

DESERT REPORT

BY MARLI B. MILLER

Layers of Time

A walk in Death Valley

I'm hiking up a closed road in Death Valley National Park to see a pile of gravel. I guess that's one way to look at it. What some folks might view as a waste of precious time in this magnificent place I see as a vehicle for time travel.

Just four months ago in August, Hurricane Hilary dropped some 2.2 inches of rain on Death Valley – more than typically falls here over the course of a year. With virtually no soil to absorb it, the water ran off immediately. It gathered in rivulets, confluenced into small channels, then larger channels, and finally into streams that flash-flooded down canyons and alluvial fans. The flooding closed every road in the national park. It's now

early January, 2024, and this road up one of the fans isn't supposed to open to cars for another two weeks.

In just under two miles, I reach my destination, a low ridge extending eastward from the base of a hill. It was deposited by waves near the shoreline of a giant lake called Glacial Lake Manly, sometime between 186,000-120,000 years ago. The ridge grew by fits and starts out from the hill as a spit, with waves obliquely slapping its front and moving the gravel out to its tip. You can see wave-rounded cobbles in the road cut forming curved layers that slope towards the valley. They're also scattered about on the top of the spit where I sit down and take in the view.

In front of me, the highway descends its gentle gradient to where I parked the car, nearly 200' below sea level. From there, the floor of Death Valley is practically flat, continuing well past Badwater Basin some 25 miles to the south. When this gravel spit formed, Lake Manly, more than 50 miles in length and some 6-8 miles wide, filled the entire scene. At its high stand, this place where I'm sitting would have been below water because the lake's highest shoreline reached another mile up the road. This gravel spit formed during a period of stability as the lake receded. Two smaller ridges lie just below me, and another very small one lies just above, marking different stages in its retreat.

Just like anybody, I wrestle with the ever-changing and fluid concept of time. Stopped highway traffic that delays my arrival by 15 minutes can seem interminable, and I bemoan how quickly a year passes. I've heard countless people comment at how Badwater Basin is *still* flooded by water from Hurricane Hilary, but when it all



The highway cuts right through the spit. Death Valley, once filled to a spot above and behind the spit, is in the background. Marli Miller

About the Desert Report

As you may have noticed, there have been changes in the scope of articles that have been included in the *Desert Report* during the past four years. We are now looking to the future and giving thought to what should be added, continued, or de-emphasized. Hence we invite you to take this opportunity and share your thoughts with us.

The current schedule

I'll begin with what may be obvious: this issue is being produced in April, one month later than had been anticipated. This displacement will be continued and publication dates in the future will be April, July, October, and January. In part this was necessary when difficulties arose in finding topics and authors for the current issue, but the change in schedule includes a benefit in that the *Desert Report* will not be in competition with the many other materials that arrive in your mail in the December holiday season.

Topics in the past

Traditionally, the *Desert Report* has included articles about specific local problems, proposals, and issues. There have also been articles about personal experiences and special places intended to show the intrinsic and non-commercial value of wild deserts.

In recent years, articles on 'non-traditional' topics have been added. In 2020 – 2021 we ran a series on *Threats and Challenges to Public Lands* followed by a series called *Fundamental Choices* with a focus on general environmental issues which have global and local impacts. We have also included articles on Health Impact Assessments, the need for local involvement in land planning, the ubiquitous plastics problem, and sustainable economics. Beyond the quarterly publications, there have been two Special Issues, one dealing with solar energy production and a second dealing with the broader questions of population growth and material demands on the deserts.

Questions for the future

Are there topics you'd like to read more about, for example: local desert conservation issues, desert wide concerns, personal non-fiction stories, broader environmental issues, or . . .? You may also prefer that less attention be given to some of these topics than has been the case in the past. *What kind of information would you like to see – or expect to see – in the Desert Report?*

Please understand that the *Desert Report* is not able

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to assign reporters to a story but rather depends upon volunteers to write the stories. If you are able to suggest persons who might be willing to write on a particular topic, this is especially useful. We are soliciting your input.

A call to participate

Would you be able and willing to write a story for the *Desert Report*? In general, articles are intended to be informational. Direct advocacy for specific points of view are discouraged, as we wish to believe that if intelligent people are given correct facts, they will do the right thing. Personal essays may be of several sorts: experiences that show the intrinsic value of the land; description of unique places or persons; stories of communities living and dealing with desert issues. A trip report that only describes where you went is not likely to be of general interest. Descriptions of people or organizations are possible if there are broader lessons to be learned.

There is no expectations that writers are either fluent or experienced. The process is flexible and is often a collaborative enterprise. We can not promise that everything that is submitted will be printed, and so we request that you contact one of the editors in advance with your proposal. Deadlines for final text are March 1, June 1, September 1, and December 1. Please join us in this enterprise.

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Still Saving Mono Lake

Thirty years and no resolution

“Wasn’t Mono Lake already saved?” Yes and no. The framework was established to save it with the State Water Resource Control Board (SWRCB) Decision 1631 on the celebrated day, September 28, 1994. That decision determined that the lake level should rise to an average elevation of 6392 feet to ensure it will be a healthy ecosystem well into the future. Until the lake reaches that level, it is not saved. Sadly, for the past 29 years Los Angeles Department of Water and Power (LADWP) has taken the maximum amount of water that the stream diversion rules allow, even when they didn’t need the water, even when they know that the lake won’t rise to the mandated lake level if they do. It has been clear for some time that the rules won’t get the lake to where it should be and that they need to be adjusted based on what we know today.

When stream diversions started in 1941, the lake level was at 6417 feet. By 1980 it had plummeted 45 feet, to the lowest that the lake has ever been – 6372 feet. The

compromise of 1994 was to raise the lake 20 feet to an average elevation of 6392 feet, balancing the needs of the City of Los Angeles and the needs of a very important ecosystem.

Based on the best hydrological data at the time, the lake was expected to rise to the mandated level within twenty years under the rules spelled out in the decision defining how much water the LADWP could take. There was to be a review of the rules in 2014 if the lake was not coming up as planned. LADWP asked the SWRCB that review be pushed to 2023, which was granted. Twenty-nine years of experience tell us that the lake is not going to reach a lake level of 6392 feet under the current rules. Now entering the 30th year, the lake level is nine feet short of the goal as of February 1, 2024, even though the lake rose almost five feet in the unprecedented runoff year of 2023. The stream diversions have to be temporarily reduced or suspended to allow more water to flow into the lake.

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Rush Creek flowing into Mono Lake. Lynn Boulton



Layers of Time: A Walk in Death Valley

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finally evaporates, we'll probably describe the shallow lake as short-lived. This gravel remnant of a giant lake that existed over 100,000 years ago takes my confusion to a new level. Was that a long time ago?

It seems so, but then I think of the mountains that enclosed the lake. They started rising some 3-3.5 million years ago – more than 20 times the age of the lake. I've always considered the mountains to be young, even going so far as to tell park visitors that Death Valley's present landscape was "only about 3 million years old." Compared to their rocks, many of which are older than 500 million years, that's true. Some of the rocks are well over a billion years old.

Those rocks tell stories – about how they formed and about what's happened to them since. I pick a cobble up off the spit. It's a beautiful maroon color and made of tiny grains of quartz all mashed together. I suspect it came from the Zabriskie Quartzite, a distinctive rock unit that forms prominent cliffs throughout the region. Its sand was deposited mostly in a shallow ocean and various coastal environments during the Cambrian Period, which lasted from 539-485 million years ago.

I've studied geology my entire adult life, and I still find it incredible that I can hold, in my own hands, a piece of the Cambrian sea floor. Each of the millions of tiny sand grains that make up this rock originated from some still-older rock and were transported by streams to the Cambrian shoreline. There, they were probably kicked around by coastal waves until getting buried by layers of more sediment, followed by more sediment for who knows how long – until circulating groundwater cement-



Migmatite gneiss, formed by partial melting of rock during high temperature metamorphism. Marli Miller



Overtured Anticline in Titus Canyon—the Zabriskie Quartzite forms the prominent red cliffs in the right-center of the photo. To the left (west) is overtured Cararra and Bonanza King Formations. At the canyon mouth, the rocks are nearly horizontal, yet upside down. Marli Miller

ed the compacted grains together as layers of rock. In the Death Valley region, there are more than 10,000 feet of sedimentary rock on top the Zabriskie Quartzite and at least another 10,000 feet of sedimentary rock below. Each bedding plane in that sequence of rock was once the Earth's surface.

And so much has happened to them since! Besides today's mountain-building, driven because the earth's crust in the region is extending, they've all experienced an earlier period of mountain-building by crustal compression. At the mouth of Titus Canyon just 20 miles northwest of here, those events folded the rock to where it's completely upside down. Elsewhere, the rocks were intruded by granitic magma, while others were carried to depths of 15 miles or more and partially melted. And now, as today's mountains erode, they shed rocks of all ages and types and sizes into their canyons, which get washed out onto the alluvial fans during floods.

From my perch on the gravel spit, I'm just a few feet above the alluvial fan. It's unmoving and silent. The road will reopen soon, and tourists will once again drive past this spot without a second thought. But the myriad channels and wild assortment of rocks of the fan speak to a process that never stops. It will flood again. I see the whole fan in motion, with gravel streaming over the road, tearing up the asphalt, eventually burying or eroding the gravel spit. Today, this year, my existence – they all seem to diminish into the infinitesimal. I close my eyes and start walking downhill, deeper into the lake.

