NEWS OF THE DESERT FROM SIERRA CLUB CALIFORNIA & NEVADA DESERT COMMITTEE JANUARY 2025

# DESERT REPORT

BY KAT DOW

## Saving Walker Lake

### A community based approach to the western water crisis

Driving through Nevada on Highway 95 can be a lonely journey. Sprawling expanses of scrub desert, interrupted only by mountains and telephone poles, extend mile after mile, as far as the eye can see. Human settlements are often hours apart. It can come as quite a shock to a traveler, then, to see the landscape suddenly open up to reveal a sparkling desert lake nestled into the valley at the foot of the Wassuk mountain range. It was this site that caught Harry Reid's eye in 1969 as he traveled from his home in Henderson to the state capitol in Carson City to serve his first term in the Nevada state legislature. If the story is to be believed, it was the mysterious lake in the middle of the desert that first piqued his interest in the fate of the terminal lakes that he would later champion as it grew undeniably clear that many were at risk of ecological ruin.

Walker Lake is the terminus of the river system in the Walker River Basin, an approximate 3,000 square mile watershed that straddles the state line from western Nevada into California. For millennia, it was the lifeblood of the Agai Dicutta (*Trout Eaters* to the Numu, now recognized as the Walker River Paiute Tribe), who derived their name from the lake they called Agai Pah (*Trout Lake*). It was host to several species of fish endemic to the Great Basin: the cui-ui, the

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**Sunrise at Walker Lake.** Kathy Trujillo of Hawthorne, Nevada

BY CRAIG DEUTSCHE

# From the Editor

This is both an announcement and a personal note. I have been involved with the *Desert Report* for over twenty years and have been the managing editor for fifteen years. This has been a very rewarding experience, but the time has come for me to reduce my commitment. A combination of personal wishes, health considerations, and changes in desert conservation issues have influenced my decision. While I expect to remain involved with the *Desert Report* in other capacities, I will not be managing the quarterly publications.

I now wish to thank the people who have done so much of the very real work for the publication. Jason Hashmi has done the layout and design of the printed issues for longer than I have been involved. He and I have also spent many hours discussing the successes and failures of the LA Dodgers. Birgitta Jansen has consulted on decisions about articles and policies of the *Desert Report*, and she has written many of the individual articles. Stacy Goss has relieved me of responsibility for circulation matters and financial affairs, and Barry Boulton has been invaluable in managing the layout of the website and posting articles and schedules.

The immediate future of the *Desert Report* is currently under consideration. Quite obviously, a volunteer to continue as editor is a first wish. Please consider whether this is something you might choose to do. Going beyond this, changes in the format, responsibilities, and/or publishing schedules are other possibilities under consideration. Ideas and comments can be sent to either Joan Taylor, chair of the Desert Committee or myself. Our contact information is posted inside the last page of this issue.

With my thanks to you readers,
Craig Deutsche

## THOUGHTS FROM THE CHAIR

I think I speak for all of us desert activists when I say that we are immensely indebted to Craig for his many years of thoughtful and expert work as Editor of the *Desert Report*. I don't believe that our mainstay publication has ever been finer than under Craig's guiding hand.
You are going to be a hard act to follow, Craig. But fortunately Jason Hashmi who has been responsible for *Desert Report's* outstanding graphic design for decades, is willing to continue, and Craig will still be helping to edit copy. In addition, Barry Boulton does great work keeping our website au courant, and Brigitta Jansen is a source of inspiration for topics.

As for a future editor, I'm chairing a subcommittee looking into next steps to find another volunteer. Please send me an email at palmcanyon@mac.com if you would like to serve or have any recommendations regarding same.

Many, many thanks again, Craig for your dedication to the cause!

Joan Taylor
Chair Desert Committee

**After 15 years of expert leadership, Craig Deutsche is stepping down as editor of the Desert Report.**
Photo top left: Jackie Czapla. Others: Eric Rorer

BY KRYSTIAN LAHAGE

# The Joshua Tree Conservation Coalition

## A collaborative approach to species conservation

The iconic western Joshua tree, a highly emblematic keystone, flagship, and umbrella species of the Mojave Desert is in dire straits. Wildfires, invasive grasses, and habitat loss due to human development are detrimental to the species and its habitat. Climate change multiplies the impact of these threats, with longer and hotter droughts reducing the number of young Joshua trees. Available species distribution models suggest that areas predicted to be suitable for western Joshua tree based on twentieth century climate data will decline substantially through the end of the twenty-first century, especially in the southern and lower elevational portions of its range, which includes its namesake Joshua Tree National Park.

Though we do not fully understand how the species will respond to a changing climate in the future, a peer-reviewed study showed that suitable Joshua tree habitat in Joshua Tree National Park may shrink to 2% under shifting temperature and precipitation patterns projected by certain climate scenarios. Suitable Joshua tree habitat is simply moving north and into higher elevations more quickly than Joshua trees can disperse and adapt without intervention.

There have been several efforts to elevate the conservation status of the Western Joshua Tree. A petition to list the Joshua tree under the Endangered Species Act (ESA) was heard and reviewed twice until the federal government decided against listing in 2019. A separate effort to list under the California Endangered Species Act (CESA) began in 2020, but repeated deadlocks in the California Fish and Game Commission indefinitely halted progress. To address the species' immediate need for additional protections, California's legislature introduced and passed the Western Joshua Tree Conservation Act, marking the first protections in the state for a climate-threatened species.

**Joshua Trees.** Mojave Desert Land Trust

The Western Joshua Tree Conservation Act prohibits the take of western Joshua trees in California unless authorized by the California Department of Fish and Wildlife (CDFW). It also allows CDFW to issue permits for incidental take of western Joshua trees, provided certain requirements and mitigation are met or for CDFW to receive specified fees in lieu of mitigation activities. These fees will be used to protect significant Joshua tree habitat. Finally, the legislation requires CDFW to develop and implement a western Joshua tree conservation plan in collaboration with governmental agencies, California Native American tribes, and the public. The draft version of this plan was published on November 28th and CDFW will hear public comment at its February 2025 meeting.

While the Mojave Desert Land Trust (MDLT) applauds the state for working towards a conservation solution, we are concerned that the Act has not built enough funding or incentivized the innovative programs needed to efficiently address the species' decline. In response, MDLT started conversations with our partners including federal and state agencies, researchers, and other nonprofits to envision what is needed to truly protect the Joshua tree. In 2023, with California Wildlife Conservation Board (WCB) funding, MDLT initiated the Joshua Tree Conservation Coalition to ensure communication and collaboration between agencies, land managers, Tribes, researchers,

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# Saving Walker Lake

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**Walker Lake.** Walker Basin Conservancy

Tahoe sucker, and, most notably, the Lahontan cutthroat trout, which would spawn in the freshwater upstream in the Walker River and make their way to the alkali lake at the bottom of the system where they could grow up to 40 pounds.

In an all too familiar story, the western expansion of the United States made its way to the Walker Basin in the mid to late 1800s. Agai Pah was renamed Walker Lake as settlers proliferated throughout the West, removing and replacing indigenous communities and their ways of life. Utilization of natural resources became the underpinning of the development of the West, and the use of water for commercial and agricultural purposes was heavily encouraged as settlers flocked to find their fortunes in a place considered at the time to be a blank slate.

As the result of agricultural and commercial development in the basin, Walker Lake, at the very bottom of the system, has lost 90% of its volume. All species of fish have been extirpated from the lake as the total dissolved solids of the remaining water have increased beyond tolerable limits. Without adequate freshwater inflow from the Walker River, additional effects include a decline in elevation of nearly 200 feet, shoreline recession of as much as seven miles, increased water temperatures, and decreased dissolved oxygen levels.

Alarms for the health of Walker Lake were beginning to ring as far back as the 1980s, when scientists from the Nevada Department of Fish and Wildlife began taking note of the declining fish population and monitoring water quality. In 1991, a group of area residents and other citizens formed the Walker Lake Working Group to build public support for a long-term solution to protect the lake. What resulted is a Public Trust suit currently in its third decade of adjudication as the case gets kicked back and forth between State and Federal courts.

Thirty-three years after Harry Reid's fateful drive past Walker Lake, the passage of the 2002 Farm Bill created the Desert Terminal Lakes Program, from which emerged the Walker Basin Restoration Program (WBRP). Initially administered by the National Fish and Wildlife Foundation (NFWF), the WBRP was granted over $311 million for restoration efforts, including acquisitions, research, and conservation activities. It became the highest funded program of permanent water right acquisitions in the country. The Walker Basin Conservancy (Conservancy) was founded in 2014 as part of the WBRP. The Conservancy functions as the local non-profit under which NFWF would "hold and exercise water rights acquired by, and to achieve the purposes of, the Walker Basin Restoration Program" (111th Congress 2009).

Of the total funding granted to the WBRP, nearly $185 million was made available for the purchase of land, appurtenant water, and other related interests in the Nevada portion of the Walker Basin to help restore water levels in Walker Lake. Funding later expanded to include efforts in the California portion of the basin as well. To achieve this goal, the funding amount reflects the volume of water required: an estimated average of 50,000 acre-feet (AF) of reliable inflow per year.

