

SUMMARY REPORT

# WILD CHILE

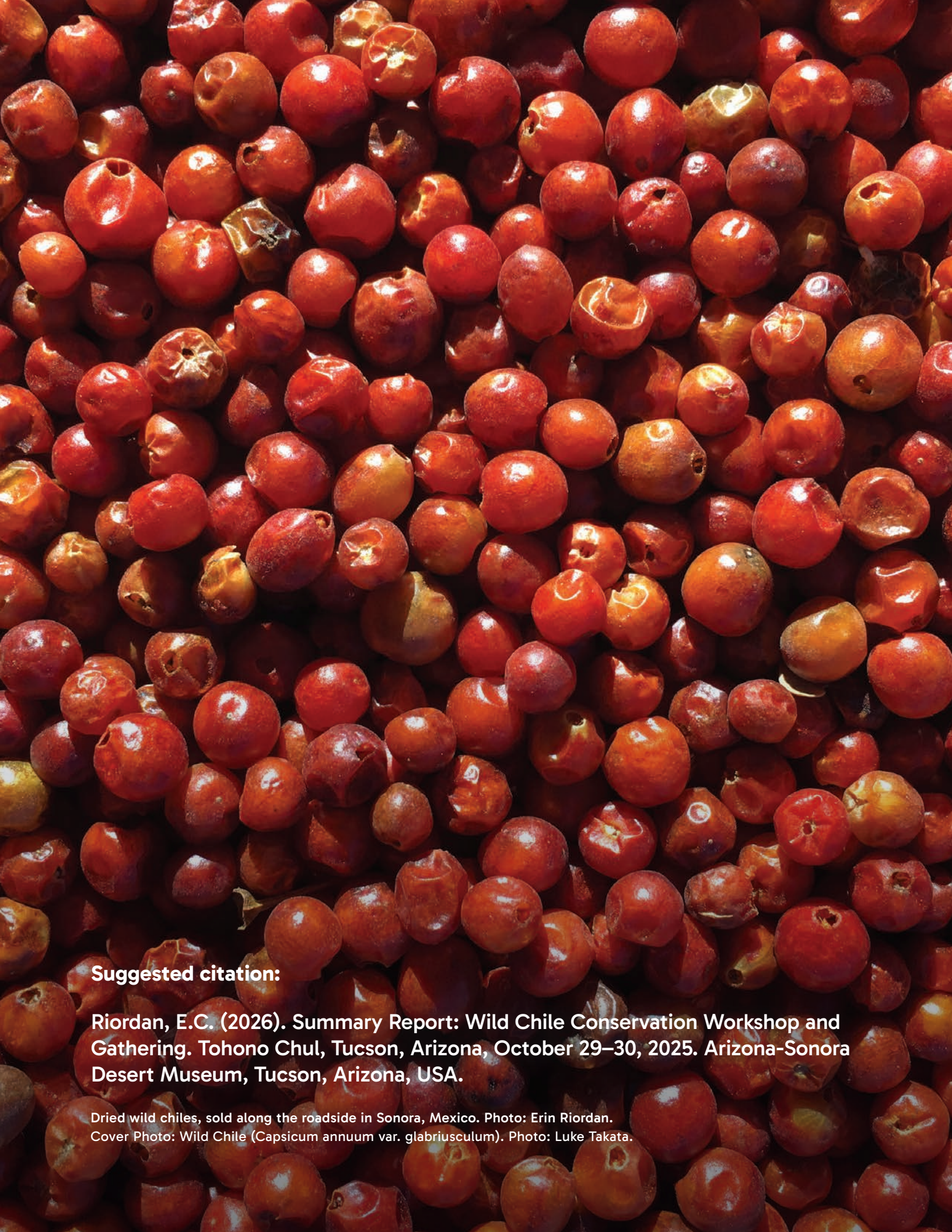
## Conservation Workshop & Gathering

Tohono Chul, Tucson, Arizona  
October 29 – 30, 2025

Erin C. Riordan, PhD  
Arizona-Sonora Desert Museum

ARIZONA-SONORA  
DESERT  
MUSEUM

Tohono  Chul  
GARDENS • GALLERIES • BISTRO



# Table of Contents

1	.....	<b>I. Executive Summary</b>
2	.....	The 2025 Workshop: A Path Forward
3	.....	A New Regional Collaborative
3	.....	Immediate Priorities
4	.....	<b>II. Building on a 25-Year Legacy</b>
5	.....	A Landmark Achievement
6	.....	Current Challenges
7	.....	<b>III. Wild Chile Conservation Workshop &amp; Gathering</b>
8	.....	Participating Organizations and Contributions
9	.....	Theme 1: Indigenous Stewardship
10	.....	Theme 2: Trans-disciplinary Research
11	.....	Theme 3: In Situ Conservation
13	.....	Theme 4: Ex Situ Conservation
15	.....	Theme 5: Data Governance and Coordination
17	.....	Theme 6: Public Engagement & Narrative Reframing
19	.....	Theme 7: Sustainable Funding
20	...	<b>IV. Looking Forward</b>
21	.....	Immediate Next Steps
22	.....	Long-Term Vision: Start Local, Build Global
23	.....	Appendix A. Wild Chile Botanical Area Species List for Wild Relatives of Crops

**Suggested citation:**

Riordan, E.C. (2026). Summary Report: Wild Chile Conservation Workshop and Gathering. Tohono Chul, Tucson, Arizona, October 29–30, 2025. Arizona-Sonora Desert Museum, Tucson, Arizona, USA.