Marli Miller, PhD, is an instructor and researcher at the University of Oregon. Among her books are Roadside Geology of Oregon (2014), Roadside Geology of Washington (2017) and Oregon Rocks (2021). Her newest book, on the geology of Death Valley, should be available in September. Marli makes her geology photographs freely available through her website geologypics.com.

Still Saving Mono Lake

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For the past 30 years, LADWP has taken the full amount allowed. They did not voluntarily reduce their stream diversions at any time to meet the goal. LADWP took the full amount even in very wet years (exceeding 100% of normal) such as in 1995-98, 2005-06, 2010-11, 2017, and 2023. If any of those gains from big wet years had been preserved, it would have provided a better buffer during a following drought. The more water that goes into the lake, the healthier the lake will be. Those of us that watch the lake start praying during droughts hoping the lake doesn't reach a tipping point and die. We can see green algae develop in the lake, and we count the dead grebes that wash up on the shore from the lack of brine shrimp. It becomes hard to find a brine shrimp to scoop up to show visitors. There are few alkali flies along the shore as well.

The winter of 2016-2017 was a very big winter with an expected runoff of 197% of normal. In that year, LADWP released 4,600 AF of water south of the Haiwee Reservoir to restore groundwater in three locations (Rose Valley, Indian Wells Valley, and Cameron Wash north of Mojave)¹ and gave water away to the Metropolitan Water District as well². Despite having more water than they needed, LADWP still took 4,439 AF from the Mono Basin, while they also receive on average 5,500 AF of water from the Mono Tunnel annually.

With the even bigger winter of 2022-2023, LADWP reported at the February 8, 2024 Inyo-Los Angeles Standing Committee meeting that they released 40,000 AF of water in 2023 south of the Haiwee Reservoir where they had spread nearly 5,000 AF in 2017³. And again, on January 31, 2024, they took 4,500 AF from the Mono Basin while it poured in Los Angeles from an atmospheric river. They didn't need the water. Their policy is to take every last drop.

LADWP says the lake is at a healthy level now at 6383 feet. It is healthier now than it was this time last

year. There was an abundance of brine shrimp this summer to feed the migrating birds that rely on the lake. However, it isn't at a safe level nor a healthy enough level. The SWRCB decision was based on years of research. LADWP's stream diversions have imposed a constant drought on the lake so when a real drought comes along, there is no recourse to save the lake as it drops lower and lower. We hold our breath and hope the drought ends before the ecosystem collapses. We don't know what that tipping point level is. The lake has been fluctuating between 6372 and 6385 feet for decades.

Once the lake rises to the mandated level of 6391 feet, LADWP will be able to take more than 16,000 acre feet of water with conditions that prevent the lake level from dropping below 6388 feet. A lake level of 6388 feet is healthier and more resilient in prolonged droughts than 6383 feet is. The Mono Lake Committee's hydrological modeling shows that the lake level would be at 6418 feet if there hadn't been any diversions. If it weren't for the SWRCB Decision 1631 the lake would have dropped to 6350 feet and we would have lost the ecosystem. That decision can and will save the lake if we don't delay in seeing it through.

Lynn Boulton graduated from UCSB with a BA in geology. Working in an urban area, she led a tread-lightly lifestyle trying to "walk the talk." After moving to Lee Vining, she brought the Eastern Sierra into the statewide campaign against bobcat trapping, which led to her serving as chair of the Sierra Club's Range of Light Group in the Toiyabe Chapter.

- 1) <https://sierrawave.net/ladwp-runoff-preparations-way-eastern-sierra/>
- 2) <https://www.kpcc.org/2017-04-12/ladwp-to-supplier-take-our-extra-water-no-charge>
- 3) <https://www.inyowater.org/wp-content/uploads/2024/02/2-8-24-SC-Meeting-Backup-Material.pdf> slide 9



Mono Lake and tufa spring. Sub B/firago via Creative Commons

Envisioning Community Benefits Agreements

An opportunity for California's Lithium Valley

Introduction and background

On January 26th, 2024, hundreds gathered on the outskirts of Niland, near the southeastern shores of the Salton Sea, to witness the inception of Lithium Valley. After more than a decade of anticipation, Australian-based company, Controlled Thermal Resources (CTR), finally broke ground on their \$1.85 billion dollar Hell's Kitchen Project, the United States' first of potentially many integrated geothermal renewable power and lithium coproduction facilities in the region. Lithium serves as a crucial component powering ubiquitous devices like cell phones, electric vehicles, and large-scale, clean energy storage systems. A recent Lawrence Berkeley National Laboratory report found that there could be enough lithium in Imperial County to fuel an astonishing 375 million electric vehicle batteries - more than enough to meet the United States clean energy goals.¹

Nevertheless, for many Imperial County community members, their outlook on Lithium Valley is one of "cautious optimism."² Some fear that the Imperial Valley region will be used as a sacrifice zone for the nation's clean energy goals with benefits unequally distributed to the lithium companies and purchasers.³ Residents have also witnessed similar promises in the past, as previous renewable energy projects, like solar and wind, delivered only marginal gains, leaving them understandably wary of anticipated outcomes and touted benefits.⁴

Given the region's history of the unfulfilled benefits of new technology, how then can community needs be prioritized in the Lithium Valley vision? Can there be a Lithium Valley that centers the interests and needs of Imperial Valley residents? One viable approach is through the establishment of legally deliverable community benefits agreements with the various lithium developers.

Envisioning a community benefits agreement for Lithium Valley

A community benefits agreement (CBA) is a legally enforceable agreement between a private company and a coalition comprised of community organizations, labor unions, tribal entities, or other stakeholders. It details commitments to and steps for achieving goals for the parties involved. These agreements have the ability to shift power back to local community organizations by providing them with a level of decision-making to shape how large-scale projects impact the region and help to

hold the company accountable in delivering substantive, quantifiable benefits.⁵ In turn, companies also benefit from the CBA because, not only can the company learn from the community coalition's intimate expertise of the region, but they are also working with them in an active, engaged partnership invested in the project's long-term success. Together, all parties to the CBA share decision-making to address issues as they arise and a commitment to working on shared goals so companies do not have to do it all alone.

For a CBA to be effective, it must be led by a coalition that authentically represents the interests and needs of impacted community members. The coalition must survey and conduct extensive outreach in the region to hear from all community voices and comprehensively identify concerns. During the CBA negotiation process, coalition partners should have clearly defined roles and responsibilities and remain transparent, inclusive, and accessible to the community. Provisions should then be specific, concrete, and meaningful. Lastly, a CBA should have a clearly defined implementation structure and formal means by which all parties are working together to ensure accountability to obligations and deliverability of goals.⁶

Local Imperial County-based organizations have already called on the various lithium developers to sign a CBA to address region-specific needs. In 2023, Imperial County sat at an unemployment rate hovering around 16% highlighting the need for high-quality job opportunities.⁷ County residents are also exposed to very poor air quality due to particulate matter causing high levels of asthma and risks to pregnant women and people with heart disease.⁸ Environmental justice advocates and nearby tribes have also expressed concerns that the lithium developments will hurt longtime efforts to restore the Salton Sea and encroach on tribal cultural resources.

Advocates for a Lithium Valley agreement could look to existing CBA language and provisions to inform their own. While the specific community benefits can vary depending on the community involved and the region's needs, these agreements can typically cover a wide range of commitments from hiring priorities for residents, Project Labor Agreements (PLAs) for construction work, specific high-quality job standards, race and gender-based equity measures including inclusive hiring practices, workforce training and development, and

environmental protection and management. The following are examples of CBA provisions that local advocates could use for Imperial County:

Cultivating and developing a local, inclusive workforce

Jobs to Move America (JMA) is a strategic policy center focused on raising job standards through the creation and enforcement of progressive policy and tough negotiation of effective CBAs. In Southern California's Antelope Valley, JMA helped lead a coalition of community and labor organizations to negotiate an agreement with the world's leading electric vehicle manufacturer, BYD, rivaled only by Tesla. Signed in 2017, this Antelope Valley CBA established guidelines for collaboration with a focus on developing a well-trained, diverse workforce and retaining them through internal professional development and promotion. This CBA resulted in the creation of the nation's first electric bus manufacturing apprenticeship program, training a new generation of Antelope Valley workers, and thereby ensuring that there is a skilled local community workforce that can do this specialized work. The parties also collaborated to recruit and place workers who have been historically disadvantaged in the manufacturing industry, including women, people of color, returning citizens, and veterans.

The transformative impact of the CBA has been evident in the lives of Antelope Valley residents and the company, prompting a renewal of the agreement in 2020.⁹ Over the course of six years, the workforce at BYD has undergone a significant shift, with over 70% of the workforce now comprised of individuals from communities historically underrepresented in manufacturing – surpassing the CBA's initial goal of 40%. While the national average for women working in manufacturing is around 8%, BYD has closer to 30% women workforce at their facility. In a collaborative effort, the involved parties successfully secured a million-dollar High Road Training Partnership grant from the California Workforce Development Board.¹⁰ This kind of lasting partnership has been looked on favorably by government agencies committed to ensuring that public investment results in both growing the clean energy technology sector and creating high-quality jobs as part of the transition. Earlier this year the California Energy Commission remarked on their support for these kinds of partnerships when they voted to award BYD's bid for a \$30,000,000 grant to develop a dedicated electric school bus manufacturing facility in Lancaster, CA, thus creating more job opportunities for Antelope Valley residents.¹¹

Models like the Antelope Valley CBA can inform how Lithium Valley advocates can forge their path of partnership that not only supports the growth of the lithium industry but also provides meaningful, inclusive workforce opportunities for local community members, ensuring they are not left behind.