With the establishment of the WBRP and the Conservancy, a sort of "proof of concept" is being undertaken to establish more innovative and permanent pathways to water and natural resource conservation. Traditionally there have been only a few approaches to water conservation in the West – the "buy and dry" method, in which the buyer purchases land strictly for its water rights without regard for the health or use of the land, usually selling off the dry land afterwards; or through use of temporary water leasing, which compensates water rights holders for the temporary cessation of use of those water rights, usually for a period of up to three years. The Conservancy is instead using a "buy and manage" method and recognizes that agriculture is

**The Walker River.** Walker Basin Conservancy

an integral part of the Walker Basin. The Conservancy strives to support the local economy and a productive community, alongside its goal of restoring Walker Lake.

Farming in the Walker Basin has long been a challenging and expensive endeavor, a situation made even more uncertain by the growing frequency and intensity of droughts. This, along with the nature of tight-knit rural communities, meant that early efforts of the WBRP and its water acquisitions were met with a mix of skepticism and distrust by many. Concerns over the potential impact these initiatives would have on local agriculture and livelihoods were palpable, as many questioned whether the project would truly benefit both the environment and the people who depend on the land. It took years of effort, steady community presence, and outreach by the Conservancy to counter these misgivings. Trust is integral to successfully completing a water deal and while there remain some doubts about the Conservancy's methods and intentions, the sincere desire to be a valuable and contributing member of these communities has proven to be the best path towards gaining that trust.

Ten years on from the establishment of the Conservancy and 15 years after the establishment of the WBRP, 56% of the estimated 50,000 AF restoration goal has been acquired. With twenty-seven successful water transactions completed, there are still many legal hurdles ahead to ensure the administration of those water rights instream for wildlife purposes. To date, only a portion of those acquired rights have successfully completed the change application process. Even so, the Conservancy's success in the Walker Basin shows that temporary water leasing is not the only possible strategy for reallocating water between historic and contemporary water needs.

In addition to the permanent acquisition of water rights within the Walker Basin, the Conservancy has helped to develop and implement an annual storage water leasing program through the Walker River Irrigation District (WRID). This is a means to temporarily transfer storage water rights from Topaz and Bridgeport reservoirs upstream into the Walker River for the benefit of Walker Lake. The program compensates water rights holders for enrolling their water to be sent downstream on an annual basis. After the fourth successful year, almost 46,000 AF of water that would otherwise have no legal means of exiting the bounds of the irrigation district has been put instream.

Looking ahead, the Conservancy continues to navigate the many challenges presented in fighting for water conservation and the preservation of natural resources and is leading the charge to redefine the methods utilized to achieve these goals. Through a 2024 initiative of Nevada Department of Conservation and Natural Resources, the Conservancy received pilot funding for groundwater rights retirement in over-pumped and over-appropriated regions throughout the State. Groundwater levels in the Walker River's Smith and Mason Valleys have been declining for decades. Through the grant 1,700 AF of groundwater rights were purchased and retired, permanently removing them from use. The successful execution of the pilot program has set a precedent for permanent groundwater retirement and provides a roadmap for implementation of this strategy in the long-term.

There is hope on the horizon for the sparkling lake hidden in the desert. To date, the Conservancy has worked with 156 farmers and ranchers in the Walker Basin and has sent over 71,000 AF of WBRP water to Walker Lake. This along with the historic winter of 2023 provided enough inflow to Walker Lake to raise the elevation by 16 feet, bringing it to its highest level since 2012. The efforts of the Conservancy demonstrate the potential to balance permanent water acquisition and instream flow restoration with enhancement of rural economies and communities. If you wish to learn more about or help with the Walker Basin Conservancy's work to conserve, rehabilitate, and preserve the precious natural resources of the Walker Basin, please visit walkerbasin.org or contact us at info@walkerbasin.org

*Kat Dow is the Water Program Manager for the Walker Basin Conservancy. Her work involves the acquisition of water rights from willing sellers and working to put that water instream for the benefit and restoration of Walker Lake. Born in Hawthorne Nevada, just a few miles from Walker Lake, she watched the decline and eventual collapse of the lake up close. Kat lives in Reno, Nevada but makes frequent trips all over the Walker Basin on behalf of the Conservancy and returns to Hawthorne and Walker Lake often to see her family and friends there.*

**Shoreline at Waker Lake.** Walker Basin Conservancy

BY SOPHIA MARKOWSKA

# Burrowing Owls

## One step closer to state protections

**Burrowing Owl Stare.** Jeri Krueger/USFWS

In a significant conservation gain, the Western burrowing owl (*Athene cunicularia hypugaea*) has been granted "candidate status" for protection under the California Endangered Species Act (CESA). The California Fish and Game Commission (Commission) voted unanimously in October 2024 to advance the species to candidacy after the California Department of Fish and Wildlife (CDFW) determined that the petition included sufficient information to indicate the listing of the species may be warranted. Burrowing owls will have CESA protections during the candidacy period, during which CDFW will undertake a complete status review of the species. This interim status is a crucial first step toward full protections under CESA, ensuring the species' long-term survival in the state.

The petition seeking endangered or threatened status for the Western burrowing owl was filed in March 2024 by the Center for Biological Diversity, Defenders of Wildlife, Burrowing Owl Preservation Society, Santa Clara Valley Audubon Society, Urban Bird Foundation, Central Valley Bird Club, and San Bernardino Valley Audubon Society. It offers two potential CESA listing methods:

1. List the southwestern, central-western, and San Francisco Bay Area populations as endangered and the Central Valley and southern desert range as threatened, or
2. List the burrowing owl as threatened throughout its entire range in California.

**Background**

Burrowing owls have experienced a dramatic decline in California, with populations disappearing from much of their historical range. They have suffered significant habitat loss due to urban development, the conversion of grasslands to agricultural lands, large-scale wind and solar energy infrastructure development, and the killing and removal of ground-dwelling squirrels and other mammals whose underground burrows the owls use for nesting and roosting. The owls are also killed by rodenticide poisoning and collisions with wind turbines and cars.

The species has been extirpated from at least 19 of the 51 counties where it once occurred, and is nearing localized extinction in 10 additional counties. Population losses began as early as the 1940s, with the decline accelerating since 2015. Currently, only about 225 breeding pairs remain in central-western and southwestern California and fewer than 1,500 breeding pairs are found in the Central Valley, primarily in the southern regions. A formerly large population in the Altamont Pass area in eastern Alameda and Contra Costa counties is down to a few hundred pairs and is declining rapidly. The San Francisco Bay Area population is near extirpation with less than 25 pairs around the margins of San Francisco Bay after emergency intervention.

The species' stronghold is within the Imperial Valley, with an estimated 4,000 breeding pairs. Although there is still a relatively robust population in this region of southern California, banded burrowing owl data shows little evidence of movement between populations. This means burrowing owls in the Imperial Valley do not serve as a source population and do not augment geographically isolated or depleted populations elsewhere in the state.

**Petition history**

This recent petition follows a previously submitted petition in 2003 to list the burrowing owl under CESA by many of the same conservation co-petitioners as the 2024 petition. That petition was ultimately denied, with the state concluding there was insufficient evidence to warrant listing.

The Commission received the most recent petition on March 5, 2024. Once the Commission receives a petition, it must refer it to CDFW for evaluation. Within 90-120 days, CDFW must assess the petition's contents

to determine if sufficient information is included to indicate that the petitioned action may be warranted and, therefore, considered for listing.

CDFW found that the 2024 petition includes sufficient scientific information to indicate that listing the species may be warranted. On October 25th, the Commission published a decision to make the species a candidate for listing. Candidate status gives the burrowing owl interim state protections while the agency conducts a full status review, which can take 12 to 18 months to complete.

**Problems with current "protections"**

Prior to becoming a candidate species, the burrowing owl was only considered a Species of Special Concern. "Species of Special Concern" is a designation given to species that are not listed under CESA but satisfies one or more of the following criteria:

1. Is extirpated from the State or, in the case of birds, is extirpated in its primary season or breeding role;
2. is listed as Federally-, but not State-, threatened or endangered; meets the State definition of threatened or endangered but has not formally been listed;
3. is experiencing, or formerly experienced, serious (non-cyclical) population declines or range retractions (not reversed) that, if continued or resumed, could qualify it for State threatened or endangered status;
4. has naturally small populations exhibiting high susceptibility to risk from any factor(s), that if realized, could lead to declines that would qualify it for State threatened or endangered status.

**Burrowing Owls.**
Seth Topham/Bureau of Land Management

Although the burrowing owl is a Species of Special Concern, current practices are insufficient to prevent or reverse population declines that have continued throughout most of the species' range in California.

Many other means of protection have often been nonbinding and are also insufficient. For instance, CDFW has provided voluntary guidelines for avoidance, minimization, and mitigation measures for potential negative impacts on burrowing owls, but there is no requirement to abide by them. These guidelines often rely on the California Environmental Quality Act (CEQA) lead agencies to agree to adopt the measures. However, CEQA is not meant to be used as a tool for species and habitat protection, but rather as an information tool for policymakers to fully understand the environmental impacts of a proposed project. This leads to a frequent failure of the CEQA process to adequately mitigate for impacts to burrowing owls and their habitat.

