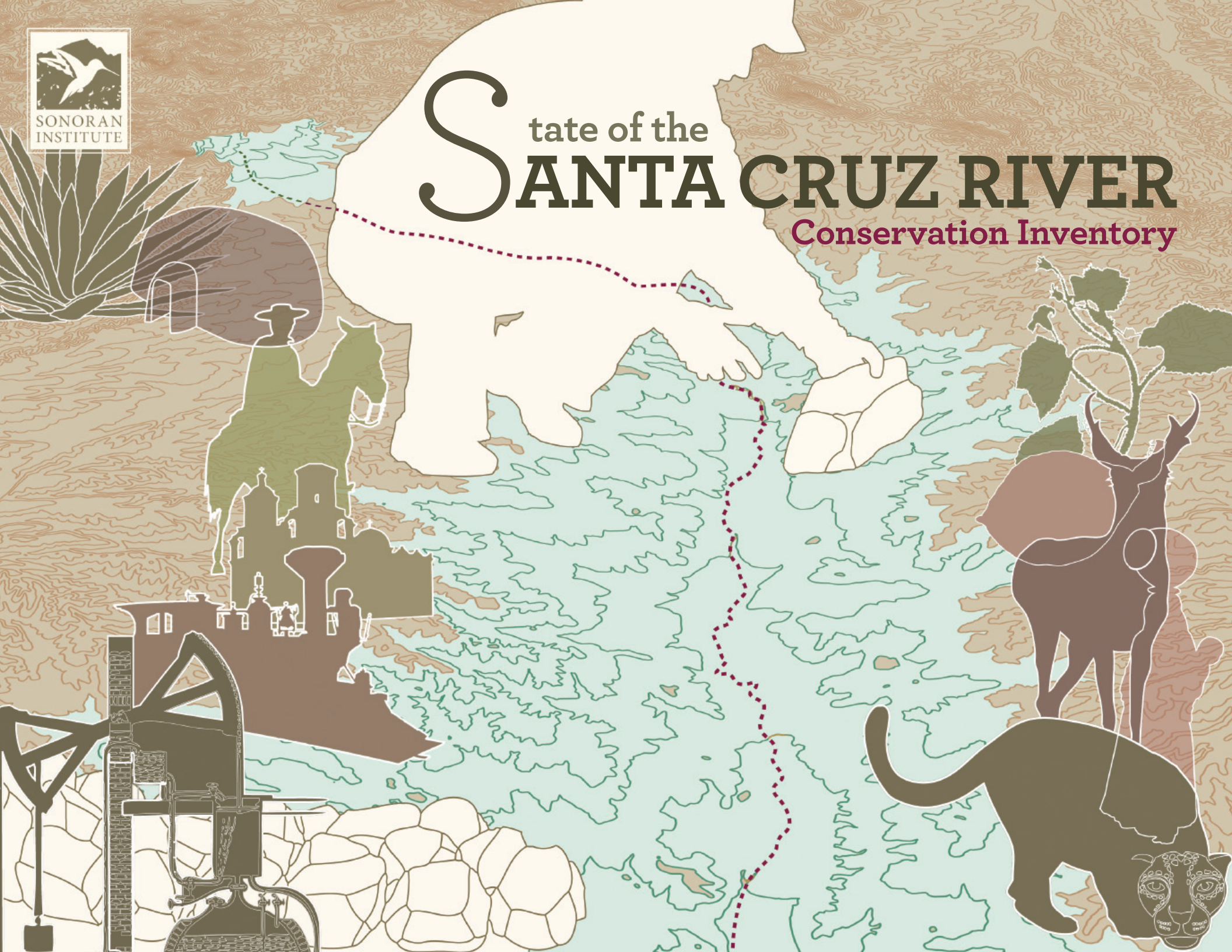




State of the **SANTA CRUZ RIVER** Conservation Inventory



Sonoran Institute Mission and Vision

The Sonoran Institute inspires and enables community decisions and public policies that respect the land and people of western North America. Facing rapid change, communities in the West value their natural and cultural resources, which support resilient environmental and economic systems.

Founded in 1990, the Sonoran Institute helps communities conserve and restore those resources and manage growth and change through collaboration, civil dialogue, sound information, practical solutions and big-picture thinking.

Our passion is to help shape the future of the West with:

- Healthy Landscapes that support native plants and wildlife, diverse habitat, open spaces, clean energy and water, and fresh air.
- Livable communities where people embrace conservation to protect quality of life today and in the future.
- Vibrant economies that support prosperous communities, diverse opportunities for residents, productive working landscapes and stewardship of the natural world.

