

DESERT REPORT

BY BIRGITTA JANSEN

The Environmental Crisis & Fundamental Choices

An existential challenge



SPECIAL ISSUE

Continuing a series of focused articles placing our deserts in a broad environmental and social context as we are increasingly faced with a number of *Fundamental Choices*.

The challenge of making choices has been with us as long as humans have existed on this planet. But the choices we are currently facing are unique and unprecedented due to scale. Climate change and environmental degradation have become headlines everywhere and are demanding solutions. Unfortunately ways of dealing with these crises have thus far been uneven and subject to forceful corporate, political, and individual interests rather than the wellbeing of our biosphere.

This article will touch on a few of the technological and innovative ideas that are in various stages of being researched, developed, or implemented. Since environmental degradation is inextricably intertwined with economics and a consumer culture, this will be commented on within the framework of those three systems. Population issues will briefly be looked at separately.

What are our options?

There appear to be two major streams of thought. There are those who hold fast to a firm belief in technological fixes as long as economic growth can be maintained as a priority. If that can be done while preventing or ameliorating some of the damage to ecological systems, that's viewed as a benefit. I have often heard it said that technology is human kind's only hope for the future.

Taking the road less traveled are those who support putting the brakes on, i.e. limiting or shrinking the economy with the recognition that the continuation of the economy as we now know it, has destructive environmental consequences. They see this planet is a closed system and what there is, is *all there is*. Resources are finite. To address the environmental crisis they propose shifting the emphasis from economic growth and wealth accumulation, to decreasing our consumption, valuing well-being and things that matter to us such as our children, relationships, community, health, satisfaction with life, in short, all that makes life worthwhile.

The technological perspective

We are already familiar with ongoing developments in the areas of electric vehicles, solar panels and wind turbines in an effort to decrease CO2 emissions. But there is a myriad of less well-known projects in the works utilizing recent technology such as, for example, fossil fuel cells, simple cycle gas plants, satellites to

BY BRIAN CZECH

The Steady State Economy

Real conservation

Birgitta Jansen's "Greening Of America" (September's *Desert Report*) was incredibly insightful and aptly alarming. And, as she described the environmental challenges of industrial solar developments, wind turbines, and deep-sea mining, we could see the economy sprawling between the lines. My job is to take the baton from between the lines and bring it to a macroeconomic finish. Specifically, I'm here to explain the sustainable option in broad economic policy terms. It's called the "steady state economy."

When pondering the meaning of "steady state economy," it helps to remind ourselves exactly what economic growth is, starting with what it is not. Economic growth is not mom, apple pie, or Chevrolet. It's not even synonymous with more jobs. (Far too many other factors come into play, such as robots "stealing" our jobs and CEOs hogging income.) Economic growth is not, in other words, a harbinger of economic or social welfare.

Economic growth is simply an increase in the production and consumption of goods and services in the aggregate. It requires a growing population and/or per capita consumption. It's measured with GDP, or gross domestic product. Technically, that's all it is! Attitudinally, it's materialism writ large. Politically, it's a central economic policy of the USA, pursuant to the antiquated *Full Employment and Balanced Growth Act of 1978*.

Now it's apparent that we have three major alternatives: growth, de-growth, and a steady state economy. De-growth, then, means a decrease in production and consumption (in the aggregate), a declining population and or/per capita consumption, and a shrinking GDP. As unsustainable as growth is, it also doesn't take long to recognize that neither is de-growth a paragon of sustainability.

This leaves the steady state economy as the one sustainable option. The steady state economy is a stabilized level of production and consumption, entailing a stabilized population and per capita consumption. "Stabilized" is not the same as flatlined. Rather, the steady state economy fluctuates to some degree with changes in the weather, resource trends, and regulations such as environmental protection. A "nice" steady state economy fluctuates mildly, and ideally at some optimum level, keeping the (mildly fluctuating) population happy.

The phrase "in the aggregate" also warrants careful attention. Economic growth doesn't amount to more

apples here with less oranges there. What we're interested in is the size and weight of the shopping cart, not so much the contents therein. This is a key concept to remember, because it helps to dispel the fallacious notions of "green growth." Just because solar panels are starting to replace fossil fuels doesn't necessarily make for growth, much less "green." In fact, degrowth is almost certainly on the horizon as we phase out of fossil fuels. Even the attempts to grow the economy "greenly" will result in the degradation described by Jansen. What's pitched as "green growth" is better described as non-green non-growth.

Circular flows in a triangular economy

We hear a lot these days about the "circular economy," with total reuse and recycling of our material goods. This concept arises from the noble motive of preventing waste, halting pollution, and making an economy sustainable. Unfortunately, it's also often coupled with the oxymoron of "green growth." Supposedly, once we figure out how to "circularize" the economic process, we can turn our attention to an ever-greater circular flow. While the motive is noble, the concept is dangerous when extended to macroeconomic policy goals. Thinking we could become entirely efficient in the economic production process would be to violate the second law of thermodynamics, the entropy law.

Without plumbing the depths of entropy in phys-

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BY JOHN MIRISCH

Forced Urban Density And Energy Sprawl

Everything is linked

Why should people who are keenly interested in preserving the magic of the living desert care about development in dense urban areas? Why should they take an interest in whether single-family neighborhoods are outlawed and density is forced upon residential communities? Shouldn't people who want to preserve our state's wildlands, including the sensitive desert, support a further concentration of population into densely packed urban areas? If more people live in densely packed cities, fewer people would be tempted to move to the "sprawl" of California's rural areas, including our deserts.

After all, don't those advocating for higher urban densities claim to want to protect the environment, our natural resources, and the earth itself by promoting density as a way to reduce our physical (and, according to them, carbon) footprint? On the surface, it's an appealing narrative.

This argument is similar to the fairytale so memorably called out by Swedish climate activist Greta Thunberg, with her searing indictment of governments unwilling to take meaningful action against climate change: "Here we are at the beginning of a mass extinction and all you can do is talk about money and fairytales of eternal economic growth."

Urban growth advocacy and boosterism has in many ways the character of a religious cult, and, not unlike many cults, it is often all 'bout the money. Ultimately, it is about forcing density on urban areas through up-zoning, i.e. removing land use restrictions associated with urban planning and attempting to create utilitarian harmony within a City.

And yet for many, living within varying levels of density is a personal choice, a lifestyle choice like many others. Some will take Manhattan while others will take Mayberry. If urban density zealots reject the notion that "There is a time for everything, and a season for every activity under the heavens," they do so under the dogma that "Density is destiny" and that "There isn't a time and a place or a season for anything except for density."

Urban growth advocates frequently denigrate single-family neighborhood lifestyles with the label of "exclusionary zoning." Unfortunately, the alternative of high-rise, high-density development, most commonly located along public transportation routes, fails on several accounts. With no requirements for inclusion of

significant affordable housing, these developments are exclusionary for economic reasons. Persons with lower incomes who might most benefit from access to public transportation and from a demographically mixed neighborhood are exactly those who are excluded.

This enabling of developer profits has absolutely nothing to do with affordability, equity, or the environment. (In fact, as demographer Wendell Cox points out,¹ higher urban densities are associated with the worst housing affordability).

A second failure of the argument for increased urban density is that it is a proxy for unrestrained growth. As their names so openly and loudly proclaim, well-funded density booster organizations like "Up for Growth"² don't even try to conceal their *raison d'être*. The focus on upzoning and forced density is all about forced growth, and forced growth is all 'bout the money.³

And here is where we finally come to the impacts of forced density and forced growth upon our wildlands, especially our deserts. Urban density advocates look upon rural areas to provide the resources for their eco-modernist dreams, as if the desert landscape itself is neither sensitive nor needs protections from exploitation.

The fairytales of eternal economic growth require, as has been the case with all growth throughout history, increased levels of consumption and increased levels of energy production.

While many forced density activists like to rail against what they call "urban sprawl," few of them seems to be talking about energy sprawl.⁴ For obvious reasons, nobody who is singing the siren song of density's "environmental benefits" is going to advocate for increased use of fossil fuels. We are looking at the need for exponential increases in the generation of renewable energy. Industrial-scale wind, solar, and – for some of the eco-modernists, at least – nuclear energy are at the top of the list.

To spare the state's wildlands from the ravages of "urban sprawl," it is outside of the urban areas – in the very wildlands they supposedly want to protect – that growth activists will expect to produce the additional renewable energy that concentrated urban areas will demand. In this version of "saving the planet," we can

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Environmental Crisis & Fundamental Choices

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monitor global CO₂ levels, etc.^{1,2,3}

In her book *Under a White Sky*, Elizabeth Kolbert presents a number of technological and scientific proposals in various stages of development and execution. She mentions two technological approaches in particular that are becoming more widely known and gaining traction: carbon capture systems and solar geoengineering (or stratospheric engineering).⁴ Unfortunately Direct Carbon Capture, (i.e. collecting CO₂ molecules from the air), and storage is not a proven technology nor cost effective considering the scale required to do the job. Among environmentalists, the fear is that the fossil fuel industry will see this as an opportunity to continue producing more because the CO₂ problem will be fixed in the future.⁵

The idea for solar engineering came from studying volcanic eruptions which put sulphur dioxide into the atmosphere resulting in cooling effects. Solar engineering intends to artificially replicate this by spraying various reflective particles or sulphur dioxide into the atmosphere, or brighten clouds with salt spray to make them more reflective.^{6,7} Not much has been written about potential externalities or unintended consequences.

