REGIONAL OPEN SPACE STRATEGY FOR MARICOPA COUNTY

Who We Are

The Central Arizona Conservation Alliance (CAZCA)
Convened by Desert Botanical Garden, CAZCA aligns and unifies the efforts of more than sixty partner and collaborating organizations to conserve, restore, and raise awareness for open space in Central Arizona.

Through community engagement, collaboration, and strategic regional coordination, CAZCA works to ensure a sustainable regional open space system that supports healthy ecosystems and healthy communities.

Desert Botanical Garden (DBG)
For nearly 80 years, Desert Botanical Garden has been teaching and inspiring visitors from the local community and around the world, providing research, exhibits and more designed to help people understand, protect and preserve the desert's natural beauty.

The Garden's commitment to the community is to advance excellence in education, research, exhibition and conservation of desert plants of the world with emphasis on the Southwestern United States. We will ensure that the Garden is always a compelling attraction that brings to life the many wonders of the desert.

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CAZCA
CENTRAL ARIZONA CONSERVATION ALLIANCE

DESERT BOTANICAL garden

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Verde River Basin Partnership
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In January 2016, with significant human and financial resources from the Nina Mason Pulliam Charitable Trust, Desert Botanical Garden, Maricopa County Parks and Recreation Department, the McDowell Sonoran Conservancy, the Sonoran Institute, the Nature Conservancy, the Trust for Public Land, and more than thirty other participating organizations, the Central Arizona Conservation Alliance convened a multi-scale, stakeholder-driven, strategic planning process in an effort to reconcile our region's values for economic growth and conservation of our natural and cultural heritage. Through hundreds of collaborative workshops and meetings, and with copious research and outreach, that process has resulted in this Regional Open Space Strategy for Maricopa County (ROSS).

The ROSS is a first iteration road map and action agenda. It is in no way exhaustive. It lays out fundamental initial steps toward unified, cohesive, regional open space conservation, but acknowledges there still exists gaps in information, collaboration, and coordination. In the ROSS, we put forward clear, concise objectives and specific on-the-ground, highly achievable strategies inclusive of the social, cultural, environmental values of communities. When fully implemented, the ROSS will deliver a connected, distinctive, well-managed open space network that will enhance the unique character of the region and enable Maricopa County to realize the full benefits of open space for people, environment, and economy.

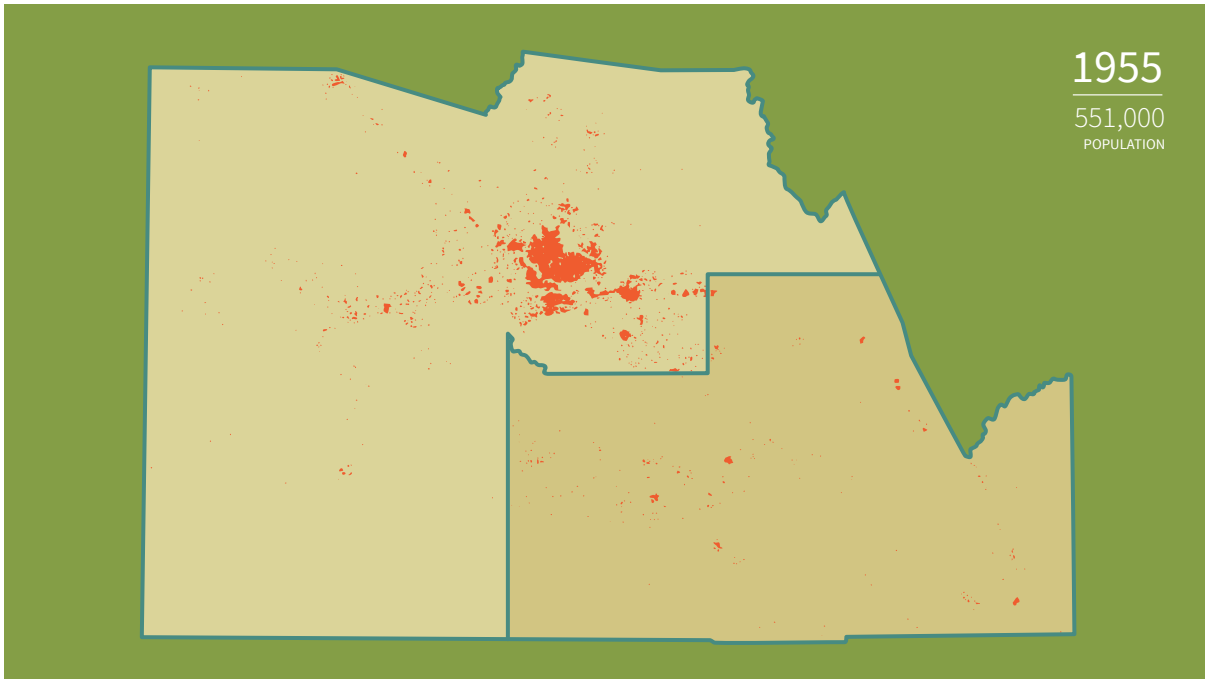
The ROSS is both strategic and tactical, simplistic where necessary, and more sophisticated where possible. As the community of practice tests ideas and advances its collective capacities and understandings, we will revisit, adapt, and revise the ROSS in turn. It is a living, breathing, responsive strategy and the commitment of the Central Arizona Conservation Alliance is to continue to nurture and forward its goals toward achieving a sustainable preserve system that supports healthy ecosystems and healthy communities.

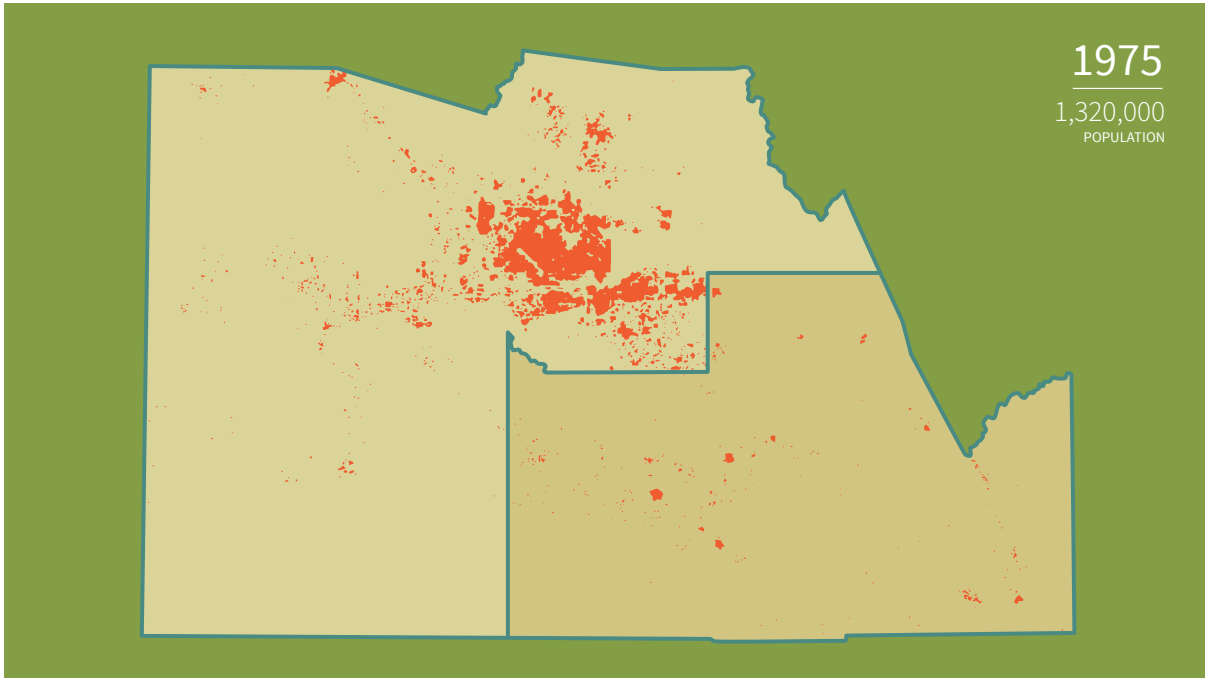
Introduction

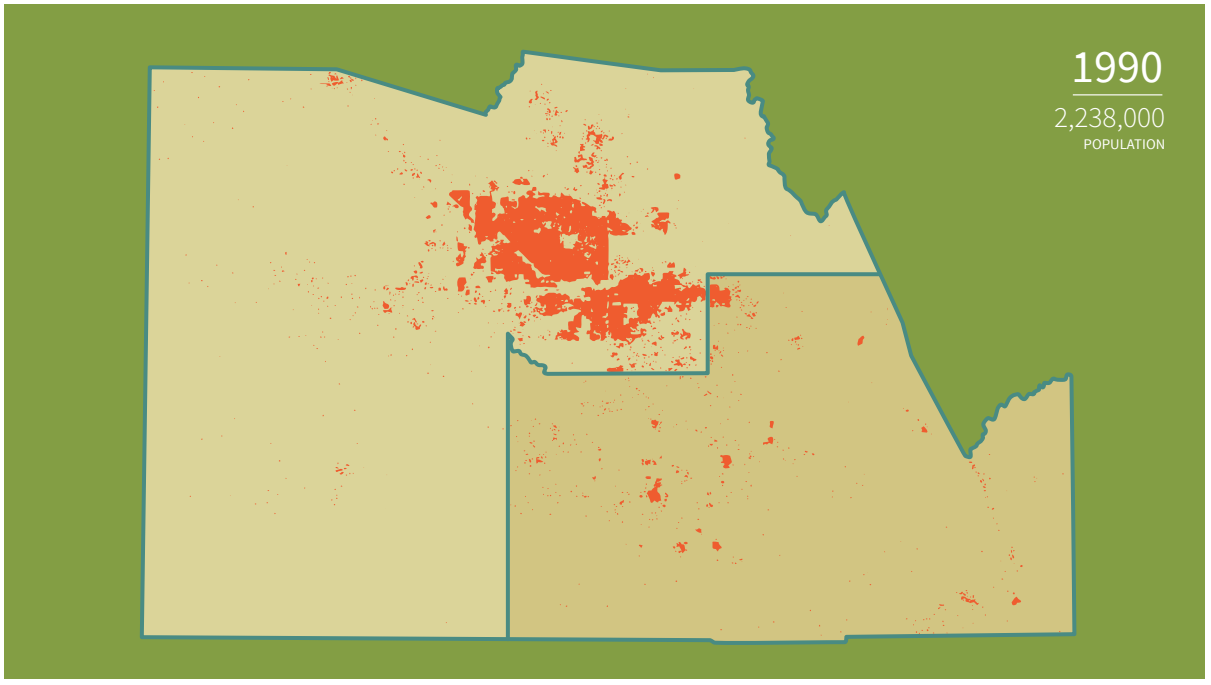
In 2016, Maricopa County became the fastest growing county in the United States, **adding 222 new residents each day**.[1] From 2010 through 2016, the Phoenix metropolitan area documented the highest percentage population gain of all the major metropolitan areas in the Western United States.[2] While it is striking to have earned the top spot, the region is no stranger to robust growth. It is, in fact, defined by growth. In the 20 years between 1955 and 1975, the Phoenix metropolitan area nearly tripled in population, growing from 550,000 residents to more than 1.3 million. In the 35 years that followed, population more than tripled again such that by 2010, the region was home to 4.2 million residents.[3] Since 1980, the Phoenix metropolitan area has been among the fastest growing in the nation– a trend projected to continue into the foreseeable future. **In just 22 years, by 2040, regional population is projected to climb to between 6.2 and 7.4 million residents.**[4]

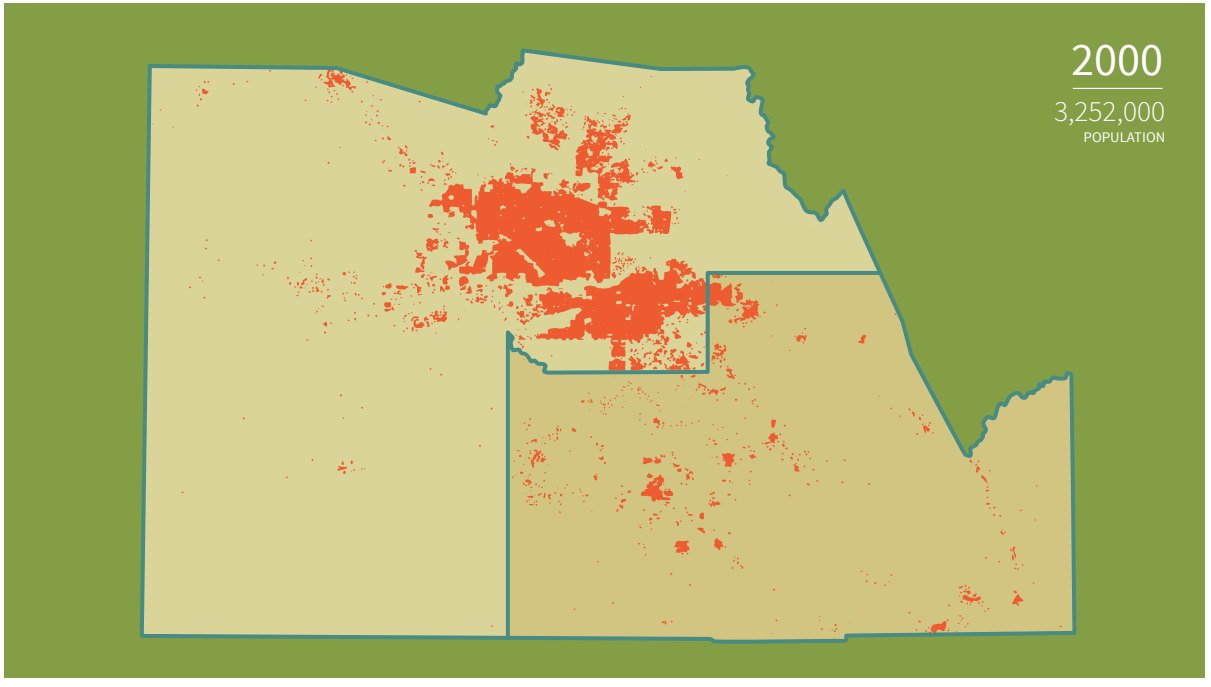
What is it about this particular region that over the decades has captured the hearts and minds of so many new residents? Certainly, that sweet combination of variables that manifest as “good quality of life” plays a tremendous role. Economic opportunity, affordable housing, entertainment experiences, good weather – Maricopa County has it all.