The Sonoran Institute is a nonprofit organization with offices in Tucson and Phoenix, Arizona; Bozeman, Montana; Glenwood Springs, Colorado and Mexicali, Baja California, Mexico.

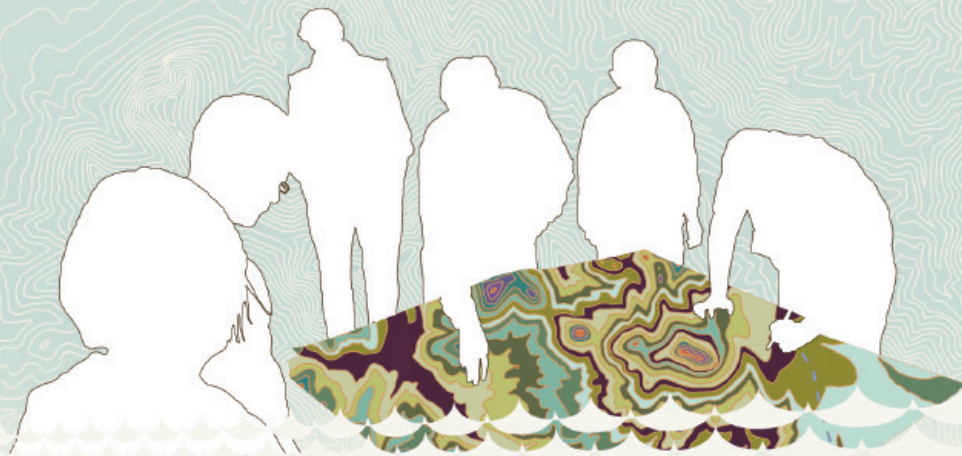
www.sonoraninstitute.org



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State of the Santa Cruz River—companion document is available at: <http://tiny.cc/scrci>



Introduction

The Santa Cruz River and other riparian areas in the watershed have long been the backbone of the region's natural and cultural heritage. This rich history is highlighted in the *State of the Santa Cruz River* (available at <http://tiny.cc/scrci>).

This companion document, *State of the Santa Cruz River—Conservation Inventory*, aims to acknowledge the numerous conservation efforts underway throughout the region that promote watershed health as well as protect and restore the river. Understanding the “who”, “what”, and “where” of conservation efforts is crucial to fostering collaboration and ensuring long-term conservation success. Recognizing conservation priorities is also vital to success. This resource compiles the following:

Who: different organizations, alliances, and collaborations working in the watershed. If your group or effort is missing, please contact us so we can include your work.

Conservation Efforts: the general location and groups implementing restoration, monitoring, or some other conservation activity.

Conservation Priorities: the general location and description of collectively identified areas that are of high conservation value.

HOW WAS THE INVENTORY COMPLETED?

This inventory stems primarily from a binational mapping session held during the Madrean Archipelago Conference in May 2012 (see Santa Cruz River Conservation Symposium, <http://tiny.cc/scrci>). The goals of the mapping session were to identify conservation efforts and conservation priorities. The mapping exercise focused on the southern half of the Santa Cruz River watershed, from the Pima/Pinal County line south into Mexico.

The Sonoran Institute provided draft maps that included points identifying locations of known conservation efforts. Each point was marked with a number that corresponded to a general description of the effort and the lead organizations involved. Participants were asked to comment on existing points and descriptions, as well as draw additional points associated with other conservation efforts. The resulting inventory included the following efforts: land protection, monitoring, research, restoration, coalition or partnership, public utility, education, and inventory. We presented updated versions of these maps at Santa Cruz River Research Days in April 2013. Additional efforts were identified at that time.



To determine conservation priorities, we asked participants to map and describe areas that were of high value. The attendees of the 2012 mapping session identified all the areas in the following maps. The conservation priority map is preliminary and needs your input. Please contact us to update the map with additional priorities. We will present the maps annually at Santa Cruz River Research Days.

As we read in *State of the Santa Cruz River*, natural and cultural resources are inextricably linked along the river channel and throughout the watershed. Therefore, this inventory includes conservation efforts and priorities that relate to both natural and cultural resources. We use the term “cultural” loosely to refer to efforts and priorities that relate more directly to people rather than nature. However, people are part of nature, so this label is subjective. The distinction has relevance on-the-ground, however, as natural and cultural conservation groups often work independently and in different circles. With this inventory, we hope to catalyze new partnerships across sectors or strengthen existing relationships. We plan to include more cultural conservation efforts in future updates to these maps.

OVERVIEW OF TERMS

Santa Cruz River Watershed—the area encompassed by lands that water runs over, under, or through on its way to the river.

Riparian—the plant and animal communities that are associated with water bodies like streams or dependent on sites with year round or seasonal water.

