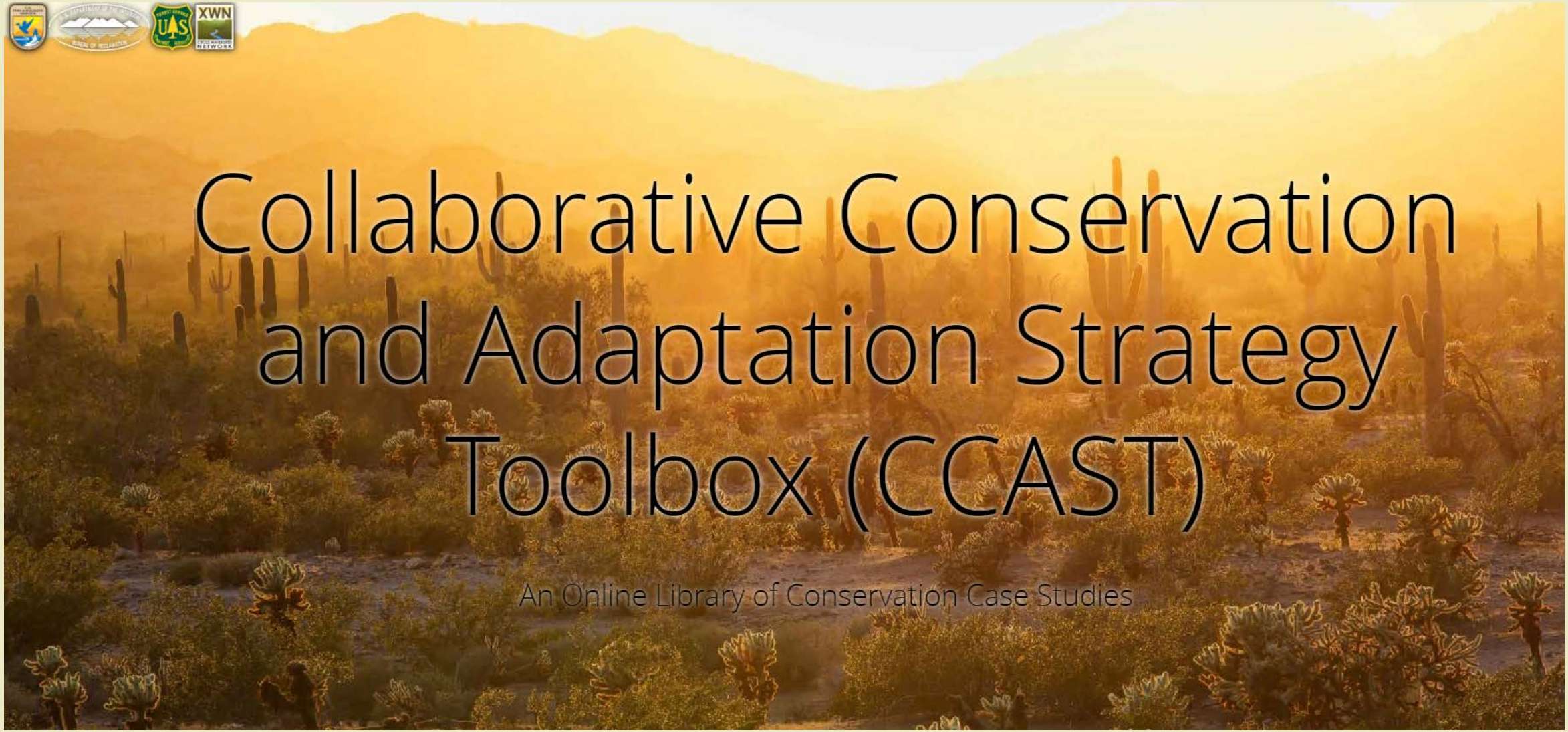


National Conference on Ecosystem Restoration

August 28, 2018

Brief History

Partners collaborating to address major natural resource challenges for the Mojave, Sonoran, and Chihuahuan Desert ecoregions.

Approach

Partners identified the need to improve communication about strategies to increase ecosystem resilience.

- Share stories about on-the-ground actions to learn more quickly about what works and what doesn't
- Provide connections between people working across large geographies
- Case studies that identify challenges and adaptation strategies to restore/conserve resources
- Focus on resource managers
- Provide accessible, usable resources in a "Management Toolbox"

What is a case study?

