distinguish truth from falsehood. Public health falters, as seen when communities reject vaccination or ignore the evidence of climate change. Civil discourse breaks down, and problems that require collective action—like preserving biodiversity or mitigating natural disasters—become unsolvable.

Progress stalls. Our most outstanding achievements as a species—from eradicating diseases to mapping genomes to building machines that touch other planets—are rooted in scientific thinking. Without it, we drift. We lose the ability not only to solve problems but even to recognize which problems matter.

In every generation, some keep the flame of science alive—not just in their research, but in their willingness to share wonder with others. The naturalist who guides a child's hand to a frog's cool skin, the teacher who encourages questions rather than rote memorization, the citizen who records the arrival of a migratory bird or the flowering of a rare plant—these are the guardians of wonder.

Their work is vital. Without it, the next generation inherits not a world of possibility, but one of boundaries and prohibitions. The sense that "the world is knowable, if only we ask," recedes. The loss of science is not just a professional or academic concern; it is a loss for all who would wish to see, understand, and participate in the world.

All is not lost. Science, after all, is a habit of mind, and habits can be cultivated. To reclaim science is to reclaim curiosity—to rebuild, step by step, a culture of questioning, experimentation, and shared discovery.

This begins not in grand institutions or government policy, but in the everyday acts of attention: watching the way a plant turns toward the sun, listening to the chorus of frogs after rain, asking what lies beneath a stone or behind a fact. It grows in classrooms and kitchens and backyards, wherever someone is willing to say, "I don't know, but let's find out."

We can rebuild the bridges between knowledge and imagination, between explanation and empathy. We can remind ourselves, and each other, that the world is richest when we seek to understand it—not merely to exploit it, but to participate in its unfolding.

To lose science is, in a sense, to turn away from the light—a light kindled in the deep past and carried forward, sometimes faltering, but never extinguished. It is the light by which we discern the real intricacies of frogs and snakes, the relationships between deserts and sky islands, the meanings hidden in the ordinary and the extraordinary alike.

In the end, the loss of science is not inevitable. It is a choice, renewed each day in what we value, what we question, and what we are willing to imagine. To hold on to science is to hold on to the possibility of a world that is ever more knowable, ever more wondrous, and ever more our own. JCM

The Last Page

Apex preadators regulate biodiversity. JCM

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