Addressing racial, economic, and gender equity

By engaging in collaborative efforts through a CBA, communities play a crucial role in identifying region-specific issues and creating solutions to them. In 2022, the Alabama Coalition for Community Benefits and JMA signed a landmark multi-state CBA with New Flyer, the largest bus manufacturer in North America. The CBA focused on addressing racial, economic, and gender inequities, and in particular, removing barriers to employment and career advancement, so as to allow New Flyer to utilize the full potential of the local workforce. In the agreement, New Flyer committed to ambitious, measurable hiring and promotion goals aimed at removing barriers to the plants for historically disadvantaged groups in Anniston, AL, and Ontario, CA. Specifically, the CBA requires that at least 45% of new hires and at least 20% of promotions at each New Flyer plant shall be from historically disadvantaged communities. To reach this goal, the CBA outlines that the coalition and New Flyer work together to implement a program to build outreach, recruitment, and training for historically disadvantaged people. The CBA also gives prospective applicants a fair chance at employment by postponing background checks until after extending a job offer. Finally, in order to ensure workforce retention, the coalition and New Flyer implemented a new system addressing discrimination and harassment claims, offering employees filing such complaints an independent advocate.¹²

Job access through innovative provisions

In addition to addressing inequities, the collaborative CBA approach enables the creation of other innovative provisions tailored to increase job access. For example, in the CBAs mentioned above, the community coalitions recognized transportation challenges as a job access need. In response, both CBAs detail strategies for BYD and New Flyer to provide shuttles and ride-sharing programs, synchronized with shift schedules and public transit times. Additionally, to diminish reliance on private vehicles during lunch hours, both manufacturers committed to allowing at least one food truck to serve employees on the plant's premises.

The Antelope Valley CBA with BYD also incorporates other job access needs. To address language barriers for prospective and current employees, the agreement puts in place Spanish bilingual capacities for outreach and recruitment, while current employees benefit from bilingual training materials and workplace communications. BYD is also providing English as a Second Language to facilitate opportunities for career advancement. Lastly, the CBA empowers an Antelope Valley-based coalition partner to work with BYD in providing additional outreach, recruitment, and service coordination with other local advocacy organizations for additional resources, such as housing, medical and mental health access, childcare, as well as

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NEPA and CEQA

When the twain meet

The National Environmental Policy Act (NEPA), signed into law by President Nixon on January 1, 1970, provides the framework for environmental decision making on federal lands to this day. The California Environmental Quality Act (CEQA), signed into law by then Governor Ronald Reagan on September 18 of the same year, requires the State and other local agencies to consider the environmental implications of their actions and policies. Together, their initial policy guidelines, with modifications and clarifications based on subsequent litigation, represent the rule book of how government agencies shall consider the potential environmental consequences of their actions and how the public can participate in the decision-making process.

NEPA and CEQA are similar in purpose and in their processes, establishing the guidelines for environmental assessment, public participation, and documentation, but there are also significant differences on several strategic points – differences on the CEQA side that can require more in-depth environmental impact assessments and greater opportunity for public engagement. Thus, as concerned citizens and public defenders of the California deserts, it is important to understand when a proposed development may invoke a joint NEPA-CEQA review process.

Generally, NEPA applies to actions proposed on federal lands, while CEQA applies to state and local government proposed projects. Both NEPA and CEQA establish comprehensive environmental “checklists” of review topics, ranging from potential impacts on aesthetics and air quality, to water, soils, biology, and cultural resources. Under NEPA, an environmental assessment (EA) is prepared to determine the scope of issues that may warrant further review; and the CEQA requires an Initial Study (IS) to be prepared by the decision-making body (the Lead Agency).

If the EA/IS determines that an environmental topic has the *potential* to result in significant adverse impacts on the environment, then a more detailed environmental impact study (an EIS under the NEPA) or environmental impact report (EIR under the CEQA) must be prepared, with more detailed focused assessments on those topics. This is where the CEQA establishes some additional procedural steps for public review and comments, as opposed to the NEPA.

If the Lead Agency determines that all environmental issues may be mitigated to non-significant levels, then

a Finding of No Significant Impacts – a FONSI (not to be confused with Henry Winkler’s “the Fonz” in Happy Days) may be issued under the NEPA, or a Negative Declaration (Neg Dec) may be issued under the CEQA, and no further analysis in the form of an EIS/EIR is required. Issuance of a FONSI or Neg Dec greatly shortens the project review timeline and reduces the public opportunity for input on the project.

This is where the CEQA differs most substantially from the NEPA. Under the CEQA, at the Initial Study stage of the review process, the decision-making body must sign off on the *Mandatory Findings of Significance* at the bottom of the environmental checklist. The Mandatory Findings clause (§15065 of the CEQA Guidelines) poses the following question:

Does the project have the *potential* to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, *reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?* [emphasis added by the authors]

If the answer is “Yes”, the project has the *potential* to impact these biological or cultural resources, then preparation of a formal EIR is *mandatory*. The Mandatory Findings requirement is clear: “*reduce the number . . . of a rare or endangered plant or animal*” means “minus one”. If a project has the potential to harm one desert tortoise or Coachella Valley milk-vetch, then a full EIR must be prepared with all the additional public hearings and scrutiny that goes with it.

Under what circumstances might a project on federal lands trigger a joint NEPA-CEQA environmental review process? Certain types of projects are inherently both “federal” and “state” in that they cross interstate boundaries, such as the Interstate freeway system or transportation projects involving federal funding. In these cases, Caltrans has been given the authority to oversee joint NEPA-CEQA review processes. Also requiring joint NEPA-CEQA environmental review are major interstate infrastructure projects, such as along the Colorado River, in which case the federal Bureau of Reclamation (BOR) takes Lead Agency authority over projects along the river.

There are times when agencies agree to coordinate environmental review processes conducted by two lead agencies to maintain consistency between federal and state regulatory requirements. The Salton Sea Water Conservation and Transfer Project proposed to transfer 300Kaf (thousand acre-feet) of Colorado River water from the Sea to San Diego is an example, in which case the Imperial Irrigation District served as the state lead agency and the BOR as the federal lead. In that case, a Draft EIR/EIS was prepared to address the dual needs of federal and state Endangered Species Acts and water regulations imposed by the Quantification Settlement Agreement – a settlement between the Lower Colorado River States adjudicated by the U.S. Supreme Court. The result of that project established a Habitat Conservation Plan for wetland restoration projects around the Sea, but also set the stage for major water transfers that hastened the demise of the marine environments once supported by the now-dead Salton Sea.

In broad, landscape-scale actions, such as the Desert Renewable Energy Conservation Plan (DRECP), a joint NEPA-CEQA process was necessary to address the requirements of development of solar and wind energy projects in the 22.6 million-acre area that comprise the Mojave and Colorado Deserts of California – 10 million acres of which are federal lands managed by the Bureau of Land Management (BLM). To manage the sweeping landscapes and natural resources of the DRECP area more efficiently and effectively, a joint federal-state review process was undertaken, with the BLM and U.S. Fish and Wildlife Service representing the federal lead agencies and the California Energy Commission and California Department of Fish and Wildlife (CDFW) serving as the state lead agencies. The result was the DRECP, which established certain areas for energy development and established other areas for conservation where no development would be permitted and other areas as Areas of Critical Environmental Concern (ACECs), where certain sensitive resources were recognized. It should be noted that individual energy project proposals must still be evaluated regarding their specific resources or requirements, such as road access or utility corridors that cross state or federal lands.

The actual implementation of the DRECP is still a work in progress. As recently as June, 2022, the JB Eastern Slope Mitigation Area was approved in an agreement between the BLM and the CDFW, establishing a 158,000 acre area on BLM lands to offset impacts of solar energy projects elsewhere within the DRECP to protect desert tortoise, Mojave ground squirrels, and other sensitive desert wildlife.

Other projects that involve both NEPA and CEQA review processes may include mining projects in which operations may be proposed on either federal or state/private lands, but certain aspects of the project – water resources, transportation, energy transmission – may be required to support the project, crossing federal-state

land jurisdictions. Such projects, even if proposed solely on federal lands, may trigger CEQA involvement if such “off-site” project requirements are necessary for the project to go forward.

This is where the Mandatory Findings of Significance under the CEQA may come into play regarding the environmental review process. If those off-site project components have the potential to “reduce the number” of an endangered species or impact cultural resources, then an EIR is required, and the project cannot be approved simply with a FONSI or NEG DEC.

Conversely, if a development project is proposed on private land, but requires federal funding or permits to go forward, then a joint NEPA-CEQA review process may be warranted. The Red Hill Bay Restoration Project was initiated by the Sonny Bono Salton Sea National Wildlife Refuge Comprehensive Conservation Plan (CCP) as a NEPA document, resulting in a FONSI. As the project was expanded to include 600 acres of private lands under then-dry Red Hill Bay, the Imperial Irrigation District took the CEQA Lead Agency role, ultimately issuing a Neg Dec and overseeing the restoration of the wetlands at the mouth of the Alamo River.

Summary

Ensuring compliance with NEPA and CEQA can be a daunting task, even for environmental professionals. The circumstances and regulatory requirements for each project are unique. Understanding the many exemptions, exceptions, and nuances that surround the interpretation and implementation of the laws requires the help of legal professionals, such as the Sierra Club Legal Defense Fund or the Center for Biological Diversity. That said, even those environmental law firms depend on the eyes and ears of the conservation community to attend the public meetings, write comments, and present oral testimony, and hold the decision makers to their legal responsibilities under the NEPA and/or the CEQA.