In another attempt to protect the species, state and local governments have taken some steps to conserve burrowing owl populations through habitat preservation programs aimed at limiting the destruction of burrows. However, once again, these measures have not been mandatory nor have they been successful in reducing declines in the species' populations. Burrowing owls are managed for in 36 Habitat Conservation Plans (HCPs) and 22 Natural Community Conservation Plans (NCCPs) in California, which include protection and mitigation measures. The permanent protection of habitat is one of the mitigation measures that is often utilized; however, these conservation lands are typically at a much lower ratio compared to the habitat that is being developed and are often piecemealed in a manner that disrupts connectivity between existing populations. Only a handful of these HCPs and NCCPs can point to any success in preserving burrowing owls, and few have the ability to protect large enough areas to support a meaningful number of breeding burrowing owls.

Current state policy allows for burrowing owls to be excluded from breeding sites after nesting to accommodate development projects. Studies show that this "passive eviction" is not a successful tool for mitigating project impacts, as many owls either don't survive or don't move on to breed elsewhere.

**Petition requirements for listing under CESA**

In order for a species to be listed as threatened or endangered under CESA, petitioners must demonstrate that the species faces a significant risk of extinction. A petition must include substantial scientific evidence, such as the status of the species, population trends, habitat assessments, and threats to the species, to support the petition's claim that a species should be listed.

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BY WILLIAM E REES, PHD, FRSC

# What's The Real Problem?

## And can we do anything about it?

**Introduction: Beyond climate change**

I've recently spent considerable time and energy trying to get climate-change NGOs – and wider society, for that matter – to look beyond global heating to it's cause, the much greater problem of *ecological overshoot*. Why? Because society's focus on climate change *per se* (wind and solar power, EVs, non-existent carbon capture and storage) misses the point entirely. As a result, we are not fixing the climate, are causing considerable additional environmental damage and are worsening overshoot.

How stupid is that?

Overshoot means there are too many people – rich and poor – consuming and polluting too much. The world community is living out of a mainly capitalist neoliberal economic narrative that assumes the economy is essentially freed of natural constraints; human ingenuity is the greatest resource; and technology will find substitutes for any good or service provided by nature. Thus spellbound, contemporary governments cannot conceive of limits to growth *even on a finite planet.* So it is that economic activity is overwhelming the regenerative and assimilative capacities of the ecosphere. We 'modern' humans are eroding the biophysical basis of our own existence.

Overshoot is a meta-problem, the over-riding *cause* of climate change (a pollution problem) and its co-symptoms – biodiversity loss, ocean acidification, tropical deforestation, land/soil erosion, etc., etc. – virtually all so-called 'environmental problems'. But here's the thing: We cannot cure any major co-symptom of overshoot in isolation of the others; conversely, confronting overshoot directly would tackle all co-symptoms simultaneously. And, because overshoot is, by definition a terminal condition, that's precisely what we must do.

Easily said, but not so simple in execution. Any effective cure to overshoot will involve significantly reduced energy/material consumption and waste production and this means a smaller economy and fewer people – not exactly planks in any party or government platform.

**Can we get there from here?**

Those who follow my argument this far usually ask the obvious next question: "What can a person do to tackle overshoot?" There are many ways of answering the obvious that are not so obvious. I usually initially respond that individuals, *as individuals,* cannot really do much that will make significant difference. At this point, I'll likely be told that I am too pessimistic, that there are many things ordinary people can do – and, in fact, there are hundreds of books and academic papers arguing the case for individual action. However, at the risk of seeming dismissive, perhaps a majority of these calls to action can be tossed into a box I call speculative *pixie dust.* "All we have to do is adopt much less material-intensive lifestyles"; "Why not encourage voluntary simplicity?" "If everyone in the world shifted to a vegan diet then…"; "Just stop fossil fuels"; "Adopt a circular economy"; "The world should accept Kate Raworth's doughnut economics"; "implement a temporary global one-child policy?" and similar admonitions capture the essence of the hopelessly-more-hopeful collection of possible actions.

*Of course,* if everyone did these things then we'd be closer to our goal! Hey, if everyone were sustainable then we'd be sustainable!

There are many problems with this kind of thinking. On the material side, much of it is energy blind, biophysically ignorant, and ecologically naive. For example, were we to "stop fossil fuels" in the absence of a detailed 'Plan B' to engineer an orderly economic contraction, then the economy would collapse – there would be social chaos, major famines, mass migrations, etc., and, globally, hundreds of millions would likely perish. (Keep in mind there are, as yet, no suitable substitutes for most uses of fossil fuels.)

But what about recycling and circularity? While recycling is theoretically a good idea, keep in mind that energy is the pulsing heart of every economic activity and *energy is 0% recyclable* – it invariably travels a one-way irreversible path through the economy. Even material recycling is limited by second law and material inefficiencies so, in addition to significant additional energy, it usually requires more raw materials as well as specialized capital equipment. There is another problem – perpetual growth neuters recycling. Even with 100% recycling (impossible), doubling the material economy – which the Modern techo-industrial (MTI) world certainly hopes to do – would mean doubling energy and material throughput on a planet already in overshoot. In short, while recycling of some metals and other substances is economically worthwhile and even necessary, a literal circular economy is mostly a mythic concept with limited potential. Ditto many other ideas wafted aloft in pixie dust.

Perhaps an even more important barrier to change

is the reality of individual and social behavior. Relatively few prescriptions of what we *can* do take basic human behavior into account. The simple fact is, not everyone is going to do the things they could do to 'save the world,' certainly not voluntarily. It doesn't help that it is harder to give something up that one already has than to be denied something one has merely aspired to. The world's wealthy 'haves', which includes everyone reading this magazine, are not about to transition *en masse* to the hair-shirt lifestyles that would be required to sustain even half the present global population. Sharing cumulative wealth and income is not a defining characteristic of modern societies. In fact, the income gap is steadily widening.

In summary, while there is copious information on WHAT must be done to achieve a just sustainability, there has been much less attention to the 'HOW-do-we-get-it-done' question.

And this is where things get tricky. In theory, governments hold a major key on HOW we might move forward: *(un)sustainability is a collective problem that requires collective solutions imposed by governments for the common good.* It follows that the role of government becomes more important the deeper the crisis. We can therefore only regret that this truth sounds radically 'socialist' – or worse – to contemporary ears ringing with the right-wing call for smaller governments and the off-loading of responsibility onto individuals.

So be it. Just remember that individuals cannot implement better urban transportation systems; individuals cannot ban toxic chemicals; individuals cannot set quotas on fish catches and forest harvest rates; individuals cannot cap fossil fuel extraction. Only governments can. Similarly, if they were actually true to sound economic principles, it would be governments' responsibility to impost gradual but *effectively escalating* carbon taxes – indeed, *generalized ecological tax reform* – to ensure that the prices of goods and services rise to reflect their true social costs.

The latter would actually be an enormous leap forward. Full social cost pricing is not only more economically efficient, but would also reduce resource consumption and pollution (economic throughput) by threatening to price many goods and services out of reach of the majority. This, in turn, would force the corporate sector to adapt, i.e., to seek ways of lowering input costs. To maintain affordable consumer prices and stay in business, manufacturers would have to develop much more energy- and material-efficient technologies and manufacturing processes.

Regrettably, decisive government action is not in the cards – we are still stuck with the 'HOW to make it happen' question. Ecological tax reform has no political legs; people have been trained to recoil at any suggestion of higher taxes and prices, no matter how economically logical and ecologically necessary. More importantly, government agencies, at least in western democracies, are increasingly the subject of 'regulatory capture' and the revolving door syndrome. Personnel from government agencies, with all their insider knowledge, take up positions in the private sector; executives from private corporations infiltrate regulatory agencies that are suppose to oversee those same corporations' activities. Such agencies are then basically controlled by private actors who are disinclined to act against short-term corporate interests. Recent events in the US accelerate this trend beyond previous imagining. Symbolized by billionaires Elon Musk and Vivek Ramaswamy being designated to head President Elect Trump's new Department of Government Efficiency, we see the corporate sector *becoming* the government. If Trump and his minions follow through, the entire enviro-climate etc., regulatory system may well wither to nothingness.

Corporate governments are even waking up to the 'population problem' but on the *ecologically wrong side of the bed.* In countries where populations are peaking or falling (as needed to overcome overshoot), governments are adopting pronatalist policies to ensure the supply of labor and tax-payers needed for business-as-usual under the growthist mantra. On 12 November 2024, Russia even passed legislation making it a punishable offense to discuss or promote the advantages of childlessness or child free lifestyles.

In all, it seems that MTI societies have created an inverted Panglossian 'worst of all possible worlds': our natural biological predisposition to expand and acquire (nature) is being reinforced by a cultural social construct of perpetual material and population growth (nurture).

**Looking back to see ahead**

A philosopher friend and I recently summarized our contemporary civilizational predicament as follows:

*Modern techo-industrial culture is sleepwalking into an unprecedented existential crisis. The core cognitive issue is that the future which most MTI leaders and ordinary people assume lies ahead is mainly a technology-enhanced extension of the recent past. This popularly imagined future has no future. A vastly more complex future 'context' is emerging seemingly by stealth, a context that is so far unrecognized and, to which, the global community has therefore been wholly unresponsive. In other words, MTI culture is acting out of a vision of its past and present that is inadequate, inaccurate, and irrelevant to the future that is actually taking shape. This crucial dissonance is self-evident to those who choose to see but seems not to be understood by any MTI nation or institution of influence. As a result, current actions and stated intentions are making a terrible situation worse.*

How can this be? There is an obvious historical root. We MTI sleepwalkers are operating from a cultural narrative and economic paradigm derived from a post-enlightenment affliction known as *human exceptionalism*.