Dried wild chiles, sold along the roadside in Sonora, Mexico. Photo: Erin Riordan.  
Cover Photo: Wild Chile (*Capsicum annuum* var. *glabriusculum*). Photo: Luke Takata.

# I. Executive Summary

The wild chile (*Capsicum annuum* var. *glabriusculum*) is an iconic plant of the United States–Mexico borderlands. In southern Arizona and Sonora, where it is known regionally as the *chiltepín*, it supports biodiversity and sustains deep culinary traditions and local economies as a wild food and spice.

As a wild relative of a cultivated crop—the direct ancestor of hundreds of sweet and hot pepper varieties—it carries genetic traits

valuable for crop improvement. However, wild populations in the region face escalating threats from climate change, habitat fragmentation, invasive species, and over harvesting, despite a 25-year conservation legacy anchored by the Wild Chile Botanical Area (WCBA). Coordinated conservation and investment are needed to safeguard wild populations and the ecological, cultural, and agricultural benefits they provide.

## The 2025 Workshop: A Path Forward

The Wild Chile Conservation Workshop and Gathering held in Tucson, Arizona October 29–30, 2025 convened a diverse cohort of federal agencies, public gardens, research institutions, and conservation organizations. The gathering focused on a central challenge: **strengthening collaborative action around the conservation and use of the wild chile and other arid land crop relatives.**

Participants developed an integrated conservation framework organized around seven themes:

### Indigenous Stewardship:

Centering cultural connections and Indigenous data sovereignty and governance

### Trans-disciplinary Research:

Bridging ecological and genetic research

### In Situ Conservation:

Assessing and managing threats within wild habitats

### Ex Situ Conservation:

Expanding seed banking, propagation, and access

### Data Governance & Coordination:

Sharing resources and data to support decision making

### Public Engagement:

Shifting narratives and broadening public support

### Sustainable Funding:

Moving beyond unpredictable project funding to long-term stability



Photo: Erin Riordan



Photo: Erin Riordan



Wild Chile Botanical Area (WCBA), located in the Tumacacori Mountains of southern Arizona. Photo: Luke Takata.

## A New Regional Collaborative

The workshop's primary recommendation is the formation of a regional conservation collaborative for the wild chile and other wild relatives of crops in arid North America ("Aridamerica"). This collaborative will align partners and help secure long-term funding needed to sustain conservation actions that are adaptive, culturally grounded, and resilient to political or economic shifts.

## Immediate Priorities

Strategically anchored in the cultural and ecological hub of Tucson, Arizona, the collaborative aims to establish a scalable and replicable model for wild food plant and crop relative conservation. Near-term actions will focus on formalizing the collaborative to prioritize and coordinate conservation efforts, strengthen information sharing, and expand ex situ propagation. Central to this phase is a comprehensive assessment of wild populations across southern Arizona. The collaborative will also pursue high-visibility outreach to leverage the strong regional identity around the wild chile and build broader public support for conservation.

# II. Building on a 25-Year Legacy

## Conservation Context

**Southern Arizona and surrounding Aridamerica (Fig. 1) is a biodiversity hotspot for the wild relatives of cultivated crops (WRC). Thriving in harsh environments, WRC retain adaptive traits like drought and pest resistance, often absent in their domesticated relatives. As climate pressures intensify, these traits become increasingly important tools to breed hardier crops. Conserving WRC, however, requires an integrated approach.**

In situ stewardship protects wild populations in their natural habitats to allow for ongoing adaptation, while ex situ backup, such as seed banks and garden living collections, safeguards genetic diversity against environmental threats and facilitates research and use. Because many WRC hold deep cultural significance, conservation efforts must also incorporate Indigenous and local community priorities, including access, equitable benefit-sharing, and data sovereignty.



**Figure 1.** Map of Aridamerica. Reproduced from Nabhan, G.P. & E.C. Riordan et al. 2020, An Aridamerican model for agriculture in a hotter, water scarce world, *Plants People, Planet*. <https://doi.org/10.1002/ppp3.10129>

## A Landmark Achievement

Established in 1999 by the Coronado National Forest, the Wild Chile Botanical Area (WCBA) is one of the few protected areas in the United States designated for the in situ conservation of a WRC: the wild chile, or chiltepín (*Capsicum annuum* var. *glabriusculum*). This rugged, 2,500 acre protected area sits within the Coronado National Forest's Tumacácori Highlands

Ecosystem Management Area, which spans three mountain ranges along the United States–Mexico border (Fig. 2). The WCBA emerged from a unique collaboration among federal agencies, conservation organizations, ranchers, scientists, and historians, to support research, conservation, and sustainable traditional harvesting at the wild chile's northern range limit in southern Arizona.