Restoration—enhancing the health or integrity of the resources in a particular location.

Monitoring—collecting scientific information at regular intervals, as opposed to one time only, in order to understand the status or condition of the resources in a particular location; monitoring data can be used to answer research questions.

Research—collecting and analyzing scientific data to answer a specific question about a resource.



Who is Working in the Region?

Below are the organizations and entities identified in the inventory and links to their websites.

Altar Valley Conservation Alliance
www.altarvalleyconservation.org

Arizona Game and Fish Department
www.azgfd.gov

Arizona Department of Environmental Quality
www.azdeq.gov

Arizona Native Plant Society, Tucson Chapter
www.aznps.com/index.html

Asociación de Reforestación de Ambos Nogales
(Association of Reforestation for Ambos Nogales)
www.arannogales.net

Audubon Arizona
<http://az.audubon.org>

Buenos Aires National Wildlife Refuge
www.fws.gov/refuge/buenos_aires

Bureau of Land Management
www.blm.gov/az/st/en.html

Bureau of Reclamation
www.usbr.gov

Cienega Watershed Partnership
www.cienega.org

City of Tucson
<http://cms3.tucsonaz.gov>

Coalition for Sonoran Desert Protection
www.sonorandesert.org

Desert Botanical Garden
www.dbg.org

Frente Cívico Nogalense (non-profit working in Nogales, Sonora, website unavailable)

Friends of the Santa Cruz River
www.friendsofsantacruzriver.org

Friends of Sonoita Creek
<http://sonoitacreek.org>

FROG Conservation Project
<https://sites.google.com/site/frogspotsprogram>

National Audubon Society
www.audubon.org

Instituto Tecnológico de Nogales
www.itnogales.edu.mx

International Boundary and Water Commission
www.ibwc.state.gov

National Fish and Wildlife Foundation
www.nfwf.org

National Park Service, Sonoran Desert Network
<http://science.nature.nps.gov/im/units/sodn>

National Park Service, Tumacácori National Historical Park
www.nps.gov/tuma/index.htm

Pima Association of Governments
www.pagnet.org

Pima County
www.pima.gov

Pima County Regional Flood Control District
<http://rfcd.pima.gov>

Pima County Regional Wastewater Reclamation
Department
www.pima.gov/www

Santa Cruz County
www.santa-cruz.az.us

Save the Scenic Santa Ritas
www.scenicsantaritas.org

Santa Cruz Valley Heritage Alliance
www.santacruzheritage.org

Sky Island Alliance
www.skyislandalliance.org

Sonoran Institute
www.sonoraninstitute.org

Sonoran Joint Venture
<http://sonoranjv.org>

Southern Arizona Buffelgrass Coordination Center
www.buffelgrass.org

The Hummingbird Monitoring Network
www.hummonnet.org/index.html

The Nature Conservancy
www.nature.org or <http://azconservation.org>

Tohono O'odham Nation—San Xavier District
www.waknet.org

Town of Sahuarita
<http://sahuaritaaz.gov>

Tucson Audubon Society
www.tucsonaudubon.org

Universidad de Sonora, Mexico
www.uson.mx

University of Arizona
www.arizona.edu

University of Arizona, Water Resources
Research Center
<https://wrrc.arizona.edu>

U. S. Army Corps of Engineers
www.usace.army.mil

U. S. Fish and Wildlife Service
www.fws.gov

U. S. Geological Survey
www.usgs.gov

Watershed Management Group
<http://watershedmg.org>



Conservation Efforts

INVENTORY MAPS

The maps on the following pages show the general locations of conservation efforts. Each is marked with a discrete number. We overlaid these numbers on a base map of natural and cultural resources. This base map includes archaeological preserves identified by Santa Cruz Valley Heritage Alliance in the *Feasibility Study for the Santa Cruz Valley National Heritage Area*, historical districts, and protected lands that preserve both natural and cultural resources. For example, Pima County acquired thousands of acres of land specifically to protect ranches, historic sites, and other important cultural and natural resources as part of the Sonoran Desert Conservation Plan (learn more about the plan at: <http://www.pima.gov/cmo/sdcp/index.html>).

The overview map shows the portion of the Santa Cruz River Watershed represented in this inventory and provides the legend for the base map. Maps on the pages immediately following the overview map display the conservation efforts identified in the Tucson and Nogales regions. Click within the boxes on the overview map to easily navigate to the regional map of interest.

To study a particular mapped effort, locate the corresponding number, or Map ID, in the list that follows the maps. Click on the effort icon in the map to easily navigate to the page that includes the corresponding effort description. Buttons at the bottom of each page will take you back to either regional map.

