FOR MEMBERS OF THE NATURE CONSERVANCY IN ARIZONA



FALL 2024

A Climate for Positive Change





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COVER LEFT TO RIGHT © Ivan Martinez © Russ Schnitzer; © iStock/Georgia Evans THIS PAGE State Director Dan Stellar © Mark Skalny Photography OPPOSITE PAGE Walnut Creek in Big Chino Valley, Arizona. © Adriel Heisey INSET Sullivan Lake, Paulden, Arizona © Andrew Kornylak

From the State Director

Climate Action for Today and Tomorrow



Arizona is known for many things: incredible landscapes, diverse wildlife, vibrant cultures. Unfortunately, the fact that it is home to the hottest city and is among the most rapidly-warming states in the country is also on the list.

But another distinguishing factor is the remarkable resilience of our people. Together, we are adjusting to life in the

era of climate change and investments in conservation are paying off and serving as a source of hope.

For example, The Nature Conservancy in Arizona has orchestrated land conservation in the Apache Highlands around the Verde River since the 1970s, including stewarding 17,000 acres of TNC preserve lands. And just this year, relationships fostered over decades led to the creation of Del Rio Springs State Park. We played an important role in protecting this historically- and ecologically-significant site.

This kind of patient, partner-centric success is the foundation of our work to help nature and people adapt to climate change. Yet addressing the consequences is only part of the battle; we must also rapidly, dramatically, solve the root problem by reducing greenhouse-gas emissions.

TNC has advocated for investments from every level of government, and we are collaborating with companies, communities and many other stakeholders to achieve that imperative.

We must curb emissions in a way that promotes economic stability and growth.

In this issue of Field Notes, you'll meet elected officials, dedicated advocates and local leaders who are also taking on that responsibility. Together, we can achieve a thriving economy and reach net-zero emissions by 2050 in Arizona across the country and around the world.

With gratitude,

Dan Stellar | State Director | The Nature Conservancy in Arizona



Creating Positive Mitigation and Adaptation: What's the Difference?

Mitigation is taking action to stop further warming. Scientists agree we are on the precipice of reaching critical points—and that's why mitigation strategies to dramatically, reduce greenhouse gas emissions are essential.

Adaptation is acting to manage the changes that are occurring as a result of climate change. From helping communities in the path of flooding and wildfires, to human health threats such as poor air quality and extreme heat, to the cost of food and changes in how insurance is managed, the impacts of climate change are already far-reaching, dangerous and expensive.

Guided by science, The Nature Conservancy in Arizona is supporting strategies that, when combined, increase the pace and scale of positive change.

Mitigate Climate Change

Promote Reinforcing Strategies

Adapt To Climate Change

Use Energy More Efficiently



Improvements and changes to how we live in the built environment reduce energy use

Transition to Clean Energy



Solar, wind and other forms of renewable energy produce very little to no climate-changing pollution

Enable Sustainable Transportation



Hybrid and electric vehicles use less energy overall than fossil fossil-fuel

Conserve Water



Optimizing water usage in crop production to save energy and make food systems more resilient

Provide Education and Engagement



When more people know about climate change and understand how they can help, they can act to reduce their carbon footprint and prepare for risk

Increase Tree Canopy



Trees store carbon and they provide shade, which means we can use less air-conditioning

Protect Freshwater Corridors



Conserving land around waterways helps retain water during droughts

Improve Forest Health



Healthy forests help store water and they are less susceptible to wildfire risk

Support Communities



Services such as cooling stations during extreme heat are essential to protecting vulnerable populations

"Concientizar sobre las temperaturas extremas y como puedes hacer pequeños proyectos al nivel individual en nuestras casas y en comunidad para mitigar el calor extremo, también relacionar que nuestro medio ambiente tiene mucho que ver con la calidad y expectativas de vida. Si no hacemos un cambio en nuestro diario vivir, nuestro planeta se va a sobre calentar."