- On-the-ground conservation project shared through a standard, easy to read template
  - Stories of adaptation strategy success and failure
  - Can include monitoring frameworks, resource valuations (ecosystem services)
  - Address the needs of resource managers
- Improve communication across the region
  - Share stories that might not be easily available
- Used to populate the “Management Toolbox,” where information will be easy to access

Case Study Sections

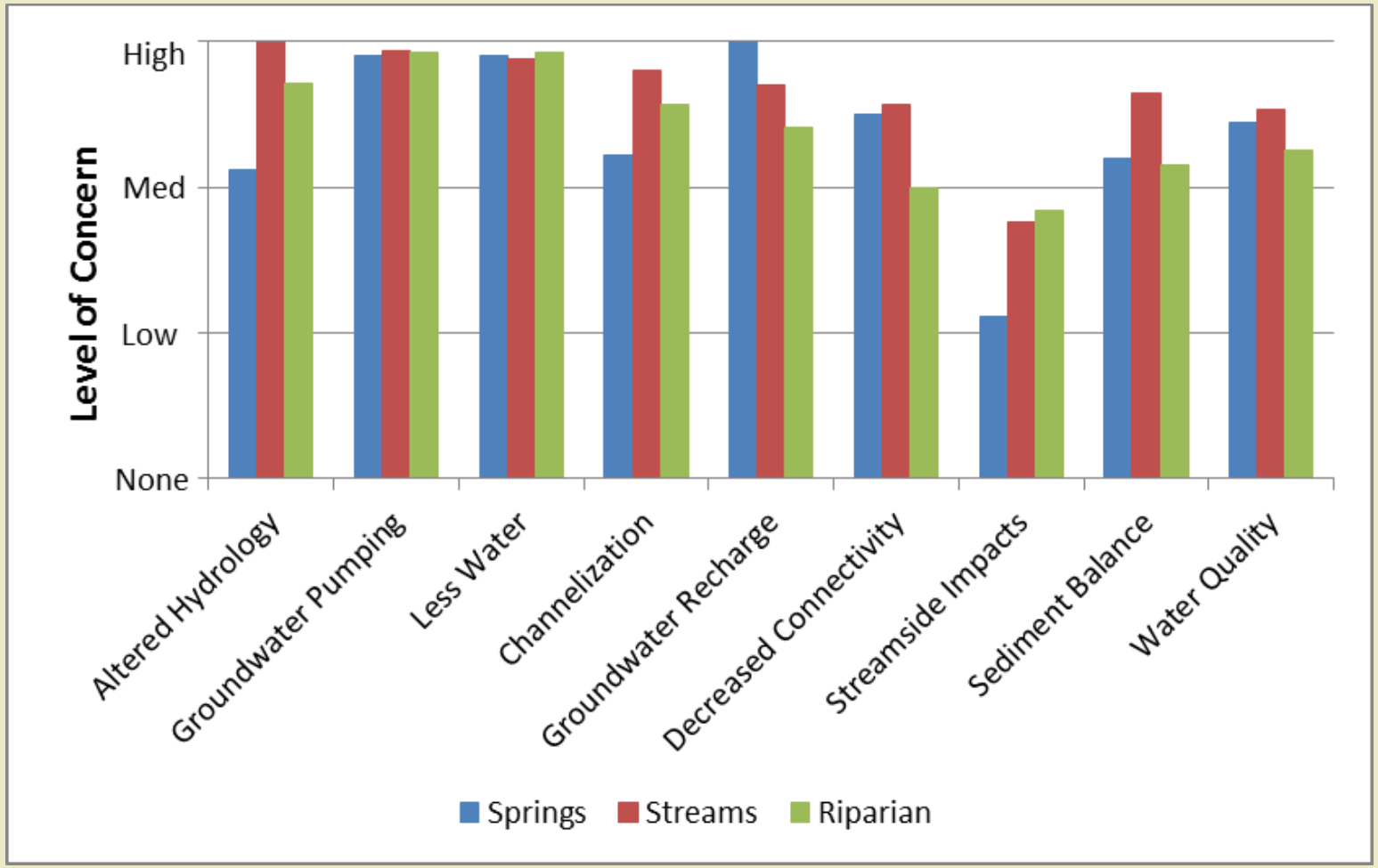
- Background
- Key Issues
- Project Goals
- Project Highlights
- Lessons Learned
- Next Steps
- Collaborators and Funding Partners
- Project Resources
- Key Contacts

photo: Dennis Caldwell

Identify Management Challenges

Questionnaire: Stressors by Ecosystem

Multiple Workshops



Identify Management Strategies

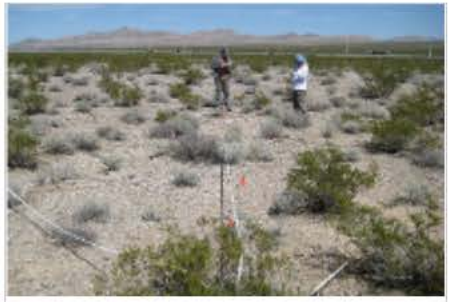
- Mitigation techniques
- Adaptation strategies
- Monitoring and adaptive management
- Landscape-scale collaboration and governance

What are land managers already doing?