The description of each **conservation effort** outlines the following:

- Map ID;
- resource type (natural, cultural, or both);

- region or location;
- effort type;
- groups or partners involved;
- activities; and
- timeframe.

The descriptions do not provide exhaustive detail about each conservation effort, but rather a quick reference to help identify potential contacts. However, more information is available for some of the conservation efforts at: <http://www.southwestlearning.org/santacruz>

WHAT ARE WE MISSING?

We recognize that this inventory is far from complete. We hope this will be a useful reference for the natural and cultural conservation community to learn from each other and better coordinate efforts. We trust that this reference will continue to grow and have designed this publication in such a way to permit easy updates with new information. Currently this resource is a digital publication, but we hope it will evolve into a more interactive tool in the future.

SUBMITTING NEW INFORMATION

Please submit new information or modifications/updates to existing information in this document to: Claire Zugmeyer at czugmeyer@sonoraninstitute.org. Type “Conservation Inventory” in the subject line and we will update the document.

OVERVIEW MAP



- Historical Districts
- Archaeological Preserves
- Anza Trail Corridor
- Wastewater Treatment Plant
- Flow Direction

FLOW STATUS*

- Perennial (year-round)
- Effluent Dominated
- Formerly Perennial
- Seasonal/Intermittent

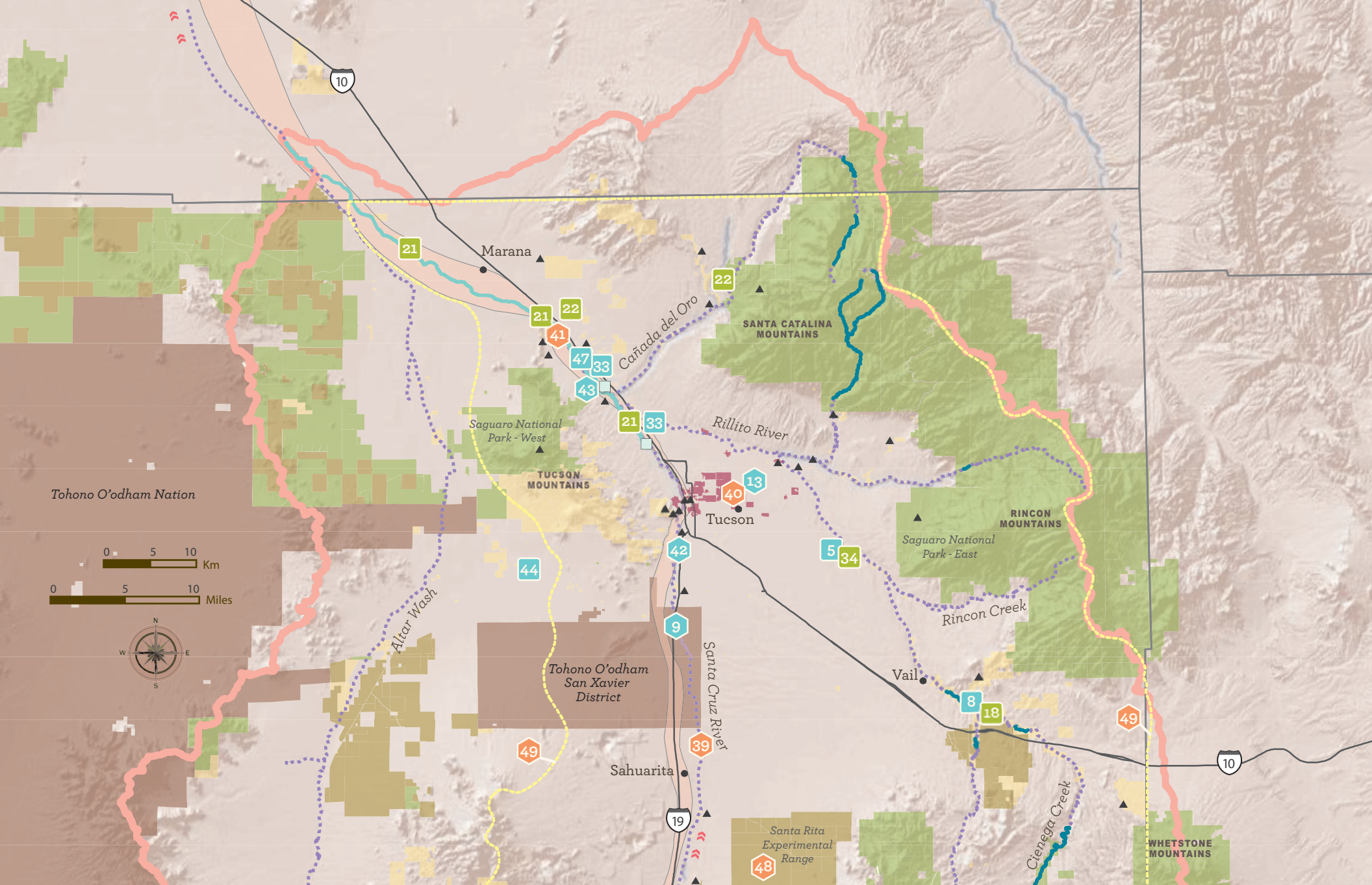
*United States – 2010, The Nature Conservancy; Mexico – 2003, Arizona-Sonora Desert Museum