Translation: "This program is important because it increases awareness about extreme temperatures, and participants learn how to lead small projects starting at home and at the community level to mitigate extreme heat. The environment is tied to our quality of life and life expectancy. If we don't start making a change now, our planet is going to get hotter."

~Juana Silva

Urban Heat Leadership **Academy**

Mitigation and Adaptation on the Streets of Phoenix

Thirteen degrees. That is the temperature difference between some neighborhoods in Phoenix, the hottest large metropolitan area in the country. According to Amy Scoville-Weaver, TNC's Healthy Cities program director in Arizona, "The biggest contributor to that variance is tree canopy."

That's why The Nature Conservancy and Phoenix Revitalization Corporation came together to form the Urban Heat Leadership Academy (UHLA). The program offers Maricopa County residents living in communities with inadequate tree cover the opportunity to learn about urban heat, air quality and water. Presented in English and Spanish, UHLA includes hands-on projects like planting trees and resources to help residents advocate for policies to make their communities cooler, greener and healthier.

"The UHLA efforts are particularly important because they represent both climate adaptation and mitigation," said Scoville-Weaver. "For example, more trees means cooler buildings, which reduces the need for air-conditioning, therefore using less energy."

Juana Silva, who worked with fellow UHLA graduates to use a small grant from TNC to plant 20 trees to create a "cool island" in a south Phoenix neighborhood © Juana Silva

The Policies, the Plans and the Players

Federal Action, **Arizona Results**

Policy makes conservation and climate action possible. That's why The Nature Conservancy encourages lawmakers at all levels to support initiatives that prioritize nature and promote community action.

The November 2021 Bipartisan Infrastructure Law (BIL), also referred to as the Infrastructure and Investment Jobs Act (IIJA), provides

billions of dollars for over 100 new climate, energy and environmental projects including conservation and natural infrastructure work.

The Inflation Reduction Act

(IRA), signed into law in August 2022, allocates \$370 billion toward increasing clean energy and other

priorities. The IRA is already creating jobs, improving communities and addressing the root causes of climate change.

The availability of predictable, significant funding gives states, cities and industries the confidence to invest in new technology and innovative practices. In Arizona, federal dollars from the BIL and IRA are spurring manufacturing growth, increasing the application of green infrastructure practices, and enabling smart conservation that will help our state thrive far into the future.

The Nature Conservancy's approach to supporting the global transition to net-zero emissions is based in partnership and science.