Putting on the brakes

For those who pin their hopes on technology and economic growth, the emphasis is on how people can manage and control the crisis; i.e. the anthropocentric perspective. But people who advocate “putting on the brakes” know that we don’t seem to be very good at managing and controlling nature. They also believe that we cannot separate the impacts of economic growth and consumerism on the environment. For them, shifting the economic growth fueled by the fossil fuel industry to a “green” energy producing industry, is old wine in new bottles. It won’t lessen the detrimental impact on the environment but simply shift the causes. This point of view leads to a hard look at what needs to change to lessen and ameliorate damage to ecological systems, as well as protect what little we still have left.

Proponents of “putting the brakes on” tend to look at the big picture: the web of all life and our place within it. Peter Seidel (a Minnesota architect who has been writing about environmental issues for decades), maintains that for some reason we humans cannot perceive the world as an integrated whole.⁸ Yet it is this holistic approach, or “systems thinking,” that needs to determine our choices and actions. Economist Peter Victor states it boldly: “Long term exponential growth and increasing GDP is incompatible with living well on Planet Earth. If we’re going to live within the capacity of the biosphere, we’re going to learn to manage to live without growth.”⁹

There are several movements that appear to be attracting a following: Degrowth,^{10,11} Steady State Economics,¹² and Ecological Economics.^{13,14,15} All three

For those who pin their hopes on technology and economic growth, the emphasis is on how people can manage and control the crisis; i.e. the anthropocentric perspective. But people who advocate “putting on the brakes” know that we don’t seem to be very good at managing and controlling nature.

of these emphasize economic growth as deleterious to the environment and view infinite economic growth as unsustainable. They see the human-created economic system as wholly dependent on natural ecosystems, whereas the ecosystems can do very nicely without the economy. In fact the survival of all species, including ours, totally depends on the natural ecosystems. They ask, “Could we, especially in the so-called developed nations, do with less?” Could we decrease consumption and thereby decrease our impact on the biosphere?

They also emphasize the social injustice of current economics and income inequality. They advocate changes in the measurement of GDP to include other measures such as longevity, fairness, wellbeing, and happiness. The example of Bhutan is often mentioned.

Many other voices express similar beliefs and values. Ron Deibert, Professor of Political Science and Director of the Citizen Lab at the Munk School of Global Affairs and Public Policy, University of Toronto, urgently calls for restraint in his book *Reset, Reclaiming the Internet for Civil Society*.¹⁶ J.B. MacKinnon, the author of *The Day The World Stops Shopping* proposes consuming less.¹⁷

Tzepora Berman is an environmental activist and Chair of the Fossil Fuel Non-proliferation Treaty Initiative. She inspired a group of scientists, academics, and former diplomats to develop a framework to enable countries to negotiate a managed wind-down phase in the fossil-fuel industries rather than a shock to the system that leaves everyone scrambling. Berman also comments that the solution is not only to switch to electrification and renewable energy but to use less.^{18,19} All are unanimous in their sentiment that any pathway that is chosen needs to be fair and equitable, with an emphasis on collaboration, building community, and valuing our children and relationships instead of focusing on personal wealth accumulation.

With that in mind there have also been frequent calls for changes in the Gross Domestic Product (GDP) as a single measurement.^{20,21} Traditionally, for econom-

ic growth to occur and to have a healthy GDP, money needs to be spent by individuals, corporations, and governments. The birth of Amazon has been, economically speaking, a happy event. However everything that is produced needs to be either grown or mined, which as we know, always impacts the environment.

It is of interest to note that overconsumption has “quietly surpassed population as our greatest environmental challenge.”²²

Overpopulation

There is a significant body of literature on the relationship between overpopulation and environmental impact.^{23, 24, 25, 26} A number of authors have written that unrestrained human population growth is not possible.^{27, 28} Providing family planning, educating women, increasing their social status, and lifting families out of extreme poverty are viewed as ways to address this issue.²⁹ Overpopulation is a growing concern for a number of reasons including the increasing demand for resources.³⁰

Conclusion

I have briefly touched on a few ideas as to how to deal with climate change and the environmental crisis. There appear to be two streams of thought for dealing with our problems. The techno-scientific approach promises a way forward that might require few significant changes in our lifestyle. The second approach advocates slowing down or even decreasing the demands we place on the natural environment. The two streams of thought are venturing in seemingly opposite directions, which makes the problem of what to do even more challenging.

However one fact should concern all of us. As a number of authors point out, our very survival, that of all life forms, is wholly dependent on a well-functioning and balanced biosphere. We are an integral part of the web of life. But we have already seriously upset the applecart. Events are happening around the globe, that have never happened before and the scale of which is unprecedented. Lessening our footprint on this planet needs to be our primary concern. Regardless of all the ideas and proposals out there, that is what we can do and need to do, now, individually and collectively.

Footnotes cited in this article are available at www.desertreport.org by going to the bottom of any page and selecting “notes.”

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.

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Bears Ears: A Primer

An opportunity to get things right

Bears Ears is located in the southeast region of what is now called Utah, and it continues to be sacred to many Tribal Nations. It's home to thousands of Native cultural places and is rich in natural, scientific, and historic resources. The Tribes that formed a coalition to protect it have long recognized the threats posed by extractive industries, vandalism, and looting.

In 2015, the Hopi Tribe, Navajo Nation, Ute Mountain Ute Tribe, Pueblo of Zuni, and Ute Indian Tribe came together to form the Bears Ears Inter-Tribal Coalition to advocate for the protection of this landscape. The Tribes submitted a proposal to President Barack Obama to designate 1.9 million acres of their ancestral lands as a National Monument and asked that Tribes be made monument co-managers alongside federal agencies.

On December 28, 2016, President Obama used his executive power under the Antiquities Act to establish the 1.35 million-acre Bears Ears National Monument. Obama's presidential proclamation ruled that Bears Ears would be preserved through collaborative management between the five Tribes and the federal government to establish holistic protections for the region. This arrangement would also fulfill the government's trust responsibility to Tribes and empower their inherent sovereignty.

Less than one year later, the Trump administration carried out their largest public land reduction in the country's history, attempting to revoke and divide the Bears Ears Monument with two, much smaller monument "units." In total, the protected area was reduced by 85 percent. The five Coalition Tribes sued the Trump Administration to have the revocation of the monument declared illegal.

Significance for Native Americans

In the language of the five Coalition Tribes, the Bears Ears landscape is called *Honmuru*, *Shash Jaa*, *Kwiyagtia Nukavachi* and *Ansh An Lashokdiwe*; all translating in English to Bears Ears.

The Native peoples of this region all have a geographical, historical, and spiritual connection to Bears Ears. For those Americans whose ancestors were settlers or immigrants to North America as recently as 500 years ago (but much more recent for most), it is hard to grasp the concept of having a deep connection



Bears Ears Inter-Tribal Coalition Leadership - From left to right: Clark Tenakhongra, Hopi Tribe; Shaun Chappoose, Ute Indian Tribe; Jonathan Nez; Malcolm Lehi, Ute Mountain Ute Tribe; Manuel Heart, Mountain Ute Tribe; Carleton Borekaty, Pueblo of Zuni.

to a place or landscape. Tribal Nations maintain their cultural lifeways and tie their history to this continent in ways that many non-Indigenous Americans do not understand.

For place-based peoples, the notion of stewardship over sacred places is paramount. For some, Bears Ears is essential to their creation story, it tells their people's history, and it is the core of the Tribe's survival. Bears Ears provides (or has provided) protection, and in return the Tribes feel compelled to protect it. Any harm done to the sacred place is harm directly to those who hold it sacred. In their view, ensuring the health of sacred places allows the sacred places to ensure the health of their people.

The evidence of Tribal habitation within Bears Ears is literally inscribed on the cultural panels, painted on the walls and cliff sides, and built into ancestral structures. Roadways, built and used over millennia, connect sacred spaces throughout the landscape (evidence of pre-columbian cross-continental trade) and are viewed as knowledge left by the ancestors. Bears Ears contains evidence of at least 13,000 years of human habitation by Western standards, but since time immemorial for the Tribes who trace their origins there.

It remains a bright light to Indigenous peoples and as a place to heal and to continue practicing their lifeways. The diverse ecology of the region provides a space to practice and teach Traditional Knowledge;

the landscape is alive and is still used for hunting and sourcing medicinal plants. Bears Ears is still revered for community practices, food gathering, and ceremony. The Bears Ears represents healing in the truest sense.

Special relationship between tribes and federal government

The federal government would take a step towards empowering the inherent sovereignty of the Tribes and fulfilling its trust obligations to the Tribes by enabling an arrangement for collaboration or co-management of Tribal ancestral homelands.

Additionally, the Federal government's obligations under several laws and executive orders apply to the multitude of cultural resources found within Bears Ears. Just to name a few, federal agencies are compelled to "consider the effects" of their actions in regards to "Historic Properties," as covered in the The National Historic Preservation Act (NHPA)¹. Additionally, The American Indian Religious Freedom Act (AIRFA) requires the U.S. Government to respect and protect the rights of Tribes to freely exercise their religions. In practice this has meant that agencies are required to "consider the effects" of their actions on traditional religious practices. For places like Bears Ears, federal agencies merely "considering the effects" is not sufficient to protect the sacred sites found within the region.