LAND PROTECTION*

- U.S. Federal Protection
- U.S. State, Local, Private Protection
- U.S. State, Local, Private – Managed for Conservation







*Mexican landownership differs, conservation status unknown

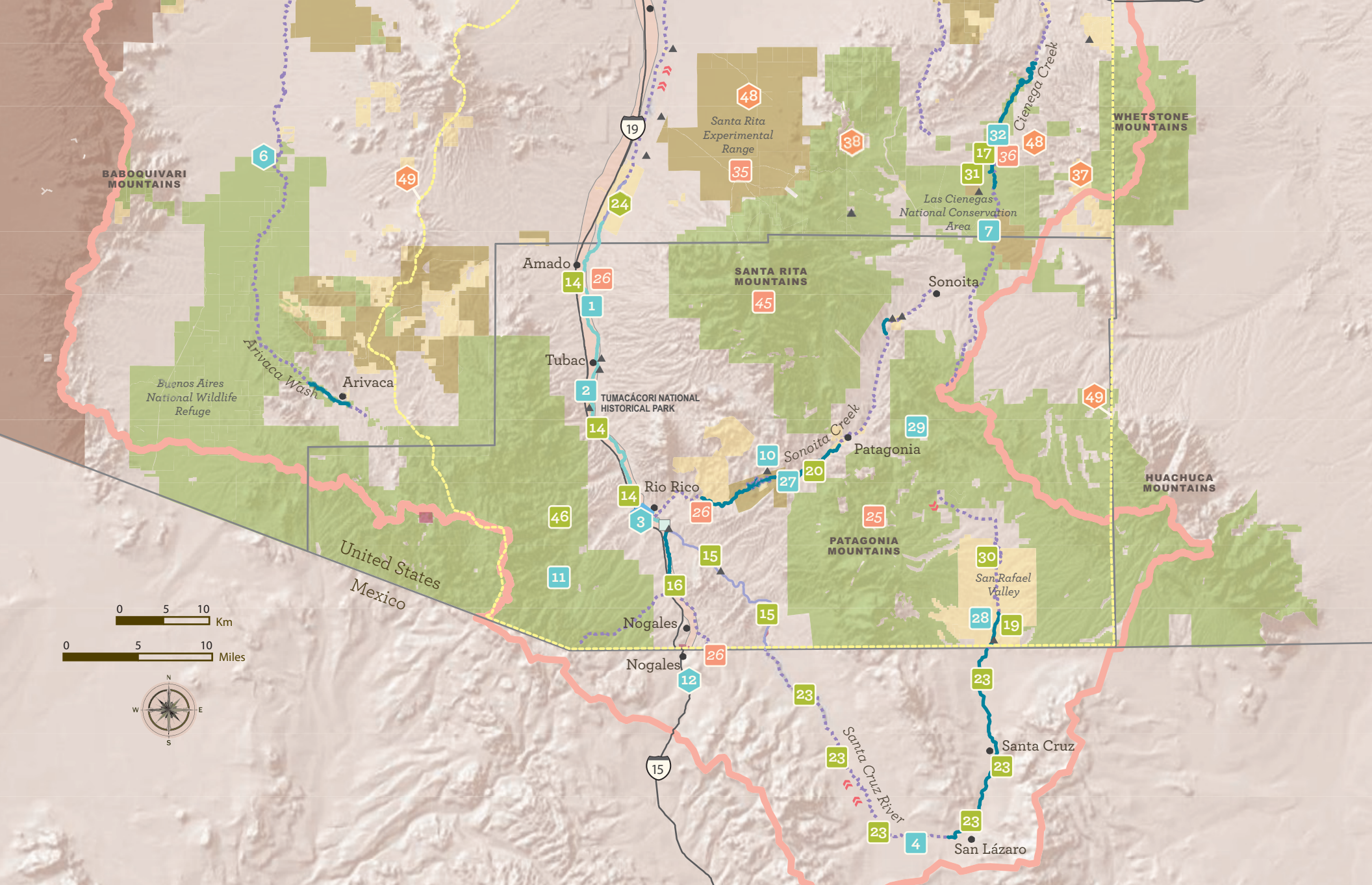




SANTA CRUZ RIVER WATERSHED TUCSON REGION

EFFORTS LEGEND

- | | |
|--|---|
|  Natural |  Restoration |
|  Cultural |  Monitoring |
|  Natural and Cultural |  Other |