THE 3CS

for a clean, green and equitable energy transition

Conservation

Avoid impacts to wildlife and habitat and restore and enhance nature's values

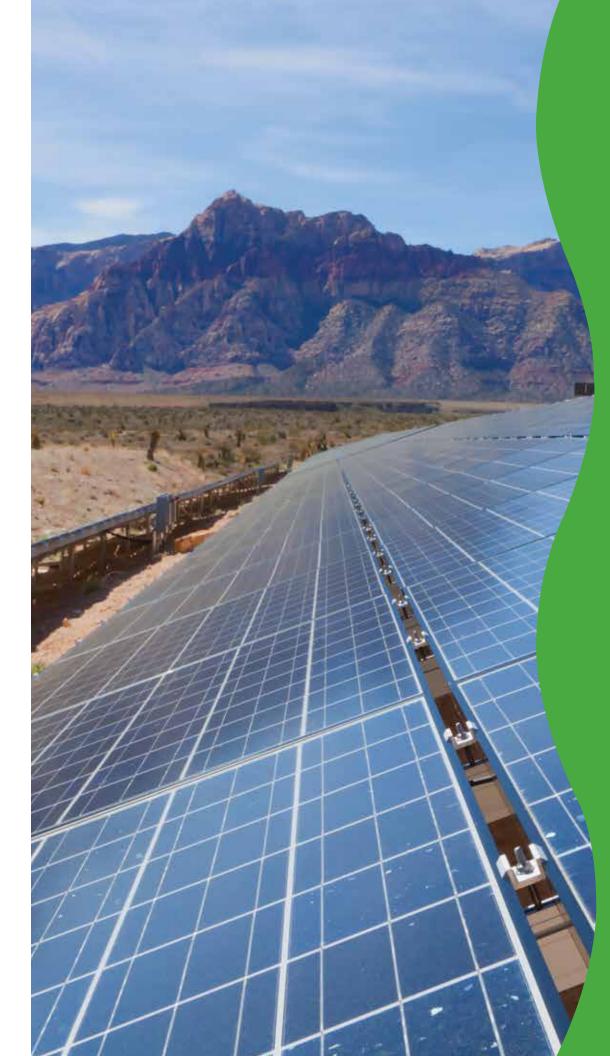


Climate

Maximize reductions in greenhouse-gas emissions

Communities

Center communities and Indigenous peoples, working in collaboration to support shared benefits and an equitable transition



Meet **Nicole Hill**

The Nature Conservancy's **Arizona Climate Program Director**



The Nature Conservancy is using the power of nature and the strength of policy and markets to reduce emissions, support renewable energy and store carbon. With 20 years of experience in conservation management, local government administration, public financing and policy, Nicole manages a team of experts and collaborates with partners to make meaningful progress for the future of Arizona's people, places and economy. She also works on multi-state energy studies and strategies in the West.

Working The solutions needed to protect a healthy future for Arizona are just as diverse as the state's wildlife, ecosystems and people.

How It Started:

Arizona residents are increasingly affected by poor air quality, the economic impacts of disasters such as wildfires and strain on infrastructure. That's why in 2019, The Nature Conservancy convened state and local government agency professionals, nonprofit partners, electric utility representatives, economic development stakeholders,

academics and others to develop a state-wide strategy to promote clean air, clean energy and a prosperous economy. That effort culminated in the Arizona Thrives: A Path to a Healthy and Prosperous Future report, which served as a catalyst, fostering momentum toward pragmatic solutions to achieve net-zero carbon emissions by 2050.

It is time to accelerate the transition to a low-carbon future in a way that is equitable, affordable, reliable and competitive. The change has already begun, and the choice is to lead the way, or find ourselves adapting to others' solutions. (Arizona Thrives Report, 2019)



TNC HAS LONG EMBRACED THE ROLE OF CONVENER TO UNITE STAKEHOLDERS.

In 2023, we assembled Mesa Mayor John Giles, Flagstaff Mayor Becky Daggett and Maren Mahoney, the Director of the Governor's Office of Resiliency, to discuss conservation efforts happening across the state, inspire collaboration and explore potential alignment.

How It's Going:

Maren Mahoney

Director of the Arizona Governor's Office of Resiliency



What is the goal of the state Office of Resiliency?

Our team is charged with uniting water, land use, transportation and energy policy to address the compounding threats to Arizona's water, natural resources and impacts of the climate crisis. We serve as a hub, bringing federal dollars to the state, setting state-wide priorities and supporting local initiatives.

How are federal funds making a difference in Arizona?

The 2021 Bipartisan Infrastructure Law (BIL) and 2022 Inflation Reduction Act (IRA) offer unprecedented investment opportunities to grow

our clean-energy economy, improve grid resilience and decrease carbon emissions. Governor Katie Hobbs directed state agencies to pursue federal funds, and to date more than 15,000 clean energy jobs have been created and \$11 billion of investments from the BIL and IRA have touched down in Arizona.

What is happening at the state level to address climate mitigation?

A state climate action plan was last developed in 2006. Under Governor Hobbs and with the funds from the Climate Pollution Reduction program of the Inflation Reduction Act, the Office of Resiliency completed a new state Priority Climate Action Plan that was submitted to the Environmental Protection Agency, and we are now embarking on the second phase, the Comprehensive Climate Action Plan, due in 2025. Sector-specific working groups will determine potential emissions-reduction measures to reach carbon neutrality by 2050, and the plan will also address workforce development gaps and, crucially, include financing and funding blueprints.

How is The Nature Conservancy contributing to that important work?