What management strategies should be coordinated across geographies to maximize impacts?

What are strategies for now and probable future conditions?

Building the Toolbox: Topic-Based Galleries



Actionable Science

Research that can be applied by land managers.

Collaboration and Community Engagement

Partner engagement to improve effectiveness.

Connectivity and Corridors

Maintaining or improving habitat connectivity.

Cultural Resources

Gallery of Case Studies related to Cultural Resources

Fish and Wildlife

Projects designed to support fish and wildlife.

Landscape and Watershed-Scale

Restoration

Improving ecosystem condition

Socioeconomics

The social and economic aspects

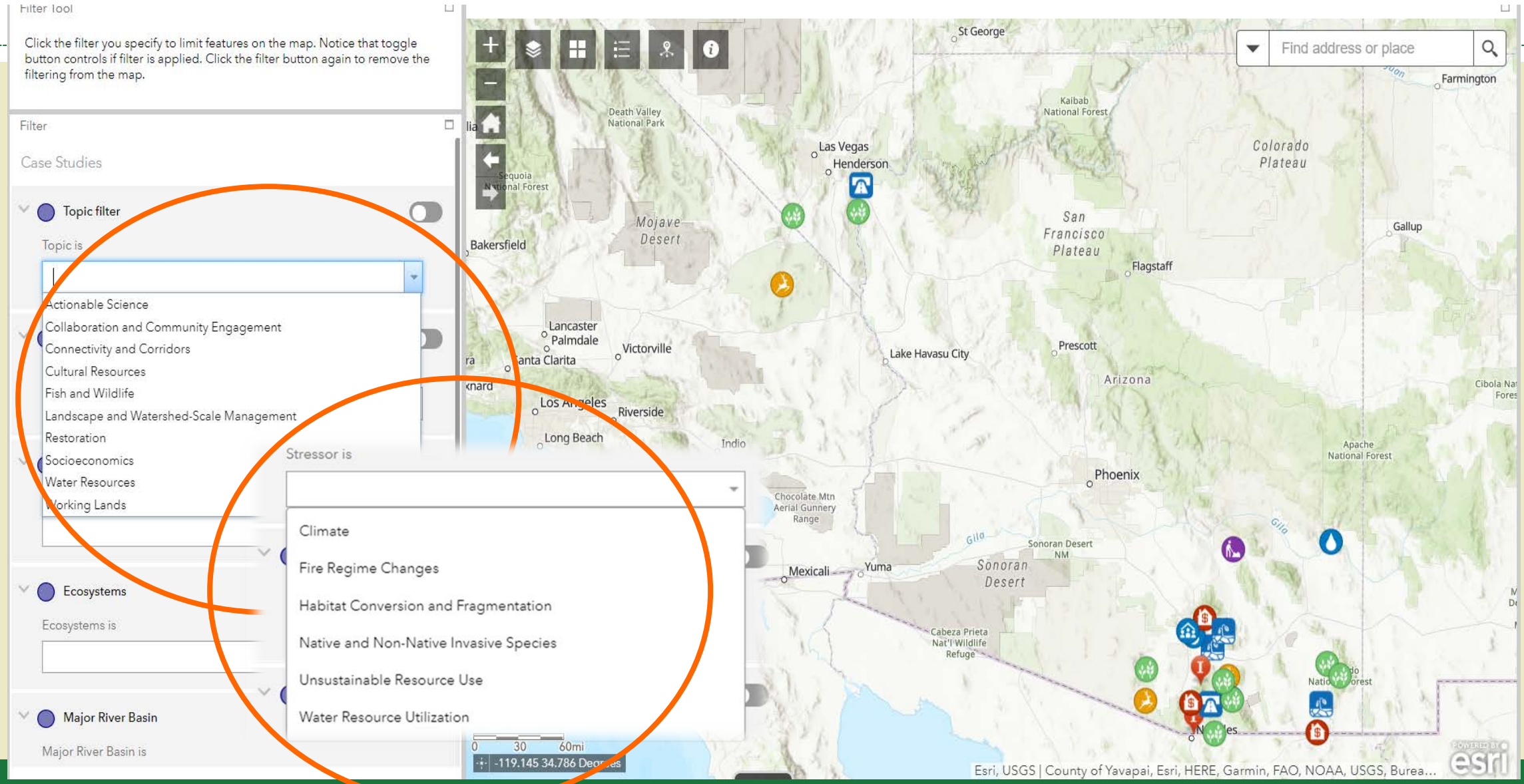
Water Resources

Projects on water resources for

Working Lands

Conservation on farms, ranches,

CCAST Interactive Map



CCAST Word Search

Search by Interactive Word Cloud

Sort by

Tags

adaptation adaptive management agriculture alternative agriculture amphibian aquatic Arizona biodiversity bird border buffelgrass California Chihuahua citizen science climate change collaboration Colorado communication community involvement connectivity conservation easement corridors