President Biden's recent proclamation² restoring the monument recognized that the Federal Government has certain obligations to Tribal Nations. The proclamation reads, "Restoring the Bears Ears National Monument honors the special relationship between the Federal Government and Tribal Nations, correcting the exclusion of lands and resources profoundly sacred to Tribal Nations, and ensuring the long-term protection of, and respect for, this remarkable and revered region."

Both the Obama and Biden proclamations recognized the cultural and spiritual significance that Bears Ears holds for the five Coalition Tribes. Both proclamations also recognized a Bears Ears Commission which would "ensure that management decisions affecting the monument reflect tribal expertise and traditional and historical knowledge." We commend President Biden for restoring the Bears Ears National Monument, we continue to be hopeful that the Tribes will be meaningfully involved in management as well.

Future of the Bears Ears Monument collaborative management

Each member Tribe exercises its inherent right to self-determination by appointing a delegate to represent its interests in the Coalition's work, in tandem with a Memorandum of Understanding signed by all five Tribal councils that invests power in and ascribes limits to Coalition activities.

Historically, federal consultation and tribal engagement has been 'in name only.' Sending a memorandum

to Tribal Governments is not real Tribal consultation, though in the eyes of federal agencies it has been the means of soliciting Tribal engagement.

For the Coalition Tribes, Bears Ears is too important for shallow consultation, so Tribal leaders decided to develop a land management plan grounded in Traditional Knowledge in anticipation of the moment when the original vision for Bears Ears is restored and their input is sought.

To further the development of the Coalition's land management plan, the Coalition established the Bears Ears Cultural Resource Subcommittee which acts as an inter-Tribal cultural advisory body composed of issue area experts. The Subcommittee synthesizes input from Tribal Historic Preservation Officers, Tribal Resource Department Leads, Elders, traditional practitioners, and other community members to guide resource and cultural management of Bears Ears.

The Coalition leaders and Subcommittee members see the plan as a "living document" that will be added to and evolve as different needs on the landscape arise. They intend for the first iteration of their plan to be completed and ready for distribution in 2022. It will serve as the foundation for how they would like to programmatically approach collaborative management at Bears Ears. The plan will substantively decide which resources, threats, and activities to prioritize in the monument management planning and implementation phases.

Conclusion

To conclude, I'd like to emphasize our Tribal Leadership's recent joint statement commending restoration,³ "The Bears Ears Inter-Tribal Coalition looks forward to the President's continued leadership in ensuring that a new model of collaborative management between the Tribes, state and federal land agencies is immediately put into action and that a comprehensive Land Management Plan can be developed for the greater Bears Ears landscape. In this new model, the traditional knowledge and place-based conservation strategies of Tribal communities will play a significant role in shaping efforts to conserve and plan a resilient future for this landscape that we all hold dear."

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BY JAMES CORDERO

The Deadly Border Wall

A human tragedy

“El Centro Project 2” was the name given to the section of border wall that was to be built inside the Jacumba Wilderness by the Army Corps of Engineers. When construction started in May 2020, two things were already guaranteed: the project would cost a lot of money, and sadly, the newly constructed fence would cause more distress and death for those crossing the desert on foot from Mexico into the United States. The 1994 Border Patrol Strategic Plan of *Prevention Through Deterrence* has evolved and still continues to cause harm.**

El Centro Project 2 was one of the most expensive sections of border fence built along the entire United States/Mexico border, with a price tag of \$147 million for just about three miles of 30-foot-tall steel bollard fencing. One could say the contract for this, and other newly constructed border fence sections, were a quid pro quo for a company from Bozeman, Montana, named BFBC LLC, a subsidiary of Barnard Construction. Along with other Republican fundraisers, Barnard Construction donated to Donald Trump’s presidential campaign. BFBC LLC was incorporated just four days before the border was said to have been “stormed” by a migrant caravan

at the Tijuana/San Ysidro port of entry. The “crisis” led President Trump to declare an “emergency” along the United States/Mexico border not long afterwards.

I could go more in depth about what’s wrong with a border fence constructed in the Jacumba Wilderness. Dozens of environmental protection laws were waived leading to bulldozing a sensitive ecosystem, the destruction of cultural sites on Kumeyaay ancestral land, and the interference of mating patterns of the federally endangered Bighorn Sheep. What I am here to tell you about is something that is not widely known about the border fence in the Jacumba Wilderness: the new border fence is harmful and life-threatening to migrants. Migration paths have changed, and migrants are being pushed to go farther lengths, resulting in more distress and death.

What I have to say next may leave you scratching your head. The three miles or so of fence that span from the west end of Davies Valley to the east end of Skull Valley inside the Jacumba Wilderness *were not* constructed to keep migrants from crossing into the United States. At the east end of Skull Valley and at the west end of Davies Valley, the fence stops before reaching the base of mountains, leaving ample room for a high volume of foot traffic before the hills rise. At both ends of the fence, water bottles, food wrappers, and other discarded items show extensive foot traffic through the (now invisible) borderline. Don’t worry, my team from Border Angels and I didn’t just go to witness the new fence. We also cleaned up almost a dozen bags of trash and discarded the waste properly, with a regular schedule of trash cleanup planned in these areas.

The new fence ends abruptly, and that’s where it gets even more dangerous for migrants. To avoid these now heavily surveilled valleys, migrants have little to no choice but travel through high-risk canyon corridors where it *appears* there is less surveillance and visibility, resulting in a much longer trek to their intended destination. Longer distances, along with more severe temperatures year-round, make for a great number of rescues and deaths. There were around ten confirmed deaths and around 400 rescues in fiscal year 2021, inside wilderness boundaries or just beyond. Almost all the deaths that occurred just outside the wilderness boundaries were migrants who had entered the United States through the Jacumba Wilderness. Rescue beacons were added in Skull Valley and Davies Valley this



Discarded water bottles and other personal belongings where the fence ends on the east in Skull Valley. Photo by James Cordero



Members of Border Angels plant a memorial cross in Pinto Canyon to honor Martin at the location where he was found deceased.

Photo by James Cordero

past summer, but they are in areas where fewer migrants travel, as these beacons are in a wide open and very visible area.

Since the construction was halted at the beginning of 2021, I have participated in planning searches after receiving distress calls from migrants in or near the Jacumba Wilderness or from their families. Although we know the names of only three of the migrants that passed away, one will forever remain with me: Martín Alfredo Rodríguez Alcazar. Martín died on May 1, 2021, just inside the entrance of Pinto Canyon and less than a mile from the border. Martín's story is sadly all too common. Martín was twenty-four years old, just five and a half weeks shy of his 25th birthday. I learned about Martín when my partner Jacqueline and I were on vacation and Jacqueline received a call from a friend of Martín's family. Martín had called his family, and they had spoken with him by the phone. He was out of food and water before he even crossed into the United States, and at the time of the call, Martín was in dire need of help just inside the United States boundary.

Jacqueline and I started looking at maps with the little bit of information we were given and discussed this with our Border Angels desert team members, since our group is familiar with most of the Jacumba Wilderness where we carry out weekly supply drops. With the help of our team members and with the family's description, we were able to figure out the canyon where Martín would eventually be found. Unfortunately, before we could even form a search, we learned from one of our Border Patrol contacts that Martín had been found deceased on May 1, the day before we received the phone call. A group of migrants, apprehended only hours after Martín made the call to his family, told the Border Patrol

of finding someone unresponsive and gave the approximate location. The search later that evening didn't take long. On the morning when Martín's family spoke with him for the last time, Martín mentioned that he felt that he was dying. According to the estimated time of death, Martín didn't live much longer than that phone call. When we spoke to the family on May 2, the family did not know yet that Martín had already passed away. The GPS location of Martín's passing was less than half a mile south of our southernmost supply drop site inside that canyon. I often think what may have changed if Martín reached our supply site in time.

Martín's story is not uncommon for those crossing into the United States through the desert, but unlike most, I was able to learn about Martín by connecting with his family members. I learned that Martín had lost his mother in 2018 and his father in 2020. He still had some family members in Mexico, but also had family in Los Angeles and other parts of the United States.

At home in Jiquilpan, Michoacán, Martín found part-time work as a bricklayer, and on the days when work was available, he could only earn up to 200 pesos a day (a little less than \$10 USD). There were no economic opportunities for Martín in his hometown, and his plan was to come to the United States and work for a few years. The plan included sending money earned in the United States back home to his son and his son's mother, Martín's partner. Martín set off for the United States on April 8, 2021, hoping for chance to provide a better life for his son.

Martín's family described him as a healthy person but said that during his journey he sometimes would become depressed, feared crossing the desert, and fought the urge to turn back. He kept going and kept fighting for his son, even up to his last breath. Martín would often share bible verses on his Facebook page, and one of his last posts (translated) said, "God put me on this path and he will know how to guide me to my destination. God first. Everything is for a better future for me and my family." There was a picture attached that appears to show the group Martín traveled with. I hope Martín was able to find some comfort at the end of his life through his religious beliefs. Martín did not have to die. The border fence in the Jacumba Wilderness is dangerous. It kills.

James Cordero is a professional photographer, humanitarian aid provider and hiker that has spent years hiking in the Jacumba Wilderness. James has worked with the non-profit Border Angels for over five years and holds the position of Water Drop Co-Director, with his partner and Co-Director Dr. Jacqueline Arellano. James and Jacqueline welcomed their first child together earlier this summer.