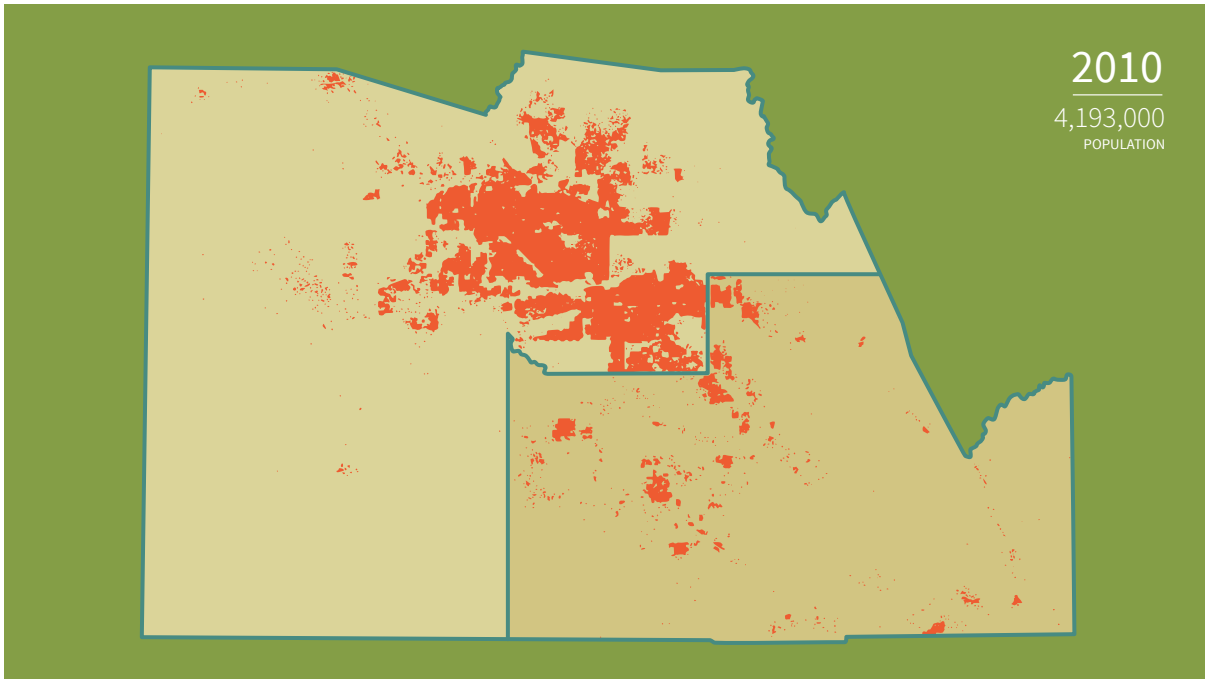
But, there is something unique to our region that stands apart and continues to draw people from across the country and the globe to visit, live, establish businesses, and stay in Maricopa County – and that is, the unparalleled beauty and distinctive character of the Sonoran Desert.

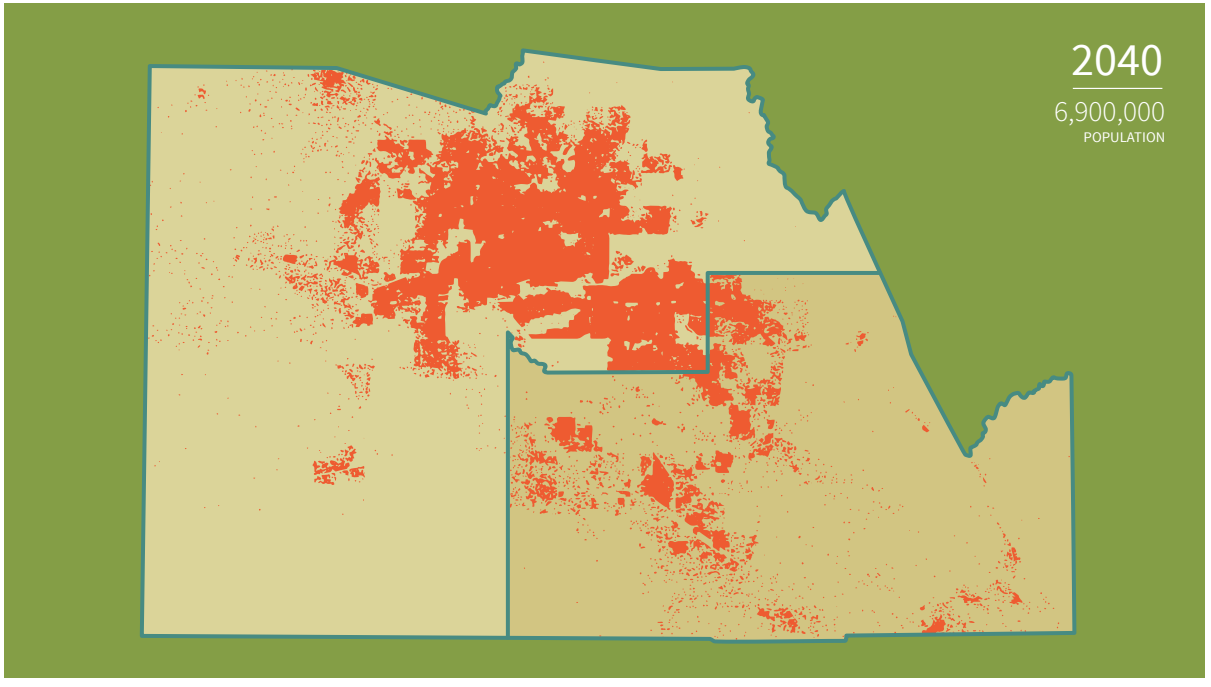

1955
551,000
POPULATION


1975
1,320,000
POPULATION


1990
2,238,000
POPULATION


2000
3,252,000
POPULATION



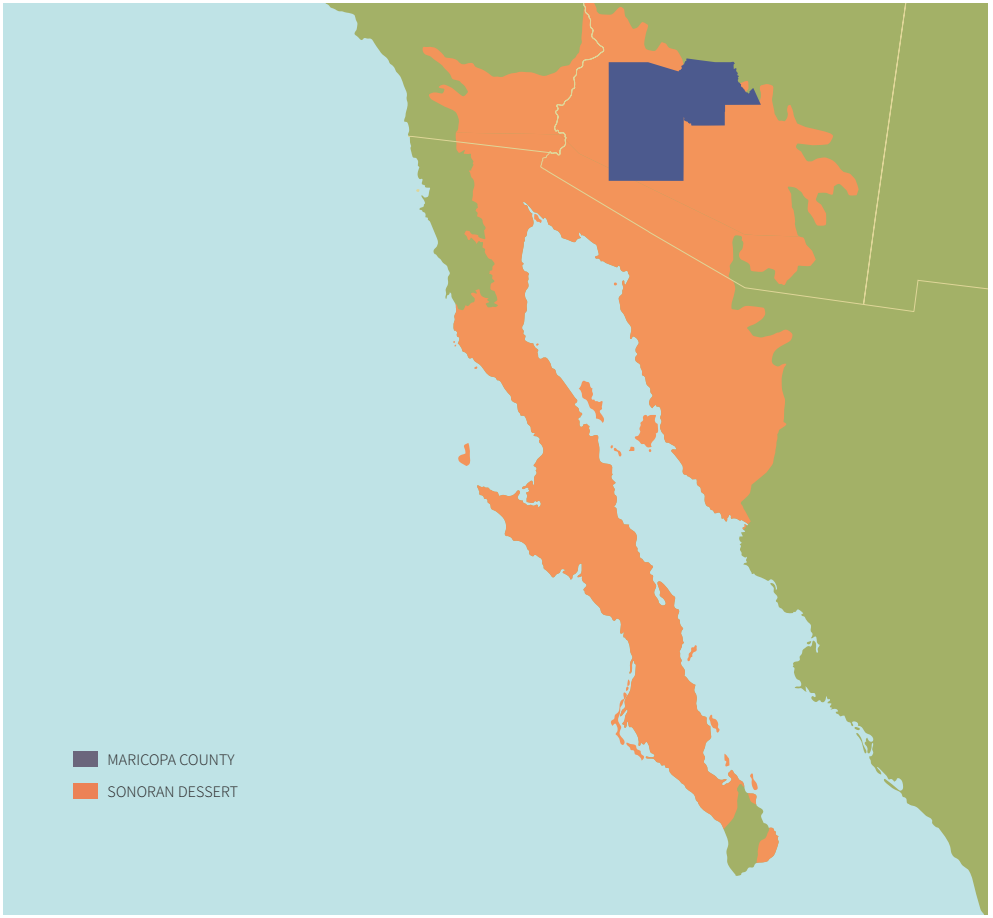


Source: Maricopa Association of Governments

Maricopa County is situated at the northeastern reaches of the Sonoran Desert, a singular place on the planet, rich in diversity of people, cultures, landscapes, flora, and fauna. Although it is sometimes perceived as desolate, **the Sonoran Desert is the most biodiverse desert in North America**,[5] and perhaps even the globe. Breathtaking natural features, vibrant scenery, and thousands of miles of trails make Maricopa County a true outdoor haven.

At least 60 species of mammals, more than 350 species of birds, +20 amphibian species, as many as 1000 species of bees, over 250 butterfly species, +100 species of reptiles, and about 30 species of native fish call this desert home.[5,6] Nearly 4,000 species of plants thrive in the Sonoran Desert – more than have been docmented in the Olympic rainforest.[7] The Sonoran Desert is an extraordinary and flourishing place.

The beauty, livelihoods, and recreational opportunities afforded by the Sonoran Desert are critical to Maricopa County's economy and quality of life and essential to the fabric of its communities. Arizonans, whether born and raised or transplants from elsewhere, overwhelmingly and continually point to the value of natural areas in their lives. In fact, in poll after poll, state and local residents cite parks, preserves, open space, and trails as the state's "greatest assets"[8] and what they "love most"[9] about where they live.




350


100


60


1000+


+250


20

Still, across the West, a real tension exists – typically, as we grow our cities and economies, we sacrifice the open space we love through both land conversion and degradation of habitat. In fact, for every doubling of human population, there is a tripling of land conversion to urban use.[10, 11]

In May 2017, a Morrison Institute study found that 80% of Arizonans are concerned about the state's natural environment and the level of care given to its natural resources. Sixty-eight percent of the study's respondents believe that, "protecting the environment should be given priority, even at the risk of slowing economic growth."[12]

As our region grows toward +7 million people, as our legacy parks and preserves age and accommodate more and more visitors, as we begin to transform millions of acres of Sonoran Desert, these are the opportunities and challenges of our time. How do we nearly double in population, grow our economy, and at the same time sustain community character, parks and preserves, habitats, and quality of life? **Where is it best to grow? What is best conserved?**

As leaders and decision-makers consider these challenges and others, a collective theme has emerged toward sustainability and resilience requiring approaches that cut across environmental, social, and economic systems. Coordinated open space, or, "natural infrastructure" planning, has been called the "harmonic confluence between environment, development, and economy."[13] When we plan for and coordinate open space conservation and management at the regional scale, multi-benefit, layered solutions emerge resulting in context-sensitive, cost-effective, politically viable, and highly implementable strategies for improving quality of life and protecting the environment.