Over the past quarter-century, these partnerships have produced significant outcomes:

### Research & Discovery

Field studies highlighted important ecological interactions and documented over 50 WRC species within the WCBA and over 150 WRC species within the broader Tumacácori Highlands (Appendix 1).

### International Collaboration

Partnerships catalyzed cross-border exchanges with Mexican experts on genetic resources and nurse plant ecology.

### Scientific Impact

Collaborative research produced over a dozen papers in high-impact journals including *Nature* and *Conservation Biology*.

### Conservation Leadership

The WCBA collaborative model established essential benchmarks for stewardship, influencing best practices for WRC conservation in North America.

### Cultural Identity

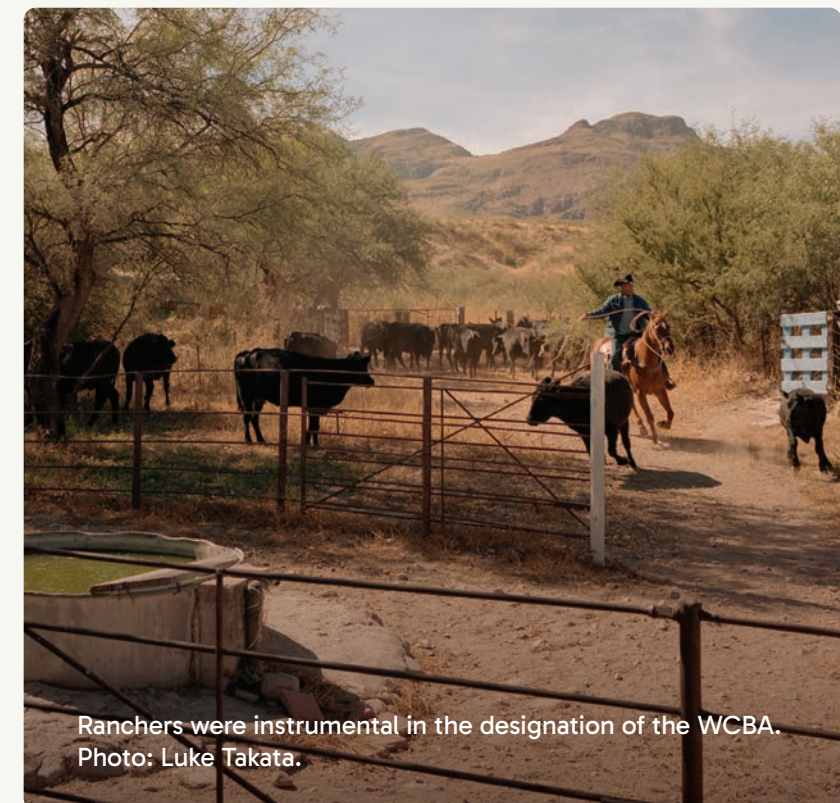
Increased public awareness linked the wild chile to southern Arizona's identity, contributing to Tucson's designation as the first UNESCO City of Gastronomy in the United States.



Figure 2. Wild Chile Botanical Area and Tumacácori Highlands Ecosystem Management Area. Photo: Perin McNelis, Borderlands Restoration Network. Map adapted from Riordan, E.C. & G.P. Nabhan, 2019, Trans situ conservation of crop wild relatives, *Crop Science*. <https://doi.org/10.2135/cropsci2019.06.0356>.

## Current Challenges

Despite these achievements, Arizona's wild chile populations have not been systematically monitored at a landscape scale since the reserve's designation. Today, mounting regional pressures, including climate stress, habitat fragmentation, invasive species, and overharvesting in Mexico, are placing additional strain on populations across the species' northern range.



Ranchers were instrumental in the designation of the WCBA. Photo: Luke Takata.

# III. Wild Chile Conservation Workshop & Gathering

The Wild Chile Conservation Workshop and Gathering was held on October 29–30, 2025, at Tohono Chul in Tucson, Arizona.

Co-organized by the Arizona-Sonora Desert Museum and Tohono Chul, the event brought together diverse partners to celebrate the 25th anniversary of the WCBA and advance the conservation of the wild chile and other important crop relatives in Aridamerica (Table 1). It featured a technical workshop,

public panel, and field trip. The open-space format of the workshop, emphasizing intentional sharing and deep listening, was designed to break down conventional silos and build the foundation for creative, collaborative conservation. Participants were invited to contribute key priorities or topics related to the guiding question:

**How can we strengthen collaborative action around the conservation and use of the wild chile and other arid land WRC?**

Conversations during the workshop revealed conservation actions across seven strategic themes.



Workshop participants brainstorm conservation priorities. Photos: Luke Takata.