For more information, see these general guidelines governing NEPA and CEQA – and when the twain actually do meet. https://opr.ca.gov/ceqa/docs/NEPA_CEQA_Handbook_Feb2014.pdf

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Shellie Zias-Roe is a visiting lecturer at the University of Redlands where she has taught environmental courses such as environmental impact assessment for over ten years. She is Executive Director of a 501c3 non-profit organization Urban Earth Care Farm, an environmental education and urban farming program for individuals with developmental disabilities.

BY LYNN BOULTON

The Polaris Exploration Project

Is gold worth the cost?

Polaris is the north star, but there is nothing about the direction of this project that inspires or makes one contemplate the wonders of our universe.

The Polaris Exploration Project is a ten-year, gold exploration project in the Bodie Hills surrounding the historic Aurora Mining District. Klondex, a subsidiary of Hecla Nevada, will drill and pull out 1 to 3 core samples at up to 250 different locations in the southeast (Nevada) corner of the Bodie Hills. They will determine how much gold is in the core samples and will start developing a map of the underground deposits. It is the biggest of the four drilling projects in the Bodie Hills, and it will damage the environment on the south side of the Aurora Crater, the east face of Sawtooth Ridge, and the top and east face of East Brawley Peak.

Only 102 of the drill sites have been identified. Klondex wants to be able to drill the other 148 sites based on the core samples from the first 102 drill sites. They might just “step out” from one of those drill sites 100-300 yards, or they might want to drill in a new area.

We don't know. Nor does the US Forest Service. In our comments we asked that only known drill sites be approved as part of this project, not the full 250.

A lot of surface disturbance comes with exploratory drilling. Klondex will grade and widen existing Forest Service roads through the project area, widen and grade barely visible two-track roads that were created by people driving off-road, and they will create new, 14-foot wide dirt roads to dozens of drill sites. 102 drill sites measuring up to 90 square feet will be scraped of all vegetation. A bulldozer will dig out a sump pit that should be ramped on one side to allow wildlife to escape if they go in to drink the water. The water will contain cuttings and fluids from the drill that includes various lubricants and additives and rock dust. Each drill hole will use 100,000 gallons.

The Polaris plan of operations estimates they will remove 4,000 trees. These will mostly be healthy, mature pinyon trees, but might also include Jeffrey pines, limber pines, or lodgepole pines that grow at the top of the Brawley Peaks.



Sump pit at existing drill site. Lynn Boulton



Drill pad with road leading to it. Lynn Boulton

This may even be an underestimate. Hecla Nevada estimated they would only remove 20 trees at their Sawtooth Ridge Exploration Project. We measured the density of pinyon trees next to three of the sites that they drilled in 2023 and came up with an average of 76 trees that were either removed or buried under the pad at each drill site. This will eventually total an estimate of nearly 1,000 trees at Sawtooth Ridge. They have ten sites left to clear and drill out of the 13 on a densely wooded slope at Sawtooth Ridge. Because Klondex is drilling on a slope, each pad is cut into the hillside, and rock, dirt, and trees are shoved downslope to build up a flat pad.

Brawley Peak is a subalpine ecosystem with the largest stand of limber pines in the Bodie Hills. It is a remote area of the Bodie Hills and is relatively undisturbed by human activities. There are springs on the mountain, with willows and aspens on its north slope where seven drill sites are planned. Seventeen drill sites will be in a bowl between East and West Brawley Peaks at 9,000 feet. Many of the drill sites are in a sage grouse mating and nesting area. These are the Bi-state Sage Grouse, a distinct population that are in serious decline. They are currently a candidate for listing under the Endangered Species Act. The Bodie Hills is the core population of this species.

Does Klondex have the right to destroy the natural habitat and ecosystems of this remote, beautiful area? The 1872 Mining Law is the answer. No environmental law can stop someone from extracting their minerals from the earth if they've claimed them; not even the Endangered Species Act trumps the 1872 Mining Law. A claim gives "dibs" to the minerals in a 1,500'x600' area of land (20 acres) for a one-time filing and location fee of \$65 and an annual fee of \$165. (The BLM just raised the rate by a whole five dollars on October 1, 2023.) Any U.S. citizen, legal immigrant who wants to be a citizen, or a corporation that has established a business in the U.S. can file a claim. Hecla got its start in the Coeur d'Alene mining district in Idaho, and Klondex started with the Fire Creek mine in Nevada. Both are U.S. Companies.

Mineral exploration companies drill several holes at each drill site in different directions hunting for the veins that have gold. They need to do this at hundreds of locations to create a map of the deposit underground. This means there will be future drilling projects in the area after this one. They need to round up investors in between projects. Each drilling project provides more information and brings them closer to turning the hidden resource into a gold reserve that can be mined. Because the gold is microscopic, gold mines are very large open pits. If the dirt contains low grade ore at 0.05 ounces of gold per ton, then twenty tons of rock need to be removed (two truck-loads), crushed and leached with a sodium cyanide solution to extract just one ounce of gold. It may be only two tons of dirt for higher grades of gold at 0.452 ounces per ton.



Temporary road in the Bodie Hills. Lynn Boulton

While an open pit mine destroys the earth and all that was on the surface, exploratory drilling does a significant amount of damage to the environment too. The roads, drill pads, and sump pits destroy patches of the surface vegetation, and the noise, lights, traffic, and commotion of human activities forces wildlife out of the area for the duration. In the case of the Polaris Project, it will be for ten years. Our only recourse is to ask the Forest Service to require a high level of reclamation and to hold Klondex accountable for following the Forest Service's requirements. We work to let the public know what these projects are doing to our public lands. It is time for a Sierra Club Beyond Gold Campaign!

BLM brochure on mining: tinyurl.com/xftmarr7

Lynn Boulton graduated from UCSB with a BA in geology. Working in an urban area, she led a tread-lightly lifestyle trying to "walk the talk." After moving to Lee Vining, she brought the Eastern Sierra into the statewide campaign against bobcat trapping, which led to her serving as chair of the Sierra Club's Range of Light Group in the Toiyabe Chapter.

Solar and Wind Energy Plans

A continuing assault on Nevada public lands

Although solar development in Nevada have been documented many times, the sheer number of proposals and their cumulative impact is overwhelming. If details in the following article are numbing, the overall message is clear . . . the editors.

As many know, the federal push to develop renewable energy on public lands is in full force, and Nevada has become a Ground Zero for many of these large-scale projects. At this point, there are four projects under construction in Southern Nevada (at about 15,000 acres total), and seven additional projects undergoing National Environmental Policy Act (NEPA) Review. These and other future projects appear likely to alter the very nature of the Great American West, replacing a largely natural landscape with a much more industrialized one. There needs to be further debate in this country as to whether this is something that we as a people want to do.

“Big green” proposals for Bureau of Land Management (BLM) lands must go through a few phases of review before they can be considered for NEPA. One of the first is called the Prioritization Process. This occurs when BLM districts receive several green energy applications, and the process is used to choose the ones with the fewest conflicts. While a low priority application usually doesn’t move forward, several that have been designated as “medium” and “high” priority are moving forward to the next phase – the Variance Process. Created under the Record of Decision for the 2012 Western Solar Plan (under revision now), the 19 million acres of Variance Lands are all open to solar development, but must go through a “Variance Process”, which is a pre-NEPA review. In our experience, the Variance Process in Nevada has been tailored to move projects more quickly into a NEPA review. We have only seen the BLM reject one variance application in Silurian Valley, CA, in 2014 – before the Desert Renewable Energy Conservation Plan was established.

There are over 130 applications in Nevada for these green projects on federal lands. Just under ten have been rejected, and the rest are being reviewed and are lingering as applications.