The good news is that we can grow in ways that at once sustain our most valuable natural assets and services, promote thriving economies, and enhance regional quality of life. But, it will not happen by accident. That future requires a thoughtful plan for open space conservation and management in Maricopa County. It requires regional-scale strategies, real community engagement, tremendous coordination of efforts across organizations and fields of expertise, sustained inter-jurisdictional cooperation, financial investment, and a fundamental change in how we think about economic development, growth, land management, and conservation.

Conservation means development as much as it does protection. I recognize the right and duty of this generation to develop and use the natural resources of our land but I do not recognize the right to waste them, or to rob, by wasteful use, the generations that come after us.

- Theodore Roosevelt, Speech at Osawatomie, Kansas, on August 31, 1910

OPEN SPACE IN MARICOPA COUNTY

PHOTO BY SLAVEN GUIJIC

What is Open Space?

The State of Arizona (Revised Statute §11-935.01- 2016) defines open space as "any space or area characterized by great natural scenic beauty or whose existing openness, natural condition or present state of use, if retained, would maintain or enhance the conservation of natural or scenic resources, or the production of food and fiber.[1]" By this definition, and by widely accepted definitions of open space across the nation, open space is an inclusive term that embraces a broad array of lands such as parks and preserves, local and regional trail systems, natural and wilderness areas, waterways, forests and monuments, agricultural lands, natural resource lands, as well as a myriad urban open spaces. Open space may be protected or unprotected and public or private land and waters.

There are also more nuanced understandings of open space in local contexts. In some communities and neighborhoods, open space might mean the views, grounds for sports and games, or outdoor community gathering places. What communities consider to be open space, how it is perceived, how it is valued, and what it means in the lives of community residents and visitors varies from person to person, community to community.

However an individual or community, or even an individual within a community, defines their particular open space, communities typically attach similar ideals to these spaces: conservation, recreation, contact with nature, social gathering, and physical, emotional, and spiritual wellbeing.

KEIJI IWAI | ALAMY STOCK PHOTO

The Benefits of Open Space

More than the sum of its parts, an interconnected system of open space is a working landscape that provides extraordinary ecological, recreational, health, economic, and other benefits and services to our region.

ECONOMIC BENEFITS

Local, national, and global data agree that open space, parks, preserves, and trails contribute significantly to our economy. The American Planning Association, National Association of Realtors, National Association of Home Builders, Outdoor Industry Association, Arizona Forward, Arizona Office of Tourism and many other organizations describe economic benefits derived through open space. These include benefits such as:

- Direct consumer spending on outdoor recreation
- Direct jobs
- Positive effects on real property values
- Increases in municipal revenues
- Enhanced ability to attract and retain businesses and workers
- Enhance ability to attract and retain affluent retirees

DIRECT CONSUMER SPENDING: In Arizona, outdoor recreation generates $21.2 billion in direct consumer spending each year. Nationally, consumers spend more money on outdoor recreation economy than they do on pharmaceuticals, motor vehicles and parts, household utilities, gasoline and fuel, and education.[2]

DIRECT JOBS: In Arizona, the outdoor recreation industry generates more direct jobs (201,000) than aerospace, defense and tech sectors combined (184,000). These jobs produce $5.7 billion in wages and salaries annually.[2]

PROPERTY VALUES: As early as the 19th century, researchers were documenting the positive connection between open space and property values. From 1870s research of the great Frederick Law Olmstead to more recent studies from Phoenix and cities across the planet, the significant positive effect of open space on neighboring residential and commercial property value is indisputable.

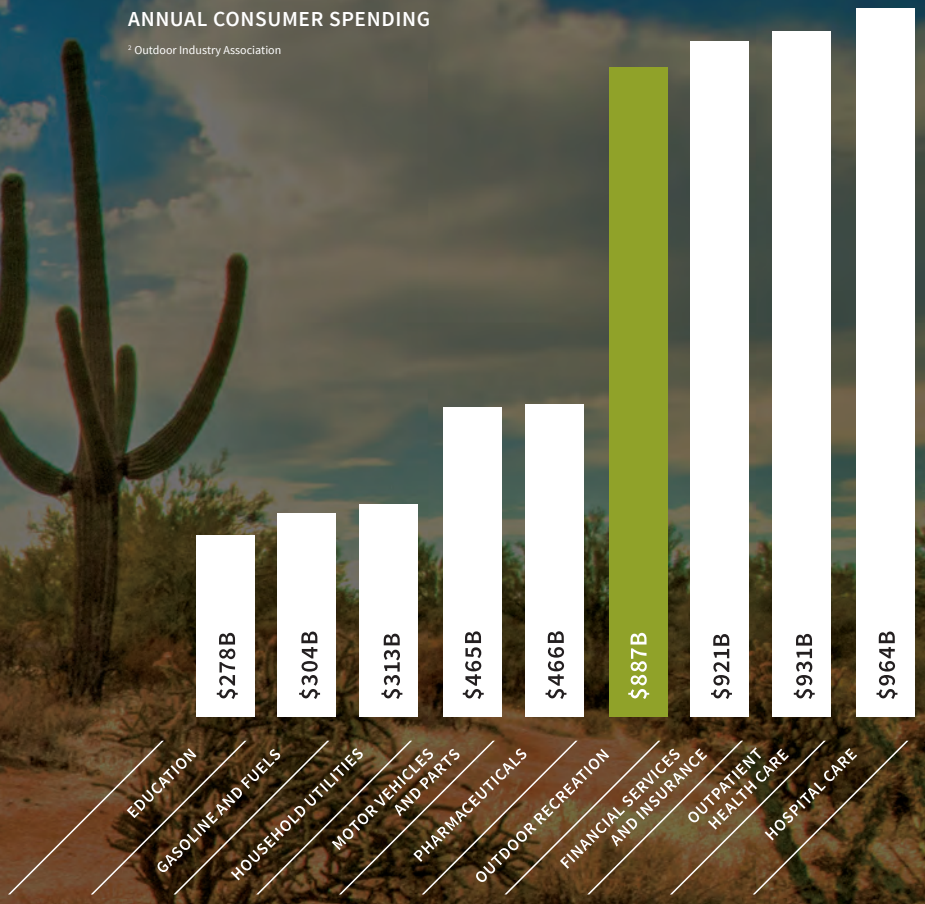
Enhanced property value is derived from people's willingness to pay a larger amount of money for a home located close to open space areas than they are for a comparable home elsewhere. A 2009 National Association of Realtors study found an average premium of 20% for properties proximate to open space.[3]

PHOTO BY FRANKLIN SEAL | RIM TOURS MOUNTAIN BIKE ADVENTURES

A Powerful Economic Sector

ANNUAL CONSUMER SPENDING

[2] Outdoor Industry Association



Municipal revenues: Increased property values and increased municipal revenues go hand in hand. Property tax is a critical revenue stream for cities. A consequence of enhanced property value is that property owner's pay higher property taxes to governments. In effect, this represents a capitalization of open space into higher property taxes for the proximate land and buildings.

Municipalities also benefit by revenues generated through outdoor recreation, travel, and tourism. In Arizona, $1.4 billion in state and local tax revenue was generated through outdoor recreation in 2016.[2] Nearly all (93%) Arizonans consider open space "an essential component" of the state's travel and tourism economy.[4]

An analysis prepared for the Arizona Office of Tourism states, "travel and tourism is one of the most important export-oriented industries in Arizona. Spending by visitors generates sales in lodging, food services, recreation, transportation and retail businesses – the 'travel industry'."[5] These sales support jobs and contribute tax revenue to local and state governments.

Open space not only pays for itself, it generates additional revenue.

Enhanced attraction of businesses and workers: In *Area Development*, Moody economists Dan White and Douglas Wynne write, "One of the areas most overlooked when comparing competing metro areas is a livability factor, or quality of life, that makes certain areas more attractive to individuals and thus businesses." In their analysis *The Regional Impact of Quality of Life on Entrepreneurial Decisions*, "recreation" is identified as one of the four most influential quality of life variables for business start-ups alongside public safety, public education, and child welfare.[6]

Access to recreation and open space is an important factor for individuals, families, and businesses in deciding whether an area is a desirable place to live, work, and do business. Parks, preserves, trails, and other greenspaces play a significant role in attracting and retaining the creative class, young innovators, knowledge workers, and affluent and healthy retirees to the region.

ARIZONA

THE OUTDOOR RECREATION ECONOMY GENERATES

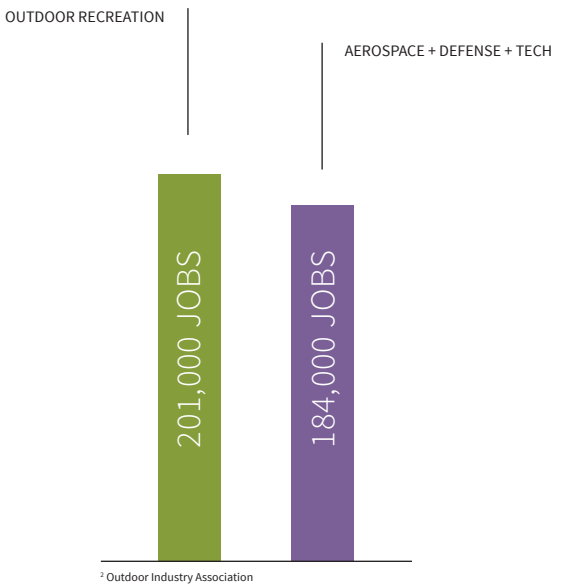
201,000 **DIRECT JOBS**

$21.2 BILLION **IN CONSUMER SPENDING**

$5.7 BILLION **IN WAGES & SALARIES**

$1.4 BILLION **IN STATE & LOCAL TAX REVENUE**

[2] Outdoor Industry Association



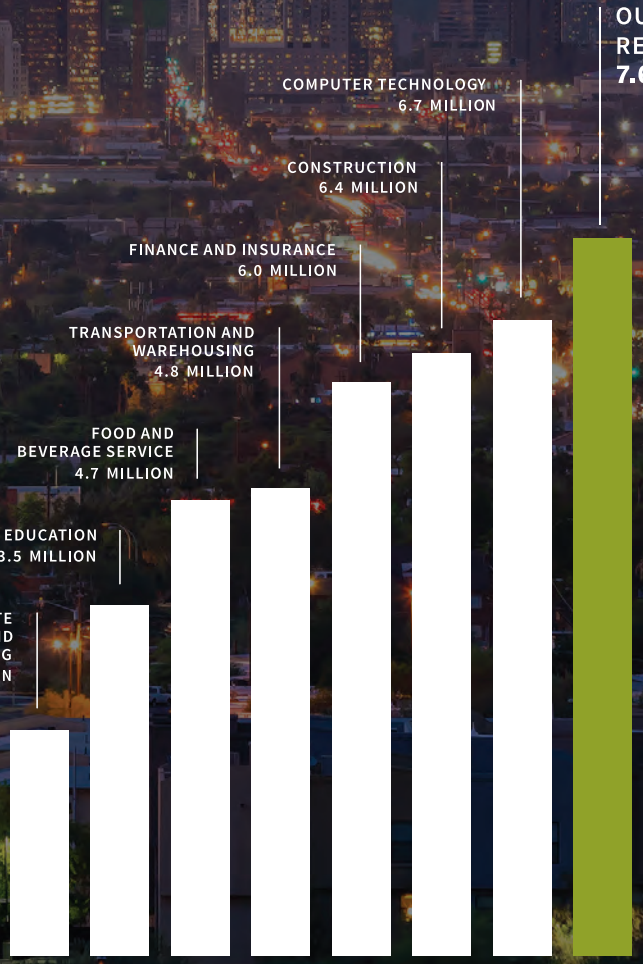
[2] Outdoor Industry Association

More jobs in Arizona **DEPEND ON OUTDOOR RECREATION** than on the aerospace, defense and tech sectors combined.

Job Comparison

BY INDUSTRY

[2] Outdoor Industry Association



CONSERVING BIODIVERSITY

Aside from the benefits plants, animals, and microbes obviously enjoy by their own conservation, nearly all of the other benefits and services individuals and communities derive by open space are established through biodiversity.

Biodiversity creates the web of life, and through it and the interactions between and among species and their environments, human life is made possible on this planet[7, 8]. High biodiversity also confers resilience in the ecological functioning of the landscape.

Well-planned and connected open spaces create extensive networks of habitat, allowing species to thrive, migrate, and adapt to changing conditions, thereby conserving biodiversity.

ENVIRONMENTAL

Open spaces convey indispensable environmental benefits to Maricopa County communities. Among other things, open spaces and natural infrastructure filter pollutants and dust from the air, protect water quality and quantity, reduce run off, regulate storm water, enhanced ground water recharge, reduce soil erosion, absorb carbon dioxide, regulate local climate, and help to mitigate the “urban heat island” effect.

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RECREATIONAL

Biking, hiking, running, horseback riding, hunting, fishing, birding, wildlife viewing, boating, climbing, photography, camping, backpacking, watersports, picnicking, and more – open space affords communities the opportunity to play, exercise, and enjoy the outdoors close to home.