Table 1: Participating Organizations and Contributions

Organization	Primary Contributions
Arizona-Sonora Desert Museum	Coordination, Indigenous & Community Partnerships, Plant Conservation
Tohono Chul Gardens	Horticulture, Public Gardens, Storytelling
Desert Botanical Gardens	Co-Stewardship, Plant Conservation, Research
Native Seeds/SEARCH	Arid-adapted Crops, Benefits Sharing, Seed Conservation
Borderlands Restoration Network	Field Surveys (Seed & Voucher Collection), Native Plant Materials, Restoration
USFS Coronado National Forest	Natural Resource Management, Monitoring, Regulations & Policies
USFS Rocky Mountain Research Station	Applied Research, Climate Adaptation, Ecological Interactions, Genetics, Pollination Ecology
Independent Experts	Agroecology, Conservation, Crop Diversity, Crop Improvement, Ethnobotany, Fundraising, Genetics, Global Change

## Theme 1: Indigenous Stewardship

**Goal:** Pursue co-stewardship with local and Indigenous communities to align conservation priorities with community values, address historical inequities, and respect Indigenous data sovereignty and governance.

### Build Authentic Relationships and Trust

Conservation efforts are most successful and long-lasting when they support the integral cultural ties between people and the environment. When exclusionary policies, restricted access, and other historical and ongoing harms sever connections to the land, communities lose livelihoods, traditions, and irreplaceable local ecological knowledge. Because traditional practices often maintain plant populations and genetic diversity, supporting these human-plant relationships is essential to both in situ and ex situ conservation. Building authentic community partnerships requires time, trust, and a commitment to community-defined priorities.

### Address Barriers to Access and Collection

Although the wild chile's designation as a Forest Service "sensitive species" requires research permits for collection, important exceptions exist for Native Americans. The Coronado National Forest 2018 Forest Plan explicitly supports Native American access and the gathering of traditional food and medicinal plants. However, a legacy of restrictive enforcement, including past fines, has fostered a persistent perception within Native American communities that harvesting on public lands is illegal, widening the rift between people and their ancestral lands. Bridging this gap requires proactive outreach and education to communicate Indigenous rights and support reconnection with wild populations on federal lands, paired with robust ex situ stewardship programs that enable community members to access and cultivate these plants more freely.

### Conservation Actions

- **Elevate Indigenous Leadership:**  
Engage Indigenous Nations as full partners in conservation planning and stewardship.
- **Respect Indigenous Data Sovereignty:**  
Consult with Indigenous leadership and cultural and natural resource authorities to align conservation actions with principles of Indigenous data sovereignty and governance.
- **Support Traditional Access:**  
Work with federal agencies to increase awareness of Indigenous rights on public lands.
- **Expand Community Availability:**  
Establish ex situ access through local gardens and partner with Indigenous Nations on stewardship and propagation.
- **Activate Public Spaces:**  
Leverage public gardens and conservation sites as welcoming spaces for traditional harvest, learning, and cultural exchange.

## Theme 2: Trans-disciplinary Research

**Goal:** Bridge knowledge gaps through coordinated, transdisciplinary research to better understand how genetic and ecological factors shape adaptive traits in wild chile populations.

### Advance Genetic Understanding

Updated genetic surveys are needed to improve our understanding of wild chile population structure and diversity. Peripheral populations, such as those within the WCBA, can be reservoirs of locally adapted traits valuable for breeding climate-resilient crops. Determining whether these populations are genetically distinct or part of a continuous, hybridizing gradient will inform ex situ conservation strategies (Theme 4) to ensure unique genetic diversity is secured for both conservation and crop improvement.

### Address Ecological Knowledge Gaps

Significant knowledge gaps persist regarding the processes that maintain wild chile populations. To date, the interaction ecology of the species—spanning pollinators, dispersal agents, soil microbes, wildlife, and climate drivers—has not been studied in an integrated manner. For instance, poorly understood pollination dynamics limit insight into gene flow and population viability. Addressing these gaps requires coordinated, trans-disciplinary research.

### Conservation Actions

- **Update and expand genetic surveys**  
Assess population structure, genetic diversity, and adaptive traits, prioritizing range-edge populations.
- **Investigate Ecological Population Dynamics:**  
Conduct transdisciplinary research on interaction ecology, dispersal, and recruitment to understand population persistence.
- **Integrate Science into Action:**  
Synthesize genetic and ecological findings to directly inform in situ management (Theme 3) and ex situ seed collection (Theme 4).

## Theme 3: In Situ Conservation

**Goal:** Monitor wild chile populations and assess in situ threats to inform adaptive, science-based management and prioritize ex situ backups.

### Address Capacity and Monitoring Gaps

Wild chile populations in southern Arizona face multiple, compounding threats. While the Coronado National Forest manages the WCBA, staffing, funding, and resource shortages prevent regular surveys or sustained population monitoring needed to effectively manage wild chile populations on public lands. Bridging this capacity gap will require robust external partnerships.