cultural data management desertscrub development Dos Rios drought economic ecosystem services environmental flows erosion fire fish floodplain forest fragmentation GIS grassland grazing groundwater groundwater recharge habitat shifting and alteration hydrology Idaho invasive inventory invertebrate Kansas land cover landscape conservation design linear infrastructure lovegrass Madrean Watersheds mammal map mesquite Mexico model Mojave Desert monitoring montane National

Native Grass Hay Production for Multiple Benefits at the Cobra Ranch

Web Mapping Application

A Case Study on Water Conservation and Reuse

Determining Prescribed Fire Compatibility with Masked Bobwhite Quail Habitat Rehabilitation

Web Mapping Application

A Case Study on Actionable Science

Restoring Leopard Frog Habitat in Cienega Creek, Arizona

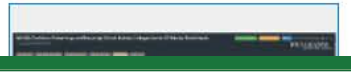
Web Mapping Application

A Case Study on Restoration

Prescribed Burns for Grassland Management at the Sevilleta National Wildlife Refuge

Web Mapping Application

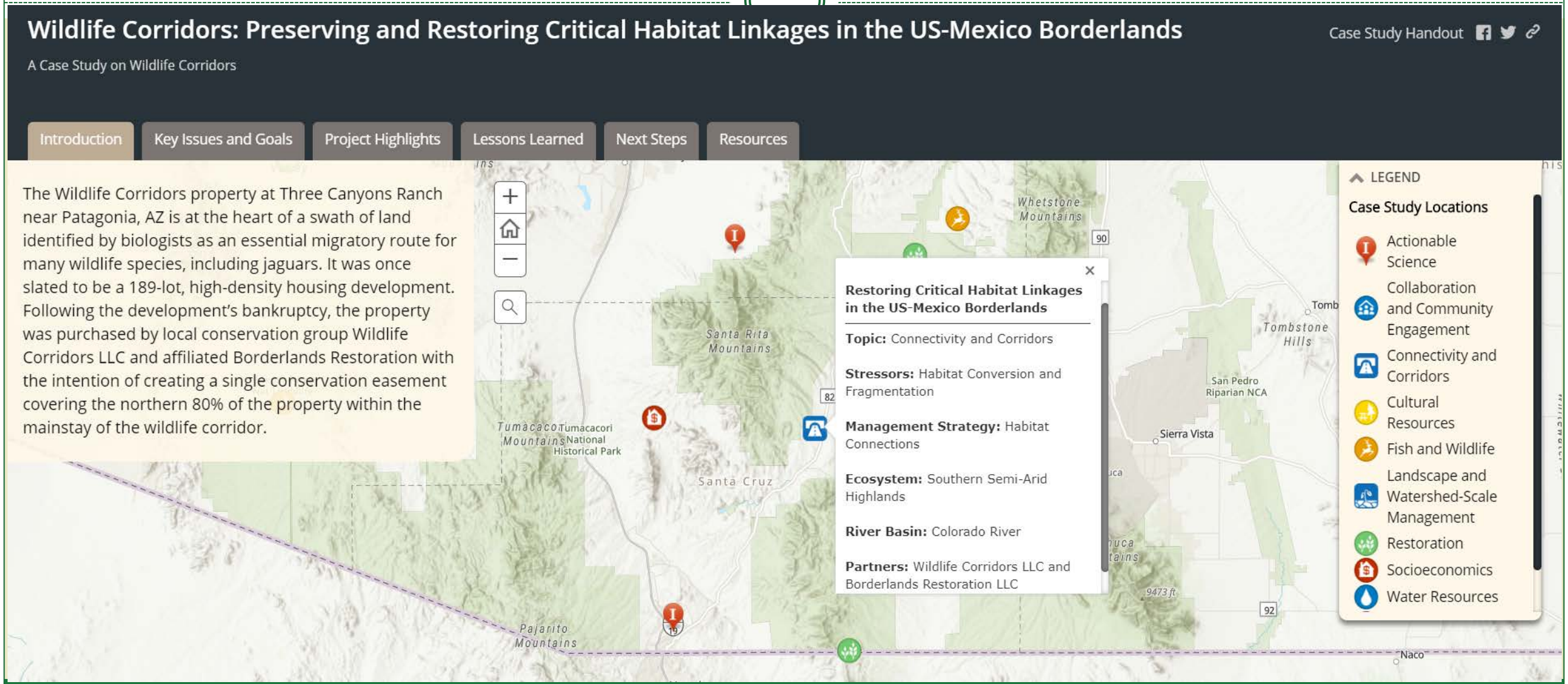
A Case Study on Fire Management



Wildlife Corridors: Preserving and Restoring Critical Habitat Linkages in the US-Mexico Borderlands