TNC has been an important player for decades when it comes to state policies related to land, water and wildlife, and today, climate change. They bring expertise and research from across the country and world to our work to prepare Arizona for the future, and they help create connections between funding opportunities, policies and local people.

How can Arizona residents engage with the Office of Resiliency?

We are planning events to get people excited about programs including home-energy rebates and Solar For All. We recently added staff to help build new coalitions that will pursue federal grants and provide technical assistance to communities and organizations. I encourage everyone to sign up for our newsletter at resilient.az.gov to find out more.

Maren Mahoney is an attorney, policy expert and sustainability leader committed to addressing threats to Arizona's natural resources.

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Generating Momentum for the Clean Energy Transition

With amenable terrain, abundant sunshine and a culture of collaboration, Arizona is positioned to rapidly transition to reliable clean energy. The path to that goal has many potential and intersecting routes, which is why The Nature Conservancy is focused on leveraging science, partnerships and our legacy of conservation to chart a course that protects nature, achieves community goals and improves the outlook for future generations.

A Plan for the West

The Nature Conservancy recently released Power of Place-West, a comprehensive energy, economic and geospatial study that analyzed scenarios to meet clean-energy goals by 2050 in eleven Western states, including Arizona.

"We found the West has twenty times the suitable land we need for solar, thirteen times the suitable area we need for offshore wind, and three

times the suitable land we need for on-shore wind, if we pursue the most efficient mix of clean energy technologies and transmission pathways," said Nicole Hill, project lead and climate program director for TNC in Arizona.

Today, more than 50% of all new clean-energy projects in the West are developed on our most productive natural areas and working lands, posing a risk to habitats for species like the Sonoran pronghorn, desert tortoise, and Golden eagles. TNC science demonstrates that it is possible to responsible siting and development of future infrastructure and achieve economy-wide net-zero greenhouse-gas emissions, while also avoiding sensitive natural areas and working lands.

"Because TNC has built trust in Arizona for decades, our organization's research is valued in decision-making," said Hill. "For example, I was humbled to be appointed by the Governor's Office of Resiliency to the Arizona Power Plant and Transmission Line Siting Committee. That role allows me to be a part of accelerating clean-energy projects that work for people and protect biodiversity and generations of conservation success."



Arizona contains part or all of the four North American deserts, as well as diverse grasslands, forests, mountains and rivers. There are 72 threatened, endangered or candidate species in **Arizona**, including:

10 mammals | 9 birds 5 reptiles | 21 fish 2 amphibians | 22 plants

.....



3 billion

Globally, TNC will lead and support initiatives to reduce or store 3 billion metric tons of carbon yearly by 2030.

40 %

Renewable-energy production in the United States is expected to more than triple by 2030, resulting in about 40% of the nation's energy coming from sources such as wind and solar.

80%

of Arizona voters support their utility investing in clean-energy sources.

80%

Arizona's three largest utilities - Arizona Public Service (APS), Tucson **Electric Power (TEP) and Salt River Project** (SRP) - represent more than 80% of the electricity consumed in the state. Each has voluntarily committed to reaching net zero by 2050.

Getting From buses to bulldozers and sedans to SUVs, transportation is the largest contributor to There of greenhouse-gas emissions in Arizona.

Laveen **School District Driving Change**

Like generations of American children, the students of Laveen Elementary School District bookend their days on big yellow buses. Eric Kissel is the director of transportation with the Laveen District, which serves 8,000 children from this growing community in southwest Phoenix. "My job is to get kids safely from point A to point B." In recent years, he has come to define "safely" a bit more broadly.

Whether the sleepy quiet of chilly mornings or the rowdy clamor of sunlit afternoons, the acrid smell of burning fuel is ever-present on diesel-powered buses. Laveen is located in Maricopa County, which has repeatedly earned a failing grade for air quality from the American Lung Association.