**Border Patrol 1994 Strategic Plan: <https://www.hsdl.org/?abstract&did=721845>.

A podcast called "Border Trilogy": <https://www.wnycstudios.org/podcasts/radiolab/projects/border-trilogy>

BY TOM MYERS

Water Security Throughout The Colorado River

Threatened by population growth and climate change

The following article is critically important, and although it is somewhat technical, the details are necessary to understand and deal with the future water shortages that are expected in the Colorado River Basin. – Editor

On August 16, 2021, the US Bureau of Reclamation (Burec) declared that a shortage exists in the Colorado River system for the first time ever due to continuing drought and increasing diversions. My article in the last *Desert Report* (September, 2021) documented the long-term flows, demands, and the effects of climate on the Colorado River. This article digs deeper into the potential long-term shortages to the Las Vegas Valley, as served by the Southern Nevada Water Authority (SNWA), and the Coachella Valley, as served by the Coachella Valley Water District (CVWD). Figure 1 shows the Colorado River basin and the location of these water purveyors

Burec administers shortages on the Colorado River according to the 2007 Colorado River Interim Guidelines for Lower Basin Shortages (Interim Guidelines) and 2019 Lower Basin Drought Contingency Plan (DCP). Current allocations for California, Arizona, and Nevada are 4.4, 2.8, and 0.3 million acre-feet/year (MAFY). Figure 2 shows the complicated set of delivery reductions required as Lake Mead falls below given elevations. The Upper Basin is required to deliver an average of 7.5 MAFY to the Lower Basin as part of the Colorado River Compact after the wettest 20 years on record (as described in the previous *Desert Report*). Burec currently projects that Lake Mead will be at elevation 1067 feet above mean sea level (AMSL) in January 2022 so Nevada and Arizona will take delivery reductions as specified in Figure 2.

If Lake Mead falls below elevation 1025 feet AMSL, the total reduction in deliveries to Lower Basin states would be 1.1 MAFY with 6.4 MAFY continuing to be delivered. No further delivery reductions are required as the water level falls to as low as elevation 895 feet AMSL, the lowest outlet through Hoover Dam and the minimum water level at which deliveries can be made to downstream users. Arizona and California would be



Figure 1: Map of the Colorado River basin and areas outside the basin served with its water.

Source: <https://www.doi.gov/water/owdi.cr.drought/en>

physically cut off from any water. SNWA has a pipe into Lake Mead (its third straw) that will allow diversions to occur to elevation 875 feet AMSL, meaning that Las Vegas can physically get its allocation even while Arizona and California are shut off.

Nevada's (mostly southern Nevada urban areas) water demand will soon exceed its 300,000 acre-feet per year (AFY) allocation regardless of the shortage declarations. Per capita water used in the SNWA service area has decreased 52% from 2002 to 2020, from 211 to 111 gallons per capita per day. However, SNWA's overall demand continues to increase due to unchecked population growth. The 2020 Clark County population is 2.3 million, but SNWA expects it to increase to a figure between 3.2 to 4.1 million people by 2070. Water demand would range from 353,000 to 441,000 AFY by

2070 which would exceed Nevada's full river allocation by as much as 47% even with additional conservation.

SNWA claims a complicated set of sources in addition to its river allocation to help meet its current and future demand. These include approximately 47,000 AFY of senior groundwater rights in the Las Vegas Valley, tributary water rights in the Virgin and Muddy Rivers, and groundwater rights in Coyote Spring Valley that SNWA could develop and move through Lake Mead. SNWA claims it has stored water 2.1 million acre-feet (MAF), seven times its river allocation, in groundwater banks in southern Nevada, California, and Arizona, primarily with unused Colorado River allocation. SNWA would use these temporary sources by diverting from Lake Mead while the state would utilize the water from where it is stored. Additional future potential sources could include an exchange agreement with the Metropolitan Water District of California (MWD), which includes the City and County of San Diego and Los Angeles, to develop a water reuse program exchange or pay for ocean desalination in southern California or Mexico in exchange for Colorado River water.

California's apportionment is divided among the Palo Verde Irrigation District, the Imperial Irrigation District (IID), the MWD, the Yuma Project, and the

CVWD. California's Colorado River apportionment has a higher priority than much of Arizona in that the Central Arizona Project apportionment (of over 1 MAFY) goes to zero prior to California taking any shortage. California agreed in 2019 to take some reduction in deliveries if Lake Mead falls below elevation 1090 (outlined on Figure 2).

CVWD has a basic apportionment from the Colorado River of 330,000 AFY and agreements with IID so that it currently receives 402,800 AFY increasing by 2027 to 436,050 AFY. Total Coachella Valley water demand projected for 2045 is 885,400 AFY. Of that, 539,300 AFY is urban, 169,500 AFY is just for golf courses, and the remainder is primarily for agriculture. CVWD per capita water use exceeds 300 gallons per day, but that includes golf courses and agriculture so is not comparable to SNWA. Groundwater, CVWD's other source, stored in Coachella Valley exceeds 40 MAF, but natural recharge currently averages only 50,000 AFY. Pumping far exceeds natural recharge, averaging about 152,000 AFY throughout the valley with CVWD using almost 100,000 AFY. Artificial recharge averages almost 190,000 AFY using California State Water Project (SWP) and Coachella Canal water so that the aquifer at present does not experience widespread drawdown.

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Lake Mead Elevation (ft. above mean sea level)	2007 Interim Guidelines Shortages				Minute 323 Delivery Reductions	Total Combined Reductions	DCP Water Savings Contributions			Binational Water Scarcity Contingency Plan Savings	Combined Volumes by States and Country					
	AZ	NV	MX	Lower Basin & Mexico Total	AZ	NV	CA	MX	AZ Total	NV Total	CA Total	Lower Basin Total	MX Total	Lower Basin & Mexico Total		
1,090-1,075	0	0	0	0	192	8	0	41	192	8	0	200	41	241		
1,075-1,050	320	13	50	383	192	8	0	30	512	21	0	533	80	613		
1,050-1,045	400	17	70	487	192	8	0	34	592	25	0	617	104	721		
1,045-1,040	400	17	70	487	240	10	200	76	640	27	200	867	146	1,013		
1,040-1,035	400	17	70	487	240	10	250	84	640	27	250	917	154	1,071		
1,035-1,030	400	17	70	487	240	10	300	92	640	27	300	967	162	1,129		
1,030-1,025	400	17	70	487	240	10	350	101	640	27	350	1,017	171	1,188		
<1,025	480	20	125	625	240	10	350	150	720	30	350	1,100	275	1,375		

Figure 2: Table showing delivery reductions (thousand acre-feet per year) to the Lower Basin states and Mexico as the Lake Mead water level lowers.

The Steady State Economy: Real Conservation

→ PAGE 2

ical or mathematical terms, let's go straight to what it means for sustainability: We can never become 100% efficient in the production process. In the production and consumption of goods and services, there will be waste: wasted material (pollutants, in other words) and energy (typically in the form of heat). In terms of physics, all this waste can be lumped with the term "entropy." We try to fight it off with recycling, insulation, and smart industrial design in general, but entropy increases at every step.

Even if we could become entirely efficient, that doesn't mean we could have perpetual growth. We'd still need to increase inputs to procure additional outputs. There's no making something from nothing; that's the first law of thermodynamics. "No free lunch," we might say.

So, rather than a circular pie in the sky, it's more accurate to think in terms of a "triangular economy," firmly planted right here on Earth. The triangular economy should resonate with most readers because it's based on very simple ecological principles that are witnessed every day. The triangle starts at the base with producers, and proceeds upward into consumers. In nature, or the "economy of nature," the base of the triangle consists of plants. They produce their own food in the process of photosynthesis. Moving up the triangle, the next organisms we encounter are the primary consumers. These are the animals that eat plants directly, such as rabbits, cows, and (for the most part) geese. Moving up further still, we have the secondary consumers that eat primary consumers. These include predators such as snakes, eagles, and wolves. Technically, the secondary consumers also include scavengers such as the California Condor.

Why is this collection of species "shaped" like a triangle and not, for example, a rectangle or an octagon? Well, you've just encountered the second law of thermodynamics in action! In economic terms, the second law establishes that there is no such thing as 100% efficiency in the transformation of matter and energy. That's why we cannot get (thankfully perhaps) a million tons of geese from a million tons of grass. In fact, there is a handy little rule of thumb that tells us roughly ten percent of biomass gets converted from one trophic level to the next. A million tons of grass might get us a hundred thousand tons of geese.

For the non-ecologist out there, you've picked up yet another term: "trophic levels." The three major trophic levels in the economy of nature are producers, primary consumers, and secondary consumers. Of course, if you drill down into the life-history details, you'll find that numerous species don't adhere strictly to these levels. Humans and bears are excellent examples. They are classic omnivores that occupy an intermediate level overlapping primary and secondary consumers.

The human economy also has a trophic structure. Once again it makes perfect sense to recognize

the three basic levels. However, it helps to modify our labels. We can call the "producer" level the agricultural and extractive sectors. The primary and secondary "consumers" amount to heavy and light manufacturing, respectively. Let's remember that rule of thumb about proportions, too. It takes a lot of bauxite mining at the trophic base of the economy to smelt aluminum into the ingots. These may then be pressed into sheets, from which blanks may be cut, redrawn, trimmed, and seamed. Materials and energy are lost along the way – that dastardly second law of thermodynamics again.