Web Mapping Application

CCAST: Online Toolbox



Wildlife Corridors: Preserving and Restoring Critical Habitat Linkages in the US-Mexico Borderlands

A Case Study on Wildlife Corridors

Linkages between undeveloped habitat are essential for genetic flow and biodiversity of wildlife species. These linkages, often called wildlife corridors, are increasingly threatened as human populations expand. Urbanization, agriculture, highways and other human development have led to habitat fragmentation and the overall disruption of migratory paths used by animals.

The conservation easement property preserves a critical corridor segment while managing for multiple use and enjoyment of the property by the surrounding communities. By involving local communities in learning from and tending to their local watershed, the property also serves to educate the public about the importance of undeveloped spaces for wildlife movement.

Project Goals

- Strategic acquisition of land identified as an important habitat linkage for several wildlife species
- Community engagement and education
- Management for moderate recreational use, ecological restoration, and wildlife corridor integrity

Wildlife Corridors: Preserving and Restoring Critical Habitat Linkages in the US-Mexico Borderlands

A Case Study on Wildlife Corridors

- **Community Engagement:** Public outreach and the dedication of community members who care deeply about the border region and its resident wildlife continue to be key factors project success. Regular reports to the county, local officials, and residents help raise awareness and increase for engagement. An array of people including youth, seasoned professionals, county officials, local contractors, retirees, and artists have found ways to care about a place they previously didn't know existed.
- **Mixed Model of Funding:** With cumulative expenses anticipated to be $2.4M by 2020, the Wildlife Corridors LLC Business Plan calls for income of roughly $3.2M from a combination of lot sales, grants, and philanthropic donations to the non-profit organizations Biophilia Foundation and BioR, 501-3-c. These organizations purchase the development rights on land in the corridor so it can be protected under a conservation easement. Furthermore, the partners have pledged that 80% of any profit made from the sale of lots will go into a dedicated fund for

Wildlife Corridors: Preserving and Restoring Critical Habitat Linkages in the US-Mexico Borderlands