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# What's The Real Problem?

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Being exceptional, humans are not part of nature and are therefore exempt from natural laws. This is why, from a biophysical perspective, mainstream economic theories and models are little more than imaginative balloons untethered from reality. They contain no reference to anything outside themselves and ignore the systemic properties of the complex ecosystems and social systems within which the economy actually operates. Combined with the notion that human ingenuity is the greatest resource (and therefore more people is invariably a good thing) such 'thinking' frees the human enterprise for perpetual growth; overshoot and the rest of our contemporary eco-social predicament is all but inevitable.

Things are actually worse than that for two major reasons. First, we know that cultural narratives/paradigms are mere products of the human mind that take shape through continuous discourse and repetition until – realistic or not – they rise to the status of received wisdom. But by that time, they may well have acquired a physical presence in adherents' brains. Neural science reveals that the constant repetition of concepts creates dedicated synaptic circuitry in the brain that is stimulated, and further reinforced by, supportive ideas and which produces discomfort and denial when the individual is confronted by opposing ideas. Such embedded neural circuitry enables 'thoughtless thinking', thinking that is mostly automatic and extremely difficult to abandon or discard, e.g., the notion of *perpetual economic growth abetted by continuous technological advances.*

Second, all constructed paradigms or narratives are self-referencing. If something goes awry, true believers fall back for solutions on the same beliefs, values, assumptions and behaviors that shaped the paradigm – and created any problems – in the first place. This supports the argument that *no solution to our contemporary predicament can be found within the MTI worldview.* Almost the entire response to the climate crisis and other co-symptoms of overshoot (e.g., so called green renewable energy -- wind turbines, solar panels, EVs, etc.) are cast from the growth-oriented paradigmatic mold, are worsening the situation, and are thus doomed to fail. By and large, even our best universities are complicit in perpetuating the problem. They are the repositories and replicators of the MTI worldview within which no solution can be found.

So where does this leave us? To achieve a just and sustainable material steady-state on Earth we need a *personal to civilizational transition away from MTI sensibilities to a wholly new way of thinking and being on Earth (a new set of beliefs, values, assumptions and behavioral norms) in which humans can live spiritually satisfying lives more equitably within the biophysical means of nature.*

**Next steps – trigger events or a local 'Plan B'?**

But again, HOW to get there? It may take a dramatic failure – systemic collapse and millions of deaths – to shake a culture from its customary narrative. Chronic energy shortages or global famine could do the trick. Mass demonstrations or revolution might also work – if enough people are truly disadvantaged or disenchanted they may revolt, overthrowing corrupt governments, for example.

We may actually be close to such citizens' uprisings even in rich countries. The 4 December 2024 assassination in New York of UnitedHealthcare CEO Brian Thompson, possibly out of frustration with corporate greed, has generated a groundswell of sympathy and support for the alleged shooter, Luigi Mangione. This disturbing response to events at least reveals the pent-up frustration of US citizenry re: their expensive, often inaccessible and rather ineffective private health-care system. People see private health care as emblematic of corporate self-interest, the growing income gap and the massive accumulation of wealth among the privileged few. The Thompson assassination called to mind a prescient decade-old article by billionaire, Nick Hanauer: *The Pitchforks Are Coming – For Us Plutocrats.* In this piece Hanauer essentially warned his "…fellow filthy rich, …all of us who live in our gated bubble worlds: Wake up, people. It won't last."[1] If the one per-centers continue to do nothing to address inequality and the growing income gap in the US, they are setting the stage for a modern peasant revolt. But would anything coherent emerge from the ruins since the survivors will themselves still mostly be products of MTI thinking?

All of which underscores the fact that the MTI world is in a genuine predicament. Predicaments are not the same as problems. Problems have solutions; predicaments are beyond solving – they merely have outcomes. So, in the final analysis given the momentum of MTI culture and systemic resistance to change, I'm not sure there is anything truly transformative ordinary people can do *on their own* to 'tackle' overshoot. Ironically, at a time when community cohesion has never been more important, society seems ever more fractured and mutually distrustful. This is not helpful. Overshoot will end, and in present circumstances any 'outcome' will probably be tragic at some level for millions. It's not even certain that major governments and international institutions can positively influence the *nature* of the outcome. (The 1992 United Nations Framework Convention on Climate Change and its 29 international COP conferences to reduce fossil fuel use and emissions have failed repeatedly – both consumption and emissions are at record levels and rising).

Perhaps the wisest strategy for individuals and communities is a combination of self-education, community re-building for mutual understanding/support, and active political engagement. The initial goals should be to raise eco-social-reality to popular consciousness and to organize discussion of key elements of a 'Plan B' for orderly degrowth tuned to your community. And re-

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# Joshua Trees

→ PAGE 3

and other stakeholders. In a separate but complimentary effort to the coalition, MDLT is also working with U.S. Geological Survey (USGS) on a WCB-funded research project to build a comprehensive demographic dataset to monitor the status of western Joshua trees across their entire range in California over the long term.

The coalition will apply lessons from the Giant Sequoia Lands Coalition, which unites public and non-governmental partners. The Joshua Tree Conservation Coalition is led by a steering committee including representatives from the National Park Service, U.S. Fish and Wildlife Service, Bureau of Land Management, the Native American Land Conservancy (NALC), USGS, CDFW, and MDLT. The Native American Land Conservancy will take the lead in tribal engagement initiatives for the project with the goal of having a tribal liaison in the coalition and a tribal committee to inform the coalition as a whole and to support increased tribal stewardship and management.

The steering committee is carefully designing the coalition to foster meaningful collaborative action. The next steps will involve identifying and engaging the diverse range of agencies, organizations, and tribal partners, whose expertise and shared commitment will be vital to safeguarding Joshua trees.

Together, the coalition will implement proactive conservation in the face of uncertainty. Partners will conduct range-wide coordination and collective action to effectively support the long-term survival and persistence of Joshua trees in response to the landscape-scale stressors they face. Implementing effective large-scale conservation and stewardship actions is challenging due to a lack of funding and personnel, limited research and data, and the uncertainty in the timing and magnitude of the Joshua tree's response to climate change. The coalition will address this by bringing together monitoring, research efforts, and priority-setting efforts, and coordinating where feasible. Partners will compile and share best practices, guidance, information, and lessons learned for large-scale stewardship. MDLT will provide additional leadership and logistical coordination for these efforts.

This highly collaborative and innovative approach is timely and will help to ensure the long-term viability of the Joshua tree. We are honored to play a role in the protection of this iconic species and all the life that calls the desert home.

The coalition's steering committee met in Joshua Tree National Park November 18th-19th to draft a mission and charter and will meet monthly as they continue to build out the coalition's framework.

*Krystian Lahage is the Public Policy Officer for the Mojave Desert Land Trust. He previously served as the Legislative Affairs Manager for the County of Orange covering infrastructure, climate, water, and green energy issues and as the Senior Field Representative and wildfire taskforce co-lead for U.S. Senator Dianne Feinstein in Riverside, San Bernardino, and Orange Counties.*

**Joshua Trees.** Mojave Desert Land Trust

BY JEFF AARDAHL

# West Mojave Route Designation Project

## Summary of Judge Illston's decision, October 22, 2024

*Conservation organizations have a long history of challenging the Bureau of Land Management (BLM) over off-highway vehicle (OHV) route designations on public lands in the 3.1 million-acre West Mojave (WEMO) area. A first lawsuit was filed in 2006, and in response, Federal District Judge Susan Illston determined the BLM failed to comply with its OHV route designation regulations designed to minimize impacts to wildlife and other environmental resources, and that BLM violated the National Environmental Policy Act (NEPA) by failing to analyze a reasonable range of alternatives regarding miles of OHV routes in the WEMO area (i.e., all alternatives analyzed included the same 5,098 mile route network). In 2021, the same conservation organizations filed a similar lawsuit against the BLM and the FWS over BLM's 2019 OHV route designations in the same WEMO area and FWS's biological opinion issued to BLM.*

*This article provides a summary of the recent decision issued by Judge Illston on the conservation organization's 2019 lawsuit.*

On October 22, 2024, U.S. District Court Judge Susan Illston issued her order on the lawsuit filed by six environmental organizations[1] against the Bureau of Land Management (BLM) and the U.S. Fish and Wildlife Service (FWS) over BLM's approval of amendments to the California Desert Conservation Area (CDCA) Plan that designated off-highway vehicle (OHV) route networks in the Western Mojave (WEMO) Desert. BLM determined that there are 15,235 miles of routes in the WEMO area (including illegal user-created routes and other so-called "translinear disturbances") and it designated 5,997 miles as available for OHV use when it approved the 2019 route designation amendments to the CDCA Plan. Of those routes available for OHV use, 2,219 miles are located within desert tortoise and Lane Mountain milkvetch (LMMV) critical habitat.