PHYSICAL AND MENTAL WELLBEING

Overwhelming evidence suggests that people who live near open space spend more time outdoors and exercise more. Research also indicates direct correlations between exposure to green spaces and improved mental health and well-being; increases in happiness and positive emotions; reduced stress and anxiety; increased immune function; reduced respiratory, stroke, and circulatory mortality; and lower rates of lung, breast, and colon cancers.[9, 10, 11, 12, 13, 14] Time in nature has also been shown to bolster creativity, confidence, and problem solving skills.[15]

The evidence of these benefits is so overwhelming that doctors have begun prescribing nature as medicine!

SENSE OF PLACE & SOCIAL CAPITAL

Open space is a defining character and point of pride for our region, providing a sense of place in space and time and local distinctiveness. Parks, preserves, trails, and other open spaces serve as gathering places to socialize, engage in discourse, express culture, relax, build community cohesion, educate, and connect with the natural world.

Places left in their native state, and familiar to us from our earliest years, form our concepts of beauty and home. They comfort us, and not just through their aesthetic appeal, but through what they offer in the way of breathing room, habitat preservation, recreation, reflection and solitude, perhaps the most urgent pursuit of all in the urban world. These places are our constants and have much to do with our character.

- Maria Baier, Former State Land Commissioner, as quoted in The Arizona We Want

A Legacy of Open Space Conservation

Maricopa County has a rich history of community and civic leaders, governments, and conservation organizations aligning around shared goals to preserve local open space amidst development. In the 1920s, community leaders such as Dwight Heard, James Dobbins, Steven Mather, and U.S. Senator Carl Hayden banded together to save a favorite recreational spot from encroaching mining to establish South Mountain Park. In the 1950s, the Maricopa County Parks Commission was created, and the County acquired Estrella Mountain Regional Park, the first in what would become the largest County park system in the nation. In the 1960s, U.S. Senator Barry Goldwater was instrumental in seeing the iconic Camelback Mountain preserved as a park. The 1970s saw the conservation of the Phoenix Mountains Preserve through the efforts of community champions led by Dorothy (Dottie) Gilbert, Ruth Hamilton, Maxine Lakin, and Margaret Hance among others, and then Phoenix Mayor John Driggs.

Efforts continued through the 1990s when, thanks to the energies of the McDowell Sonoran Land Trust and Scottsdale residents, the City of Scottsdale passed a sales tax to support the acquisition of what is now the McDowell Sonoran Preserve, the largest municipal preserve in the nation.

The 1990s also saw the power of bi-partisan cooperation when lawmakers passed the Arizona Desert Wilderness Act, thereby protecting rare, wild places like the Harquahala Mountains, Big Horn Mountains, Signal Mountains, Hummingbird Springs, and the North and South Maricopa Mountains.

The list goes on – the Phoenix Sonoran Preserve, Peoria's Sunrise Mountain, Glendale's Thunderbird Conservation Park, and Buckeye's Skyline Regional Park are other examples of local open space conservation successes made possible by the confluence of planning, collaboration, community engagement, and governmental vision and leadership.

Revisiting Regionalism in Open Space Planning

These efforts and successes have been critical to conserving an enviable collection of open space across Maricopa County. However, as the region's population exploded, conservation and investments in maintenance of natural areas did not keep pace. Urban encroachment coupled with ever-increasing visitorship (at times, equal to or greater than that of popular national parks[16]) and diminishing resources for management has resulted in the isolation and degradation of many of these natural resources for people and nature.

Sustaining natural areas and the quality of life components they convey to residents of Maricopa County alongside the growth and development anticipated for the next 20 years will require a regional approach to open space planning and conservation. As is the case for transportation and economic development, regional planning for open space conservation will deliver far more powerful outcomes than will planning in isolation. **Planning at the scale where central cities, suburbs, and rural areas can be considered together is critical to sustaining and enhancing the ecological, economic, social, and public health benefits derived from open space.**

A NETWORK OF OPEN SPACE CAN COHESIVELY RESPOND TO CHALLENGES AND OPPORTUNITIES IN:

- WATER QUALITY & QUANTITY
- STORMWATER MANAGEMENT
- COMMUNITY & ECOLOGICAL CONNECTIVITY
- EXTREME HEAT & ISSUES OF CLIMATE CHANGE
- PUBLIC HEALTH
- HAZARD MITIGATION
- ECONOMIC DEVELOPMENT
- HABITAT CONSERVATION
- OUTDOOR RECREATION

In January 2016, with significant human and financial resources from the Nina Mason Pulliam Charitable Trust, Desert Botanical Garden, Maricopa County Parks and Recreation Department, the McDowell Sonoran Conservancy, the Sonoran Institute, The Nature Conservancy, the Trust for Public Land, and more than thirty other participating organizations, the Central Arizona Conservation Alliance convened a multi-scale, stakeholder-driven, strategic planning process in an effort to reconcile our region's values for economic growth and conservation of our natural and cultural heritage. Through hundreds of collaborative workshops and meetings, and with copious research and outreach, that process has resulted in this Regional Open Space Strategy for Maricopa County (ROSS).

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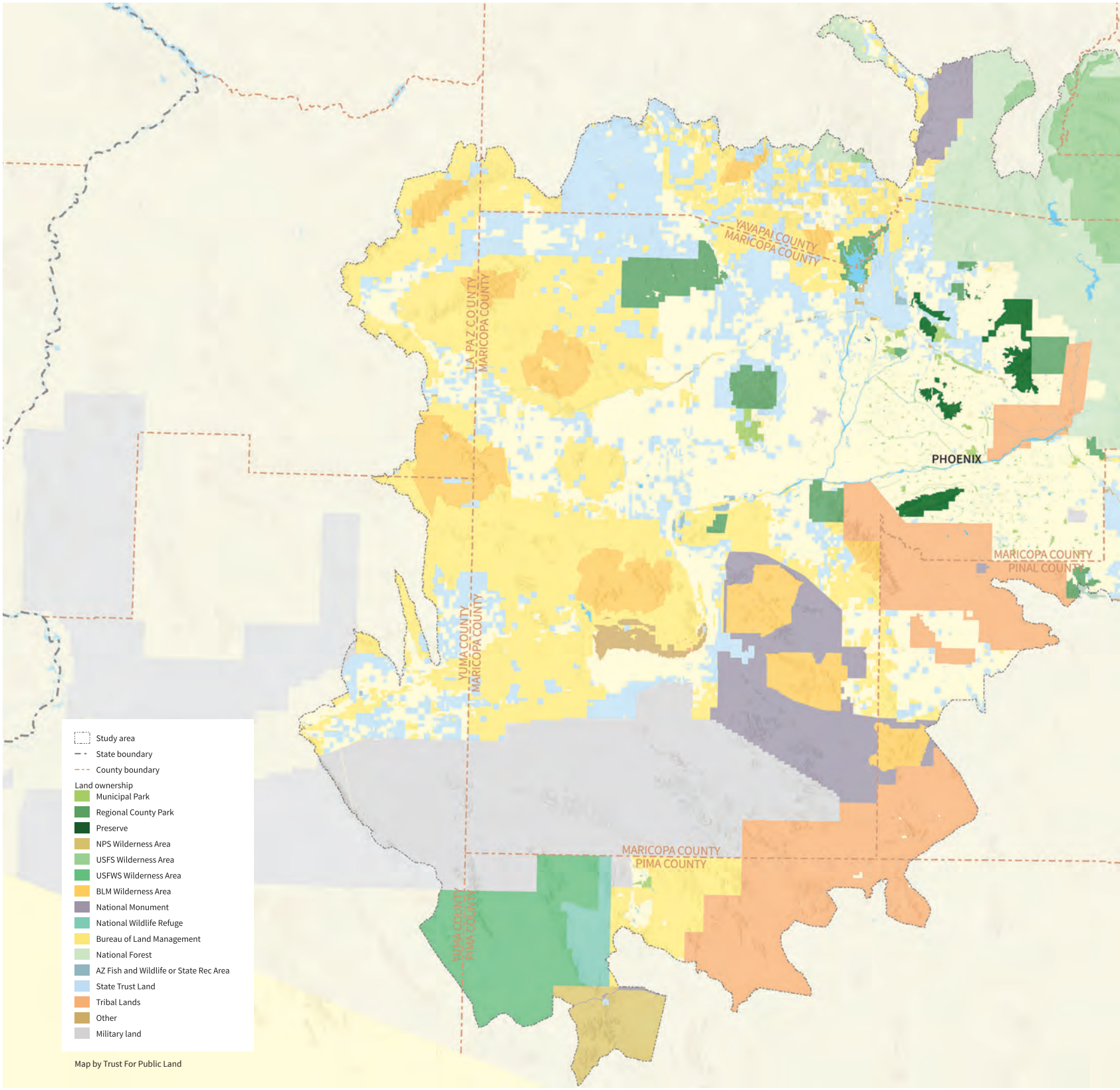
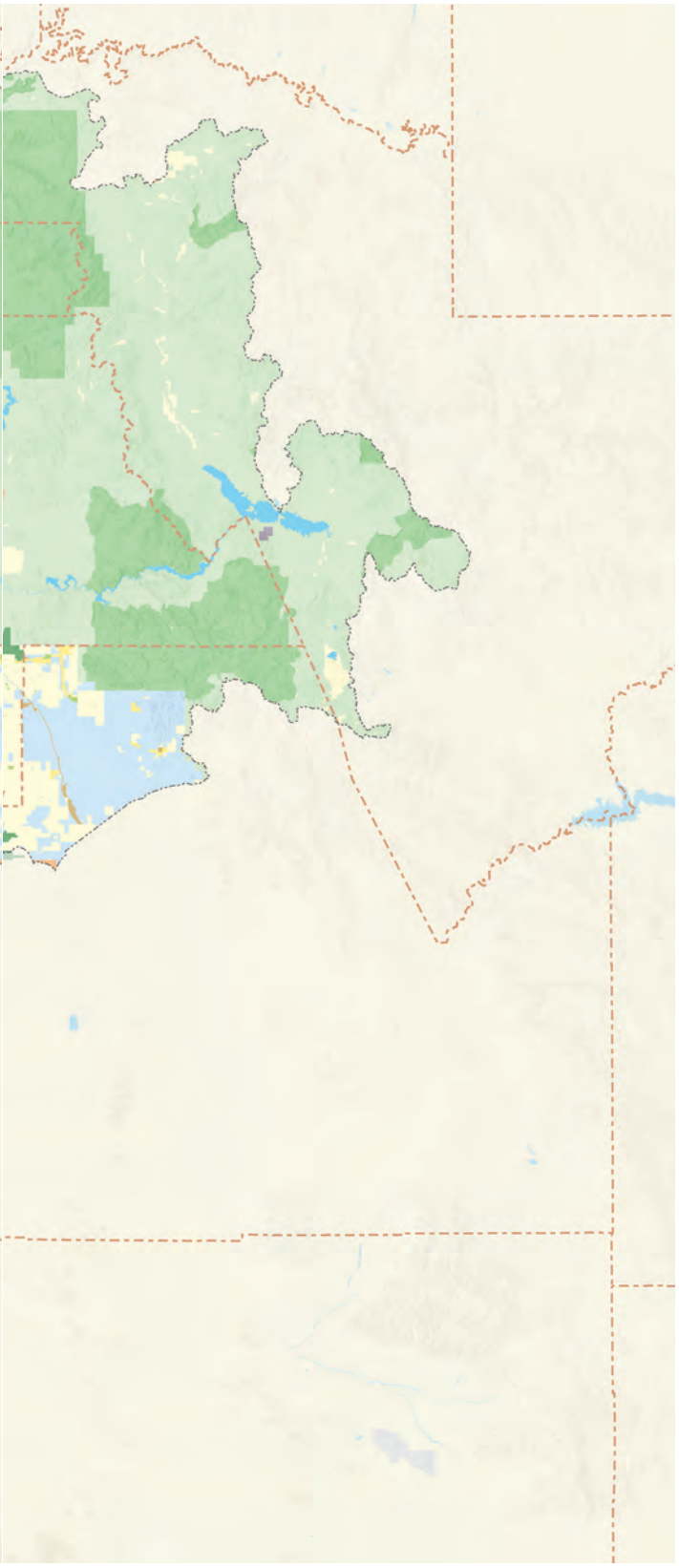
THE REGIONAL OPEN SPACE STRATEGY



Map by Trust For Public Land



The Regional Open Space Strategy Study Area

There are two project boundaries for the Regional Open Space Strategy – one socio-political and the other ecological. The logic for this is simple: while decision-making spheres, policies, and populations are defined by distinct lines on a map, these lines are nonexistent to plants, animals, water, and ecological processes. Some ROSS opportunities are realized through policy, necessitating the sociopolitical boundary (e.g. land trades) while others (e.g. wildlife connectivity) necessitate expansion and cooperation beyond County lines.