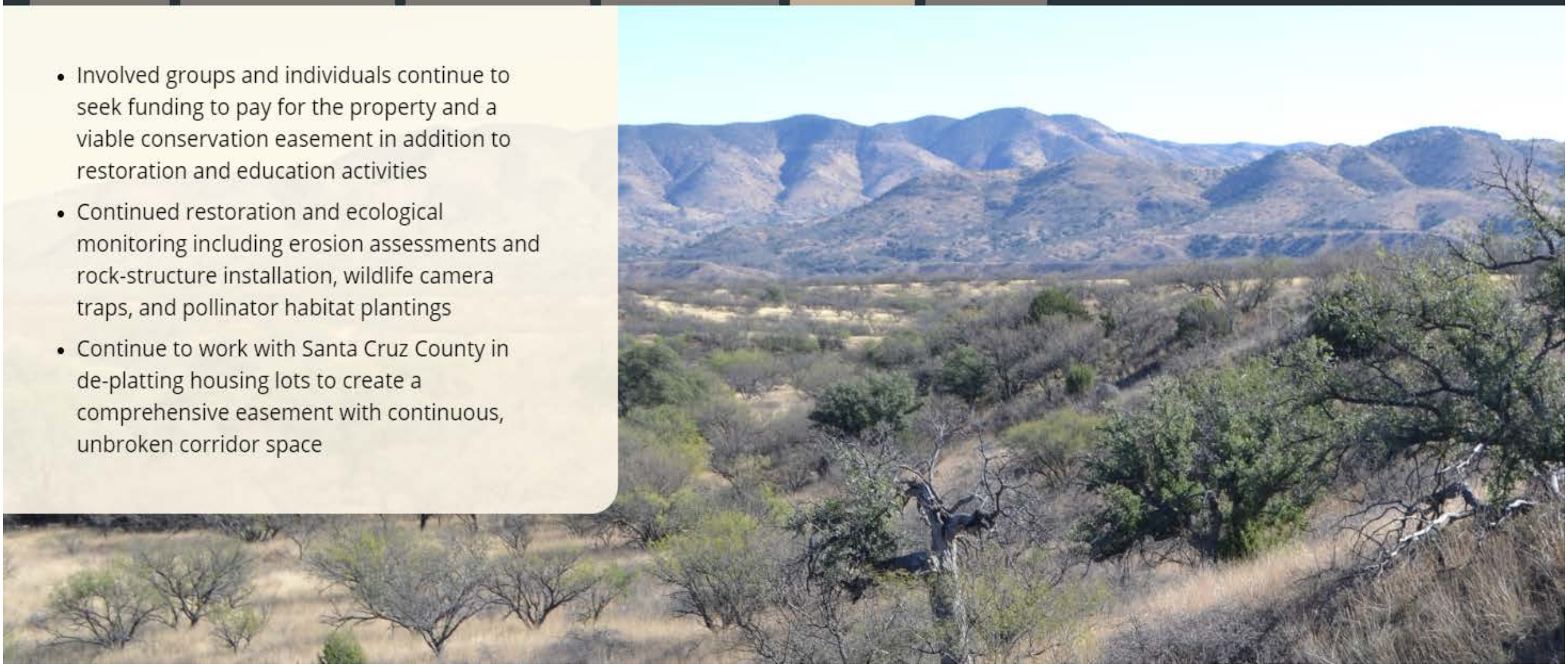
A Case Study on Wildlife Corridors

- Considering and responding to community perceptions was vital in early stages and throughout the process. Public and private variables were carefully tended to through consistent and strong communication.
- Close work with the bank that held the foreclosed mortgage, including attending to the lender's values, needs and desires initiated success. Likewise, respectful work with existing lot owners, the easement holder, and the former development owner enabled the work to continue and morale to remain high.
- Future efforts of this nature should research interested parties thoroughly in order to gauge financial contribution potential and other forms of interest. Creative options for funding should be explored and assessments should be conducted of how much time and money are required for long-term property management.
- A major challenge of this effort involves sustaining conservation with limited financial resources. Parsing out intricate legal and real

Wildlife Corridors: Preserving and Restoring Critical Habitat Linkages in the US-Mexico Borderlands

A Case Study on Wildlife Corridors

- Involved groups and individuals continue to seek funding to pay for the property and a viable conservation easement in addition to restoration and education activities
- Continued restoration and ecological monitoring including erosion assessments and rock-structure installation, wildlife camera traps, and pollinator habitat plantings
- Continue to work with Santa Cruz County in de-platting housing lots to create a comprehensive easement with continuous, unbroken corridor space



Wildlife Corridors: Preserving and Restoring Critical Habitat Linkages in the US-Mexico Borderlands

A Case Study on Wildlife Corridors

Collaborators

- Ron Pulliam
- Jack May
- Seibert Ecological Restoration LLC
- Many community members of the region

Funding Partners

- AZ Department of Forestry
- FWS grant
- Private contributions to Biophilia Foundation and BioR, 501-3-c

Resources

- Case Study Handout
- Arizona Missing Linkages: Patagonia-Santa Rita Linkage Design by AGFD and NAU
- Wildlife Corridors webpage

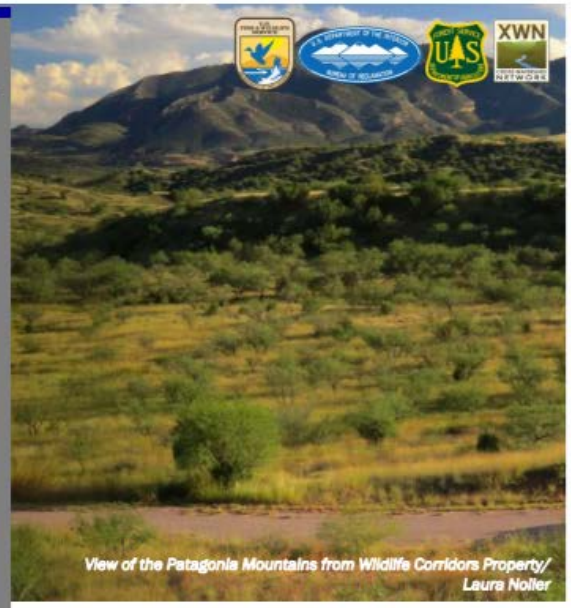
Photo Gallery

- View the photo album

HABITAT CONNECTIONS

Wildlife Corridors LLC: Preserving and Restoring Critical Habitat Linkages in the US-Mexico Borderlands

The Wildlife Corridors property at Three Canyons Ranch near Patagonia, AZ is at the heart of a swath of land identified by biologists as an essential migratory route for many wildlife species, including jaguars. It was once slated to be a 189-lot, high-density housing development. Following the development's bankruptcy, the property was purchased by local conservation group Wildlife Corridors LLC and affiliated Borderlands Restoration with the intention of creating a single conservation easement covering the northern 80% of the property within the mainstay of the wildlife corridor.