### Navigate Governance and Environmental Stressors

Conservation efforts are often hindered by shifting political landscapes that escalate environmental pressures. Public lands are vulnerable to policy changes that favor privatization or resource extraction. Physical access barriers, such as locked gates on surrounding private lands and border infrastructure, restrict access necessary for research and monitoring. Beyond these governance hurdles, wild chile populations face compounding abiotic and biotic stressors, including invasive species, altered fire regimes, and drought. Limited understanding of recruitment dynamics—the processes by which new plants establish—constrains our ability to determine when to deploy targeted interventions, such as localized assisted migration or intensive habitat restoration, to sustain population viability over time.

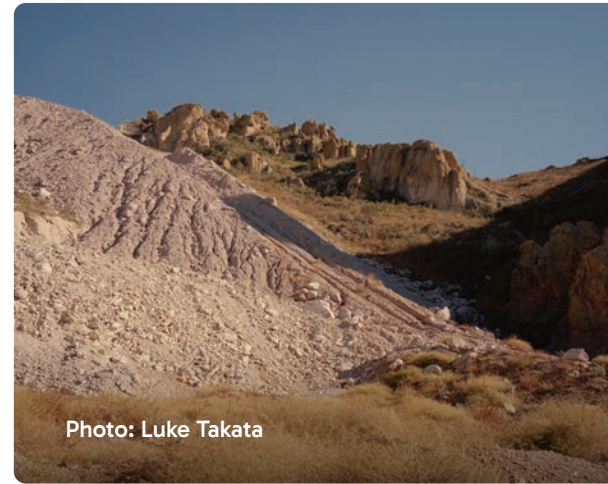


Photo: Luke Takata



Border construction threatens wild chile habitat in southern Arizona. Photo: Luke Takata.



Above: Participants discuss in situ threats during a field trip to the United States–Mexico borderlands. Photo: Luke Takata.



### Conservation Actions:

- **Establish a Monitoring Network:**  
Secure long-term funding to build a cross-institutional network dedicated to sustained in situ monitoring.
- **Conduct Systematic Status Assessments:**  
Regularly assess population health, habitat condition, and emerging threats to guide adaptive management and prioritize ex situ collection.
- **Remove Stewardship Barriers:**  
Partner with land management agencies to identify and resolve policy and physical obstacles that impede field research, monitoring, and Indigenous-led conservation.
- **Implement Proactive Interventions:**  
Evaluate the efficacy of climate-informed strategies, such as invasive species management and localized assisted migration, to maintain long-term population persistence.

# Theme 4: *Ex Situ* Conservation

**Goal:** Strengthen coordination and partnerships to address ex situ conservation gaps, ensuring that wild chile genetic resources support long-term conservation, research, and community needs.

## Strategic Partnerships and Capacity Constraints

Securing genetic diversity requires sustained funding and a pipeline of systematic seed collection, storage, regeneration, and distribution to maintain viability and accessibility of ex situ accessions. While Native Seeds/SEARCH serves as a cornerstone repository with over 40 wild chile accessions, a significant geographic gap exists: only two of these accessions originate from southern Arizona. Closing this gap requires integrated research (Theme 2) and in situ monitoring (Theme 3) to prioritize new collections. Furthermore, maintaining ex situ collections is a major operational undertaking; a single accession regeneration grow-out can cost between \$8,000 and \$10,000.

## Expand the Ex Situ Conservation Network

A distributed network of partners is needed to address ex situ conservation and capacity gaps. Organizations such as Borderlands Restoration Network already lead vital seed collection and propagation efforts, which can be further prioritized using data from genetic surveys and in situ monitoring. Public gardens, including Arizona-Sonora Desert Museum, Tohono Chul, and Desert Botanical Garden, are well positioned to serve as ex situ conservation hubs, offering accessible space and technical expertise for propagation and public education. Partnerships with Native American communities should be pursued to center Indigenous leadership in the preservation and use of wild chiles on sacred sites and sovereign lands.

## Scale Urban Propagation and Cultivation

Local cultivation networks offer an additional pathway to expand access to wild chile plant materials. Integrating seed grow-outs into schools, community gardens, and urban landscapes increases seed availability while building public conservation literacy. Scaling these efforts, however, requires development and distribution of multilingual cultivation “best practices” guidelines. These resources should emphasize traditional practices and agroecological techniques specifically tailored to the region’s arid climate.