The socio-political boundary for the ROSS is defined as Maricopa County. Maricopa County spans more than 5.9 million acres in Central Arizona and is home to more than 4 million people. It is currently the fourth most populous county in the United States, and larger by population than 24 states. In 2016, Maricopa County was named the fastest growing county in the United States.[1]

The ecological boundary for the ROSS extends slightly beyond Maricopa County to encompass relevant watersheds and high-integrity habitat as defined by the Arizona Game and Fish Department and the Environmental Systems Research Institute (ESRI). This boundary will ensure that the region is able to tackle issues of wildlife connectivity, water resources, climate change, invasive species management, and restoration at scales that are ecologically meaningful.

Planning Process

Through an extensive challenges and opportunities mapping process and four years' collaboration and dialog, CAZCA partners identified four key opportunity areas for expanded discussion and regional planning. Working groups assembled and began to meet specifically and articulate goals around these specific challenges:

- **Land Conversion and its Pace, Scale, and Distribution**
- **Degradation of Natural Areas**
- **Increasing Disconnect Between People and Nature**
- **Insufficient Coordination and Collaboration in Open Space Planning and Conservation Actions**

Working groups articulated four responsive goals:

GOAL 1: Protect & Connect
Ensure a robust network of natural areas to sustain habitat, provide opportunity for recreation, support clean air and water resources, and improve resilience to drought, extreme heat, and flooding.

GOAL 2: Sustain & Restore
Identify and engage best practices in land management and restoration to sustain and enhance native biodiversity, positive recreational experiences, and socio-economic benefits connected with the Sonoran Desert.

GOAL 3: Love & Support
Build champions and the constituency of support and action for Sonoran Desert conservation by raising awareness and connecting people with nature.

GOAL 4: Coordinate & Elevate
Build upon the CAZCA foundation to ensure and amplify regional open space planning, management, and conservation successes.

Developing Strategies
Working groups transformed to become technical "Goal Teams" drawing on expertise from within and far beyond the partnership. Goal Teams were tasked with clarifying their overarching goal, defining objectives, and calling out specific tactical actions that would directly address the priority challenges, or would build the necessary capacity to address these challenges. Teams were asked to place great emphasis on ensuring that actions were implementable in the context of Maricopa County today.

From the outset, the Regional Open Space Strategy for Maricopa County has been a highly collaborative, iterative process drawing upon tremendous human resources and expertise from across the region and decade's worth of achievements and efforts from the broader open space stakeholder community. ROSS objectives and associated actions have evolved within and between the ROSS technical Goal Teams, with input from the CAZCA partners, and through concerted and sustained efforts to solicit direction and feedback from across the regional space. The ROSS has been reviewed at professional national and international meetings, by self-selected and specifically targeted stakeholders, the ROSS Advisory Council, and many other organizations, departments, agencies, and community groups.

In addition to catalyzing regional open space conservation and coordination, the ROSS works to unify, integrate, and support goals and objectives defined in existing municipal open space plans, general plans, sustainability strategies, and other regional, state, national and international conservation strategies.

ROSS GUIDING VALUES AND PRINCIPLES

Focus on what is most important

Make the strategy clear and concise

Emphasize implementation from the start

GOAL 1

PROTECT & CONNECT

NORMA JEAN GARGASZ | ALAMY STOCK PHOTO

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GOAL 1: PROTECT & CONNECT

Ensure a robust network of habitat blocks and connections to sustain native plant and animal communities, provide opportunities for recreation, support clean air and water resources, and improve resilience to drought, extreme heat, and flooding.

Background and Rationale

Since the early 20th-century, Maricopa County's population has grown almost 800% ushering a massive land conversion from natural open space to agriculture and/or urban space.[1] According to regional build out projections for the year 2040, more than 2,000,000 acres of Sonoran Desert in Maricopa County are planned for development.[2] This extraordinary growth of population and built infrastructure presents significant challenges to sustaining natural ecosystems, plant and animal populations, climate change resilience, high-quality recreation opportunities, and community identity and way of life.[3] Losses in these areas have wide-ranging and long-term consequences.

Beyond land use change itself, the way land is converted and how land conversion is distributed across the landscape contributes greatly to the negative effects of land use change. Conventional grid development with hard edges between the natural and built environments disrupts wildlife connectivity, alters hydrology, and results in tremendous loss and fragmentation of habitat.

Recognizing that we cannot conserve everything, but that we need and/or desire to conserve some things, it stands to reason that if equipped with the tools and information to do so, leaders would place high priority on regional open space designations that deliver the most value and benefit to nature, communities, and residents.

The ability to sustain natural systems and high-quality opportunities for people to enjoy nature depends upon growing and connecting the region's system of protected areas, increasing our capacity and willingness to develop in ways that retain natural infrastructure, and in coordinating open space conservation at the regional scale. Actions identified under Goal 1 aim to build capacity, improve access to information, develop decision-support mechanisms, and expand regional coordination to conserve the region's most strategically important lands and waters. Several of the actions identified in this goal will inform and facilitate successes in Goals 2, 3, and 4.

Successful implementation of these actions will greatly improve the region's capacity to achieve an interconnected system of open space capable of sustaining natural ecosystems; the economic, social, health, and ecological services they deliver; and high-quality recreational amenities that Maricopa County's residents and visitors value.

OBJECTIVE 1.1

Develop a GIS-based data visualization and modelling tool, or "Greenprint," to support decision-makers in the identification of Maricopa County's most ecologically and culturally valuable resources for conservation.

ACTION	DESCRIPTION	SUGGESTED LEAD ORGANIZATION(S)	OTHER PARTICIPANTS	TARGET YEARS
1.1.1	Identify and engage natural infrastructure planning partners.	DBG, MSC, SI, MCPRD		*Done
1.1.2	Research models, case studies, and existing tools and services for visualizing and modelling for natural assets.	DBG, MSC, SI, MCPRD		*Done
1.1.3	Select lead partner(s) for technical services and tool development.	DBG, MSC, SI, MCPRD	TPL, TNC, AGFD	*Done
1.1.4	Identify initial priority asset types to be included and modelled.	Goal Team 1, Steering Committee, Advisory Council, and Planning Team, together with CAZCA partners		Ongoing
1.1.5	Bring data out of silos and compile across types/goals.	Goal Team 1 with selected technical services partner		Ongoing
1.1.6	Assign relative weights to asset types within and across goals.	Goal Team 1 with selected technical services partner		Ongoing
1.1.7	Develop the tool, technical analysis, and modelled outputs.	TPL, AGFD, DBG, TNC	Goal Team 1	*Done
1.1.8	Test the tool.	DBG, TPL, SI, AGFD, TNC, ASU	Select municipalities	Ongoing

* Implementation began as the strategy was being developed

OBJECTIVE 1.2

Identify and map natural infrastructure and open space conservation priorities. Develop a comprehensive regional open space vision inclusive of priorities spanning urban, suburban, rural, and wilderness areas.

ACTION	DESCRIPTION	SUGGESTED LEAD ORGANIZATION(S)	OTHER PARTICIPANTS	TARGET YEARS
1.2.1	Identify and convene stakeholders and a technical advisory team to determine priorities.	SI, DBG	Diverse open space decision makers, stakeholders, and users	*2017-2019
1.2.2	Establish prioritization criteria to Include considerations as: • Ecological value • Socio-cultural value • Development pressures • Gaps in protections • Gaps in recreational opportunities • Gaps in public access to nature • Low hanging fruit • Local and community priorities • Potential for acquisition	SI, DBG, MSC, MCPRD, AGFD, TNC, TPL, ASU, AudAZ, Goal Team 1, and stakeholders convened in Action 1.2.1		*2017-2019
1.2.3	Analyze natural infrastructure assets against defined criterion to determine relative conservation value.	SI, DBG, MSC, MCPRD, AGFD, TNC, TPL, ASU, AudAZ, Goal Team 1, and stakeholders convened in Action 1.2.1		*2017-2019
1.2.4	Develop and publish open space visions with mapped priorities.	SI, DBG, MSC, MCPRD		*2017-2019

* Implementation began as the strategy was being developed

OBJECTIVE 1.3

Advocate for integration of natural infrastructure concepts, planning, and open space conservation priorities into decision-making.

ACTION	DESCRIPTION	SUGGESTED LEAD ORGANIZATION(S)	OTHER PARTICIPANTS	TARGET YEARS
1.3.1	Train planners, developers, engineers, and other practitioners and decision-makers in natural infrastructure concepts and use of the GIS-based Greenprint.	DBG	TPL, AGFD, SI, MSC, MCPRD, TNC, ASU, AudAZ, AAEE	2018-
1.3.2	Advocate for adoption and integration of the Greenprint by state and local governments and the Maricopa Association of Governments.	DBG	MSC, WTMC, SI, TNC, MCPRD, AudAZ, DFLT, SALT, and local, state, and federal agencies and departments	2018-
1.3.3	Advocate for integration of natural infrastructure planning concepts into university and continuing education curriculum for planners, engineers, urban designer, architects, develops and other applicable career fields.	DBG, SI, AAEE, TNC, ASU-School of Geographical Sciences and Urban Planning, ASU - Design School, ASU - School of Community Resources and Development		*2017-

* Implementation began as the strategy was being developed

OBJECTIVE 1.4

Continuously update and improve the Greenprint to meet the needs of decision-makers, support multi-benefit regional open space solutions, and advance regional priorities.

ACTION	DESCRIPTION	SUGGESTED LEAD ORGANIZATION(S)	OTHER PARTICIPANTS	TARGET YEARS
1.4.1	Determine process for Greenprint updates, improvements, and expansions.	DBG	TNC, TPL	2018-2019
1.4.2	Continue to service the Greenprint; retain resources for continued hosting and data updates.	DBG	TPL	Ongoing
1.4.3	Improve and expand the Greenprint aligned to regional priorities.	DBG	TNC, TPL, AGFD, MSC, CAZCA partners, and other stakeholders	Ongoing

PHOTO BY STEVE BLACKWELL

GOAL 2

SUSTAIN & RESTORE

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GOAL 2: SUSTAIN & RESTORE

Identify and engage best practices in land management and restoration to sustain and enhance native biodiversity, positive recreational experiences, and socio-economic benefits connected with the Sonoran Desert.

Background and Rationale

With its iconic saguaros and warm winter climate, the Sonoran Desert is a prime destination for visitors seeking recreation and respite. Millions upon millions of residents and tourists recreate in the Maricopa County region, which is rich in protected natural areas. Thanks in large part to the vision of mid-late 20th century community and governmental leaders who, amidst rapid urbanization, had the foresight to set aside nearly 200,000 acres of land as parks and preserves, the region is home to the largest set of urban protected areas in the nation.[1] These lands are incredible ecological, economic, and social assets.

However, that legacy preserve system is under strain. With visitorship topping that of popular national parks,[2] the system is stressed by a myriad direct visitor impacts, such as prohibited off-trail hiking, biking, and off-road vehicle use. These impacts, coupled with historic grazing, fire impacts, invasive species incursions, impacts from climate change and the urban heat island, urban encroachment, and limited resources for resource management, serve to greatly undermine the sustainability and resilience of these regional assets.[3]

The ability of park managers to effectively mitigate degradation, ensure positive user experience, and apply principles of sustainable natural resource management depends upon: 1) the capacity to engage in long-term monitoring, 2) a determination of limits of acceptable change, 3) knowledge of invasive, non-native plant distributions and removal techniques, 4) an understanding of best practices for restoration and rehabilitation, and 5) access to genetically appropriate native plant materials.

Developing these capacities requires coordination and collaboration on a regional scale. Actions under this goal will lead us towards a coordinated approach to better understand the threats, constraints, and solutions required for sustainable natural resource management and the long-term preservation of our regional open spaces system. Undertaking these actions will require financial and organizational support as well as coordination with private and public sectors. Several objectives and actions in Goal 2 will inform the work of Goal 3.

GOOGLE EARTH IMAGE

OBJECTIVE 2.1

Detect any significant change to biodiversity and water courses occurring in protected areas due to stressors.

ACTION	DESCRIPTION	SUGGESTED LEAD ORGANIZATION(S)	OTHER PARTICIPANTS	TARGET YEARS
2.1.1	Form a subcommittee to prioritize specific monitoring or research needs.	MSC	DBG, ASU, CoPPRD, MCPRD, MCFCD, AudAZ, ADOT, WTMC, CoPCSD, CoBCSD, CoTPR, AGFD, TNC, USGS, WERC, USFS, municipalities, and tribal communities	*2017-2018
2.1.2	Based on the selected priorities, conduct a literature review as well as an inventory of available data. Identify appropriate methods and experimental design for priority research or monitoring. Consider national protocols, e.g. BLM, NPS, NISC, or integration with ASU's Central Arizona-Phoenix Long Term Ecological Research project's sites/data.	MSC	DBG, ASU, CoPPRD, MCPRD, MCFCD, AudAZ, ADOT, WTMC, CoPCSD, CoBCSD, CoTPR, AGFD, TNC, USGS, WERC	*2017-2018
2.1.3	Identify mechanisms to implement regional monitoring and/or research program. Analyze and interpret data to make management recommendations.	MSC	DBG, ASU, CoPPRD, MCPRD, MCFCD, AudAZ, ADOT, WTMC, CoPCSD, CoBCSD, CoTPR, AGFD, TNC, USGS, WERC, USFS	*2017-2018

* Implementation began as the strategy was being developed

OBJECTIVE 2.2

Understand the social, environmental, and economic benefits to recreation and non-recreation users associated with the Sonoran Desert.