View of the Patagonia Mountains from Wildlife Corridors Property/ Laura Noller

KEY ISSUES ADDRESSED

Linkages between undeveloped habitat are essential for genetic flow and biodiversity of wildlife species. These linkages–often called wildlife corridors–are becoming increasingly threatened as human populations expand. Urbanization, agriculture, highways and other human development have led to habitat fragmentation and the overall disruption of migratory paths used by animals.

The Wildlife Corridors property preserves a critical corridor segment while managing for multiple uses and enjoyment by the surrounding communities. By involving local communities in learning from and tending to their local watershed, the property also serves to educate the public about the importance of undeveloped spaces for wildlife movement.

PROJECT GOALS

- Strategic acquisition of land identified as an important habitat linkage for several wildlife species
- Community engagement and education
- Manage for moderate recreational use, ecological restoration, and wildlife corridor integrity

"UN-DEVELOPMENT" The purchase of the Three Canyons Ranch property initiated the conversion of 189 housing lots and fragmented conservation easement into a wildlife-only corridor where human impacts remain minimal.

A Dense Agave Patch on the Wildlife Corridors Property/ Allegra Mount

PROJECT HIGHLIGHTS

Community Engagement: Public outreach and the dedication of community members who care deeply about the border region and its resident wildlife continue to be key factors in project success. Regular reports to the county, local officials, and residents help raise awareness and increase engagement. An array of people including youth, seasoned professionals, county officials, local contractors, retirees, and artists seemed to have found ways to care about a place they didn't know existed.

Mixed funding model: With cumulative expenses anticipated to be $2.4M by 2020, the Wildlife Corridors LLC Business Plan calls for income of roughly $3.2M coming from a combination of lot sales, grants, and philanthropic donations to the non-profit organizations Biophilia Foundation and BioR, 501-3-c. These organizations purchase the development rights on land in the corridor so it can be protected under a conservation easement. Furthermore, the Wildlife Corridors Partners have pledged that 80% of any profit made from the sale of lots will go into an dedicated fund with the Arizona Community Foundation (ACF) for the maintenance and improvement of the wildlife corridor.

Collaborators

Ron Pulliam, Jack May, Seibert Ecological Restoration LLC, and many community members of the region

Funding Partners

Arizona Department of Forestry, Fish and Wildlife Service, and private contributions

Case study support provided by US Fish and Wildlife Service, US Bureau of Reclamation, US Forest Service, and Cross Watershed Network. Updated August 2018.

LESSONS LEARNED

Considering and responding to community perceptions have been vital. Public and private needs were carefully tended to through consistent and strong communication.

Close work with the bank that held the foreclosed mortgage, including attending to the lender's values initiated success. Likewise, respectful work with existing lot owners, the easement holder, and the former development owner enabled the project to continue and morale to remain high.

A major challenge of this effort involves sustaining conservation with limited financial resources. Parsing out intricate legal and real estate nuances of the property acquisition is time-consuming and challenging.

NEXT STEPS

- Involved groups and individuals continue to seek funding to pay for the property and a viable conservation easement in addition to restoration and education activities
- Continued restoration and ecological monitoring including erosion assessments and rock-structure installation, wildlife camera traps, and pollinator habitat plantings
- Continue to work with Santa Cruz County in de-platting housing lots to create a comprehensive easement with continuous, unbroken corridor space