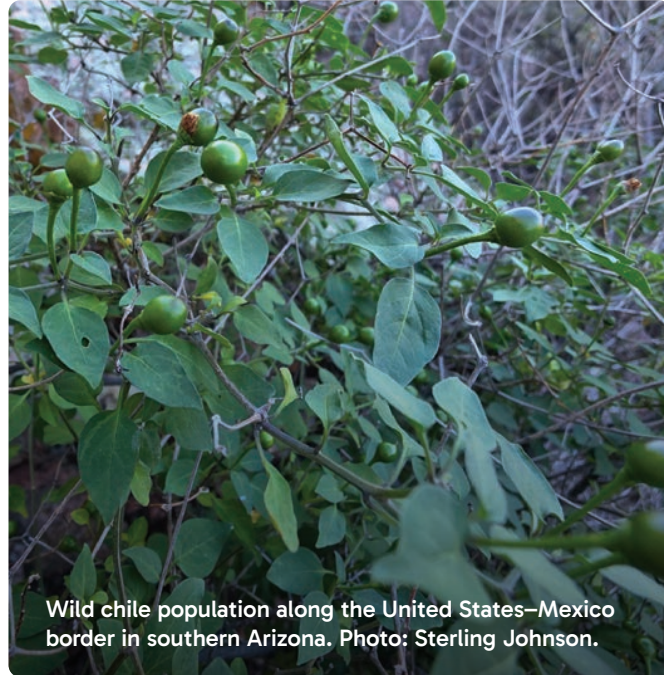


## Conservation Actions:

- **Build Ex Situ Capacity:**  
Establish a network of public gardens, nurseries, and conservation organizations to build capacity for seed collection, storage, and regeneration.
- **Prioritize Seed Collection:**  
Target new ex situ accessions from genetically distinct and vulnerable populations using in situ monitoring and genetic research to guide collection.
- **Support Indigenous-Led Stewardship:**  
Provide technical and financial resources to support the Indigenous-led propagation of wild chiles on tribal lands including the Tohono O’odham Nation.
- **Develop Cultivation Guidelines:**  
Produce and distribute multilingual educational materials focused on desert-adapted propagation.
- **Launch Urban Seed Grow-outs:**  
Partner with schools and community organizations to increase seed availability and public access.

## Theme 5: Data Governance and Coordination

**Goal:** Establish coordination and data governance protocols to bridge organizational silos, support decision-making, and respect data sovereignty.



### Update Data Systems and Governance

Creating a centralized, long-term data repository is critical to facilitate data sharing and inform natural resource management. In addition, adopting shared protocols and standardized digital tools is needed to bridge institutional silos and ensure field observations are consistent, accessible, and actionable. This data infrastructure must be accompanied by ethical data governance protocols to balance open sharing with robust safeguards for data sovereignty. Models such as the CARE Principles for Indigenous Data Governance (Collective Benefit, Authority of Control, Responsibility, and Ethics) emphasize community rights and collective benefits over extractive or purely technical models.

### Conservation Actions

- **Launch a Digital Clearinghouse:**  
Establish a shared repository to facilitate information exchange between researchers, field practitioners, and seed bank curators.
- **Standardize Field Protocols:**  
Deploy mobile data collection tools (e.g., Survey 123) to enable real-time reporting and ensure data consistency across conservation partners.
- **Formalized Ethical Data Management:**  
Develop data governance protocols that establish clear boundaries and protections for the management of Indigenous data.
- **Prioritize Reciprocal Support:**  
Transition to a model where data sharing is coupled with direct support for Indigenous-led conservation, including technical assistance and capacity building.



## Theme 6: Public Engagement & Narrative Reframing

**Goal:** Broaden the public conservation constituency through storytelling, education, and community science initiatives.

### Shift the Conservation Narrative

Building broad support for the wild chile requires a shift from technical terminology, such as “genetic resources”, toward a narrative centered on relationships. Reframing the wild chile as a living link between people, landscapes, and food systems makes conservation personal and relatable. Visual storytelling brings the plant’s history to life while elevating the local voices.

### Launch Strategic Awareness Campaigns

Cultivating a deep-seated public connection to the wild chile transforms passive interest into active stewardship. Leveraging Tucson’s status as a UNESCO City of Gastronomy will connect new audiences to conservation through the powerful lens of cuisine and regional identity. Creating high-visibility events such as a “Chile Big Day” or “Tucson Chile Month” will celebrate the wild chile’s cultural significance while simultaneously introducing the urgency of its conservation. To move from public awareness to action, participatory science initiatives like iNaturalist Bioblitz campaigns can engage community members in monitoring efforts, provided they include safeguards to protect sensitive populations from poaching. These efforts can be further enriched by partnerships with local organizations like the Tucson Bird Alliance, which highlight the chile’s broader ecological role in supporting wildlife and desert biodiversity.



Regional wild chile cultivars for sale at the Arizona-Sonora Desert Museum.

### Build Public Stewardship Capacity

Encouraging the public to “grow your own” also provides a tangible, hands-on contribution to conservation. Outreach efforts should promote home cultivation as a primary conservation action. Distributing propagation kits—complete with seeds, educational materials, and nurse plants—empowers schools and community groups to participate in stewardship while reducing harvest pressure on wild populations. Youth-focused programs are particularly impactful; introducing younger generations to the “mother of chiles” provides an accessible gateway to complex topics like the importance of biodiversity in our food systems.



Speakers (left to right: Perin McNelis, Josh Tewksbury, Gary Nabhan, Erin Riordan, Colin Khoury) highlight the ecological, economic, and cultural importance of wild chile conservation during a public panel at Tohono Chul. Photo: Luke Takata.

### Conservation Actions:

#### → Establish a Storytelling Hub:

Create a regional repository for photography, videos, and oral histories to support unified and compelling conservation messaging.

#### → Launch Public Campaigns:

Launch high-visibility public campaigns in partnership with local chefs and cultural organizations.

#### → Incentivize Home Cultivation:

Develop stewardship programs that provide the resources and knowledge needed for responsible cultivation.