ACTION	DESCRIPTION	SUGGESTED LEAD ORGANIZATION(S)	OTHER PARTICIPANTS	TARGET YEARS
2.2.1	Conduct literature review and mine data to determine the suite of benefits resulting from the open space.	ASU-SCRD	DBG, MCPRD, CoPPRD, ASP, AZF, GPEC, ASU-CAP LTER	*2017-2019
2.2.2	Through a series of surveys, identify the primary social, environmental, and economic benefits associated with recreation and non-recreation activities in and around Sonoran Desert ecosystem, as well as the associated risk of income loss that would result from ecosystem degradation.	ASU-SCRD	DBG, MCPRD, CoPPRD, ASP, AZF, GPEC, ASU-CAP LTER, USFS, municipalities, and tribal communities	2019-

* Implementation began as the strategy was being developed

OBJECTIVE 2.3

Conduct research to determine acceptable levels of impact from visitor use, provide guidance on developing monitoring strategies, and use information derived from monitoring to evaluate management actions.

ACTION	DESCRIPTION	SUGGESTED LEAD ORGANIZATION(S)	OTHER PARTICIPANTS	TARGET YEARS
2.3.1	Conduct literature review and data mining to determine best practices for conducting Visitor Use Management research. Identify any similar studies that have already occurred.	ASU-SCRD	DBG, MCPRD, CoPPRD, municipalities, and tribal communities	2019
2.3.2	Identify desired conditions for resources and visitor experiences, select indicators and establish thresholds, compare and document the differences between existing and desired conditions, and identify visitor use management strategies and actions to achieve desired conditions.	ASU-SCRD	MSC, DBG, MCPRD, CoPPRD, USFS, BLM, municipalities, and tribal communities	2020-2022
2.3.3	Enable and assist park managers in monitoring to ensure thresholds are not exceeded and take appropriate management action based on documented conditions (adaptive management).	ASU-SCRD	MSC, DBG, MCPRD, CoPPRD, USFS, BLM, municipalities, and tribal communities	2022-
2.3.4	Conduct a training workshops on Visitor Use Management for park managers.	ASU-SCRD, MCPRD	MSC, DBG	2022-

OBJECTIVE 2.4

Identify best management practices and guidelines for wildlife and habitat restoration including climate change considerations such as drought in the Sonoran Desert region.

ACTION	DESCRIPTION	SUGGESTED LEAD ORGANIZATION(S)	OTHER PARTICIPANTS	TARGET YEARS
2.4.1	Create a "CAZCA Restoration Lab" to foster collective learning, resource sharing, training, and implementation support for Sonoran Desert restoration. An essential function of the Lab will be to identify and fill information gaps for best practices. Host quarterly speaker and workshop series to share restoration projects and challenges and elicit input from participants. Post information presented in the series and create a web-based forum for discussion and information sharing.	MSC, DBG	TNC, WTMC, MCPRD, CoPPRD, AGFD, BOAZ, ACNC-SOMO, AudAZ, ASP, USFS, MCFCD, ADOT, BLM, USFS, CNUW, ASU, municipalities, tribal communities, and any agency or department responsible for revegetation, restoration, or rehabilitation	*2017-
2.4.2	Support and coordinate communication and outreach of field research experiments designed to test techniques to improve knowledge and best practices of restoration and native plant materials propagation[4].	MSC, DBG	AGFD, AudAZ, WTMC, WERC, USGS, USFS, BLM, ACNC-SOMO, AAEE, SWSP	2018-
2.4.3	Conduct experiments designed to fill research gaps in best practices of restoration and native plant materials propagation in the region[4].	MSC, DBG	ASU, CNUW, WTMC, MCPRD, CoPPRD, AGFD, TNC, USGS, USFS, BLM, WERC, ACNC-SOMO, SWSP	2018-

* Implementation began as the strategy was being developed

OBJECTIVE 2.5

Ensure a reliable supply of genetically appropriate native plant material for restoration, revegetation, and other needs[5].

ACTION	DESCRIPTION	SUGGESTED LEAD ORGANIZATION(S)	OTHER PARTICIPANTS	TARGET YEARS
2.5.1	Assess the need for native plant materials regionally. Survey public land agencies and private entities to calculate long-term seed needs. These needs will include materials for restoration, catastrophic events, and urban infrastructure projects, etc.	DBG, MSC	PCA, AudAZ, SWSP	*2017-2018
2.5.2	Assess the capacity of private, public, and tribal producers to meet the need for native plant materials[6]. Inventory seed collections available for amplification and assess capacity for propagating local ecotypic seed and other materials in private and public sectors within our ecoregion.	DBG, MSC	PCA, SWSP	2018
2.5.3	Identify the key species to include in a propagation program. Select an initial set of 10-15 species within plant functional groups and plant community types. Consider future climate change scenarios and "prestoration" in selecting a robust seed mix. Create a database on plants, germination requirements, storage requirements, propagation techniques, etc. that will help practitioners select species mixes appropriate for their site and needs.	DBG, MSC, WERC	PCA, SER-SW Chapter, CNUW, AudAZ, MCPRD, MCFCD, ADOT, BLM, USFS, SWSP, municipalities, tribal communities, and any agency or department responsible for revegetation, restoration, or rehabilitation	2018
2.5.4	Develop and share existing tools that enable managers to make ecologically based decisions in selecting a seed mix or plant palette for ecological restoration, such as plant community composition maps, seed transfer zones[7], and the plant germination database described in Action 2.5.3.	DBG, MSC, WERC	PCA, SWSP	2018-
2.5.5	Develop project to collect and propagate local seed to meet regional need[8]. Analyze capacity and demand assessments and develop appropriate mechanisms to develop a propagation program incorporating existing resources. Possible programs may include a networked model, a collective, native seed farm, or catastrophic event seed bank.	DBG, BLM, WERC	TNC, CNUW, MCPRD, MCFCD, ADOT, AGFD, USFS, SWSP, municipalities, tribal communities, and any agency or department responsible for revegetation, restoration, or rehabilitation	2018-

* Implementation began as the strategy was being developed

OBJECTIVE 2.6

Identify best practices and enact a strategic plan for invasive, non-native species management in the Sonoran Desert region.

ACTION	DESCRIPTION	SUGGESTED LEAD ORGANIZATION(S)	OTHER PARTICIPANTS	TARGET YEARS
2.6.1	Identify high priority nonnative plants and animals for the region. Compile a list of invasive species occurrence in Maricopa County parks and preserves and prioritize species and areas to include in mapping, informational, and strategic efforts. Create a list of relevant regional and national invasive species programs[9].	DBG, MSC	SWVMA, CoPPRD, AudAZ, ASDM, ADOT, MCPRD, ADOT, AGFD, ASP, BLM, USFS, municipalities, regional fire depts., and tribal communities	2018-2019
2.6.2	Work with partners to set a standardized system for citizen science invasive species mapping and strategic efforts[10]. Consider the creation of a certification to streamline detection, treatment and monitoring activities, a set of minimum standards for control to simplify this process and maximize returns on the project investment in volunteer training.	DBG, MSC	CoPPRD, PMPC, MCPRD, ASU, ACNC-SOMO, AGFD, USFS, BLM, ASP, municipalities, and tribal communities	2018-2022
2.6.3	Post relevant information regarding invasive plant and animal management strategies for high priority species. Ensure that all partners can easily access and share information about management decisions, improve strategy efforts, and provide a single comprehensive method for inputting mapping and monitoring data[11].	DBG	MSC, AGFD, ACNC-SOMO, ASDM, PMPC, USFS, BLM, ASP, municipalities, and tribal communities	2018-
2.6.4	Conduct field research to improve knowledge of best practices. Identify gaps in best practice guidelines and develop studies to improve knowledge.	MSC	DBG, CoPPRD, MCPRD, ASDM, NPS- Saguaro, SWVMA, ACNCS-SOMO, USFS, BLM, ASP, municipalities, and tribal communities	2018-

Objective 2.6 – Continued on next page

OBJECTIVE 2.6 (Continued)

Identify best practices and enact a strategic plan for invasive, non-native species management in the Sonoran Desert region.

ACTION	DESCRIPTION	SUGGESTED LEAD ORGANIZATION(S)	OTHER PARTICIPANTS	TARGET YEARS
2.6.5	Create regional strategic plan for invasive, non-native plants and animals, including a contingency plan if prioritized invasive species eradication and control is not attainable[12]. To the extent possible, align with existing Arizona and U.S. efforts. There will be three major components of the regional strategic plan: • Management • Regional Collaboration • Legislative Action	DBG, MSC	All relevant local, state, and tribal land management agencies and departments, SWVMA, TNC, ACNC-SOMO	2019-2020
2.6.6	Work with partners to develop and implement park-specific action plans. In addition to the regional strategy, parks and preserves will also likely require invasive management plans. CAZCA will offer guidelines and support in this area.[13]	DBG, MSC	All relevant local, state, and tribal land management agencies and departments, SWVMA, TNC, ACNC-SOMO	2020-
2.6.7	Expand public understanding and increase awareness of how non-native invasive species impact natural resources, communities and economies. Leverage existing programs and events.[14]	DBG, MSC	ASDM, NPS-Saguaro, SWVMA, TNC, ACNC-SOMO, all relevant local, state, and tribal land management agencies and departments	2018-

PHOTO BY STUART MECKLER

GOAL 3

LOVE & SUPPORT

Technical Leads

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GOAL 3: LOVE & SUPPORT

Build champions and the constituency of support and action for Sonoran Desert conservation by raising awareness and connecting people with nature.

Background and Rationale

Personal experiences and connections with nature bring us joy, relieve stress, facilitate physical and mental wellbeing, boost our creativity and intellect, calm our minds, and provide a deep sense of place in space and time. Even so, an ever-growing body of evidence suggests that people today are spending significantly less time in nature than previous generations, raising deep concerns across fields of expertise and practice. The Environmental Protection Agency estimates that the average American spends 98% of their time indoors or in transit[1].

Especially concerning is a growing disconnect between children and nature. A recent study from the Kaiser Family Foundation found that kids ages 8 to 18 spend an average of 7.5 hours a day, 7 days a week, plugged into computers, TV, video games, music, cells phones, etc.[2] Other research found that more children know how to play a computer game and open a web browser than swim or ride a bike[3]. This is not just an urban challenge – across nations, this children-nature disconnect is playing out throughout rural, suburban, and urban communities.

The challenges presented by this disconnect are many. When we do not spend time in nature, we cannot realize the physical and mental benefits nature provides. Furthermore, research also suggests that simply having information about nature is not sufficient for a person to value nature, be motivated to act in its interest, and support its conservation. Experiences in and connections with nature, above and beyond mere awareness of nature, are critical as a foundation of support for nature conservation. Best said by the International Union for Conservation of Nature's #NatureForAll initiative, "New approaches are required to broaden support and mobilize action for conservation with new audiences across all sectors."

The objectives and actions identified in Goal 3 aim to engage people, especially young people, across Maricopa County to experience, connect with, and share their love of nature. These actions will grow champions and advocates for Sonoran Desert open space conservation. Actions under Goal 3 underpin the successes of Goals 1 and 2 and work in close concert with Goal 4.

> The wildest and remotest place on Earth, the most imperiled species on Earth, will be protected only if people care about nature where they live.
>
> - Ted Trzyna, Urban Protected Areas: Profiles and Best Practice Guidelines

PHOTO BY ETHAN BEUTE

OBJECTIVE 3.1

Raise awareness and inspire people to love, appreciate, and care for the Sonoran Desert.