PROJECT RESOURCES

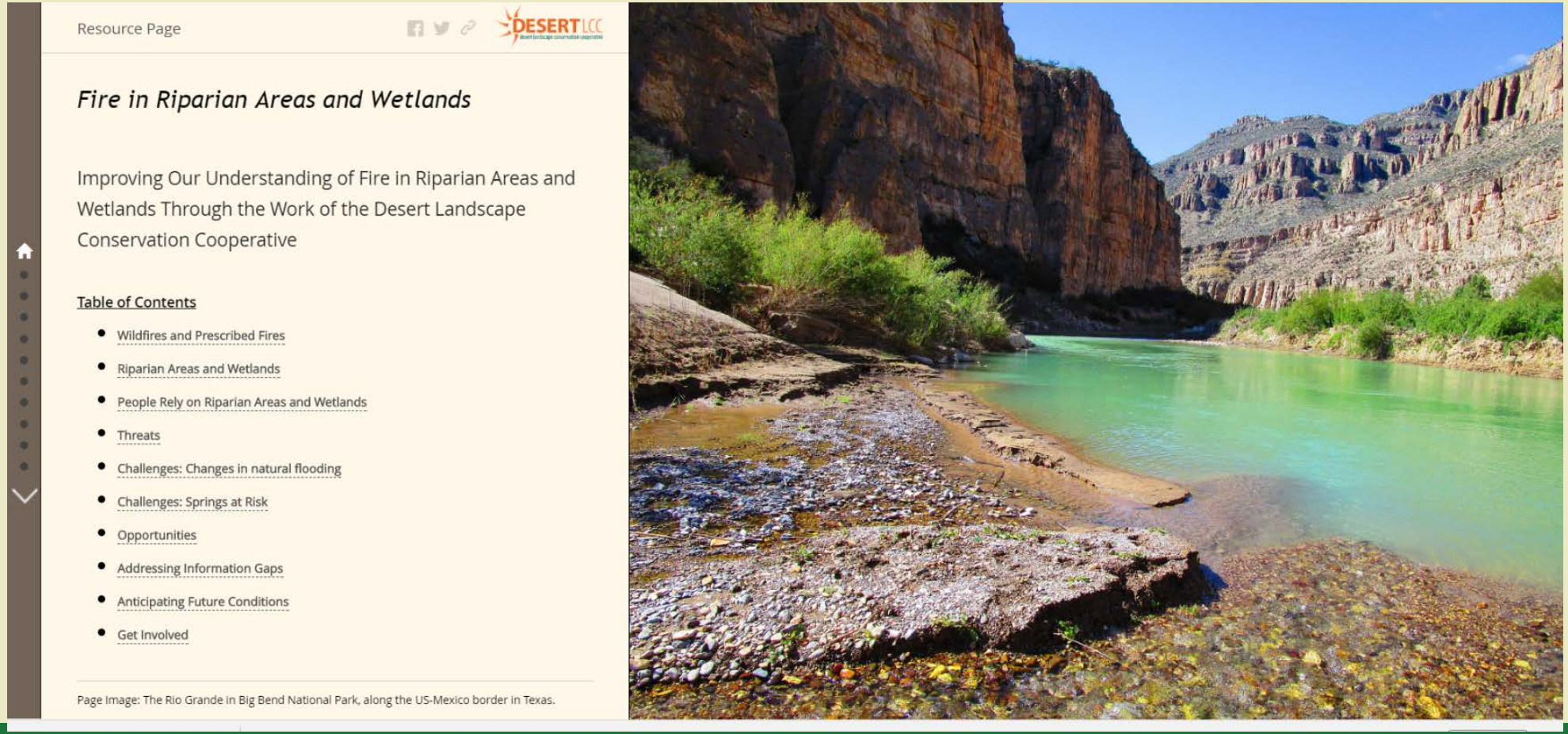
For more information on this project, contact David Seibert: dseibert@email.arizona.edu

For additional project resources and case studies, visit the Collaborative Conservation and Adaptation Strategy Toolbox: WWW.DESERTLCC.ORG/RESOURCE/CCAST

Rock Structures Reduce Erosion on the Wildlife Corridors Property/Caleb Weaver

Next Steps

- Case studies arranged by topic in storymaps



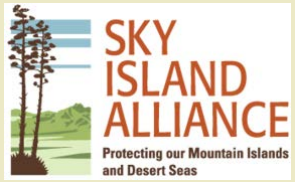
Our Own Lessons Learned

- Use existing partner network
- Direct outreach by staff and graduate students
- Co-development of case study text & peer review
- Focus on what you can accomplish

Who's Involved

- USDA Southwest Climate Hub
- US Fish and Wildlife Service
- US Forest Service/Rocky Mountain Research Station
- Bureau of Reclamation Lower Colorado Regional Office
- Desert LCC Science Working Group
- XWN – Cross Watershed Network
- Tamarisk Coalition
- University of New Mexico
- University of Arizona

Case Study Contributors to Date



Contribute your Case Studies!

"These adaptation case studies will be a great resource for the collaborative planning that is taking place in the Lower Santa Cruz watershed."
-Federal agency partner

- Share your stories
- Showcase your work and organization
- Interact with other practitioners

“I am always looking for new ideas to guide us in our restoration and resource management responsibilities. Narratives like these offer real-life examples of the challenges we all face and provide solutions.” Jeff Bennett, Big Bend National Park, National Park Service

Thank you!

Matt Grabau, US Fish and Wildlife Service Science Coordinator

matthew_grabau@fws.gov

Genevieve Johnson, Bureau of Reclamation

gjohnson@usbr.gov

https://desertlcc.org/resources/story-map