As for services? They also arise from surplus at the base of the economy. Furthermore, the customers served by these sectors are, for the most part, the producers, manufacturers, and consumers in the trophic structure. In other words, the service sectors *are in no way operating independently of the goods sectors*. Rather, all these sectors grow as an integrated whole, and only if the trophic base is expanding. That means agriculture, logging, mining, domestic livestock production, and commercial fishing are spreading out into the landscape and/or intensifying in place. Whether spreading or intensifying, they are modifying, usurping, or destroying the wildlife habitats that preceded them.

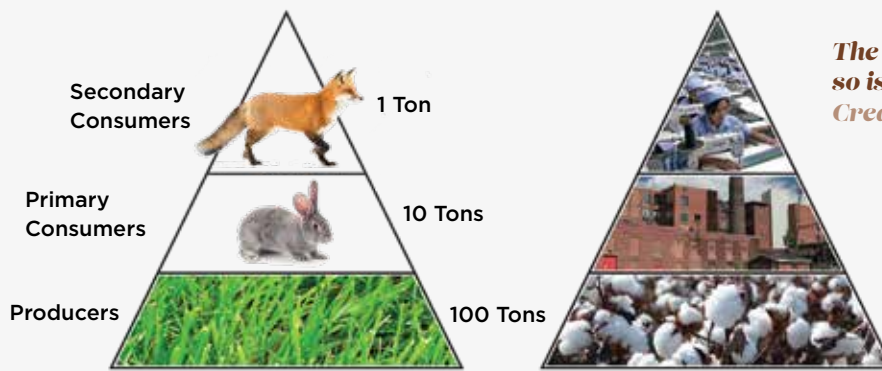
Technological progress

Technological progress is one of the trickiest aspects in thinking about limits to growth. But, we're already halfway there by recognizing the triangularity – as opposed to the circularity – of the economy. We've addressed the basic concept of efficiency as we move from one trophic level up to the next in the production process. We know we cannot get 100% efficient in the production process, but how about getting a lot more efficient than we are now, at least?

In economic terms, technological progress is best described as increasing output per unit input; increasing productive efficiency, in other words. The big hope of technological progress is why policy makers, especially at the federal level, are often keen to fund research and development (R&D) institutions and programs. Yet even though our annual R&D expenditures are into the hundreds of billions of dollars, our environmental problems are worsening.

To understand why all this R&D isn't solving the environmental problem, we have to ask ourselves: How does R&D occur? For one thing, it must be financed. Almost all R&D is conducted by corporations and government. For corporations, this means profits are required if there is to be R&D. Only after wages, rents, and interest on loans are paid off, and dividends distributed, is there money available for other things, and some of the money might be allocated toward R&D.

Meanwhile, as all economists know, profits dry up in a competitive economy except for the firm that maintains a competitive advantage. How is such an advan-



**The economy of nature is triangular;
so is the human economy.**

Credit: CASSE

tage maintained? The stock answer is “technological progress.” But now we’ve reached a catch-22: We need the profits to maintain the R&D, but we need the R&D to maintain the profits. What gives?

As I described in my book *Supply Shock*, the way out of this catch-22 is called “economies of scale.” Economies of scale provide the other approach (in addition to technological progress) to productive efficiency gains. The salient point, though, is that economies of scale, by definition, refers to the increase in efficiency stemming from an expansion of operations based upon the current level of technology.

In other words, we had to cause more of the environmental damage caused by current technology in order to fund the R&D that we hoped would solve the problem. And as it turns out, much of the new technology brought to bear is actually used for exploring and extracting resources from places we couldn’t access before.

Once again, there is no free lunch. Not even at the R&D table – in fact, especially at the R&D table, where efficiency gains are getting harder to come by, and/or more expensive by the year.

Government R&D is subject to the same catch-22 as corporate R&D, because public coffers are built primarily from taxes on profits and wages. It’s a bit like robbing Peter to pay Paul, with regard to corporation vs. government R&D. (I’ll let you ponder which might be Peter and which might be Paul.)

Big green and steady statesmanship

Talking about limits to growth as a government scientist, or any type of civil servant, is tough duty. I found this out the hard way with a career plagued by gag orders in the headquarters of the U.S. Fish and Wildlife Service (1999-2017). Even though the conflict between economic growth and environmental protection had become my specialty toward the end of my Ph.D. research, I was gradually and then adamantly prohibited from speaking or writing about it. The censorship was doubly frustrating because my job description as the first Conservation Biologist (by that title) in the history of the Fish and Wildlife Service was laden with big-picture, long-term thinking.

It’s easy to see why such censoring occurs, though. Economic growth is still one of the highest priorities of the American politician, especially at the federal level. Presidents and Congresses are geared for growth. They campaign on a platform of growth, seek to achieve it, and don’t look kindly upon those who get in the way.

When a lowly civil servant speaks truth to power about limits to growth, political appointees in the middle get scared. Rather than empowering the rare ecological economist in the government, they undermine or muffle him or her. For me, the frustration mounted until I finally quit FWS to run CASSE full time.

For a few short years in FWS, though, there was some potential for raising awareness of the trade-off between growth and conservation. One FWS Director told me, “You get us a policy position [on economic growth] by The Wildlife Society (TWS), and we’ll talk about it.” I and allies eventually succeeded in TWS, as well as in the U.S. Society for Ecological Economics, the American Society of Mammalogists, and the North America Section of the Society for Conservation Biology. Each of these scientific, professional societies have taken positions explaining the “fundamental conflict” between economic growth and environmental protection.

Yet the Director never came around, and in fact became intransigent on the matter, keeping economic growth completely off the table. (In FWS, we literally started calling economic growth “the 800-pound gorilla.”) I believe it would have helped the Director take a different approach if the conservation organizations – Sierra Club, National Wildlife Federation, Defenders of Wildlife, World Wildlife Fund, Friends of the Earth, and others – had developed an educational campaign about limits to growth and the need for a steady state economy. Those organizations had a scientific foundation to stand upon, with the policy positions taken by the scientific, professional societies. They’ve failed us thus far.

It’s never too late, though. “Fantasies of perpetual economic growth,” as Greta Thunberg ridiculed, are looking more foolish by the day. I’m guessing the first organization from Big Green to tell it like it is about the conflict between growth and conservation will instantly be viewed as heroic to an environmental public starved for leadership on limits to growth. I believe such leadership would catch like wildfire, too, because people from all walks of life are starting to sense that sustainability is a steady state economy.

Brian Czech, Ph.D., is the Executive Director of CASSE, the Center for the Advancement of the Steady State Economy. From 1999-2017, Czech served in the headquarters of the U.S. Fish and Wildlife Service. Czech is the author of several books including Supply Shock: Economic Growth at the Crossroads and the Steady State Solution.

Desert Updates

Inyo County Roads: Again in Dispute

Inyo County is requesting an easement for maintenance and motorized mixed use on several National Forest Service road segments. Most egregious of these is the thirteen-mile Wacouba/Death Valley Road. The Center for Biological Diversity and Sierra Club have opposed the proposal based on concerns that the easement would allow Inyo County to add Wacouba/Death Valley Road to its infamous *Adventure Trails* pilot program that allows non-street legal vehicles to use County roads. The existing Adventure Trails program has been documented to increase illegal off-road incursions into sensitive natural lands where the program is currently in place. Allowing off-road vehicles onto thirteen miles of road through the Inyo National Forest that ends at the entrance to Death Valley National Park will invite additional opportunities for illegal incursions in both the Forest and the Park. Inyo County currently maintains the thirteen-mile paved Wacouba/Death Valley Road, so it is unclear why the County needs an easement other than to include the road in the *Adventure Trails* program. In addition to the Center for Biological Diversity and Sierra Club letters opposing the easements, Death Valley National Park officials sent a letter to the Forest noting the Park's concern about the potential for increased illegal off-highway vehicle travel in the Park that would impact wilderness and natural and cultural resources. The conservation organizations are continuing dialogue with Forest Service decision-makers in order to support a decision to deny the easement. Ultimately the Forest Service's decision will dictate the conservation organization's next steps including challenging a bad decision.

The Significance of AB 1183 for Desert Conservation

On September 28th, desert conservation efforts in California received a great boost. Assembly Bill 1183, introduced by Assembly Member James C. Ramos, was signed into law, establishing the California Desert Conservation Program under the Wildlife Conservation

Board. The statute goes into effect on January 1, 2022. Creation of the program will provide conservation funding for the Mojave and Eastern Colorado Deserts.

The purpose of the Desert Conservation Program is to: (1) protect, preserve, and restore the natural, cultural, and physical resources of the portions of the Mojave and Colorado Deserts region in California through the acquisition, restoration, and management of lands, (2) promote the protection and restoration of the biological diversity of the region, as specified, (3) provide for resilience in the region to climate change, as provided, (4) protect and improve air quality and water resources within the region, and (5) undertake efforts to enhance public use and enjoyment of lands owned by the public, as provided. [Chapter 380, Legislative Counsel's Digest]

The Program will allow Tribes, non-governmental organizations, and local governments to apply for funding for conservation and public access projects. Funding is expected to come primarily from bond measures. The need for a desert program has been demonstrated by the numerous threats the desert faces including climate change, increased wildfires, the spread of invasive species, and development. These threats have caused declines in desert tortoise, desert birds, and other species, and catastrophic wildfires including the Cima Dome fire that destroyed 43,000 acres of the world's largest Joshua tree forest. The need to address public land use is demonstrated by the dramatic increase in visitation desert lands have experienced. For example, Joshua Tree National Park experienced a 129% increase in attendance between 2009 and 2019. Also, desert areas which are very popular and accessible, particularly for underserved communities, have few facilities to accommodate their use.