In her ruling, Judge Illston concluded the following:

- BLM's 2019 WEMO OHV route network did not comply with OHV impact minimization criteria regulations for the desert tortoise and the LMMV. The OHV impact minimization criteria were established through regulations in 1979 (43 Code of Federal Regulations Section 8342.1), some of which include:
  - Areas and trails shall be located to minimize damage to soil, watershed, vegetation, air, or other resources of the public lands, and to prevent impairment of wilderness suitability;
  - Areas and trails shall be located to minimize harassment of wildlife or significant disruption of wildlife habitats. Special attention will be given to protect endangered or threatened species and their habitats;
  - Areas and trails shall be located to minimize conflicts between off-road vehicle use and other existing or proposed recreational uses of the same or neighboring public lands.
- BLM compiled voluminous information on OHV routes and considered how the minimization criteria could be applied to each to reduced impacts, but failed to show how the minimization criteria were used in designating the open route network.
- BLM improperly relied on optional, post-route designation impact mitigation measures to satisfy its legal obligation to designate OHV routes that minimize adverse impacts to the desert tortoise and LMMV and their habitats. Additional impact mitigation measures would

**Mature desert tortoise.** Defenders of Wildlife

**Off-Roading hazard to tortoises.** Defenders of Wildlife

only be considered by BLM if monitoring showed that there were further declines in their populations.

- FWS violated the Endangered Species Act (ESA) by relying on the BLM's optional mitigation measures to avoid jeopardizing the desert tortoise and LMMV and ignoring the best available science when reaching its no jeopardy determination. Judge Illston also recognized the dire status of the desert tortoise in the WEMO area by including this statement from the biological opinion (BiOp) issued by the FWS: "The FWS's 2019 BiOp states that between 2014 and 2024, the FWS estimated a loss of approximately 50% of the adult desert tortoises in the Western Mojave Recovery Unit, the area for the 2019 Route Network."
- Education, enforcement, increased compliance, OHV route maintenance, and compliance monitoring may reduce impacts, but they do not meet the requirement for the BLM and FWS to document how those post-decision actions could result in minimizing the impacts of the specific OHV routes that were designated.
- BLM's assumption that OHV use will remain constant from 2017 to 2035 was not supported by its analysis and, therefore, it was arbitrary and capricious for the BLM to rely on that assumption in its analysis of air quality impacts.
- FWS violated its obligation to insure that its no jeopardy determination was based on the best scientific and commercial data available – specifically the Tuma (2012) and Berry (2014) studies – on the desert tortoise in the WEMO area.
- The Tuma study found that in the Superior-Cronese Critical Habitat Unit, the human presence threat model, which included off-highway vehicle use, caused the most precipitous and significant decline in the desert tortoise population because, in part, of the proliferation of roads and off-highway vehicle routes in and adjacent to the study area. Tuma recommended that BLM reduce human access and making the area more remote, particularly in areas with higher desert tortoise occurrence potential, by closing and restoring OHV routes, limiting recreational permits, increasing law enforcement to prevent illegal activities, and prohibiting OHV events.
- The Berry study found that the Desert Tortoise Research Natural Area (DTRNA), the management area with the longest history of protection – a fence to exclude livestock and vehicles – had significantly more live tortoises (10.2/km$^2$) compared to the adjacent Fremont-Kramer Critical Habitat Unit in the Rand Mountains and Fremont Valley (2.4/km ), and that the DTRNA also had lower tortoise death rates.
- If FWS had considered the Berry study's findings about the significant positive effect of excluding OHVs and livestock grazing in the DTRNA, and the low tortoise density and high death rates in the adjacent Fremont-Kramer Critical Habitat Unit, it may have concluded that a smaller and/or differently configured OHV route network was required to avoid jeopardy to the desert tortoise and impacts to its critical habitat. In particular, this was because the 2019 OHV route network included thousands of miles of routes in desert tortoise critical habitat and that a significant portion of those routes were located in areas with a higher probability of supporting desert tortoises.
- FWS's approval of a surrogate or substitute desert tortoise mortality monitoring approach was arbitrary and capricious because the rationale was not supported by the record. FWS adopted the surrogate monitoring approach based on a lower number of tortoises found dead because it accepted BLM's claim that it could not monitor the route network in a practical or reasonable manner that would allow it to find most desert tortoises that die because of collisions with vehicles, both because scavengers remove the carcasses of dead animals and because the network is too large. But the Court found that FWS's failure to require any type of monitoring and instead relying solely on incidental finding of a smaller number of tortoises during other management activities was unreasonable.
- FWS's no jeopardy determination was flawed because it was premised on unenforceable, non-specific commitments by the BLM regarding mitigation and minimization measures through BLM's adaptive management program, as well as enforcement by BLM.
- FWS's decision to exclude terms and conditions in the Incidental Take Statement (ITS) for the desert tortoise and reasonable and prudent measures to minimize the incidental take was contrary to the ESA, the implementing regulations, case law, and FWS's Consultation Handbook. Thus, the ITS was arbitrary and capricious and contrary to the ESA.
- BLM also violated the ESA by relying on the FWS's legally flawed biological opinion.
- FWS never explained how the 2019 OHV route network would not jeopardize recovery of the desert tortoise as required by the ESA and its implementing regulations.

*References and other literature cited are available on the website desertreport.org. On the home page go to the right sidebar and click on "All Posts." Then scroll down to the article that you wish to see, and the references will be at the end.*

*Formerly a biologist with the Bureau of Land Management and the National Park Service, Jeff Aardahl now works with Defenders of Wildlife focused on wildlife and habitat conservation, endangered species recovery, land use planning, and similar conservation matters.*

BY KEVIN EMMERICH

# A Proposed Area Of Critical Environmental Concern

## Protection from solar energy sprawl in Pahrump Valley

Conservation organizations are requesting long term protection of outstanding cultural and natural resources on Bureau of Land Management (BLM) public lands in the Pahrump Valley, Nevada, along the California border. About 19,000 acres of public lands in the South Pahrump Valley are planned to be developed for solar panels by the BLM. Large-scale solar developers are now building the 3,000-acre Yellow Pine Solar Project and have plans to develop five additional solar projects in this region. The projects have already impacted Mojave Desert tortoise populations, historic viewsheds of the Old Spanish National Historic Trail and the Salt Song Trail, scarce water resources, rare plants, and public lands access.

An *Old Spanish Trail – Pahrump Valley Area of Critical Environmental Concern (ACEC)* proposal has been submitted to the BLM by the a group of conservation organizations to protect these resources from the bulldozers that will be used to develop solar projects.

This petition nominates public lands in the South Pahrump Valley, Nevada, for status as an ACEC. These lands are primarily located in Clark and Nye Counties, Nevada, and the nomination is approximately 145,000 acres in extent.

**Mesquite and badlands on the Purple Sage Energy Center site.** Kevin Emmerich

The Old Spanish Trail – Pahrump Valley ACEC nomination describes in detail the significant environmental resources and values of these lands, and the need for special management attention. The area highlighted in this nomination contains a significant portion of the Old Spanish National Historic Trail, including Stump Spring, a historic watering spot for mule caravans, and would create a ten-mile-wide (five miles on either side of the trail) planning corridor to help protect the historic landscape of the trail. The ACEC would also protect the segments of the cultural landscape around the Spring Mountains important to Southern Paiute and Shoshone peoples, including a portion of the Salt Song Trail.

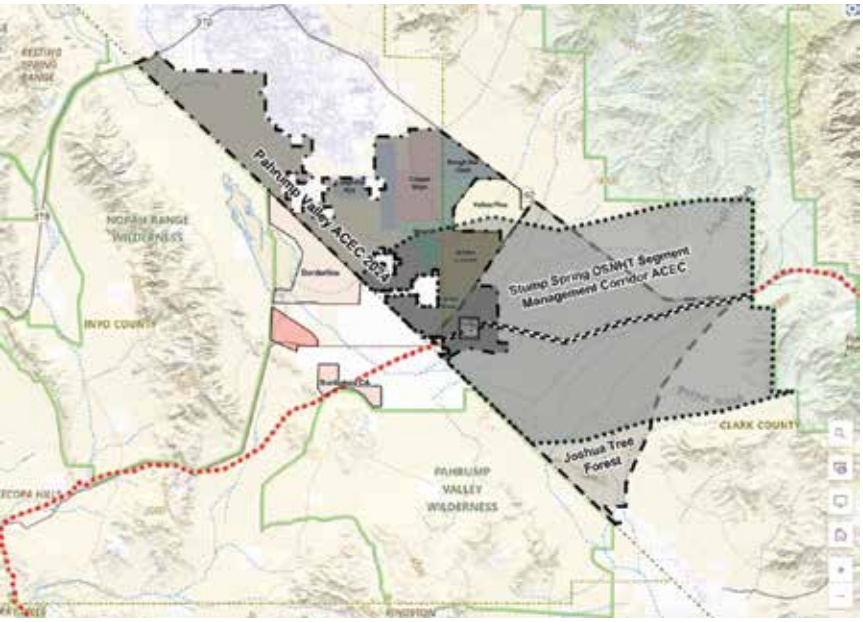
The area also supports a healthy Mojave Desert tortoise population. A high water-table supports important mesquite woodlands and habitat for neotropical migrant bird species. Much of the region provides habitat for the Pahrump buckwheat (*Eriogonum bifurcatum*), a rare plant in Nevada. Mammoth fossils and other paleontological resources have been discovered in the area. Much of the nominated area also supports a healthy population of Joshua trees.