Under Kissel's direction, Laveen is a leader in the transition from



Eric Kissel

fossil-fuel powered to electric school buses. Electric buses do not have direct emissions, which means less air pollution. And even if charging stations for buses are powered by fossil fuels, research shows that the lifecycle greenhouse-gas emissions from electric school buses are lower than diesel.

Kissel, who has had a long career in trucking and fleet management, said he initially had reservations about

electric buses, but his curiosity, commitment to his community and can-do attitude quickly took over. He discovered the emissions and pollution reduction benefits and the savings that can be realized with electric vehicles. He made the case to skeptics and earned the trust of the district's bus drivers, administrators and parents, and this past school year those efforts began to pay off. Nonprofit foundation A for Arizona helped secure two electric buses for Laveen from state funding.

"We have had nothing but positive returns," said Kissel. In fact, the first electric bus was driven by a 35-year veteran of the system who reported she heard, "Nothing! It's so much quieter than diesel," Kissel said. "The kids just settled in and the tone came down."

According to Kissel, at least 10 of the system's 44 diesel buses will be replaced with electric models in the next year with funding from the \$5 billion EPA Clean School Bus Program, and he anticipates fully half of Laveen's fleet will be electric within another year.





The Laveen Elementary School District has had strong community support for transitioning its fossil-fueled fleet to electric, improving air quality and reducing long-term costs.

Driving Impact

TNC supported research with Arizona Public Interest Research Group to understand how electrifying fleets can benefit Arizona's urban centers.

State and local governments in Arizona own 48,000 vehicles. There are viable electric alternatives for many of those.

Over the next decade, the state's 10 largest municipalities are likely to replace 4,000 light-duty vehicles; transitioning those vehicles to electric could realize nearly \$80 million in lifetime ownership costs. Phoenix alone stands to save more than \$25 million.

The economic value of air pollution reductions approaches \$14 million over the lifetime of replacement electric vehicles in those same municipalities.

\$76.5M

The Arizona Department of **Transportation has secured** \$76.5 million through the **Bipartisan Infrastructure Law** to deploy publicly accessible electric-vehicle chargers along interstate highways.

Scan to Read the Report



Tales of Two Cities

The built environment, prosperity and jobs, and the health of natural systems and people are intrinsically linked. That's why Arizona cities are leading bold initiatives to improve their communities and mitigate climate change.

OUR IMPACT:

The Nature Conservancy is proud to participate in the Resilient Southwest **Building Code Collaborative** to support the rapid adoption of construction methods designed to reduce the carbon footprint of structures. Homes and buildings last or decades, so their impact—be it positive or negative—endures. TNC will transfer lessons learned from this Arizona-centered initiative to other cities. increasing the speed and potential gains of better

building practices.

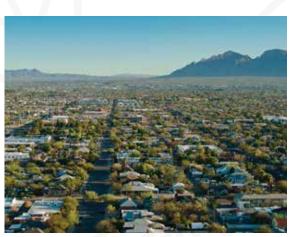
Leslie Ethen

TUCSON: INNOVATIVE COLLABORATION

The Resilient Southwest Building Code Collaborative

The need for efficient, affordable housing and buildings that preserve regional characteristics is an imperative with broad approval. Yet like many aspects of community, there are varying perspectives on how to achieve that outcome. Seeing opportunity at the intersection of those realities, the city of Tucson is wielding collaboration to transform decision-making about the built environment.

There are many ways for structures to use less energy and support climate mitigation, and Tucson's Sustainability Manager, Leslie Ethen, was determined



to bring those practices to the city. According to Ethen, just shortly after Tucson started on a new climate plan in 2021, "the Bipartisan Infrastructure Law established and funded the Resilient and Efficient Codes Implementation (RECI) program." The program was an avenue to progress, but there was a catch: individual municipalities are not eligible for the funds.

Ethen was not deterred, and in fact, the limitation spurred a bigger idea. "The network of municipal sustainability professionals is strong," Ethen says. "I reached out to peers within the Colorado River basin, and there was enthusiasm for coming together to apply for RECI funds."