#### → Integrate Youth Curricula:

Embed wild chile education into schools and youth programs, emphasizing biodiversity, cultural history, and climate adaptation.

#### → Mobilize Community Science:

Engage the public through community science initiatives to support mapping, monitoring, and climate-response observations.



Wild chile propagation and plant sales at the Arizona-Sonora Desert Museum promotes conservation through home gardens. Photo: Arizona-Sonora Desert Museum.

## Theme 7: Sustainable Funding

**Goal:** Establish financial stability to ensure the longevity of wild chile conservation.

### Funding Continuity

Conservation models often rely on short-term, unpredictable grant cycles and federal sources, leaving them vulnerable to political and economic shifts. This instability can result in interrupted research and lost momentum. To counteract this, a regional endowment or a distributed collaborative-based model is needed to decouple conservation efforts from unpredictable funding. This approach secures essential, long-term functions such as data curation, monitoring, and the maintenance of trust-based community relationships.

### Industry Engagement

One particularly effective way to frame the wild chile is as biological insurance; a narrative that specifically appeals to the interests of industry. Just as North America's wild grape relatives rescued the global wine industry from collapse, wild chile genetic diversity serves as a critical defense against diseases, pests, and climate shifts that could devastate the commercial market. Businesses that profit from chiles have a clear stake in the preservation of the plant's genetic and cultural heritage. Engaging these partners, however, requires safeguards to ensure that community access and conservation goals are prioritized before commercial interests are addressed.

### Conservation Actions:

#### → Develop a Distributed Funding Model:

Establish a multi-institutional funding structure to support core activities and leverage in-kind contributions from conservation partners to maximize collective impact.

#### → Coordinate Messaging:

Emphasize the wild chile's ecological, cultural, and economic importance to attract diverse public and private donors.

#### → Engage the Private Sector Ethically:

Create partnership frameworks that protect cultural knowledge and community benefit as a prerequisite for commercial collaboration.

## IV. Looking Forward

**Building on the momentum of the Wild Chile Botanical Area designation and decades of research, the 2025 Wild Chile Workshop signaled a pivotal shift: the need for a formal commitment to collective action.**

Participants proposed a coordinated collaborative designed to align partners, secure funding, and translate shared conservation priorities to lasting impact. The collaborative will prioritize investment in knowledge infrastructure—a shared

data platform and dedicated community and organizational liaisons—to provide the coordination and continuity needed for lasting conservation success. These strategic investments will be paired with targeted funding to meet immediate needs in ex situ collections management, advance focused research to inform conservation actions, and sustain long-term ecological monitoring (Table 2).



Facilitated discussion during the Wild Chile Conservation Workshop.  
Photo: Luke Takata.

## Immediate Next Steps

Near-term priorities will focus on formalizing the collaborative and launching coordinated actions to build momentum and capacity:

### Formalize the Collaborative:

Establish a core leadership team and a public-facing website to serve as a central hub for project alignment, unified outreach, and funding coordination.

### Secure Sustainable Funding:

Implement financial models that provide long-term support for core operations, including data management, relationship-building, and organizational capacity.

### Prioritize Data Governance & Sharing:

Develop secure frameworks for information access and data sharing to ensure all conservation partners can make informed, evidence-based decisions.

### Establish Biocultural Liaison Pathways:

Formalize partnerships with O’odham and Yaqui/Yoeme groups to co-develop stewardship models that center Indigenous priorities and respect Indigenous data sovereignty and governance.

### Expand Propagation:

Secure funding for urgent seed regeneration and coordinated grow-outs to maintain the viability, conservation, and accessibility of ex situ collections.

### Reassess Wild Populations:

Use historical data to prioritize monitoring needs and fund new field surveys, establishing a robust baseline for in situ management and future research.

### Cultivate Engagement:

Launch education campaigns and high-visibility events to build a cohesive regional identity that galvanizes public support for wild chile conservation.

## Long-Term Vision: Start Local, Build Global

Tucson’s unique convergence of biodiversity and cultural heritage positions it as a natural hub for protecting the wild relatives of our crops. While the wild chile serves as the collaborative’s lead species, this initiative establishes a scalable framework designed to encompass other key Aridamerican taxa, such as wild tepary beans and agave. By building lasting relationships between plants, landscapes, and the communities that steward them, the collaborative aims to create a powerful, integrated model for conservation that can be expanded across Aridamerica and beyond.

**Table 2:** Summary of Funding Imperatives.

Funding Imperative	Rational
<b>Formalize the Collaborative</b>	Establish a core leadership team and a public-facing website to serve as a central hub for project alignment, unified outreach, and funding coordination.
<b>Knowledge Infrastructure</b>	Secures data curation and liaison roles needed for coordination and continuity.
<b>Indigenous Stewardship</b>	Directs technical and financial resources toward Indigenous-led projects.
<b>Germplasm Security</b>	Guarantees that seed bank accessions remain genetically diverse, viable, and accessible through systematic regeneration and field collection.
<b>Genetic Surveys &amp; Monitoring</b>	Funds genomic surveys and long-term in situ field monitoring required to guide science-driven, adaptive management decisions.
<b>Public Engagement</b>	Supports high-visibility awareness campaigns, community science initiatives, educational materials, community propagation kits.