SANTA CRUZ RIVER WATERSHED NOGALES REGION

EFFORTS LEGEND

- | | |
|----------------------|-------------|
| Natural | Restoration |
| Cultural | Monitoring |
| Natural and Cultural | Other |

CONSERVATION EFFORTS DESCRIPTIONS

1

RESOURCE TYPE: Natural
REGION/LOCATION: Esperanza Ranch
EFFORT TYPE: Restoration
GROUPS/PARTNERS: Tucson Audubon Society
ACTIVITIES: Restoration of riparian vegetation along the river
TIMEFRAME: Active

2

RESOURCE TYPE: Natural
REGION/LOCATION: Tumacácori National Historical Park
EFFORT TYPE: Restoration
GROUPS/PARTNERS: National Park Service, Sonoran Institute
ACTIVITIES: Restoration of riparian vegetation along the river; cottonwood/willows in area that burned, water harvesting to encourage restoration of mesquite bosque in old agricultural field
TIMEFRAME: Active

3

RESOURCE TYPE: Natural and Cultural
REGION/LOCATION: Guy Tobin Trailhead
EFFORT TYPE: Restoration
GROUPS/PARTNERS: Friends of the Santa Cruz River, Santa Cruz County, Watershed Management Group,
ACTIVITIES: Stormwater mitigation and erosion control; use of Zuni bowl and one rock check dams to slow runoff and reduce erosion along river near trailhead
TIMEFRAME: Complete

4

RESOURCE TYPE: Natural
REGION/LOCATION: San Lázaro
EFFORT TYPE: Restoration
GROUPS/PARTNERS: Sky Island Alliance, Sonoran Institute
ACTIVITIES: Restoration of riparian vegetation in San Lázaro, Mexico with pole plantings; fencing to reduce impacts of grazing in riparian corridor
TIMEFRAME: Complete

5

RESOURCE TYPE: Natural
REGION/LOCATION: Atturbury Wash
EFFORT TYPE: Restoration
GROUPS/PARTNERS: Sonoran Institute, Tucson Audubon Society, University of Arizona Water Resources Research Center, Watershed Management Group
ACTIVITIES: Conserve to Enhance pilot site, restoration of riparian vegetation and rainwater harvesting
TIMEFRAME: Complete

6

RESOURCE TYPE: Natural and Cultural
REGION/LOCATION: Altar Valley
EFFORT TYPE: Restoration
GROUPS/PARTNERS: Altar Valley Conservation Alliance, Buenos Aires National Wildlife Refuge, Sky Island Alliance
ACTIVITIES: Stream/wash restoration and erosion mitigation; prescribed fires for grassland restoration
TIMEFRAME: Active

7

RESOURCE TYPE: Natural
REGION/LOCATION: Las Cienegas National Conservation Area—Empire Ranch
EFFORT TYPE: Restoration
GROUPS/PARTNERS: Arizona Game and Fish Department, Bureau of Land Management, Pima County, National Audubon Society, National Fish and Wildlife Foundation (NFWF), Sky Island Alliance
ACTIVITIES: Erosion control, wash restoration, sustaining grasslands and their species (NFWF Sky Island Grassland Initiative); black tailed prairie dog; brush treatment/removal; wildlife friendly fencing
TIMEFRAME: Active

[RETURN TO TUCSON REGION MAP](#)

[RETURN TO NOGALES REGION MAP](#)

8

RESOURCE TYPE: Natural**REGION/LOCATION:** Cienega Creek Natural Preserve**EFFORT TYPE:** Restoration**GROUPS/PARTNERS:** Cienega Watershed Partnership, FROG Conservation Project, Pima County, Sonoran Institute, University of Arizona**ACTIVITIES:** Buffelgrass and invasive species removal, frog restoration, bat habitat restoration**TIMEFRAME:** Active

9

RESOURCE TYPE: Natural and Cultural**REGION/LOCATION:** Martinez Hill**EFFORT TYPE:** Restoration**GROUPS/PARTNERS:** Tohono O'odham Nation—San Xavier District**ACTIVITIES:** Restoration of cottonwood/willow riparian vegetation along river at the Wa:k Hikdan cultural site**TIMEFRAME:** Active