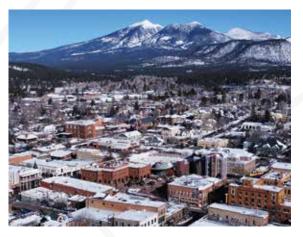
That outreach ultimately led to the formation of the Resilient Southwest Building Code Collaborative. Made up of representatives from local jurisdictions and state agencies, universities, community-based organizations, and technical partners across Arizona and New Mexico, the coalition is developing and planning for the adoption of a Southwest-specific building code that emphasize climate-smart shifts in construction and ensures a healthy, sustainable and equitable approach to building our future.

FLAGSTAFF: COLLABORATIVE INNOVATION

Comprehensive Planning and Direct-Air Carbon-Capture Technology

The city of Flagstaff has set out to achieve carbon neutrality by 2030, fully 20 years ahead of schedule for the state.

Their plan to get there is comprehensive. It includes home-energy efficiency and retrofit strategies, reducing vehicle miles traveled and converting the city's fleet vehicles to electric, and programs designed to engage and inspire business leaders, community advocates and local youth.



Those kinds of widely-adopted approaches are essential, but they are not enough to reach the city's ambitions. The plan also includes several innovative and forward-thinking strategies, such as new ways to reduce waste and manage carbon emissions from landfills. According to Nicole Antonopoulos, Flagstaff's Sustainability Director, "Our

carbon-neutrality plan's most unique aspect is a heavy reliance on carbon-dioxide removal. This requires innovation, technology, policy, market shifts, investment, and must be done with environmental justice and equity at the forefront."

Direct carbon capture is a technical process that removes carbon dioxide from the air. Although it is a relatively new technology, the use of carbon capture is picking up momentum. The Nature Conservancy's analysis indicates that while natural climate solutions such as planting trees and restoring soil health are cheaper and more readily available than engineered carbon removal in the near term, meeting climate targets will require removal beyond what natural strategies can provide. It is not "either/or," but instead both.

"I suspect we will see carbon capture as a common tool in emission-reduction plans," said Antonopoulos. Lessons learned in Flagstaff will affect how other cities adopt the rapidly advancing strategy.

OUR IMPACT:

Scheduled to open in 2025, CarbonCapture Inc. is building the world's first facility to mass-produce a modular direct-air carbon-capture system in Mesa. The Nature **Conservancy** in Wyoming has worked with the company to site the systems they produce in other states.



Nicole Antonopoulos

Finding the Way Together us can take to tackle climate change.

There are meaningful actions each of

At Home

"I'm supporting my kids' curiosity and excitement about nature and our environment, and teaching them about justice and equity. As they get older, I'm hopeful this will help them continue acting on climate change and issues of environmental justice."

> Maren Mahoney, **Director of the Governor's** Office of Resiliency





"Take advantage of assessments, rebates and online savings tools and tips from your energy provider to identify ways to conserve energy and lower bills, such as installing smart thermostats, sealing windows and using ceiling fans and blackout curtains. And get your family involved in tracking progress so that they see the outcome of their efforts."

Jacob Tetlow, Arizona resident and parent, Chair of The Nature Conservancy in Arizona Board of **Directors, and Executive Vice President of Operations with Arizona Public Service Company**

At School

Young people want to act and lead on behalf of the planet. That's why TNC and the Aspen Institute's This is Planet Ed initiative worked directly with youth leaders to co-produce a Youth Climate Action Toolkit, which provides students with the strategies and resources to advance local climate action.



At Work

"I bike to work about half of the year. Encourage your co-workers to try alternatives to driving alone, like transit, biking and walking, and consider working remotely or adopting a hybrid schedule for your teams. I find it helps to assess your carbon footprint for a baseline to inform change."

> Nicole Hill, TNC Arizona **Climate Program Director**

In Your Community

"Start by planting a tree in front of your house—it helps you save money on your energy bill and creates a more comfortable place to walk for your neighbors. And speaking of neighbors, check on them, particularly those who are elderly, during extreme heat days, because they often live alone and are more at risk of heat illness."