The time was right for state conservation funding to reach the desert. Thanks to our elected representatives and a broad coalition of groups focused on the desert – that time has arrived. The bill was co-sponsored by Mojave Desert Land Trust, Defenders of Wildlife, Vet Voice Foundation, and Hispanic Access Foundation.



Desert Cannabis: Questions and Answers Regarding a Recent Article

Desert Report September, 2021, page 18

Why aren't these "farms," which are surveyed by aircraft and otherwise, which are calculated as to the size and amount of water they use, not just removed by law enforcement?

Enforcement by the sheriffs of Los Angeles and San Bernardino Counties has increased, partly in response to public pressure. On October 1, a bulletin from San Bernardino County reported on what it has named "Operation Hammer Strike," an excerpt of which is copied below.

From Sept. 20 to 24, investigators from the San Bernardino County Sheriff's Department - Marijuana Enforcement Team (MET) served 24 search warrants at various locations in Lucerne Valley, Wonder Valley, Apple Valley, Pinon Hills, Phelan, and Newberry Springs. MET personnel had received numerous complaints about large outdoor marijuana cultivations in these areas. Over this past week, 31 suspects were arrested, investigators seized more than 16,000 marijuana plants, almost 6,000 pounds of processed marijuana, seven guns, and \$41,000. Investigators eradicated 101 greenhouses found at the locations. One of the seized handguns had the serial number ground off. Investigators mitigated one electrical bypass.

The increased attention by one sheriff's department notwithstanding, practical problems of fragmented jurisdiction, competing priorities, and inadequate resources hinder enforcement. At least three different state agencies have some responsibility for cannabis enforcement in California, but their jurisdiction applies to only a slice of the overall problem: licensing, or water diversion and pollution, or growing on public lands. Counties enforce local codes and laws, but with minimal penalties for marijuana violations, they may put a higher priority on other drugs. Investigation is difficult, requiring personnel and funding. Determining land ownership can be difficult in some desert locations. Vocal support for protecting important environmental resources will be critical to ensure adequate resources are assigned to the difficult but vital task.

Since this note was written, the County of San Bernardino has initiated a forceful enforcement response which could not be included here. Some account of this response will appear on the Desert Report website within the next few weeks.



Acquisitions to the Sand to Snow National Monument bolster Wildlife Crossing Hopes

The Mojave Desert Land Trust (MDLT) has acquired a 43-acre private parcel within Sand to Snow National Monument. The parcel's proximity to Highway 62 gives further impetus to future plans for wildlife crossings over this treacherous road.

The new acquisition of 43 acres lies within the national monument and is in close proximity to MDLT's highway-fronting lands. Sand to Snow National Monument was designated by President Barack Obama in 2016. In establishing the monument, the President aimed to "permanently protect key wildlife corridors and provide plants and animals with the space and elevation range that they will need in order to adapt to the impacts of climate change". MDLT actively acquires land within wildlife corridors to connect protected areas, which in turn helps maintain healthy wildlife populations. To date, MDLT has acquired 7,338 acres within the Morongo Basin habitat linkages between Joshua Tree National Park, Sand to Snow National Monument, and the Marine Corps Air Ground Combat Center in 29 Palms.

The full text of their news release may be found at: <https://tinyurl.com/2p8b6m6n>

More Updates Available On-Line

Basin & Range Watch along with the *Desert Committee* of the Sierra Club recently sponsored two virtual meetings dealing with desert issues. Topics discussed on October 23 were nearly all Nevada related, while the October 30 covered a broader geographic area. Although not yet in place, the recordings of these two meetings will become available on YouTube. Directions to access these videos will be posted on the Desert Committee and Basin@Range websites along with an index that may guide viewers directly to specific topics. Current planning of the Desert Committee expects that in-person meetings of the kind held in the past will alternate with virtual meetings conducted with Zoom. The intention is to make information about desert conservation issues as widely available as possible.

BY LYNN BOULTON

Gold Exploration In Long Valley

A NEPA categorical exclusion

Still in effect today, the 1872 General Mining Act makes it very difficult for the federal government to deny proposals for hard rock mining.

The 1872 General Mining Act and rising gold prices, reaching a height of \$2,038/oz on August 5, 2020, has stimulated gold exploration in California and Nevada. Over the past ten years, the Humboldt-Toiyabe Forest Service has approved fifty-seven gold exploration drilling projects as categorical exemptions throughout Nevada. The only criterion was that they were one-year projects; not how many drill pads or “temporary roads” were involved or how special the location is. Drilling projects leave scars on the landscape and impact wildlife, local water resources, and cultural resources.

The Eastern Sierra has had five exploratory drilling projects proposed in recent years: Bald Peak CA and NV (now withdrawn), Conglomerate Mesa, Spring Peak, and Long Valley. Spring Peak and Long Valley were approved as NEPA categorical exclusions; no environmental or public review step. I happen to receive Notices of Intent on some of these projects. While I wasn't able to respond to the Spring Peak project in time, I was able to for the Long Valley project. Despite over 1,300 public

comments, the Long Valley Exploratory Drilling project was approved on September 27.

Drilling will impact the declining Bi-state Sage Grouse that use the area in and around the project site. The groundwater in the project area is connected to Hot Creek and Little Hot Creek that bookend the project site. Drilling into the geothermal aquifer in a highly fractured area could impact the creeks, yet there is no monitoring plan. CBD, Sierra Club, Western Watersheds Project, and Friends of the Inyo filed a NEPA complaint against the Inyo National Forest for approving the Long Valley Exploratory Drilling Project as a categorical exclusion.

The 1872 mining law needs to be changed. If you hold a mineral claim, you have the right to dig it up. The 1872 mining law trumps all other laws protecting public lands. One amendment to the law should be a requirement of public noticing and an environmental review for all exploratory drilling projects so the public can become aware of them and can comment on them.

Lynn Boulton is Chair of the Range of Light Group within the Sierra Club Toiyabe Chapter.



Long Valley project area. Photo by Lynn Boulton

Density And Sprawl

→ PAGE 3

expect to see the desert desecrated by solar and wind farms,⁵ if not nuclear power plants. Rather than serve as a cautionary tale, the Ivanpahs of the world would serve as a model energy source for metastasizing cities. It's a case of the Ben Tre School of conservation, destroying the desert in order to save it.

Of course, the core issue is growth itself, as organizations like the Center for the Advancement of the Steady State Economy (CASSE)⁶ and degrowthers around the world understand. While we need to transition as rapidly as possible to renewable energy, the increasing production of renewables cannot justify consumption-inducing growth. In other words, we need to reduce consumption⁷ while at the same time we accelerate the transition to renewable energies that don't destroy our wildlands.

Energy sprawl into the desert is a natural and problematic consequence of forced density and forced growth. We should look to decrease energy sprawl by placing energy production on the more localized – and likely smaller-scale – sites within the urban environment. Higher levels of forced urban density also reduce the potential for more localized energy generation by decreasing the space available for solar panels.

But really, the best way to save the desert – and the Earth, for that matter – is to focus on reducing consumption and growth which is creating the spiral of energy sprawl, destruction of habitats, climate change, and loss of biodiversity.

Augmenting the fairytale of eternal economic growth, is the fairytale of decoupling – i.e. the conceit that we can continue growing forever without increasing energy consumption. This is the Brothers Grimm handbook of an Urban Growth Machine that wants us to believe that we can have it all, that eternal growth is somehow sustainable. It isn't. Eternal growth is pretty much the antithesis of sustainability. As appealing as fairytales can be, we need to remind ourselves that, as Elliot remarked in the movie E.T., "This is reality."

Footnotes cited in this article are available at www.desertreport.org by going to the bottom of any page and selecting "Notes."

John Mirisch was elected in 2009 to the Beverly Hills City Council, where he has served three terms as mayor. He is currently a garden-variety council member.



Outings

As a result of the coronavirus outbreak, there are currently no Desert Committee outings scheduled. For updated information visit the Outings section of the Desert Report website at desertreport.org. You may also want to consult with other groups that conduct recreational and service outings in the desert.

Desert Survivors: desert-survivors.org

Friends of the Inyo: friendsoftheinyo.org

Friends of NV Wilderness: nevadawilderness.org

Future Committee Meetings

Uncertainty about the Covid pandemic makes it impossible to definitely schedule a next meeting of the Desert Committee. We hope that the situation will resolve so that the annual February meeting in Shoshone can be held. Virtual meetings will be scheduled as needed and will be announced on the Desert Forum, on the website www.desertreport.com, and by email to those who have signed in to meetings in the past.

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 return e-mail, you will get a welcome message and some tips on using the system. Questions? Contact Stacy Goss, stacy.goss@comcast.net, (408) 248-8206.

Song Of The Desert

Ode to Nipton, California



Sit with me on the patio of the Whistle Stop Café. We've been here a thousand years already. You remember the sound of the train, the feeling of absolute stillness.