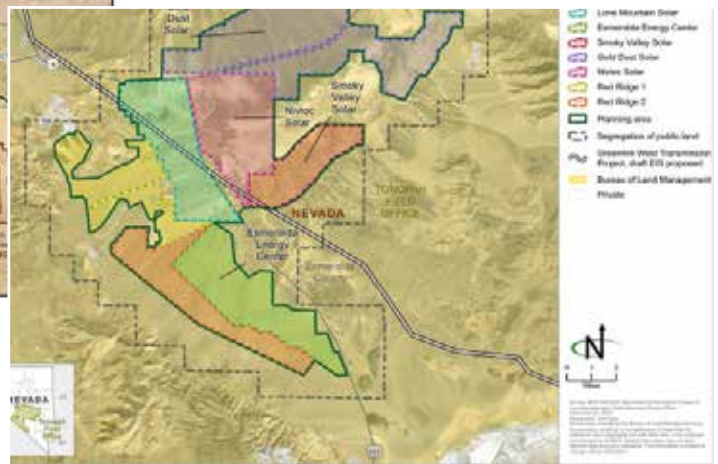
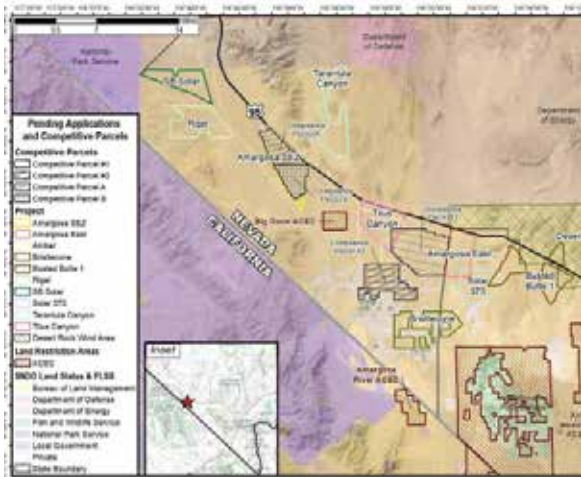
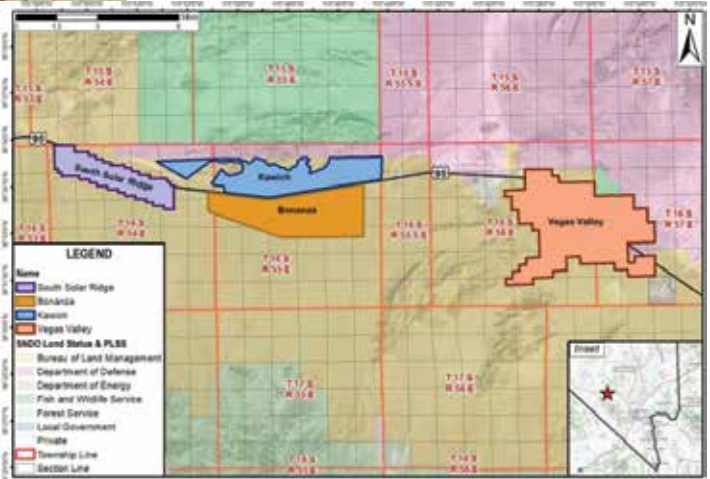
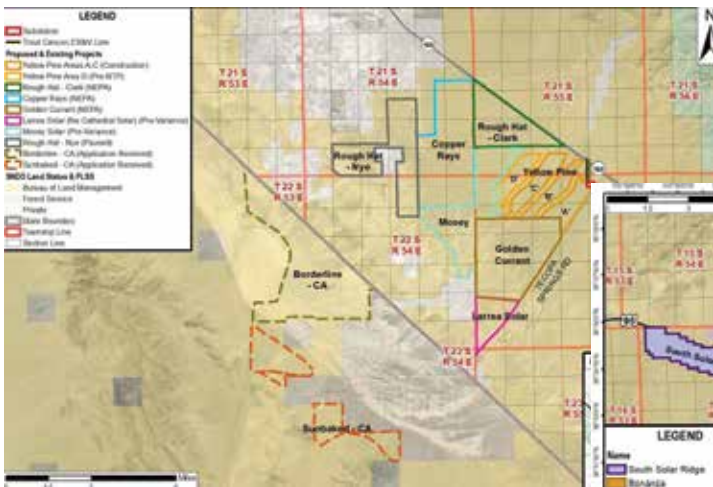
The major green energy proposals in Nevada follow existing or planned transmission infrastructure. Along the I-15 corridor in Southern Nevada are some very large projects on BLM land including Gemini Solar, which is

now under construction. Over 170 adult desert tortoises were moved off the project site, where 700 acres are being destroyed, habitat for one of Nevada’s rarest plants and one of the few endangered species designated in Nevada – the three corner milkvetch. Gemini is being touted as the most “eco” solar project on public lands because the company is using a “drive and crush” style of clearing. They have left some linear rows of vegetation, which is admittedly better than most solar projects, but project vehicles weighing up to 40,000 pounds still must drive off-road for dozens of miles.. The plan is to release over 100 desert tortoises under the solar panels. Most desert tortoise biologists say this is a big experiment and are unwilling to say it would be successful yet.

Other projects in the area on BLM land are Red Flats Solar (5,000 acres in Meadow Valley Wash), the Dry Lake South Solar Energy Zone, and Dry Lake East (a site known to have bighorn sheep, Gila monsters, desert tortoises, and even recently discovered Mojave fringe-toed lizards).

Proposed also for southern and western Nevada is the 525 kV, 476-mile Green Link West Transmission Project, which would carry 5 GW of energy. If built, it will cut through a corner of the Tule Springs Fossil Beds National Monument and enable several large-scale energy projects near Indian Springs and in the area between Amargosa and Ft. Churchill, Nevada. The Esmeralda Substation would be built west of Tonopah, where there are currently seven large solar projects associated with just this one substation. If fully built, they could develop over 60 square miles of public land, destroying rare plants, pronghorn habitat, cultural sites, and “Lands with Wilderness Characteristics”. The 5,000-acre Libra Solar project near Yerington, NV, which is near the wildlife-rich Walker River, is now undergoing a NEPA review.

Proposed from the Reno/Ft. Churchill region to Ely is the 525 kV Greenlink North Transmission Project – a 235-mile transmission line along the “Loneliest Road in America” – Highway 50. It would carry 3 GW of energy generated by new solar and wind projects. Greenlink North would also build the Lander Substation in Big Smoky Valley east of Austin. There are roughly 40,000 acres of solar applications in this area. One is called the Lonely Solar Project, to add insult to injury. Projects would be built close to Spencer Hot Springs. Near Ely, the Robinson Substation is being upgraded, and four



From top: Pahrump Valley, Indian Springs, Amargosa Valley and Esmeralda. Some of the many, many areas planned for development.

transmission projects would eventually hook into the new infrastructure. At this point, there are six solar applications, five wind energy applications, one geothermal project, and one pumped storage proposal. The exact acreage is not determined, but it is over 100,000 acres. Moving the fastest is Stagecoach Wind, a 49,000-acre proposed wind project in Newark Valley. This is located in a Priority Management Habitat Area for the greater sage grouse, a golden eagle hot spot, and wildlife habitat for pygmy rabbit and pronghorn. The turbines would be close to 700 feet tall.

The GridLiance transmission network is now owned by Nextera Energy, and they are proposing to upgrade the existing 49 miles near Pahrump and Indian Springs, and to build a new double circuit 230 kV line from the Johnnie ghost town to Beatty. These upgrades will enable several new large-scale solar projects in the Mojave Desert. Several new switchyards would be built between Amargosa Valley and Beatty which would move “giga-

watts” of energy. There are three large development zones that would hook up to these projects. These are Indian Springs Valley, Pahrump Valley, and Amargosa Valley.

The Innovation Substation near Indian Springs would be upgraded, and as a result, there are four large-scale solar applications spanning 20,000 acres being proposed for the area. Bonanza Solar is the most advanced, undergoing a NEPA review currently. The area has been identified by the Fish and Wildlife Service as the “most crucial desert tortoise connectivity corridor in Nevada”. Because of this, *Basin and Range Watch* nominated a 58,000-acre Cactus Springs Area of Critical Environmental Concern conservation alternative, which is now being considered by BLM in the Bonanza Solar Environmental Impact Statement.

The South Pahrump Valley is looking at 18,000 acres of big solar projects, with Yellow Pine Solar already



Desert Updates

“Lake Manly” from Badwater, Death Valley, Dec 2023.
Nomdeploom via Creative Commons

The Lithium Mining Rush in Nevada

There are approximately 83 proposed lithium mining projects in Nevada. Roughly half of them are targeting lithium-rich clays, using open-pit mining techniques familiar in the West. These projects will use a sulfuric acid leaching process to extract the lithium. The other half are targeting lithium-rich brines in deep aquifers, proposing to use direct lithium extraction (DLE) techniques, primarily selective ion adsorption, to produce lithium. A large number of projects are centered around Tonopah and Clayton Valley in Esmeralda County, but there are others scattered across the state.

A lightning round of updates on specific projects:

- Thacker Pass Mine is fully permitted, the lawsuits have ended, and the mine is under construction. Additional lithium exploration is happening elsewhere in the McDermitt Caldera, including on the Oregon side of the border.
- Rhyolite Ridge Mine in Esmeralda County is in the middle of NEPA, with a draft EIS expected by summer. This mine has a \$700 million loan guarantee from the Department of Energy.
- 3PL’s Railroad Valley brine project is mired in controversy over their 110,000 acre-foot water rights applications and a BLM mineral withdrawal in the area.
- There are a number of emerging clay deposit projects in northern Elko County.
- There are a half dozen clay deposit projects proposed near Tonopah. One, the Tonopah Flats project, recently received a \$57 million grant from the Department of Energy.
- Lithium exploration is occurring in clay deposits on BLM lands adjacent to Lake Mead National Recreation Area in the White Basin area.
- Brine and clay projects are ramping up in Sarcobatus Flat adjacent to Death Valley National Park.
- Brine exploration projects have also been ongoing in Fish Lake Valley, Columbus Salt Marsh, Kibby Flat, and far southern Big Smoky Valley.

A full map of proposed projects can be seen at <http://bit.ly/WesternUSLithium> (case sensitive)

Patrick Donnelly, Center for Biological Diversity

Lithium Mining and Community Consent

It is no secret that the burdens of industrial progress fall most heavily on economically disadvantaged communities and upon people of color. This situation is common where energy developments and mining occur on public lands that have special significance for Indigenous Americans. A video directed by Robert Lundahl attempts to provide a voice for these otherwise overlooked peoples: https://www.youtube.com/watch?v=_XaL6iO11fg

Available on YouTube, “*Lithium in America - Lands and Waters*” considers a number of proposed developments on public lands across California and Nevada. In each case, the camera focuses on people whose lives are directly connected to the lands that are to be appropriated - in most cases these are Native Americans who are speaking for culturally important sites which fall outside of designated Tribal Reservations.