ACTION	DESCRIPTION	SUGGESTED LEAD ORGANIZATION(S)	OTHER PARTICIPANTS	TARGET YEARS
3.1.1	Develop and implement a regional open space marketing strategy.	DBG, MCPRD, CoPPRD, CoTPRD, CoPCSD, CoSPR	APRA, ASP, BOAZ, AAEE, WTMC, ASU, TNC, AZF, AGFD, ACNC-SOMO, LW, MT+PF, DFLT, SALT, ASP, Local First, municipalities, tribal communities, agencies and depts. engaged in tourism and economic development, and CAZCA partners	2018-
3.1.2	Go beyond the choir. Outreach, engage, and develop partnerships with people and organizations representing the full diversity of Maricopa County communities.	DBG, MCPRD, CoPPRD, ACNC-SOMO, BLM, AAEE, LW, BOAZ, WTMC, MSC, ASP, USFS, TPL, TNC, DFLT, SALT, AudAZ, CNUW, ASU-CAP LTER, AGFD, SI, CoTPRD, CoPCSD, CoBCSD, CoSPR, tribal communities	Municipalities, GSCPC, BSGCC, CAZCA partners, other conservation and environmental education organizations	2018-
3.1.3	Communicate broadly and often the myriad of benefits provided by Sonoran Desert open space specifically and nature broadly (economics, health, quality of life, biological benefits).	DBG, MCPRD, CoPPRD, CoPCSD, CoBCSD, CoSPR, ACNC-SOMO, ASP, USFS, AAEE, BOAZ, WTMC, MSC, TNC, MT+PF, DFLT, SALT, AudAZ, ASU-CAP LTER, AGFD, SI, CoTPRD	Local First, municipalities, tribal communities, agencies and depts. engaged in tourism and economic development, and CAZCA partners	2018-
3.1.4	Develop and advocate for implementation of a framework for eco-regional environmental education for learners of all ages. This framework would contain common Sonoran Desert ecoregion themes across parks, preserve, and trail systems.	DBG, MCPRD, CoPPRD, AAEE, ACNC-SOMO, ASU-CAP LTER, CoTPRD, TNC, DFLT, SALT, ASP, WTMC, MSC, DFCF-DAC, tribal communities	GSCPC, BSGCC, LW, municipalities, CAZCA partners, other conservation and environmental education organizations	2020-

OBJECTIVE 3.2

Get people into nature. Facilitate learning, experiences, and connections with the Sonoran Desert through formal, informal, and non-formal opportunities.

ACTION	DESCRIPTION	SUGGESTED LEAD ORGANIZATION(S)	OTHER PARTICIPANTS	TARGET YEARS
3.2.1	Connect teachers with existing nature play and environmental education curriculum and teaching opportunities through workshops and professional development.	DBG, AAEE, ACNC-SOMO, AudAZ, ASU-CAP LTER	MSC, WTMC, AGFD, TNC, DFLT, SALT, CoTPRD, LW, tribal communities, other conservation and environmental education organizations	2018-
3.2.2	Participate in and champion the development of an Arizona Environmental Literacy Plan to connect children with nature.	AAEE	ASU-CAPLTER, ACNC-SOMO, BOAZ, AudAZ, TNC, DBG to facilitate CAZCA partner participation, municipalities, tribal communities, other conservation and environmental education organizations	2018-2022
3.2.3	Familiarize schools, groups, and communities with open space parks and preserves and opportunities for experiences in nature and outdoor learning spaces. Consider developing and implementing a program analogous to Dept. of Interior's "Every Kid in a Park" program.	DBG, LW, MCPRD, CoPPRD, CoSPR, CoBCSD, CoPCSD, CoTPRD, MT+PF, DFLT, SALT, USFS, BLM, ASP	ASU-CAPLTER, ACNC-SOMO, BOAZ, AudAZ, TNC, MSC, WTMC, GCCPC, BSGCC, municipalities, tribal communities, other conservation and environmental education organizations	2018
3.2.4	Research existing tools, apps, websites, and calendars that house opportunities and information on open space events, volunteering, and other kinds of engagement. Determine if existing tools are comprehensive or could become comprehensive. If necessary, develop a "clearinghouse" calendar of open space events, stewardship, informal and non-formal educational opportunities, and citizen science trainings.	DBG, BOAZ	AZTWS, WTMC, AGFD, TNC, MCPRD, CoPPRD, CoTPRD	2018-2019

Objective 3.2 – Continued on next page

OBJECTIVE 3.2 (Continued)

Get people into nature. Facilitate learning, experiences, and connections with the Sonoran Desert through formal, informal, and non-formal opportunities.

ACTION	DESCRIPTION	SUGGESTED LEAD ORGANIZATION(S)	OTHER PARTICIPANTS	TARGET YEARS
3.2.5	Utilize social and traditional media to cross-promote regional opportunities to connect with nature, eg. #ThriveOutside, #NatureForAll, and #HikeRight.	DBG to facilitate regional participation	AZTWS, TNC, AFGD, WTMC, AudAZ, BOAZ, ASP, NPS, BLM, USFS, municipalities, tribal communities, other conservation and environmental education organizations	2018-2022
3.2.6	Develop and advocate for implementation of a framework for eco-regional environmental education for learners of all ages. This framework would contain common Sonoran Desert ecoregion themes across parks, preserve, and trail systems.	DBG, MCPRD, CoPPRD, AAEE, ACNC-SOMO, ASU-CAPLTER, CoTPRD, TNC, WTMC, MSC, tribal communities	GSCPC, BSGCC, LW, municipalties, CAZCA partners, other conservation and environmental education organizations	2020-

OBJECTIVE 3.3

Build political and other kinds of influential champions for open space conservation in the Sonoran Desert.

ACTION	DESCRIPTION	SUGGESTED LEAD ORGANIZATION(S)	OTHER PARTICIPANTS	TARGET YEARS
3.3.1	Connect with experts to work in the business, education, environmental community to build a base of advocacy.	DBG, PMPC, SI, MT+PF, WTMC	DBG to facilitate CAZCA partner engagement	2019-
3.3.2	Create or engage an existing coalition to motivate state and local elected officials to pursue increased acquisition and management of conservation areas in the Sonoran Desert.	DBG, PMPC, SI	DBG to facilitate CAZCA partner engagement	2018-2022
3.3.3	Identify the network of local/state/regional officials who will champion open space conservation in the region.	PMPC, DBG, WTMC, SI	ASU- CAPLTER, ACNC-SOMO, BOAZ, MSC, WTMC, TNC, DFLT, SALT, CFA, tribal communities, MAG committees and councils, DBG to facilitate CAZCA partner participation	*2017-2018
3.3.4	Develop relationships with the business community. Connect the dots between the Sonoran Desert (place), quality of life, and economic prosperity.	DBG	Local First, GPEC, AFGD, ACNC-SOMO, BOAZ, AAEE, WTMC, tribal communities, MAG committees and councils, depts. engaged in tourism and economic development, CAZCA partners	2018-2019

GOAL 4

COORDINATE & ELEVATE


Goal Two
Protected and restored open spaces managed to preserve the natural, economic, recreational, and social values connected with the Sonoran Desert.

Technical Leads

Desert Botanical Garden
Sonoran Institute
Marciopa County Parks and Recreation Department
McDowell Sonoran Conservancy

With input and expertise from:

Arizona State University, CAP LTER
Paul Coseo, Stevan Earl, Allyce Hargrove

Arizona State Parks
Dawn Collins, Leigh Johnson (formerly)

Desert Botanical Garden
Stacie Beute, Kimberlie McCue

Desert Foothills Land Trust
Roger Willis

Maricopa Trail and Parks Foundation
Jan Hancock, Larry Snead

Maricopa County Parks and Recreation Department
RJ Cardin

McDowell Sonoran Conservancy
Dan Gruber

Sonoran Institute
Laurel Arndt, Ian Dowdy

Superstition Area Land Trust
Charlie Goff

Trust for Public Land
Jason Corzine

White Tank Mountains Conservancy
Les Meyers

GOAL 4: COORDINATE & ELEVATE

Build upon the CAZCA foundation to ensure and amplify regional open space collaboration, coordination, management, and conservation successes.

Background and Rationale

Conservation efforts in the Sonoran Desert have produced many notable successes. The passage of the Arizona Desert Wilderness Act in 1990 with bi-partisan support resulted in the protection of more than 1.1 million acres of natural spaces in our state. From the early-20th century through today, visionaries from across the region have lead efforts to conserve and protect a compilation of urban and suburban parks and preserves that boasts more than 200,000 acres – making it the largest set of urban protected areas in the nation.[1] Large and small, these actions and others have resulted in a rich heritage of stewardship, safeguarding not only these incredible landscapes, but also our region's identity, sense of place, and quality-of-life.

However, significant and nearly continuous population and infrastructure growth together with a range of other urban pressures challenge our ability to protect, connect, and sustain intact Sonoran Desert habitat and high-quality outdoor opportunities for recreation, social gathering, personal renewal, and connecting with nature. Infrastructure expansion has encroached upon and often isolated previously protected open space. Continued expansion is beginning to do the same with once-remote protected areas and remaining intact desert habitat. Many spaces that were acquired for conservation are now, or will soon be, islands, threatening their long-term capacity for ecological sustainability and resilience. Ecological and wildlife connectivity, in particular, has been dramatically reduced.

In addition, many of our parks and preserves are facing a range of similar challenges including incursions of invasive species, misuse of resources, vandalism, littering, and other impacts. Some groups across the region are tackling these issues in their local areas and seeing notable success, but more often than not, the knowledge and experience gained in these local efforts is not shared across the region. This results in a myriad of agencies and organizations duplicating the same kinds of projects and programs, competing for limited resources to pursue the same kinds of objectives, without the benefit of knowing what has been learned by peers.

Moreover, nearly every city and town, tribal community, county and federal agency, conservation-based non-profit organization, land trust, and conservancy has their own plan, projects, policies, funding mechanisms, and priorities for open space management and conservation. Broadly, efforts tend to focus on very local issues or immediate opportunities with limited understanding of regional context or impact.

There clearly is a vital need for a concerted regional effort to establish strategic open space conservation and connection priorities, take advantage of habitat protection and connection opportunities, fund these efforts, and address the challenges facing our open spaces to restore, maintain and sustain Sonoran Desert ecosystems and high-quality outdoor experiences for present and future generations.

The objectives and actions outlined in pursuit of this goal build on the advances that CAZCA has made toward developing a regional, collective responsibility to the future of Maricopa County. Using the tools developed in Goal 1, we will advance high priority conservation and connection actions within our area of focus. Within the region we will collectively act to protect and restore our treasured open space as discussed in Goal 2, and we will work together to ensure that all present and future residents have access to open space and the opportunity to understand its value as outlined in Goal 3.

This goal, Goal 4, focuses on creating regional mechanisms to support implementation of these regional objectives. These include data sharing, a regional data/GIS repository, and regional conservation planning tools. Goal 4 actions also focus on supporting and sharing existing work and expertise on key regional challenges like invasive species and regional needs like restoration, to avoid unnecessary duplication of effort. Finally, and most importantly, this goal involves convening appropriate regional leadership to coalesce around regional conservation, connectivity, and sustainability priorities and develop tangible and sustained initiatives to achieve them.

OBJECTIVE 4.1

Continue to develop and foster culture of collaboration both within and beyond the CAZCA partnership.

ACTION	DESCRIPTION	SUGGESTED LEAD ORGANIZATION(S)	OTHER PARTICIPANTS	TARGET YEARS
4.1.1	Continue to convene and encourage cross-sector, cross-agency, cross-disciplinary conversations around conservation of open space in the Central Arizona region.	DBG	WTMC, SI, MSC, MCPRD, CoTPRD, CoPCSD, CoBCSD, BOAZ, AAEE, DFLT, SALT, AGFD, MCFCD, MAG, CFA, MT+PF, existing and expanded CAZCA partnership	*2017-
4.1.2	Evolve CAZCA partnership, committees, and structures to continue to address regional issues and opportunities.	DBG with input from the CAZCA partnership	CAZCA, MAG, CFA	2018-2019
4.1.3	Develop a mechanism whereby the coalition is formalized to encourage shared responsibility, advancement of regional goals, and financial stewardship.	DBG with input from the CAZCA partnership	CAZCA, MAG, CFA	2018

* Implementation began as the strategy was being developed

OBJECTIVE 4.2

Develop and/or enhance tools, mechanisms, programs, and structures for sharing and collaboration.

ACTION	DESCRIPTION	SUGGESTED LEAD ORGANIZATION(S)	OTHER PARTICIPANTS	TARGET YEARS
4.2.1	Identify and prioritize needs for knowledge/ data sharing and collaboration.	DBG	SI, MSC, MCPRD, TNC, AGFD, MAG, CFA, Goal Teams, CAZCA, ASU, MT+PF, DFLT, SALT, AudAZ, USFS, BLM, ASP, other conservation and environmental education organizations, tribal communities, and local, state, and federal agencies and departments	2018-2019
4.2.2	Identify, evaluate, train, and implement available tools, models, best practices.	DBG, MSC, MCPRD, WTMC, CAZCA Labs	CAZCA, ASU, MT+PF, DFLT, SALT, AudAZ, USFS, BLM, ASP, Other conservation and environmental education organizations, tribal communities, and local, state, and federal agencies and departments	2018-2019
4.2.3	Develop a digital collaboration space. Develop or adopt shared digital tools for collaboration, data-sharing, GIS, project management, calendaring, knowledge-exchange, etc.	DBG	MSC, SI, MCPRD, WTMC, Goal Teams, CAZCA, ASU, ACNC-SOMO, BOAZ, MT+PF, DFLT, SALT, AudAZ, USFS, BLM, ASP, other conservation and environmental education organizations, tribal communities, and local, state, and federal agencies and departments	2018-
4.2.4	Develop, transform, or expand non-digital CAZCA collaboration and support mechanisms through the development of focused “labs,” continuation and expansion of workshops, and mentor opportunities.	DBG	MSC, MCPRD, WTMC, Goal Teams, CAZCA, ASU, ACNC-SOMO, BOAZ, MT+PF, DFLT, SALT, AudAZ, USFS, BLM, ASP, other conservation and environmental education organizations, tribal communities, and local, state, and federal agencies and departments	2018-

OBJECTIVE 4.3

Plan and develop mechanisms for Regional Open Space Strategy implementation.