10

RESOURCE TYPE: Natural**REGION/LOCATION:** Sonoita Creek**EFFORT TYPE:** Restoration**GROUPS/PARTNERS:** Arizona Game and Fish Department, U. S. Fish and Wildlife Service**ACTIVITIES:** Restoration of native fish populations in select areas**TIMEFRAME:** Active

11

RESOURCE TYPE: Natural**REGION/LOCATION:** Peña Blanca**EFFORT TYPE:** Restoration**GROUPS/PARTNERS:** Arizona Department of Environmental Quality, Arizona Game and Fish Department**ACTIVITIES:** Water quality mitigation; native frog restoration—bullfrog removal to benefit leopard frogs**TIMEFRAME:** Complete

12

RESOURCE TYPE: Natural and Cultural**REGION/LOCATION:** Nogales, Sonora**EFFORT TYPE:** Restoration**GROUPS/PARTNERS:** Arizona Department of Environmental Quality, Asociación de Reforestación de Ambos Nogales, Frente Cívico Nogalense, Instituto Tecnológico de Nogales, International Boundary Water Commission, Sonoran Institute, University of Arizona, U.S. Geological Survey, Watershed Management Group**ACTIVITIES:** Water quality and stormwater run-off mitigation through installation of composting toilets and both passive and active rainwater harvesting infrastructure**TIMEFRAME:** Complete

13

RESOURCE TYPE: Natural and Cultural**REGION/LOCATION:** Tucson**EFFORT TYPE:** Restoration**GROUPS/PARTNERS:** Sonoran Institute, University of Arizona Water Resources Research Center, Watershed Management Group**ACTIVITIES:** Urban stormwater run-off mitigation—green streets and green neighborhoods; Conserve to Enhance pilot program; water harvesting demonstration sites**TIMEFRAME:** Active

14

RESOURCE TYPE: Natural**REGION/LOCATION:** Santa Cruz River—Rio Rico to Amado**EFFORT TYPE:** Monitoring**GROUPS/PARTNERS:** Arizona Department of Environmental Quality (ADEQ), Bird Works (BW), Friends of the Santa Cruz River (FOSCR), National Park Service (NPS), Sonoran Institute (SI), Sky Island Alliance (SIA), NPS Sonoran Desert Network (NPS SODN), Tucson Audubon Society (TAS), U. S. Geological Survey (USGS)**ACTIVITIES:** ADEQ—water quality; BW—birds; FOSCR—water quality, fish; NPS—water quality; SI—riparian veg; SIA—mammal tracking; NPS SODN—water quality, riparian condition; TAS—birds; USGS—stream flow**TIMEFRAME:** Active[RETURN TO TUCSON REGION MAP](#)[RETURN TO NOGALES REGION MAP](#)

15

RESOURCE TYPE: Natural**REGION/LOCATION:** Santa Cruz River—Int'l Border to Rio Rico**EFFORT TYPE:** Monitoring**GROUPS/PARTNERS:** Friends of the Santa Cruz River (FOSCR), Sonoran Institute (SI), U. S. Geological Survey (USGS)**ACTIVITIES:** FOSCR—water quality; SI—riparian vegetation; USGS—stream flow**TIMEFRAME:** Active

16

RESOURCE TYPE: Natural**REGION/LOCATION:** Nogales Wash / Potrero Creek**EFFORT TYPE:** Monitoring**GROUPS/PARTNERS:** Arizona Department of Environmental Quality (ADEQ), Friends of the Santa Cruz River (FOSCR), U. S. Geological Survey (USGS)**ACTIVITIES:** ADEQ—water quality; FOSCR—water quality, fish; USGS—stream flow**TIMEFRAME:** Active

17

RESOURCE TYPE: Natural**REGION/LOCATION:** Las Cienegas National Conservation Area—Cienega Creek**EFFORT TYPE:** Monitoring**GROUPS/PARTNERS:** Arizona Game and Fish Department (AGFD), Bureau of Land Management (BLM), Cienega Watershed Partnership (CWP), FROG Conservation Project (FCP), National Audubon Society (NAS), Sky Island Alliance (SIA), The Nature Conservancy (TNC), University of Arizona (UA), U. S. Geological Survey (USGS)**ACTIVITIES:** BLM, TNC—fish, targeted riparian species, birds, riparian vegetation, stream flow, ground water, and channel morphology; AZGD, SIA—mammals; CWP, FCP—fish and targeted riparian species; USGS—stream flow**TIMEFRAME:** Active