Beyond expressing the cultural values of the lands, a common theme in the interviews asserts that legally required consultation with local communities and with Tribal organizations were never conducted, or if attempts were made, these were not done in good faith, i.e. the conclusions had been reached in advance. The value of this video is that it allows the affected people to speak directly in their own words. The following viewpoints are addressed in the video:

- The Oro Cruz gold mining proposal in Imperial County is addressed by Preston Arrow-Weed and Faron Owl, both elders of the Quechan Tribe.
- The extensive proposals for lithium extraction from geothermal brines in Imperial County are addressed by Luis Olmedo speaking for Comité Civico del Valle. He is emphatic that environmental problems be resolved in advance and that benefits from development must be shared fairly with the local community.
- A huge copper mining endeavor at Oak Flat east of Phoenix, Arizona, is discussed by Mahee Yellowfeather, an Apache descendant of Geronimo.

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.

- Peehee Muhu speaks of a massacre that occurred in 1865 near a proposed lithium mine at Thacker Pass, Nevada. Several others speak of the historical importance of the site to their people.
- Pat Gonzalles Rogers, with the Yale School of the Environment, argues that large mineral developments benefit stockholders *but do little for the local economies*. This is contrasted with national monuments which are drivers for local businesses that pay property taxes benefiting the local communities.
- Matthew Leivas, a Chemehuevi traditional chief, speaks of trash left on Tribal lands, and he worries about the consequences of the current rush to find and mine lithium resources.
- Sean Milanvich, Cahuilla, expresses concern about the extraction of lithium at the Salton Sea, and he is particularly distressed that Native Peoples have not been consulted about these developments on their traditional lands.

The message which is emphasized again and again is that Native peoples deserve to be present and heard when decisions are made about lands which were once theirs and have been taken away by force. The video is important and deserves to be widely seen.



Emigrant Canyon at milepost 5.1 before & after repair.
Federal Highway Administration

Death Valley Roads after Hurricane Hilary

A press release from Death Valley National Park (DVNP), dated March 9, 2024, reported the reopening many roads which had been closed by damage from recent flooding. Contractors managed by Federal Highway Administration (FHWA) made emergency repairs on 21 miles of the paved Emigrant Canyon Road. Later in the spring, permanent repairs, including erosion control to reduce damage from future flooding, will be undertaken on the multiple paved roads in the park. In an extreme case, damage to the Titus Canyon Road was sufficient that environmental and archeological assessments must be completed before repair work can be undertaken.

As of March 9th, another 174 miles of unpaved roads have been officially opened on the west and south sides

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Future Desert Committee Meetings

The Spring meeting of the Desert Committee will be held by zoom on May 18 from 9AM to 1PM. Details available as the time gets closer.

The Summer meeting will be held in person in the White Mountains on August 17 and 18.



Scorpio-tiger via Creative Commons

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, (510) 206-3760.

Desert Updates

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of the park. Currently the NPS crews are shifting equipment to work on unpaved roads in the eastern and northern areas of the park. At the recent meeting of the Desert Committee in Shoshone, Abby Wines from DVNP explained why repairs to unpaved roads in remote areas of the park have been given considerable priority.

Backcountry roads have not been obliterated by the rains, but rather there are short sections that are washed out and others where water collects in the lower places. Rather than go through these difficult sections, drivers of vehicles frequently detour around them on either side. The roads then become wider, new routes are created, and the damage is spread onto otherwise open land. By accelerating the restoration of these roads, the NPS hopes to facilitate responsible driving on the smaller and more remote roads of the park.

Water Sports in Death Valley? . . . no longer permitted

Although it was hardly comparable to the Pleistocene Lake Manly, the rains of this past year were sufficient to briefly fill the normally arid center of Death Valley National Park. In normal years, the inflow of water into Badwater Basin is more than overwhelmed by the high evaporation rate.

This year, the valley floor received 4.9 inches of rain in the past six months, and surrounding mountains received greater amounts. Most of that precipitation occurred in two events: 2.2 inches during the remnants of Hurricane Hilary on August 20 and 1.5 inches during an atmospheric river in early February. In an average year, Death Valley National Park would receive a total of about two inches of rain. As of mid-February, the temporary lake, informally known as Lake Manly, was about six miles long, 3 miles wide and one foot deep. Park employees and visitors alike exclaimed at the beauty of the spectacle, and the Park Service even invited visitors to launch kayaks on the lake.

By the end of the month, things had changed. Forty mph winds pushed the water two miles to the north. The lake spread out to cover more area, but at a shallower depth. The winds and increased surface area increased evaporation. A place that people had launched boats 10 feet from the road turned into a salty mud flat. When the winds stopped, the water slowly sloshed back to its original lakebed. What is left is shallower and muddier than it was before.

Due to the changed conditions, the National Park Service no longer allows people to attempt to boat on Lake Manly. Doing so would involve walking through mud, leaving footprints in the mud flat. These footprints or boat drag marks will likely stay as scars on the landscape until the next time Lake Manly returns. People are encouraged to walk out into the lake (or onto the salt flat) from the Badwater Basin parking lot, staying on already-compacted surfaces.

Current Status of the Western Joshua Tree

In response to our Western Joshua Tree CESA (California Endangered Species Act) petition filed in late 2019 and the elevation of the western Joshua tree to Candidate Status in 2020, the Newsom administration introduced the Western Joshua Tree Conservation Act legislation which was ultimately adopted in July 2023.

What does it do?

- It requires CDFW to prepare a range-wide conservation plan for the species by the end of 2024 in consultation with governmental agencies, California Native American Tribes, and the public. In fact, California Department of Fish and Wildlife (CDFW) is hosting a virtual meeting on Thursday, April 4, 2024, from 10 a.m. to noon on the development of a western Joshua tree conservation plan. Sign up here to register for this meeting.¹
- It requires the California Department of Fish and Wildlife (CDFW) to develop annual reports assessing the conservation status of the western Joshua tree and submit them to the Fish and Game (F&G) Commission and the State Legislature no later than January 1 of each year, starting in 2025 to ensure the effectiveness of the plan, including the “fees for trees” required for “taking” of a Joshua tree.
- All in-lieu fees collected for “take” of Joshua trees are to be deposited into the Western Joshua Tree Conservation Fund for appropriation to CDFW solely for the purposes of acquiring, conserving, and managing western Joshua tree conservation lands and completing other activities to conserve the western Joshua tree.
- CDFW is permitted to enter an agreement with any county or city to delegate limited authority to permit the taking of a western Joshua tree associated with developing single-family residences, multifamily residences, accessory structures, and public works projects.
- For more information on the western Joshua tree please go to CDFW’s Western Joshua Tree Conservation website or the Center for Biological Diversity’s website.²

The F&G Commission still has not voted on listing the species as threatened, and this legislation prevents unmitigated destruction of Joshua trees if the F&G Commission votes to not to list the species.

*March 10, 2024, Ilene Anderson,
Center for Biological Diversity*

1) https://us06web.zoom.us/webinar/register/WN_jpz9K-pQOSWuq4UgFOPp_7A?utm_medium=email&utm_source=govdelivery#/registration

2) <https://www.biologicaldiversity.org/species/plants/Joshua-tree/index.html>

Community Benefits

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soft skill development (i.e. punctuality, communication, to name a few.)

Communities emerge as vital contributors, addressing specific challenges and fostering solutions, as exemplified by both CBAs. Meaningfully addressing specific inequities and increasing job access can open up the full potential of a local workforce to the manufacturer. A Lithium Valley agreement may have different equity and job access needs from the ones stated above. Thus, CBA advocates should survey Imperial County residents and identify region-specific obstacles to employment in order to create the appropriate CBA provisions.

Centering tribal cultural resources and environmental protection

More recently in Santa Barbara County, the Santa Ynez Band of Chumash Indians Tribe signed a CBA with Offshore Wind developer Floventis Energy for their floating wind farm project called CADEMO.¹³ This clean technology project is a pilot, and if successful, Floventis will launch hundreds of wind turbines in the Pacific Ocean to provide renewable energy to California.¹⁴

Along with jobs and apprenticeship language, this CBA acknowledges the Chumash people's connection to both the land and the sea. First, the agreement commits Floventis to work closely with the tribe for state and federal environmental impact reviews, ensuring proper consultation. Second, the CBA supports a tribe's study of traditional cultural landscapes. Lastly, the CBA commits to establishing a tribal-run research institute. The institute's purpose is to help tribes cultivate oceanographic expertise, develop environmental strategies to co-manage offshore and nearshore resources, and grow expertise in managing one of the tribe's proposed projects, the Chumash Heritage National Marine Sanctuary. The sanctuary aims to "preserve marine and cultural resources along 156 miles of Central California Coastline."¹⁵

While the results of the Chumash Tribe CBA are still to be seen, this agreement sets tribal resources and environmental provisions that advocates can model. Tribal communities near the Salton Sea hope to protect and recognize tribal cultural resources and the natural environment. Environmental health advocates have raised concerns about Direct Lithium Extraction (DLE), the new technology that will be utilized by CTR and other lithium companies. While DLE is touted as being more efficient and environmentally friendlier than traditional lithium collection methods such as evaporation ponds and hard rock mining, there are fears about its environmental impact, especially since DLE is a newer technology.¹⁶

At some point, the coalition will have to decide the CBA's purpose and the topics it will cover. In order to create an inclusive CBA that covers a range of topics, advocates should make sure the coalition membership reflects wide interests. Inclusion of environmental experts

and tribal voices in a coalition could help inform provisions that build upon the ones created between the Chumash Tribe and Floventis.