As mitigation for urbanization and growth in the Las Vegas valley, grazing allotments here were bought-out with third party funds and closed decades ago in order to conserve tortoises and other species covered in the Clark County Multiple Species Habitat Conservation Plan.

The Bureau of Land Management recently approved a new Public Lands Rule. The rule recognizes conservation as an essential component of public lands management, on equal footing with other multiple uses of these lands. The Federal Land Policy and Management Act (FLPMA) requires the BLM to prioritize designating and managing Areas of Critical Environmental Concern (ACECs) to protect important historic, cultural, and scenic values, as well as fish and wildlife and other natural resources, and to address natural hazards.

No new large-scale renewable energy projects should occur in this ACEC. The ACEC nomination is not meant to close existing roads, recreational routes, or existing developments.

This ACEC could be established through plan amendments to the Southern Nevada Resource Management Plan (RMP), as other projects are approved – such as the many other large scale solar and transmission projects in Clark County undergoing review. Currently, BLM is




**Proposed Pahrump Valley ACEC.**

reviewing four of these solar projects in Pahrump Valley through NEPA.

The BLM has responded to the nomination and said it will not be considered in the Environmental Impact Statements of three solar projects under review at this time. They say the proposal does not meet the narrow Purpose and Need laid out as justification for the BLM to approve the solar projects. Those projects are the Purple Sage Energy Center, Copper Rays Solar and Rough Hat Clark County Solar. We have responded and told them they failed to consider a full range of reasonable alternatives for these solar proposals that would better protect the environment.

Just one of these solar projects has caused great damage to the local environment. The Yellow Pine Solar Project was started on a record-breaking drought year and efforts to move 139 desert tortoises backfired resulting in 33 mortalities. The project is using up scarce groundwater, creating fugitive dust, and the viewshed has been greatly compromised by 4.6 square miles of solar panels. It would be very disappointing to see five more of these projects permitted.

See the Basin and Range Watch Pahrump Valley ACEC nomination here: tinyurl.com/4jt6za4m

Basin and Range Watch – Save Pahrump Valley.
Sample letter to send to BLM here: tinyurl.com/32h7525r

*Kevin Emmerich is a former park ranger and field biologist. He has lived in the Mojave Desert for thirty years. Together with his wife, they founded the non-profit conservation organization Basin & Range Watch which advocates for environmentally responsible stewardship of the American southwestern deserts.*

# Desert Report Website

All the articles in this issue are available individually on the Desert Report website: www.desertreport.org. Footnotes which are not available in the printed issue, can be found at the end of their respective articles along with active links to other references. Past issues of the Desert Report and other information about the Sierra Club Desert Committee can be found on the website as well.

# Future Desert Committee Meetings

The next Desert Committee meeting will be held in-person, on February 8 and 9 at the Flower Building in Shoshone, CA. The meeting will be held noon-5:00pm Saturday and 8:00am-noon Sunday. There will be a Happy Hour and a potluck supper on Saturday evening. Jora Fogg (Jora@conservationlands.org) and Patrick Donnelly (PDonnelly@biologicaldiversity.org) will be chairing the meeting. Please contact them if you would like to present on a topic.

WALTER FELLER

# Join Us On The Desert Forum

**If you find Desert Report interesting, sign up for the Desert Committee's e-mail Listserv, Desert Forum. Here you'll find open discussions of items interesting to desert lovers. Many articles in this issue of Desert Report were developed through Forum discussions. Electronic subscribers will continue to receive current news on these issues — plus the opportunity to join in the discussions and contribute their own insights. Desert Forum runs on a Sierra Club Listserv system.**

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BY PATRICK DONNELLY

# Ripples In The Groundwater

## A tribute to Bill Christian

*The following is a talk given on November 2, 2024, at the dedication of the Bill Christian Trail at China Ranch Date Farm in Tecopa,v California*

Our friend Bill Christian left an enormous legacy written in the lands and waters of the Amargosa Basin. But while his conservation accomplishments left tangible marks on the landscape, it is the inspiration he provided that will echo through the generations.

Through substantial acquisitions, Bill's work with The Nature Conservancy[1] saved numerous beloved landscapes from going under the dozer blade: the Amargosa River just south of Shoshone; the Tecopa Marsh property and trailer, best view in the Amargosa, home to Amargosa voles and hundreds of species of birds; the Zabriskie Borax property, encompassing a huge part of the playa and marsh near Tecopa. Bill got the ball rolling with what would eventually become the acquisition of the Chicago Valley property, which his friends and colleagues like Sophie Parker pushed across the finish line, and of course, there is our China Ranch, which Bill worked so hard to save from irreparable harm and now is one of the strongholds for conservation in the Amargosa Basin.

His legacy on the ground is far more than just acquisitions. Bill was deeply involved in policy, especially as development in the California desert began to amp up in the latter part of the 2000s. He was instrumental in achieving the positive outcomes of the Desert Renewable Energy and Conservation Plan (DRECP), which zoned the California desert, designating a half million acres for solar and millions upon millions of acres for conservation, including almost the entirety of lands on the California side of the Amargosa Basin – a tremendous victory for this beautiful place. He helped put some of the pieces in place that eventually led to the derailment of the Hidden Hills solar project in Charleston View, which would have drawn hundreds of millions of gallons of water out of the aquifer on a direct flowpath to this very spot at China Ranch. And of course, through his work with Amargosa Conservancy, he was chief architect of the campaign to protect the Amargosa as a Wild and Scenic River,[2] a goal accomplished in the 2009 Omnibus Public Lands Bill and then expanded in the 2019 Dingell Act.

He also cared deeply about science, and working with his friend and co-conspirator Andy Zdon, he was the progenitor of the massive Mojave Desert spring

**Friends and family gather at the Bill Christian Trailhead.**
**All photos: Patrick Donnelly**

monitoring program.[3] This began in the Amargosa, with Bill funding Andy's work here that led to the State of the Basin Report and associated publications.[4] In later years additional grants were found and leveraged to expand this work across the whole Mojave Desert. Now we see similar initiatives in Nevada and elsewhere wholly unrelated to Bill or Andy or the Amargosa – a good idea is a good idea. Bill knew that science was going to be the basis for how we saved the desert.

If that was it alone, if the Amargosa Conservancy and the acquisitions and the policy and the science were the totality of Bill's legacy, we might still be having this gathering here today. Those actions made direct and tangible contributions to the conservation of the Amargosa Basin. We are forever indebted to him for them.

But his legacy was so much more. Let me take a diversion by sharing with you the story of the springsnails.

Springsnails, tiny organisms that live in springs across the Great Basin and Mojave Desert, are extremely cryptic organisms. So small it's hard to focus one's naked eyes on them, they really require magnification to see. In many cases they've been isolated from other springsnails for millennia, and, due to high reproductive rates, they readily speciate. As a result, there are hundreds of species of springsnails across these deserts. However, lay persons like you and me cannot readily identify them by species, only by geography. These species of springsnail are differentiated by, what else, their penises. This

often provides their names, for instance the distal-gland springsnail, with a penis on its back; the elongate gland springsnail, which apparently is quite well endowed; or the bifurcated gland springsnail, which… well I'll leave it to your imagination.

Only an expert can identify these springsnails, using a scanning electron microscope. And as of the early part of this century, there were only two people in the world, Don Sada of USGS and Robert Herschler of the Smithsonian, who could readily identify springsnail species. Any time someone found a springsnail, they'd go to Sada and Herschler for identification. However, like all of us, Sada and Herschler got older, eventually retired, and no longer were around to identify springsnails. Unfortunately, when they retired there was no one left to identify the springsnails. No new experts had emerged.

In one extremely dark moment, BLM was permitting a gold mine in northern Nevada which was going to dry up some springs. They knew there were springsnails present but since there was literally nobody on earth who could identify the species of springsnail, no particular protective measures were put in place for them. The springs dried up, and those populations of springsnail were extirpated. Were they a whole new species that went extinct? We will never know. The consequence of our ignorance may have been the extinction of species.

Beyond any acres of land acquired, any policy measures successfully promoted, or any scientific initiatives spearheaded and funded, Bill's greatest legacy in the Amargosa comes from the people who came after him.

**His is a legacy written in acres preserved. His is a legacy written in cubic-feet-per-second flowing from the springs. His is a legacy written in aquifers which will sustain the natural and human communities of the desert for generations to come.**

Us. The people standing here today; the people who couldn't be here today; and now, the people who never even knew him but who are still benefiting from his teaching and mentorship as they are passed through the generations.

Bill was a co-founder of the Amargosa Conservancy, the first locally based non-profit in the Amargosa dedicated to conservation of its waters and ecosystems. He made crucial connections with prominent local landowners who were already interested in conservation, bringing resources and amplifying their voices to ensure that local people in the Amargosa had a say in its management.