ACTION	DESCRIPTION	SUGGESTED LEAD ORGANIZATION(S)	OTHER PARTICIPANTS	TARGET YEARS
4.3.1	Broadly and continually outreach the ROSS to state and local governments, Maricopa Association of Governments, the research community, the business community, planners, economic development professionals, public health professionals, stakeholder groups, professional associations, and the broader regional, national, and international conservation community, etc.	DBG, CAZCA Steering Committee	ASU, AZF, Local First, GPEC, CAZCA partners, depts. engaged in tourism and economic development, other conservation and environmental education organizations, tribal communities, and local, state, and federal agencies and departments	*2017-
4.3.2	Evolve CAZCA partnership, committees, and structures to carry out ROSS implementation.	DBG	CAZCA Steering Committee, TBD	2018-2019
4.3.3	Work with regional partners to obtain commitments for specific actions.	DBG, CAZCA Steering Committee	CAZCA parters, other conservation and environmental education organizations, tribal communities, and local, state, and federal agencies and departments	2018-
4.3.4	Support aligned actions, as appropriate, that share common objectives.	DBG facilitated	CAZCA partners, other conservation and environmental education organizations, tribal communities, and local, state, and federal agencies and departments	2018-

The goals, objectives, and actions comprising the Regional Open Space Strategy for Maricopa County set the course for sustaining the region's most valuable assets - the natural environment and open space. Maricopa County is ready to break with the historic distinctions between people and environment, economic and ecological health. The future that Arizona's citizens want requires an updated definition of prosperity, one that acknowledges a healthy, connected system of natural areas as central to the regions' quality of life and its vibrant economy.

Transforming this vision into reality will require an organizational structure, complete with leadership to nurture its development, and sustained funding for implementation. Advancing any of the articulated actions individually will significantly benefit the region, but if implemented in unison, with purpose and collaboration among agencies, community leaders, elected representatives, NGOs, and other stakeholders, will result in a durable prosperity and resiliency for this and future generations. Join us as we come together as a region to realize the goals set forth in the ROSS and begin to secure Maricopa County's vibrant future.

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THE REGIONAL OPEN SPACE STRATEGY

Preface

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GOAL 1

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GOAL 2

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GOAL 4

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PHOTOGRAPHY

Osha Gray Davidson Sunset (Who We Are), Prickly Pear Flowers (p. 6), Bee in Barrel Cactus (p. 6), White Saguaro Flower (p. 6), Four Peaks (p.11), Pipeline Cove (p. 17), Lizard (p. 18), Granite Mountain (p. 21), Courthouse Rock (p. 25), Harquahala (p. 32), Chollas (p. 42), Planting Seeds (p. 45), Finches on Agave (p. 56), Girl (p. 66), Butterfly (p. 59), Buckhorn Cholla Blossoms (p. 62), Maverick Trail (p. 71), Ground Squirrel (p. 76)

Franklin Seal, Rim Tours Mountain Bike Adventures Mountain Biker (p. ii)

ROSS TABLES ORGANIZATION ACRONYMS

Arizona Association for Environmental Education	AAEE
Arizona Center for Nature Conservation, South Mountain	ACNC-SOMO
Arizona Department of Transportation	ADOT
Arizona Forward	AZF
Arizona Game and Fish Department	AGFD
Arizona State Parks	ASP
Arizona State University	ASU
Arizona-Sonora Desert Museum	ASDM
ASU - Design School	ASU-DS
ASU - School of Community Resources and Development	ASU-SCRD
ASU - School of Geographical Sciences and Urban Planning	ASU-SGSUP
ASU - Central Arizona-Phoenix Long-term Ecological Research	ASU-CAP LTER
Audubon Arizona	AudAZ
Be Outdoors Arizona	BOAZ
Boy Scouts Grand Canyon Council	BSGCC
Bureau of Land Management	BLM
Central Arizona Conservation Alliance	CAZCA
City of Buckeye Community Services Department	CoBCSD
City of Peoria Community Services Department	CoPCSD
City of Phoenix Parks and Recreation Department	CoPPRD
City of Tempe Parks and Recreation	CoTPR
Desert Botanical Garden	DBG
Desert Foothills Community Foundation, Desert Awareness Committee	DFCF-DAC
Desert Foothills Land Trust	DFLT
Girl Scouts Cactus Pine Council	GSCPC
Greater Phoenix Economic Council	GPEC
Liberty Wildlife	LW
Maricopa Association of Governments	MAG
Maricopa County Flood Control District	MCFCD
Maricopa County Parks and Recreation Department	MCPRD
Maricopa Trail and Parks Foundation	MT+PF
McDowell Sonoran Conservancy	MSC
National Parks Service - Saguaro National Park	NPS-Saguaro
National Seed Strategy	NSS
National Invasive Species Council	NISC
Plant Conservation Alliance	PCA
Regional Open Space Strategy	ROSS
Society for Ecological Restoration - Southwest Chapter	SER-SW Chapter
Sonoran Institute	Sonoran Institute
Southwest Seed Partnership	SWSP
Southwest Vegetation Management Association	SWVMA
Superstition Area Land Trust	SALT
The Nature Conservancy	TNC
Trust for Public Land	TPL
U.S. Forest Service	USFS
U.S. Geological Survey	USGS
Western Ecological Research Center (U.S. Geological Survey)	WERC
White Tank Mountains Conservancy	WTMC

ADVISORY COUNCIL

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Principal, Landmark & Circle G Development

Russell Benford, Ph. D.
NAU/Salt River Pima Maricopa, Gila River, Indian Communities

Cathy Carlat
Mayor, City of Peoria

Lattie Coor
Chairman and CEO, Center for Future of Arizona

Leslie Dornfeld
FAICP, PLANeT

Inger Erickson
Director, City of Phoenix Parks and Recreation

Ferran Garcia-Pichel, Ph.D.
Dean of Natural Sciences, Arizona State University

Dennis Holcomb
Flood Control District Maricopa County/NPS, retired

Dan Kimball
NPS/EPA, retired

Andy Kunasek
Maricopa County Board of Supervisors

Bill Murphy
Executive Director, Community Services, City of Scottsdale

Sandie Smith
Past President, Pinal Partnership

Ray Suazo
Arizona State Director, BLM

OPEN SPACE SUMMIT STAKEHOLDERS

Fred Abraham
Joshua Bednarek
Jessica Bland
Ryan Bleam
Chris Calcaterra
RJ Cardin
Cassandra Castellanos
Kaylee Colter
Paul Coseo
Osha Davidson
Carol Davis
Christine Dick
Donald Domann
Jake Eason
Brianne Fisher
Megan Fisk
Carolyn Flower
Darren Gerard
Charlie Goff
C.J. Hager
Sharon Hall
Allyce Hargrove
Gabby Hebert
Daniel Higgins
Amanda James
Jennifer Jenkin
Andrew Joe
Melissa Johnson
Dale Larsen
DiAnna Lipe
Cheryl Lombard
Melissa McGehee
Jeremiah McGehee
Robert McGehee
Claire Miller
Lorraine Montuori
Oliver Ncube
Mathew Nevarez
Chris Nieto
Hannah Oliver
Michael Park
Deb Patton
Tabitha Perry
Greg Peters
Sarah Porter
Ray Quay
Anne Reichman
Phil Richards
Deborah Salon
Fred Sanchez
Raymond Schell
John Sefton
Dani Serna
Alan Shelton
Ashley Slechta
Jeff Spellman
Don Steuter
Tice Supplee
Diana Suquetz
Chris Thomas
Steve Trussell
Bryan Wagner
Phil Weaver-Stoesz
Roger Willis
Christine Willis
Robert Wisener

CAZCA PARTNERS & COLLABORATORS

Desert Botanical Garden | coordinating institution

Arizona Alliance for Livable Communities | community health, livability, and well-being

Arizona Association for Environmental Education | education, development of Arizona literacy plan

Arizona Columbine Garden Club | conservation, horticulture, native plant materials development

Arizona Center for Nature Conservation | conservation, wildlife connectivity, education and outreach

Arizona Department of Transportation | invasive species science and strategies

Arizona Department of Water Resources | water protection, conservation, research, and management

Arizona Game and Fish Department | research, recreation, and conservation, community engagement

Arizona Native Plant Society | education, conservation, and restoration of native plants

Arizona Parks and Recreation Association | professional development, advocacy, and land management resources

Arizona - Sonora Desert Museum | invasive species science and strategies

ASU - Arizona Sustainable Cities Network | advancing and cultivating sustainability solutions

ASU - Biomimicry Center | ecological performance standards, student engagement

ASU - CAP LTER | ecological expertise and student engagement

ASU - Design School | urban design, environmental design strategies, student engagement

ASU - Global Institute of Sustainability, Education | community outreach and education

ASU - School of Community Resources and Development | social, economic, environmental, governance, and cultural research and student engagement

ASU - School of Life Sciences | natural science and student engagement

ASU - UREx Sustainable Research Network | emerging cities, fundamental and practical strategies to promote urban resilience

Audubon Arizona | wildlife, education, and community outreach

B3.8 | urban design, environmental design strategies, ecological performance standards

Bureau of Land Management | public land management and conservation

Bureau of Reclamation | restoration and water management

Catalyst Collective | community outreach through arts

Center for Biodiversity Outcomes | natural, social, and conservation science and student engagement

Center for the Future of Arizona | planning focused on long-term issues, “do tank”

City of Buckeye Community Services Department | cultural and natural resource management, recreation, and community engagement

City of Glendale Community Services Department | cultural and natural resource management, recreation, and community engagement

City of Peoria Community Services Department | cultural and natural resource management, recreation, and community engagement

City of Phoenix Parks and Recreation Department | cultural and natural resource management, recreation, and community engagement

City of Scottsdale Parks and Recreation Department | cultural and natural resource management, recreation, and community engagement

Cultivate South Phoenix - Spaces of Opportunity | community advocacy, health, and wellbeing

Desert Foothills Land Trust | land preservation and stewardship

Desert Foothills Community Foundation, Desert Awareness Committee | environmental education, community outreach

Friends of Daisy Mountain Trails | advocacy, land preservation and stewardship

International Union for Conservation of Nature | global authority on the status of the natural world and the measures needed to safeguard it, urban conservation and outreach strategies

Keep Phoenix Beautiful | community-based environmental preservation and protection
Local First Arizona | local business relationships
Logan Simpson & Associates | invasive species science and strategies
Maricopa Association of Governments | advisory, knowledge-exchange
Maricopa County Parks and Recreation Department | cultural and natural resource management, recreation, and community engagement
Maricopa Trail and Parks Foundation | park advocacy and community representation
McDowell Sonoran Conservancy | education, research, citizen science, and stewardship
National Parks Service - Saguaro National Park | invasive species science and strategies
North Mountain Visitor Center | interpretation, education, and stewardship
Northern Arizona University | wildlife connectivity
Okanogan Trail Construction, Inc. | connectivity and restoration facilitation
Phoenix College | community outreach and education
Phoenix Fire Department | invasive species science and strategies
Phoenix Parks Foundation | park advocacy and community representation
Phoenix Union High School District | education, policy, and community engagement
Phoenix Weedwackers | preserve advocacy, invasive species management, community representation
Pima County Natural Resources, Parks, and Recreation | cultural and natural resource management, recreation, and community engagement
Pinal County Open Space and Trails | cultural and natural resource management, recreation, and community engagement
PLANet | land use and community planning
Plant Atlas Project of Arizona | citizen science, research, and community engagement
Salt River Pima-Maricopa Indian Community | cultural, natural, and water resource management, restoration, and community outreach
Save our Mountains Foundation | preserve advocacy
Signature Botanica | restoration and native plant materials development
Sonoran Institute | western issues planning, conservation, and advocacy
South Mountain Environmental Education Center | community outreach and education
Southwest Seed Partnership | native plant materials research and development
Southwest Society of Botanical Artists | art, education, and building ecological awareness
Superstition Area Land Trust | land preservation and stewardship
Tovrea Carraro Society | native plant materials development
The Center for Native and Urban Wildlife | education, conservation, native plant materials development, restoration
The Nature Conservancy | local to global land and water protection community building
The Phoenix Mountains Preservation Council | preserve advocacy, policy, and community representation
The Trust for Public Land | research, land conservation, conservation finance, community building)
USGS - Western Ecological Research Center | native plant materials research
USFS - Tonto National Forest | cultural and natural resource management and recreation
Vitalyst Foundation | issues of open space and community health
White Tank Mountains Conservancy | education, research, planning, citizen science, and stewardship
And many individual community stakeholders, citizen scientists, and volunteers

CAZCA
CENTRAL ARIZONA CONSERVATION ALLIANCE

DESERT
BOTANICAL
garden