Conclusion

As Lithium Valley unfolds, the adoption of community benefits agreements emerges as a pivotal strategy. These legally deliverable agreements are a new way of doing business that makes communities and workers part of the decision-making in a company's large-scale development, ensuring the delivery of meaningful, substantive local benefits. Drawing inspiration from diverse examples such as Jobs to Move America's CBAs with BYD and New Flyer, as well as the agreement between the Santa Ynez Band of Chumash Indians Tribe and Floventis Energy, the Lithium Valley vision can be refocused to center the interests and needs of Imperial Valley residents.

The promise of Lithium Valley is not just one to the United States for a national clean energy transition. It is also a promise to the local people of Imperial Valley that they are deserving of just opportunities, elevating them beyond the role of a mere site of extraction. They are a community deserving to be a meaningful part of shaping their home, undiminished of their self-determination.

References for this article 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.

Theo Figurasin is a Senior Researcher supporting Jobs to Move America's California program, which includes working with frontline Imperial County organizations. He has over a decade of experience building and implementing dozens of successful national community and labor campaigns that have resulted in higher job quality standards and benefits to public health. Theo has a B.S. in Industrial and Labor Relations and a certificate in Strategic Corporate Research from Cornell University in Ithaca, NY.



Habitat and Technology

Experimental approaches to desert tortoise conservation

It was my first week working for Transition Habitat Conservancy (THC), and we were enjoying a cool October morning in the desert for field orientation. The biologist handed me a dark, fibrous nugget that I promptly learned was tortoise scat. He told me that I could identify it by its shape, size, contents, and even tell the approximate age of the dropping based on its color and sheen. I absorbed a wealth of information from Tim Shields that day in the desert, and that initial introduction has always stuck with me. His willingness to get his hands dirty, and the excitement he had for these small traces of tortoise sign showed his passion for the species and their preservation. It was the kind of inspiration that I was looking for as a business school graduate searching for a rewarding career.

Last fall, I traveled to Sacramento with Tim to ask the Wildlife Conservation Board (WCB) of California to support a project that we have been collaborating on for the seven years since my first day as a land steward. We were successful and were awarded nearly two million dollars. Concepts that sounded wild to me at that time are now being implemented on THC land thanks to this partnership and a lot of creative problem solving. Even

more importantly, these innovative solutions are being shared with others to guide more effective tortoise conservation efforts throughout the Mojave Desert.

The plight of the desert tortoise is a well-known story to conservationists. We humans have altered conditions in the desert for our own convenience in the short run, and in the process have rendered it uninhabitable to tortoises over the long run. A good example is the rapid rise of common raven populations throughout the California desert. These ultimate opportunists are happy for our handouts and hospitality, turning the readily available food, water, shade, and nest sites we provide into still more ravens to fill the skies. For tortoises, the implications of having many more ravens than were historically present means that the odds of any young tortoise surviving its soft-shelled youth to reach maturity are functionally zero across large areas. But we need to look beyond just the effects of this raven population explosion on a single species, no matter how charismatic. Burdening the desert with this many highly intelligent and mobile predators is bad news across the entire ecological spectrum. Our team has come to view ravens as agents of ecocide, as they prey on a wide variety of species while incidentally causing many problems for agricultural and industrial concerns. So, what to do?

While THC has focused on land conservation, the essential prerequisite for the survival of the tortoise and other desert wildlife, Hardshell Labs, Inc* has worked on adapting emerging technology to address ecological problems that transcend land status. Tortoises need healthy habitat, the goal of THC's work, but when a raven sees a young tortoise, it pays no attention to whether or not the land is in conservation status. It spirals down, assesses its prey, flips it over, and hammers through the soft spot in the middle of the underside. Land conservation is essential but insufficient to stem the decline of the tortoise.

Our joint proposal to the Wildlife Conservation Board was to combine our strengths. THC has land and among



Tortoise or a decoy? Tim Shields

*Hardshell Labs, Inc. is a conservation technology company from Joshua Tree, CA, specializing in applying emerging tech to ecological and resource protection problem solving.

Solar and Wind Energy

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under construction. The full solar buildout for the area would destroy multiple valuable public land resources including thousands of Mojave yuccas, some Joshua trees, rare plants, mammoth fossils, public land access, the Old Spanish National Historic Trail view-shed, and multiple wildlife species. The Yellow Pine Solar Project has already moved over 160 desert tortoises, 33 of which were moved during a record breaking drought and killed by badgers. Two other projects, Copper Rays and Rough Hat, seek to move hundreds more desert tortoises from 7,500 acres.

Basin and Range Watch, along with seven other organizations, is asking the Interior Department and BLM to void the Environmental Impact Statement for the Rough Hat Clark County Solar Project. That project would have to excavate 114 adult desert tortoises. The project site tortoise density now rivals several of the established Fish and Wildlife Service Desert Tortoise Critical Habitat units. The basin is also severely over-drafted for water resources, and Nye County is actively protesting water permits for Yellow Pine Solar. The other developers seek thousands of acre feet of water for construction of their projects.

There are big plans for the Amargosa Valley, and at one point there were over 60,000 acres of active solar project applications there. The BLM placed six of these projects on a Low Priority status due to their big water requirements, but six big projects remain. Two applications next to Death Valley National Park could start to move forward in the next year. These are called SB Solar and Rigel Solar, spanning over 11,000 acres. SB Solar would be about 1/4 mile from the park border just south of the Rhyolite ghost town. Rigel Solar would be along a popular recreation route that loops through Chloride Cliff in Death Valley National Park. The projects would use valuable water that feeds Devil's Hole and Ash Meadows, create big dust problems, and compromise the spectacular view-shed on the east side of Death Valley National Park. These projects have seen opposition from Nye County and the community of Beatty, Nevada.

The energy land rush on Nevada public lands has a lot of political support from Washington, but the impacts from these proposed plans are huge, and their popularity is rapidly declining with the public. After seeing the size and impacts of solar facilities in the last decade, people are starting to wake up, and there are now far more requests to use rooftops and previously developed sites instead of intact public lands.

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.

their parcels are certain areas of very high tortoise density. Hardshell has the gizmos to counter the effects, not only of ravens but of a wide variety of threats to the desert tortoise. Among these threats are the invasion of the desert by non-native grasses, which displace the native wildflowers upon which tortoises depend. We have just begun to investigate the possibilities for controlling the aggressive invasive grass *Schismus arabicus*. In a similar vein, we are exploring ways to increase the availability of water to desert tortoises. We are mimicking the natural basins constructed by tortoises to retain rainwater, but putting them in places where the sandy soil composition prevents tortoises' use of natural drinking sites. A large clay plate plays the role of the drinking site, retaining rainwater for a few hours after any natural storm. We then depend on the exquisitely tuned ability of tortoises to recognize and return to sites providing this vital resource. Likewise, we are working on ways to provide tortoises access to desirable food plants. This will be especially important in areas that have been taken over by *Schismus*. Right now, Mojave Desert Land Trust is applying its expertise in growing native food plants by fostering 1000 desert dandelion plants. We will use this crop of tortoise food in initial experiments in enhancing food availability for tortoises. Both water and food availability improvements are a hedge against the worst effects of climate change and drought on the state reptile.

We will also deploy a wide variety of tools and techniques to address the unsustainable level of predation faced by tortoises. Over the last decade, Hardshell, working with a large number of talented engineers, funders, and experienced and dedicated biologists, has developed a number of useful tools. Ravens are exceptionally sensitive to laser light, and we are using highly refined Internet connected lasers to drive these birds away from their favored subsidy sites. This denies them easy access to energy that will be turned into nestlings the following spring. Radio-tracking of previously trapped ravens is drawing us a map of their favored subsidy sites, essentially pointing the way for wide scale denial of easy subsidies to ravens.

Working with Sundance Biological, Inc. we have refined and systematized the technique of remote egg oiling (REO), birth control for ravens. A thin layer of oil prevents the hatching of the egg yet leaves it structurally undamaged. The adult ravens continue to care for eggs that will not hatch, tying up their reproductive effort, and ensuring that no fledglings leave a treated nest. This technique is now in wide use across the Mojave, and recent raven counts show that in areas where REO is intensively and consistently used, raven numbers have declined. Hooray!

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Desert Darkness

Thoughts in an unfamiliar world

I am in a place I thought I knew. But in this darkness I have lost my way. There are no lights, no markers to tell me where I am. There is just...darkness. The flashlight resting in my hand is inadequate to the task. I turn it off. No use wasting whatever feeble light it has left. What I had not understood before is that my knowledge of this place, although extensive, is daytime knowledge. I have no night-time knowledge here.

The experience of complete darkness is rare, especially for those who dwell in cities. Darkness isn't just the absence of light: rather it takes away the world we thought we knew. An impenetrable darkness has no beginning and no end.

Those who have experienced this darkness know its strangeness. Darkness cannot be seen, heard, tasted, felt, or touched. How to tell the story of darkness to suit the depth of it? Darkness hides dangers, secrets, and lovers; it is home to magic and mystery. The time of darkness belongs to witches and warlocks. Black is in every color giving it depth and variation, but black itself is not a color. It doesn't reflect light. It absorbs it. How to know darkness when never enveloped (*cloaked?*) in its indifferent embrace?

A friend is camped nearby, but I am only guessing. I do not know how far I've walked or into which direction. I call his name. The sound of my voice dissipates in darkness. Silence reigns. There is not a breath of wind. Am I near his campsite? I'm not sure. What I thought I knew no longer holds.

Earlier, in the last of daylight, I left his campsite to traverse a long, rocky wash to reach my own campsite. I now realize that I left too late. In the backcountry one pays a price for miscalculating time and dusk.