The Amargosa Conservancy is how my life intersected with Bill's. Chris Roholt, my longtime friend and mentor, connected me with Bill Christian and John Hiatt in the autumn of 2014. I was fresh out of Cal and looking for

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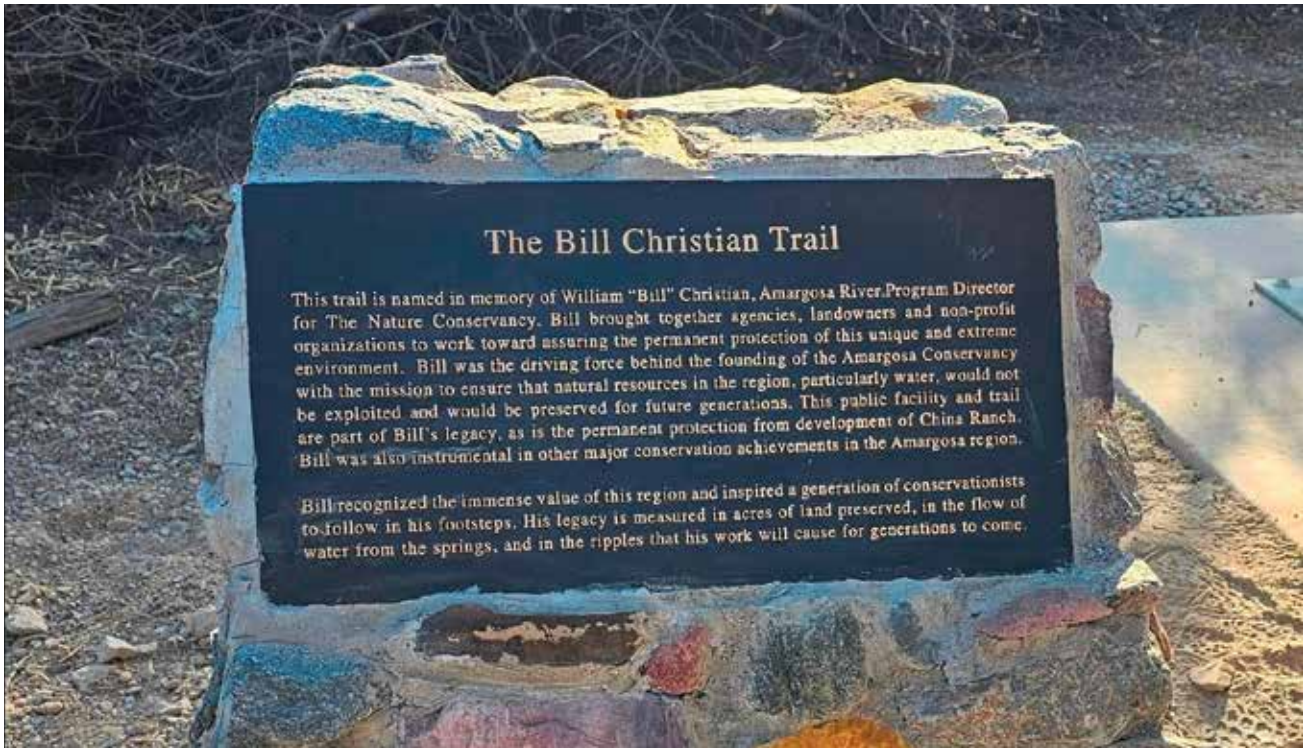

BY BIRGITTA JANSEN

# The Perilous World Of The Jackrabbit

## Animal encounters in Death Valley National Park

**2014 – Late spring: Skidoo area, Death Valley National Park**

The temperature is comfortable and there is no wind. Gently undulating hills are covered in sagebrush and other desert shrubs. The scent of drying vegetation hangs lightly in the air. We haven't had rain in a while. Picturesque cumulus clouds grace the deep blue sky. Far to the west some horsetails warn of unsettled weather in the near future.

I amble cross country to the road where the truck is parked. I love being in this place, especially on a quiet day like this when the silence feels almost palpable. The only sounds are my footsteps on sand and patches of gravel between sagebrush.

An explosion like a gunshot. Silence torn to shreds. My heart feels like a metronome on fast forward. I catch a glimpse of an animal bolting out of a sage bush right next to me. By the time I gather my thoughts, I see only a blurry speck in the distance, flying through the landscape. A jackrabbit. Then I understand what happened.

I have rudely disturbed this animal's peace and quiet. Black-tailed jackrabbits are mostly nocturnal and spend their days dozing in a scratched out depression under a bush. Their sleep is light because they can never fully relax.[1]

The jackrabbit's world is filled with danger from sky and land in a way we cannot begin to imagine. What would it be like to live in a world where nothing can be trusted? Where one needs to be on high alert 24/7 for one's entire life? Jackrabbits are never totally safe, and they know it. The problem, albeit from a jackrabbit's perspective, is that they are viewed by many carnivores and omnivores as nature's ideal prey. Eagles, hawks, and owls patrol the skies looking for food below. Wolves, coyotes, foxes, bobcats, badgers, and weasels, to name a few, roam the landscape.[2]

In order to survive, the jackrabbits had to evolve with significant adaptations to the reality of their world. For example, their auditory abilities are remarkable. The ears are probably the first thing one notices when seeing the animal. They can grow up to eight inches in length. and are almost the same length as their powerful hind feet.[3]

Their ears are a superb early warning system because they are exquisitely sensitive, and shaped to

**All photos: Jackrabbit (*Lepus californicus*).** Rod Colvin

### The naming of the Jackrabbit

**Mark Twain is credited with being the first non-native person who brought attention to this "desert-loving creature". He felt that the critter had "the most preposterous ears that were ever mounted on any creature but a jackass." Jacks are male donkeys. However the name was soon changed to the more socially acceptable "jackrabbit."[1]**

**Elsewhere it is reported that Lewis and Clark "encountered four classic Western animals for the first time", which included the jackrabbit.[2]**

**There is, however, one problem with the naming: the jackrabbit is not a rabbit. It is a hare. Rabbits and hares are different animals.[3]**

References are available at www.desertreport.org

efficiently capture and locate sounds.

Their visual ability is equally important. Unlike predators, who have eyes located in the front of their faces, a typical characteristic of prey animals is that they have eyes on both sides of their head. This eye placement allows for an almost 360-degree field of vision.[4] If you're a jackrabbit, that's an ideal arrangement.

And there's more. Since almost all aspects of the jackrabbit's behavior and characteristics are about survival, this means that their phenomenal ability to reproduce is a necessity. They are polygynandrous (males and females can have multiple partners)[5] and they could be described as lusty creatures. But for jackrabbits procreation is serious business. The mortality rate of the young ones, called leverets, is high. Not many survive their first year due to disease or predation. In warmer climates jackrabbits can mate year around and tend to have two to four litters annually with, on average, four leverets. They can give birth to between two and seven leverets but much depends on the favorability of their environment.[6]

The females do not build nests but give birth in shallow depressions under cover of shrubbery, called "forms." They might even put the leverets in different places to increase chances of survival for at least a few. The mothers don't stay with the little ones but come twice a day to nurse them at dawn and dusk.[7]

Another advantageous characteristic is that the leverets are precocial: they are born with a full coat of fur, eyes wide open, and they are mobile within minutes. Not long after their birth they can fend for themselves.[8]

The coloration of the jackrabbit's fur, called "agouti," is dark buff peppered with black.[9] Especially in a desert environment, this is useful camouflage.

But jackrabbits' best and most remarkable defense is the incredible speed they're capable of. They can run 35 to 40 mph.[10] and cover between 10 to 20 feet in a single bound.[11] Their run might include "hooking" which is another evasive tactic and refers to running in a zig-zag pattern.

I once heard a Tae Kwon Do instructor emphasize to his students: "Best defense, not be there." It's the jackrabbit's mantra.

**Summer 2016 – Hidden Valley, Death Valley NP**

I am driving southbound on a dirt road through Hidden Valley. This is not a road I have driven often, and I am enjoying the remoteness of it. The human footprint is minimal. Here and there an old road leads to a long ago mining operation now only of historic interest. The landscape in the valley consists of typical desert shrub and gently undulating hills. The Cottonwood Mountains are to the east and the southern reaches of the Last Chance Range are to the west.

I notice a furry little body on the road. It's a jackrabbit stretched out as if still in mid-run. I get out of the truck to check if the creature is still alive, but it looks like death by vehicle. Some vehicles run these back roads too fast for some wildlife to get out of the way. But a jackrabbit?

I had not seen another vehicle on this road but it must have happened recently. Ants and ravens have not yet found her. There's blood around the nose and mouth. Her front legs are reaching out to a future she will not have. But her body will soon contribute to the survival of others in this harsh and unforgiving environment. Still, as I look at this lifeless body, I feel sad.

I get back in the vehicle and continue. Within a short distance I see another jackrabbit on the opposite side of the road sitting motionless next to a burrow in the berm. That's odd, because jackrabbits do not dig burrows[12] although they might use a vacant one to escape a predator.

Since the animal is to my left, I have the opportunity to observe it while I slowly move forward. It shows not a hint of awareness to my presence. No movement. This is unusual. I slow to a near stop. The jackrabbit looks forlorn, diminished. Is it possible the animal is grieving? Jackrabbits tend to be solitary animals, although they often forage in pairs or groups at dawn and dusk.[13] And then of course, there's courting time. But do these animals develop social relationships? There has been considerable research on jackrabbits, but this question remains unanswered.