Eva Olivas, Executive Director & CEO of Phoenix Revitalization Corporation and TNC's Urban Heat Leadership Academy partner



"Get outside and explore. Take along a neighbor, a co-worker, a young person. It's when I talk to someone like my son that I really understand the power of nature and why the changes we all must make truly matter."

> Dan Stellar, TNC **Arizona State Director**



Scan the QR **Codes for** Resources

Energy Affordability



IRA Incentives



Youth Climate Toolkit



Carbon Calculator

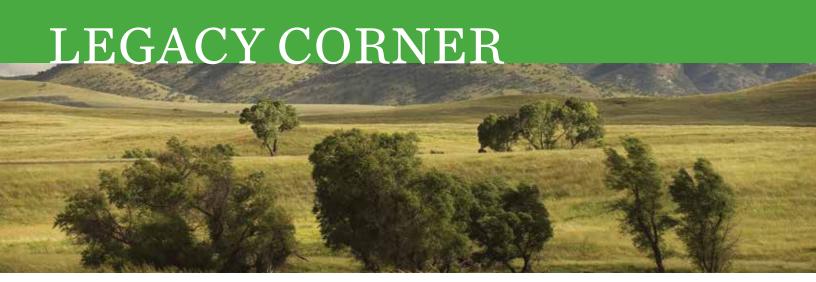


TNC Arizona Preserves Map



StoryMap: Changing the **Story of Heat in Metro Phoenix**





Meet Ted Mouras member of The Nature Conservancy's Legacy Club



WHAT'S YOUR STORY?

We'd love to hear from members about why they are passionate about nature and why they decided to include the TNC in their estate giving plans. Please send your story to Mark Ryan at mdryan@tnc.org

A Life Outdoors Centered Around Family and Service

I've been lucky enough to have lived in 3 foreign countries and 13 states, allowing me to experience a wide range of environments from my earliest childhood. My first memories of connecting to the outdoors come from my primary school days, living near Selfridge Air Force Base, outside Detroit. After school and on weekends my brother and I would hike through the woods splash through creeks and ride our bikes on backcountry roads. When our family moved to Colorado in the mid-1960s my brother and I were often joined by the older of my two sisters, leading all of us to a great love of the natural world. But it wasn't until I attended high school in Estes Park, Colorado that I realized I wanted a life in which the outdoors figured prominently.

I chose a career in the military—though that might not seem to fit the bill, I certainly did see a lot of the outdoors in many varied places. Army experiences were supplemented by vacation trips my wife, Melanie, and I have taken starting the year we were married, 1979.

Once I retired from the Army I began to volunteer with organizations associated with the environment. This accelerated after I retired, and at one point I was working more than 20 hours a week as an unpaid volunteer! One of the organizations for which I volunteered was The Nature Conservancy, and I've maintained that volunteer relationship in a variety of roles for the past 20 odd years.

Aside from TNC I also continue to volunteer with a number of environmentally-affiliated nonprofit and governmental organizations. My newest project is to help find a pathway to secure the future of the San Rafael Valley. So much of the rest of southeastern Arizona has been radically transformed by human action, and it would be a shame not to protect one of the last undeveloped landscapes, a place in which TNC has already been active.

While I recognize the importance of a range of environmental advocacy strategies, from education and outreach to more aggressive action involving protests and lawsuits, it's The Nature Conservancy with their goal of establishing lasting partnerships that convinced my wife and me to include TNC in our estate plans. As a Legacy Club member I know that our money will be put to good use once we are gone, and the natural world will be all the better due to TNC's advocacy.

Make a Lasting Memory



The Legacy Club is made up of people like Ted who have made planned gifts to The Nature Conservancy.

This group of dedicated supporters is committed to enabling conservation for future generations. This incredible community of like-minded supporters receives exclusive trip and event invitations, a special newsletter and more!

Learn more at nature.org/legacy.



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