When my nephew was still a little boy, he asked what my favorite thing in the world is. My favorite thing in the world is the Union Pacific coming through Nipton, roaring into outer space since it was built in 1905. These days, there are so few things a person can count on, so when you find something, you hold onto it. Like an old friend.

You want to live forever? Sit here a while.

An hour's drive outside Las Vegas, at the eastern edge of the Mojave Preserve, we have a special saying: What happens in Nipton, *is still in Nipton*. A few years back, the name on the five-bedroom adobe hotel was changed from Hotel Nipton to Hotel California. It is scrawled in a bright blue cursive, and although I feel a profound discomfort with changes to something as historic and as perfect as the Nipton Hotel, I have to say it makes sense. What happens in Nipton is still in Nipton. *You can check out, but you can never leave.*

To say there are ghosts here is somewhat of a misnomer. There are ghosts everywhere. Here there are spirits. Everything that ever was and that ever will be is spiraling over the restaurant patio, mirrored in the cactus and stone labyrinth that meanders out between the hotel's front porch and the train tracks. One might

Nipton train tracks at sunset ***Photo by Shannon Salter***

posit that this is, in fact, happening in all places all the time, and that is probably true. But in the desert, in this town in the heart of the Mojave, the eternal is so visible. Presence begets presence; the desert anchors us.

Nipton is in the Ivanpah Valley, an indigenous word that means "sweet water." The Pipa Aha Macav lived here for 10,000 years. They are the people beside the river, and it is from this that the Mojave gets its name. The ancients worshiped Avi Kwa Ame, Spirit Mountain, where two brothers baked their ancestors out of clay. Driving between Nipton and Searchlight on the Joshua Tree Highway, you see the mountain clearly. You see it when hiking in the Wee Thump Joshua Tree wilderness, the name of which means "ancient ones." Some of the trees there are a thousand years old and more. I often imagine them coming to life at night, chanting their name, "Wee — Thump. Wee — Thump," and kind of thumping around their forest, the darkness all around glowing with their joy and strength. The mountain watching through the moon.

The ancients needed to see their mountain every day. Because to see is also to be seen. It goes both ways. Seeing the sacred is also the sacred seeing us.

When you walk into the Nipton Hotel, there is the scent of clay. Its walls are made of earth. In 1905, the hotel was built as a resting place for train travelers. The cactus garden came together in the 1940s, maybe by a local sheriff, but no one can say for certain. The resident cactus are cholla and barrel cactus and a purple fellow in the northeast corner that is big like a circus, that can probably speak if you know how to listen, which we are everyday learning to do. At golden hour, the cholla arms cradle a tremendous light. They glow. So do the eighty some red gum eucalyptus on the property, planted in 1984. They are the famous tree of California, and this is the last town in California. This is the last town anywhere.

Part of what makes this place so special is what makes every desert locale special: the light, the big sky. From the patio of the Whistle Stop Café you see everything, and I mean everything. You see the Ivanpah Solar Electric Facility, that impeccable catastrophe with its three apocalyptic towers ablaze. You see across



Drawing of the Nipton Hotel, 1983
By Ronald Callison

the great valley. You look across time as well as space. You can see back to the very beginning. Star light, star bright. Back to the primal silence, back before language separated one thing from another, before God became empty.

Someone asked me recently if I know the difference between eternal and infinite. The longer I live in the Mojave, the less I contemplate differences and, for that matter, the less I think about what is known. There's something about getting beyond thought and coming (returning) to one's senses. It's what the eucalyptus know. What the Joshua know. The Mojave yucca. The one triumphant creosote at the center of the hotel's cactus garden, around which the whole thing revolves.

We're going.

I grew up in the heart of Irvine, CA. A beautiful place but one that, like all American suburbs, is completely artificial. As a child I could feel the pressure of something outside the insular city, and I believe now that this was two things. For one I believe it was the force of unseen suffering which is accelerating. And for another thing I believe it was the Mojave.

When I moved to Las Vegas in 2009 to pursue a Master of Fine Arts degree in poetry, my parents worried endlessly about *that drive*. That drive across the desert, where anything could happen, where a person might be swallowed up by some great expanse of a logic unknown.

I first went to Nipton that same year. A friend took me there for the Nipton burger, and to sit on the patio of the café, facing that smooth swoop of blue sky between the New York and Mescal mountains. The symmetry is incredible and strange. Cima Road runs to the other side and leads on towards Cima Dome, the place of last year's infamous lightning fire that destroyed half a million Joshua trees.

There are some poets that will say they can describe something truly, that they can put into words some pure form. And there are others that say it is impossible to describe anything fully. I am in this second camp. The longer I am in the Mojave, the smaller my

vocabulary becomes. And yet perhaps this is getting closer to that language beyond language, the departure and arrival of coming into one's own Being.

Nipton is recorded officially in San Bernardino as a hamlet, a settlement smaller than a village. Nowhere in the official documents is it labeled as a portal, but we know that it is one. The night sky here is far darker than it ought to be. Even with the lights of Las Vegas fifty miles away, the yellow streetlights on Nipton road, the twinkling caterpillar of highway 15, the red glow of Buffalo Bill's and Whiskey Pete's. I mean the stars are *all* there, and the Milky Way.

If you look up Nipton, California, you will find a great deal about the place, including articles (one even in the Wall Street Journal!) about the whole place being for sale. The articles detail some of the history: before the railroad and before the mining camp, Nipton sat at the intersection of two wagon trails. It was first called Nippeno, after the nearby mine, and this was named by a dutchman from Pennsylvania, who took this Native American word from his part of the country. It means "a warm, sunny place."

Everyone who comes to see the town has a vision, a way they want to change it to reflect themselves or a way to draw crowds to make more money. Music festivals, a brewery, a bigger hotel. This is neither good nor bad, as long as they don't take down any historic structures (the Nippeno House, the Haberdashery, the 1930s schoolhouse, the Stagecoach stop, an old hay loft). My own vision for the town surrounds not how we can change it, but how being here can change us.

I for one am in favor of Jerry Freeman's original vision (the geologist who bought the town in 1984 and passed away a few years back, who used to catch rides on the Union Pacific even after it stopped carrying passengers). His vision is for Nipton to serve as the Gateway to the Mojave Preserve—an interpretive center that connects visitors to the biology, culture, and history of the Mojave—as well as a center for art, literature, and studies of the desert environment. A place of rejuvenation, education, and ecological mindedness. A place to begin again (and again, and again). The Nippeno Foundation. *A warm sunny place.*

Recently Nipton has returned to its early roots as a mining camp. Many of the thirty or so residents work at the Mountain Pass Rare Earth mine, which has expanded so that the United States can have its own supply of the minerals which power practically all technology. Others wind sail on the Ivanpah dry lakebed, and others just know it doesn't get any better.

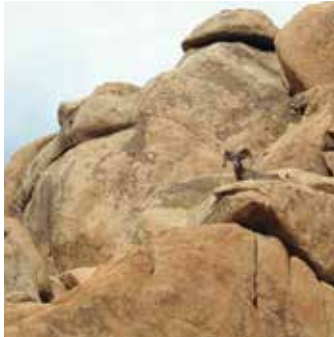
Years ago, I put my friend's ashes next to the train tracks. *Ashes to ashes*. Everyone is going someplace. You and me? We're sitting right here forever. Listening for the train.

Shannon Salter lives in the Mojave Desert of Nevada and California, is a Ph.D candidate at the University of Nevada, Las Vegas, and is an advocate for preservation of unspoiled deserts.

Caution Advised

A barrier in the desert

The desert is going to get hotter and drier, which means the ability to migrate to more suitable climates will become more and more important to the desert's wildlife. Where animals once moved freely across the landscape, our society's infrastructure has unfortunately created barriers to these movements: housing developments, highways, and railroads. The proposed XpressWest High Speed Rail project represents yet another of these barriers.



California's population of desert bighorn sheep is especially vulnerable to interference of this kind. Though the sheep have been known to traverse many miles of desert flatlands, they are reluctant to travel far from the mountains that make up their preferred habitat. Instead, their crossings between ranges happens where the gaps between those ranges are quite narrow.

The proposed rail project would run along the median of Interstate 15 connecting Las Vegas with the eastern suburbs of Los Angeles. As currently planned, it would prevent desert bighorn and many other wildlife species from crossing migrating north and south. In the long term, this would likely consign the southern population of desert bighorn sheep to extinction and would cause serious harm to other wildlife populations.

The rail company, Brightline West, has so far refused to consider adding wildlife crossing overpasses to the project's final design. The company claims that underpasses such as bridges and culverts provide all the opportunities wildlife needs to get to the other side. But while underpasses may work for some wildlife species, desert bighorn sheep are famously resistant to walking beneath objects that could conceivably harbor predators.

That's why wildlife activists and hunting groups have formed a coalition to urge California Governor Gavin Newsom to force the rail company, Brightline West, to include the relatively inexpensive crossings at three locations along the route. Those crossing spots, in the Cady, Soda, and Clark mountains respectively, have been identified by wildlife biologists where bighorn have either crossed the freeway or made close approaches.

Though speeding traffic does pose a serious threat to bighorn attempting to cross the Interstate, both

radio collar and genetic data show that sheep have made the dash successfully. But if wildlife crossings are not included in the high speed rail project, animals trying to cross will be greeted by a solid six-foot concrete wall on either side of the tracks, designed to keep cars and trains separate. That's a critical safety measure for drivers and passengers, but it may spell an unhappy ending for the animals who find themselves turned back into the lanes of Interstate traffic.