## Appendix A.

### Wild Relatives of Crops in the Wild Chile Botanical Area.

This plant species list was compiled from publicly available herbarium records and a 2019 field survey performed by the Coronado National Forest and Borderlands Restoration Network.

Family	Scientific Name	Taxon Author
Amaranthaceae	<i>Amaranthus fimbriatus</i>	(Torr.) Benth. ex S. Watson
Amaranthaceae	<i>Amaranthus palmeri</i>	S. Watson
Amaranthaceae	<i>Chenopodium neomexicanum</i>	Standl.
Amaranthaceae	<i>Chenopodium pratericola</i>	Rydb.
Amaranthaceae	<i>Salsola kali</i>	L.
Amaryllidaceae	<i>Allium kunthii</i>	G. Don
Apiaceae	<i>Daucus pusillus</i>	Michx.
Asparagaceae	<i>Agave palmeri</i>	Engelm.
Asparagaceae	<i>Agave schottii</i>	Engelm.
Asteraceae	<i>Artemisia ludoviciana</i>	Nutt.
Asteraceae	<i>Porophyllum ruderale</i>	(Jacq.) Cass.
Cactaceae	<i>Opuntia engelmannii</i>	Salm-Dyck ex Engelm.
Cactaceae	<i>Opuntia santa-rita</i>	(Griffiths & Hare) Rose
Convolvulaceae	<i>Ipomoea barbatisejala</i>	A. Gray
Convolvulaceae	<i>Ipomoea costellata</i>	Torr.
Convolvulaceae	<i>Ipomoea cristulata</i>	Hallier f.
Euphorbiaceae	<i>Croton ciliatoglandulifer</i>	Ortega
Euphorbiaceae	<i>Jatropha macrorhiza</i>	Benth.
Euphorbiaceae	<i>Manihot angustiloba</i>	(Torr.) Müll. Arg.
Fabaceae	<i>Phaseolus acutifolius</i>	A. Gray
Fabaceae	<i>Prosopis velutina</i>	Wooton
Fabaceae	<i>Vicia ludoviciana</i>	Nutt.
Juglandaceae	<i>Juglans major</i>	(Torr.) A. Heller
Lamiaceae	<i>Mentha arvensis</i>	L.
Malvaceae	<i>Abutilon abutiloides</i>	(Jacq.) Garcke ex Hochr.
Malvaceae	<i>Abutilon incanum</i>	(Link) Sweet
Malvaceae	<i>Abutilon mollicomum</i>	(Willd.) Sweet
Malvaceae	<i>Abutilon parishii</i>	S. Watson

(continued)

Malvaceae	<i>Gossypium thurberi</i>	Todaro
Moraceae	<i>Morus microphylla</i>	Buckley
Oxalidaceae	<i>Oxalis albicans</i>	Kunth
Oxalidaceae	<i>Oxalis drummondii</i>	A. Gray
Passifloraceae	<i>Passiflora arizonica</i>	(Killip) D.H. Goldman
Passifloraceae	<i>Passiflora bryonioides</i>	Kunth
Plantaginaceae	<i>Penstemon parryi</i>	(A. Gray) A. Gray
Plantaginaceae	<i>Plantago patagonica</i>	Jacq.
Poaceae	<i>Bromus arizonicus</i>	(Shear) Stebbins
Poaceae	<i>Bromus rubens</i>	L.
Poaceae	<i>Digitaria californica</i>	(Benth.) Henr.
Poaceae	<i>Digitaria insularis</i>	(L.) Mez ex Ekman
Poaceae	<i>Elymus elymoides</i>	(Raf.) Swezey
Poaceae	<i>Eragrostis cilianensis</i>	(All.) Vignolo ex Janch.
Poaceae	<i>Eragrostis intermedia</i>	Hitchc.
Poaceae	<i>Eragrostis pectinacea</i>	(Michx.) Nees ex Steud.
Poaceae	<i>Hopia obtusa</i>	(Kunth) Zuloaga & Morrone
Poaceae	<i>Setaria arizonica</i>	Rominger
Poaceae	<i>Setaria leucopila</i>	(Scribn. & Merr.) K. Schum.
Portulacaceae	<i>Portulaca suffrutescens</i>	Engelm.
Solanaceae	<i>Capsicum annuum var. glabriusculum</i>	(Dunal) Heiser & Pickersgill
Solanaceae	<i>Nicotiana obtusifolia</i>	M. Martens & Galeotti
Solanaceae	<i>Solanum douglasii</i>	Dunal
Solanaceae	<i>Solanum elaeagnifolium</i>	Cav.
Viburnaceae	<i>Sambucus nigra</i>	L.
Vitaceae	<i>Vitis arizonica</i>	Engelm.

ARIZONA-SONORA  
DESERT  
MUSEUM