Somehow this little story, seemingly so insignificant, remains vivid for me. Some people might say, "It's just a jackrabbit, why all the fuss?" But it touches me. Even in this protected area – their territory, their home – they're still at risk when encountering humans.

Jackrabbits are not an endangered species. In fact, their population is cyclical and peaks every six to ten years. However, from time to time their population crashes. This is often due to the disease tularemia.[14] Fortunately, they quickly recover due to their remarkable fecundity.

But as with so many species, there is a downward trend in numbers.[15]

One of the five North American species, the Tehuantepec jackrabbit, a Mexican endemic, is already "considered by some conservation biologists to be one of the most endangered animals on earth."[16] We don't think of

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# A tribute to Bill Christian

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work in conservation and one thing led to another and I ended up moving to Shoshone to be the executive director of the Amargosa Conservancy. Bill was on the phone with me several times a week for the first few months, talking me through not just the issues but the people and personalities that I needed to navigate in my new role.

I remember going to an interagency meeting in Las Vegas where Bill introduced me to the group. He seemed so at ease in this room full of powerful people who hold the fate of the desert in their hands. He was talking to the room and made a joke that I've used in the ten years since – "What's a lawsuit between friends?" He had this ability to be both friendly and amiable while assertive and forceful at the same time, something I've tried to emulate in my own work.

At my first in-person board meeting a few months after I was hired, he coached me along, and then at the end, handed me a huge check as a vote of confidence. I hadn't really started hustling money for the organization quite yet, and I'll never forget the feeling of him handing me that check. It was a seal of approval.

Here we are ten years later, and the Amargosa Conservancy is still kicking. I'm honored to be Vice President of the Board of Directors now, and I consider helping to foster and advance the AC to be one of the most important duties I have in my career. There's been a lot of ups and downs at the AC – a lot of them! But the vision for the organization has remained relatively steady through all of those years, and it probably has a more secure future today than it's ever had in the past.

Bill mentored me in all the years since I left the Amargosa Conservancy and went to work for the Center for Biological Diversity. While my current role means I had to develop sharper elbows than I had with the AC, and that my lawsuits aren't always very friendly, he still dropped me a line every few months to comment on the work, offer a suggestion, or just give me encouragement. Even toward the end of his life, he continued to encourage me. When I heard he was entering hospice, I emailed him pouring my heart out about what he meant to me. His reply? He said only "undeserved" and then said "there's a hydrologist I want you to talk to . . . " His final act with me was to continue to make connections and bring people together for conservation.

**Bill Christian at the Amargosa River waterfall, unknown date.** Len Warren

And while I'm sharing my personal story here, you can look around at the folks gathered here today and to many folks all across these desert lands, and you can understand how far the ripples that Bill created have traveled. There's a whole generation of desert conservationists who have been profoundly influenced by Bill and his legacy. And that generation is now producing another generation. Folks like Mason Voehl and Scott Williams here, they never knew Bill. And yet their lives and careers are being directly shaped by the ripples in the groundwater that Bill created. The face of conservation in the Mojave Desert would not be what it is today were it not for Bill Christian.

His is a legacy written in acres preserved. His is a legacy written in cubic-feet-per-second flowing from the springs. His is a legacy written in aquifers which will sustain the natural and human communities of the desert for generations to come.

But moreover, his legacy is us. The people gathered here. And the work we are doing and will continue to do to defend and protect our beloved Amargosa. The ripples in the groundwater that Bill created will continue to resonate through us, and through those we pass it onto ourselves.

And that, my friends, is the greatest legacy and lesson of Bill Christian. It's not just about what you do. It's about who you inspire to continue the work after you're gone.

*Patrick Donnelly is Great Basin Director with the Center for Biological Diversity. His passion s the conservation of aquatic endemics in the Great Basin. He fights mining, inappropriate energy development, groundwater pumping, and fossil fuels from a remote desert outpost on the edge of Death Valley.*

1) https://www.nature.org/en-us/get-involved/how-to-help/places-we-protect/amargosa-river/
2) https://www.blm.gov/programs/national-conservation-lands/california/amargosa-wsr
3) https://www.blm.gov/programs/national-conservation-lands/california/amargosa-wsr
4) https://www.amargosaconservancy.org/2020-amargosa-state-of-the-basin-report/

# The Perilous World Of The Jackrabbit

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jackrabbits' populations as dwindling, but they are rapidly losing habitat as mining, industrial solar developments, and wind farms encroach on hitherto undeveloped desert lands.

**Summer 2016: Saline Valley Road, North Pass area, Death Valley NP**

I am working in the backcountry once again. The day of work is done. I've set up camp, enjoyed my freeze dried chicken Teriyaki, and called Death Valley dispatch on the sat phone to let them know where I'm camped. All is well in my little world.

It's early in the evening, the air is silky, the sun no longer a burning orb in the sky. There's not a hint of a breeze. I'm exploring the area around my camp. When I come to an open area between the piñon pines and junipers, I stand still to listen to the silence. A silence without any ambient noise is to be cherished. We have so little of it.

Suddenly I sense a movement slightly behind me to my left. Slowly I turn my head and see a jackrabbit. She is about eight feet away from me. Neither one of us moves. I wait. I am curious to see what she might do next. She hops a few times. Hops again. She seems relaxed. Is she curious too? Then she leisurely continues to hop forward in a straight line until she suddenly makes a 90-degree right turn and slowly starts to cross the open space in front of me. She is now approximately seven or eight feet from where I am standing. When she is before me, she stops. It feels as if she is observing me while I am observing her. The world she inhabits is as unknowable to me as my world is to her. But when, in this timeless moment, her gaze meets mine, there is a bridge between two different worlds. It's all that exists. There is reciprocity. She *sees* me and I *see* her. I read somewhere that there is intimacy in the act of observation. Perhaps there is.

And then there's something else. When she hops, I hear her powerful hind feet plop down on the dun-colored sunbaked earth. It dawns on me that when we talk about jackrabbits, we talk about *seeing* one. But I've never heard it said, "I *heard* a jackrabbit hop."

She continues ..... plop..... plop..... plop..... until she reaches the brush to my right. At an easy pace she disappears into the vegetation.

*Birgitta Jansen has been an active volunteer in Death Valley National Park. Currently residing in British Columbia, she is a managing editor of the Desert Report, has written previously on a number of environmental topics, and has completed a book about the October 2015 flash floods in Death Valley NP.*

References for this article are available at the website www.desertreport.org. On the home page go to the right sidebar and click on "All Posts." Then scroll down to the article that you wish to see, and the references will be at the end.

## Desert Website

The Desert Report website features material in a more timely manner than the interval between printed issues. The material that appears on the Home page will also be more action oriented than has been customary in the past. The archive of past issues will be largely unchanged. The Index to past issues and References provided in articles can be accessed from the bottom of any page.

**www.desertreport.org**

# What's The Problem?

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member, focus on the HOW question. Do you have a social-change theory and operational strategy? Develop one – HOW, by what (preferably non-violent) means, do we convince both our local political leaders and ordinary citizens to take the necessary steps to reduce their personal and community eco-footprints?

Looking ahead, and perhaps most importantly, Plan B will invariably involve determined action to re-localize; work with allies on a strategy to bring home crucial economic activities, particularly food production/processing, cloth and clothes-making, and essential small-scale manufacturing. As globalization erodes and related supply chains fray to breaking, it will be necessary to insulate yourselves, loved ones and friends against the worst effects of the transition, whatever final form it takes.

Above all, think of this as opportunity; let the creative juices flow as if your life depended on it – because it does!

*William Rees is a population ecologist, ecological economist, Professor Emeritus and former Director of the University of British Columbia's School of Community and Regional Planning in Vancouver, Canada. He researches the implications of global ecological trends for the longevity of civilization, with special foci on urban (un)sustainability and cultural/cognitive barriers to rational public policy.*

1) https://www.politico.com/magazine/story/2014/06/the-pitchforks-are-coming-for-us-plutocrats-108014/

# Burrowing Owls

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For the Western burrowing owls in California, conservation organizations were able to build a strong case using data on the owl's declining populations, the loss of suitable habitat, and the ongoing threats from urban development.

CDFW now has 12-18 months to produce a status report, based upon the best available scientific information, that will recommend to the Commission whether or not the petitioned action is warranted. This report will also incorporate public input and recommendations from burrowing owl experts. Then, based on the status report and other information in the administrative record, the Commission will make a final listing decision. If the formal decision is to list the species, burrowing owls will be granted full legal protection under CESA.

**Conclusions**

CESA protections for burrowing owls would require state and local agencies to better manage threats and fully mitigate impacts to the species. This would include ending the policy of evicting owls from burrows for development projects and requiring adequate compensatory mitigation for habitat loss. The recent progress in gaining candidate status for burrowing owls is a hopeful development for better conservation of the species. With formal protections and increased conservation actions from state agencies, the burrowing owl will have a fighting chance to rebound statewide.

*Sophia Markowska is a Senior California Representative for Defenders of Wildlife. She works on imperiled species conservation and engages in a variety of renewable energy development issues on private lands within the Central Valley and California desert regions.*

# Thank You

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