The good news is that Caltrans, the state agency that regulates transportation projects, has yet to issue its final approval of the rail project's design, and Caltrans has the authority to insist that design be modified to include wildlife crossings. Those crossings need not be expensive. A similar project across several lanes of an interstate highway near Boulder City cost just \$750,000 to build, and bighorn and other wildlife now use it regularly.

Considering that Brightline West expects to earn more than a billion dollars each year from ferrying people between LA and Vegas, that's a very small price to pay for ensuring desert wildlife have a place in the Mojave in the 22nd Century. And it seems California's delegation to the US Senate agrees: Senators Feinstein and Padilla sent a letter to Governor Newsom in November urging him to mandate the crossings be built. Contact Governor Gavin Newsom and urge him to require the three wildlife crossings be included in Brightline West's design.

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**Photo by NPS/Robb Hammaracker
via Creative Commons**

Water Security And The Colorado River

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Because it has no direct connection to the SWP, CVWD gets its SWP water from MWD's Colorado River source. All artificial recharge, and the future of CVWD's aquifer, depends on Colorado River water. After 2027, CVWD will rely on the Colorado River for 620,000 AFY of its total demand. Beyond groundwater and Colorado River water (SWP deliveries through exchange agreements), CVWD has few other sources including small amounts of recycled wastewater to be used on golf courses. CVWD has just two proposed future projects that would develop less than 13,000 AFY – a small fraction of its current demand.

SNWA and CVWD have one thing in common – most of their current and future water resources rely on the Colorado River, an ever-dwindling source. Even if the Upper Basin continues to deliver 8.3 MAFY to the Lower Basin, shortages will continue to grow because river losses like evaporation and the Lower Basin's requirement to deliver 0.83 MAFY to Mexico are not charged to any state's apportionment. The sum of apportionments and losses exceed Upper Basin deliveries and tributaries, such as the Bill Williams River in Arizona and the Virgin/Muddy Rivers in Nevada, may be used by those states independent of their river allocation (part of Arizona's use of the Gila River is part of its river allocation).

The current shortage occurred because the most probable inflow estimates for water year 2021 to Lake Powell was 3.23 MAF, or 30% of average, although basinwide snowpack and precipitation as of March 30 had been 89 and 80% of average. The poor runoff efficiency is due to snowmelt replenishing groundwater deficits and near-empty upper watershed reservoirs. Global warming has increased temperature in the Upper Basin by several degrees, so soils dry faster and snow-packs evaporate instead of melting into runoff.

Lakes Mead and Powell originally filled when the flow was above average and river water use was low, but the Upper Basin states have accelerated the development of their apportionments, which on paper also total 7.5 MAF/Y. Simple math shows the reservoirs will never again be full. Reservoir storage capacity of the Colorado River totals about 60 MAF, more than four times the average annual flow in the Upper Basin. Lakes Powell and Mead hold about 50 MAF combined, or about four times the current average natural river flow. Current river diversions exceed the average natural flow, so there is simply no water remaining in the river even without the impact of climate change to be stored during an average year. Back-to-back extreme runoff years, such as 1983 and 1984 (see the figure in the previous article), produced only about 20 MAF in excess of current demand which would fill at-most two-fifths of the total capacity of the two largest reservoirs providing only partial temporary relief.

Multiple years with runoff as low as 2021 would reduce Lake Mead to levels close to its outlet. SNWA could take its full diversion with its third straw, and California would receive all flow exceeding that diversion (far less than its apportionment) and a small amount of evaporation occurring from the very depleted reservoir area. The Central Arizona Project would go dry. No easy solution exists for the river or either entity trying to serve its members.

The shortage criteria expire by the end of 2026 and there is an ongoing process at Burec to renegotiate the agreement. Reductions to the distributions to each Lower Basin state could occur, meaning the amounts Nevada and CVWD can withdraw from the river could be decreased.

An obvious potential for increasing available water would be to eliminate Lake Powell. This reservoir loses more water to evaporation and through seepage to the surrounding sandstone than Nevada's entire apportionment. Lake Mead could manage all conceivable future high flows. Losses from the river and reservoirs in the Lower Basin should be charged to the states so that consumptive use of water approximates the amount apportioned to the basin.

One strategy for solving the Southwest water crisis is obvious - the area simply cannot support as many people or irrigate as many crops as it currently does. The cities served by CVWD and SNWA continue to grow as if water will never be a concern. The longer they wait to substantially decrease demand, the more painful the necessary adjustments will be.

Tom Myers is a semi-retired water resources consultant and long-time desert activist. He lived in the Great Basin and southwest desert for 35 years but now lives on a forested ridge in the Endless Mountains of his home state of Pennsylvania.

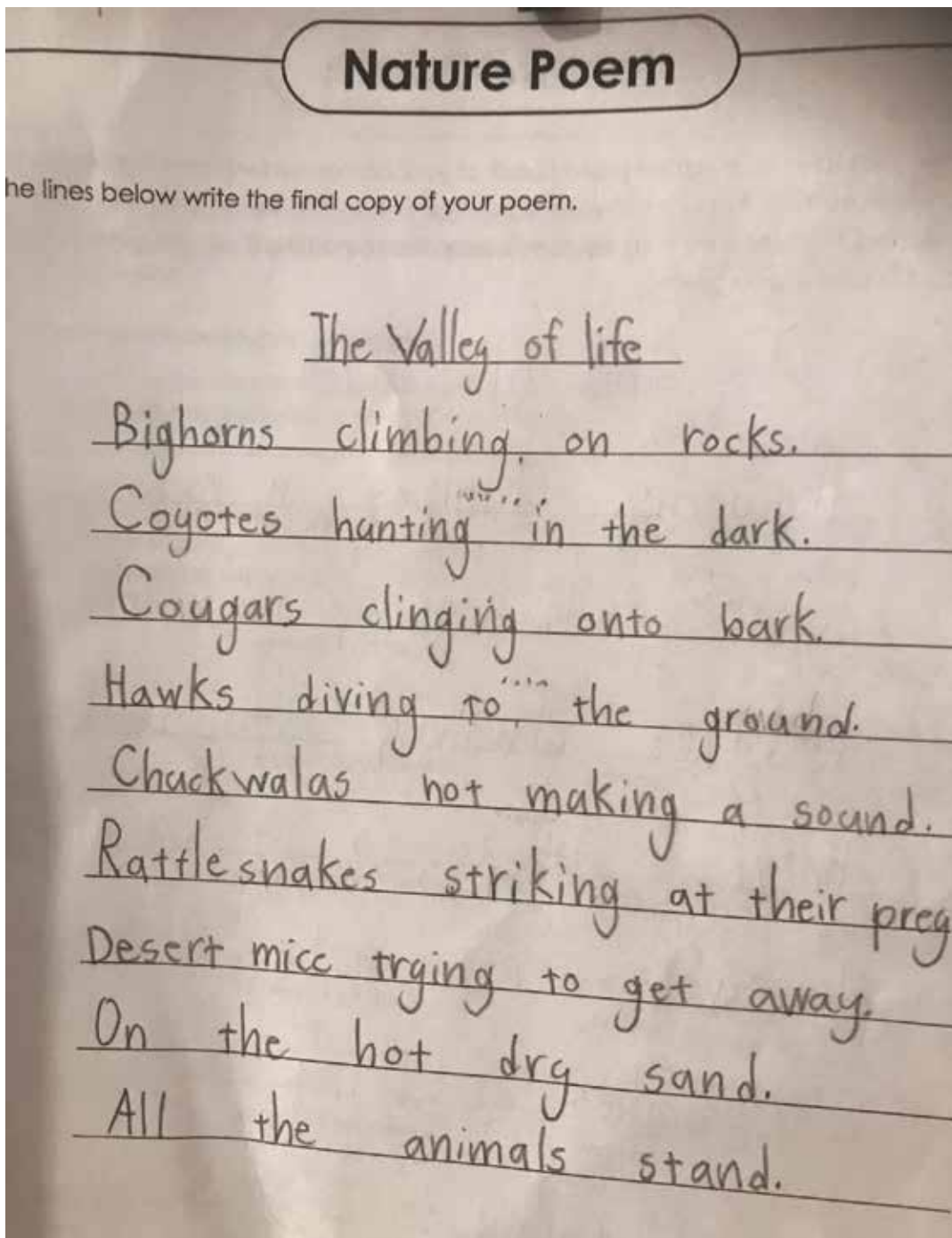
Desert Website

The Desert Report website has been rebuilt to feature material in a more timely manner than the three-month interval between printed issues. The blog 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 of past issues and REFERENCES provided in articles are reached via links at the bottom of any page.

www.desertreport.org

The Valley of Life

✉ Hi Craig, My 9-year-old (Harper) had to write a nature poem for a third-grade assignment. I just wanted to share with you what she wrote. Maybe you could put it in the Desert Report. Just a thought. - Monica Argandona





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The Sierra Club California/Nevada Desert Committee works for the protection and conservation of the deserts of California, Nevada, and other areas in the Southwest; monitors and works with public, private, and non-profit agencies to promote preservation of our arid lands; sponsors education and service trips; encourages and supports others to work for similar objectives; and maintains, shares, and publishes information about the desert.

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