This canyon is carved by water in a steep and rugged mountain range. It has a most remarkable history. In my mind's eye, I can see how late afternoon sunlight brings out vivid dark red colors in the rocks; how it warms the yellow sedimentary rock formed long ago by deposits of silt and sand. There is layer upon layer of grey limestone built from tiny marine life and from the greenish-black of a three million year old lava flow.

Once upon a time this canyon was a closed basin. Over millions of years, local springs formed ephemeral shallow lakes. These were known only to migrating creatures alive in times different from ours. The deposits from this watery history remain visible in layers called varves.

None of that will help me now. My flashlight illuminates a small circle only a few feet in front of me. There's nothing to be seen but creosote bushes, rocks, and gullies three to four feet deep. I have crossed many of them already. Everything looks the same from one step to the next in my circle of light.

The colors and thickness of these layers, alternating between brown mud and nearly white mineral deposits, tell the story of countless seasons in ancient times.

In our time this landscape looks devoid of life as it lies exposed to burning sun and whims of desert winds. The creosote bushes and prickly pear cacti patiently await the next rain; rain that may or may not come. This canyon has faint and vanishing trails created by human feet long ago. There are stone chips to be found. Now it is lizard country. I have come to know this canyon. Many times I have stood in awe of its power and mystery. I have come to love this canyon.

None of that will help me now. My flashlight illuminates a small circle only a few feet in front of me. There's nothing to be seen but creosote bushes, rocks, and gullies three to four feet deep. I have crossed many of them already. Everything looks the same from one step to the next in my circle of light.

I sort through my options. If I have to spend the night, I know that hypothermia will not be a problem. The air will cool as the night deepens, but it will remain well above freezing. If necessary I can find a spot to curl up and spend a night on the rocks. I quickly re-evaluate this option: drinks are fine on the rocks, people . . . not so much. But for one night it might have to do.

I could take a chance and wander around until I see something that I recognize to give me direction. Bad idea. I rule it out. I could sit tight until the moon comes up in a few hours. It should be about half full and provide enough

light to find my way. Okay, that's a "maybe" option. I decide to try calling out again to get my friend's attention. I call. I shout. The silence feels absolute. Nothing stirs. I call again.

I ponder my predicament. My mental map was formed over time and many explorations but only during times when I could see. I do not know this place in darkness. In times past, there have been countless nights spent out in other places, and when comfortably snuggled into my sleeping bag, I could enjoy the wonder of the sky on a clear and moonless night. There always seemed to be at least a hint of light so that I could see the darker shapes of trees and mountains. But that never mattered. A flashlight was always kept nearby. Now I have to find that sleeping bag. It's out there – somewhere.

I call out again. I hold on to the belief that my friend will hear me. No reply. Once again I survey my options. Perhaps I overlooked something that I didn't think of before. Nothing. Remaining in place, I slowly turn a full circle to study my surroundings. The overcast from earlier in the evening is clearing, and I can now see a few stars . . . but the turning disorients me even more.

Suddenly a faint pinprick of light. Then gone. My imagination? Then another tiny distant flash. Gone again. Wishful thinking? If it is my friend's flashlight, why would it be like a firefly, a tempting flash of light one moment, but gone the next as if it never happened? And why has he not called out to me? If it is my friend, he is still quite a distance away. I must have been further from his camp than I thought I was. Or maybe I cannot hear him. It has to be him. There are no others that I know of, within at least a twenty or thirty mile radius.

I stand motionless. I wait. I keep my eyes fixed on the area where I saw this little light, a minuscule message of hope. I signal with my light. I call out again. No response. My total focus is now on the promise of that light. Finally, and intermittent as it is, the light is getting brighter and coming toward me. I am certain now. It is my friend. I start walking toward him.

When we meet, he seems rather casual about my situation. It is as if such a thing happens every day. He explains that he heard my calls but thought that it was a coyote. Coyote . . . ? Then he chats amiably about someone else, a young man to whom, many years ago, the same thing happened in this very same canyon. One way to try to deal with being disoriented in a canyon is to follow the watercourse down-canyon and, most likely out. And that was what the fellow had done. He just walked out leaving the others to wonder the next morning where he had gone.

My friend says he knows where my campsite is. That is what I hoped because he knows this canyon intimately; an in-depth knowledge gained on many occasions during decades of exploration. The two of us start to walk. His flashlight is much stronger than mine. I make a mental

note: "Bring serious flashlight next time." I hadn't done so because we had backpacked in and a powerful flashlight is heavy. But when it's needed, it is really needed.

Some hills loom up next to us. With certainty he says, "Your campsite is just around the corner." And I believe him. Then I hear him say, "Uhh . . . no. This isn't it. It is probably around the next corner."

This happens again . . . and again . . . each time his voice less reassuring. It occurs to me, are we now both lost? I don't ask. Then he stops and says with astonishment in his voice, "I'm not sure."

Strange – his comment makes me feel better. I'm not the only one who is disoriented in a place I know so well. At the same time I understand that now we really have a problem. I mutter something foolish like "At least we can keep each other warm should that become necessary." He does not reply.

We start walking again, but this time with hesitation in our step. We walk and we walk, and there is no conversation as he concentrates on trying to find a familiar landmark.

When crossing one of the many gullies, I have a little "aha moment." I realize that when he was coming toward me, he was dropping in and out of the gullies, just as I had been and as we were doing now. That's why the "firefly effect" of his light. It pleases me to solve that riddle.

Suddenly: "We're here. I found it," he exclaims. I hear relief in his voice. A rock formation looks familiar. I walk around it and there is my sleeping bag on a pad, my pillow, backpack, and supplies.

"Don't tell anyone I walked you home" he says softly with a smile in his voice as he turns to walk back. I watch his flashlight as it dips in and out of sight until I could see it no longer. I wait for a few more minutes, then I turn and settle into my sleeping bag. I fall asleep wondering how did the ancients deal with the dark? What did they do when they did not have fire? What was their night-time knowledge?

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.

Habitat and Technology: Tortoise Conservation

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At least in certain areas we are helping the desert back into balance.

One very attention-grabbing option we have developed is the Techno-tortoise™. We use 3D printed, highly accurate models of tortoises to attract their main predators, ravens. Early tests, which included motion capture cameras, taught us much about how ravens attack young tortoises. For the first time we could watch how the birds behaved. We applied these lessons, and working with the engineering firm Cornerstone Research Group, created a device that attracts ravens, then delivers a strong aversive experience. Once a raven has decided that the object in front of it is a scrumptious little tortoise and begins to hammer away at it, or attempt to turn it over, the Techno-tort sprays a very irritating, but non-toxic chemical in the face of the bird. Strangely enough, artificial grape flavoring, chemically called methyl anthranilate, is specifically irritating to birds. The surprise that ravens show when a delectable little tortoise suddenly fights back with a noxious spray vividly demonstrates just what an impact this experience has in the moment. Now we want to determine if it reduces the tendency of these “educated” birds to attack actual tortoises.

So far, our work on predation reduction has focused on the raven. But another highly intelligent predator is using human subsidies to increase its numbers, and thus its negative effect on the desert tortoise. We are currently considering how to adapt our devices to reduce coyote predation on tortoises. This is early stage work, but we have some promising ideas and look forward to testing them in the field.

The shared goal of THC and Hardshell is to improve the odds of the survival of the desert tortoise, but to do so using non-lethal techniques. We are counting on the

intelligence of these predators to train them to either change their distribution or their behavior in desired directions.

The WCB grant, entitled Desert Tortoise Conservation Innovations (DTCI), is a boon to our efforts. The four-year span of the project, and its significant funding level, will allow us to not only deploy this wide variety of techniques and technology, but also monitor the reactions of both tortoise populations and those of their predators to assess their effectiveness.

Just as importantly, we will attempt to characterize areas of high desert tortoise density, what we call hotspots. Why this hilly area and not that low valley? What environmental factors influence the choice of area by tortoises and the capacity of that area to support that density? We are looking for the formula for tortoise success with a view toward finding as many of these hotspots as we can. Among the obvious factors are the quality of food and the availability of good soil for burrow digging. But what combination of foundational factors account for these? Topography, soil composition, degree and type of human activity come immediately to mind, and the multi-year duration of the project will certainly tell us much. The DTCI project will allow us to investigate these, with the goal of creating a template for the identification of high-quality desert tortoise habitat and active measures to maintain the tortoise populations that call them home.

For the next four years, we will be investigating the options for helping the desert tortoise to survive the next decade, the next century, and the next millennium. Humans have altered the desert ecosystem in ways that imperil this wonderful creature. Yet both THC and Hardshell are made up of optimists. We are disinclined to give up without expanding every effort to help the tortoise. And with the proliferation of powerful new tools to influence the course of ecological events, the potential for success exists.

Sam Easley graduated from James Madison University with a BA in economics and a passion for exploring the Blue Ridge Mountains of Virginia. Sam moved West in the fall of 2014 to pursue a career in conservation, restoring habitat on the ground, leading crews, and planning projects as a BLM intern. He has been with Transition Habitat Conservancy for six years and is now the Executive Director.

After a 35-year career in tortoise research, Tim Shields turned his attention to active interventions to save the tortoise from impending demise. In the decade since he has led and participated in a wide variety of tech development efforts with conservation in mind. He works with engineers, biologists, agency representatives, and utilities. He enjoys hiking, bike riding and looking at weird bugs.



THC & BLM tents during an outreach event to the OHV community. We have maps, snacks, coffee, live animals, etc. to entice folks to come over and learn about responsible recreation in tortoise habitat. Sam Easley



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