18

RESOURCE TYPE: Natural**REGION/LOCATION:** Cienega Creek Natural Preserve**EFFORT TYPE:** Monitoring**GROUPS/PARTNERS:** Bureau Reclamation (BOR), Cienega Watershed Partnership (CWP), Pima Association of Governments (PAG), Pima County Regional Flood Control District (PCRFCD), Sky Island Alliance (SIA), Sonoran Institute (SI), Southern AZ Buffelgrass Coordination Center (SABCC), University of Arizona (UA)**ACTIVITIES:** PAG, CWP, PCRFCD—aquatic and riparian monitoring; SIA—mammal tracking; PC, SI, SABCC, UA—Buffelgrass, BOR—annual fish surveys 2 reaches**TIMEFRAME:** Active

19

RESOURCE TYPE: Natural**REGION/LOCATION:** San Rafael Valley**EFFORT TYPE:** Monitoring**GROUPS/PARTNERS:** Arizona Game and Fish Department, U.S. Fish and Wildlife Service**ACTIVITIES:** Fish surveys**TIMEFRAME:** Active

20

RESOURCE TYPE: Natural**REGION/LOCATION:** Sonoita Creek**EFFORT TYPE:** Monitoring**GROUPS/PARTNERS:** Arizona Game and Fish Department (AGFD), Friends of Sonoita Creek (FOSC), Hummingbird Network (HN), The Nature Conservancy (TNC)**ACTIVITIES:** AGFD, TNC—aquatic and riparian monitoring; FOSC, HN—hummingbird monitoring**TIMEFRAME:** Active[RETURN TO TUCSON REGION MAP](#)[RETURN TO NOGALES REGION MAP](#)

21

RESOURCE TYPE: Natural**REGION/LOCATION:** Santa Cruz River—Tucson**EFFORT TYPE:** Monitoring**GROUPS/PARTNERS:** Pima County—Regional Flood Control District, Regional Wastewater Reclamation Department, and Office of Sustainability and Conservation**ACTIVITIES:** Aquatic and riparian monitoring**TIMEFRAME:** Active

22

RESOURCE TYPE: Natural**REGION/LOCATION:** Catalina—Tortolita Mountains Corridor**EFFORT TYPE:** Monitoring**GROUPS/PARTNERS:** Sky Island Alliance**ACTIVITIES:** Mammal tracking**TIMEFRAME:** Active

23

RESOURCE TYPE: Natural**REGION/LOCATION:** Santa Cruz River—Sonora**EFFORT TYPE:** Monitoring**GROUPS/PARTNERS:** Sonoran Joint Venture, Sonoran Institute, Universidad de Sonora**ACTIVITIES:** Aquatic and riparian monitoring—water quality, vegetation, birds at 9 sites along the river; groundwater/well water quality at three sites**TIMEFRAME:** Complete

24

RESOURCE TYPE: Natural and Cultural**REGION/LOCATION:** Canoa Ranch**EFFORT TYPE:** Monitoring**GROUPS/PARTNERS:** Pima County Office of Sustainability and Conservation**ACTIVITIES:** Channel morphology/riparian vegetation through repeat photography on historic ranch**TIMEFRAME:** Complete

25

RESOURCE TYPE: Natural**REGION/LOCATION:** Patagonia Mountains**EFFORT TYPE:** Research**GROUPS/PARTNERS:** U.S. Geological Survey**ACTIVITIES:** Understanding relationship between geology, water quality, and mining in the Patagonia Mountains and Sonoita Creek**TIMEFRAME:** Active

26

RESOURCE TYPE: Natural**REGION/LOCATION:** Santa Cruz River and Sonoita Creek**EFFORT TYPE:** Research**GROUPS/PARTNERS:** U.S. Geological Survey**ACTIVITIES:** Mapping quaternary geology between and including Nogales, Sonora and Amado, including Sonoita Creek Drainage**TIMEFRAME:** Active

27

RESOURCE TYPE: Natural**REGION/LOCATION:** Sonoita Creek at Patagonia Lake**EFFORT TYPE:** Restoration**GROUPS/PARTNERS:** Tucson Audubon Society**ACTIVITIES:** Fence out and provide water for removal of cattle along Sonoita Creek inlet to Patagonia Lake**TIMEFRAME:** In development

28

RESOURCE TYPE: Natural**REGION/LOCATION:** San Rafael Valley**EFFORT TYPE:** Restoration**GROUPS/PARTNERS:** Arizona Game and Fish Department, U. S. Fish and Wildlife Service**ACTIVITIES:** Fish and aquatic habitat restoration, removal of invasive species, native aquatic vertebrate restoration (gila topminnow, gila chub, Chiricahua leopard frog, state threatened species)**TIMEFRAME:** Active and in development[RETURN TO TUCSON REGION MAP](#)[RETURN TO NOGALES REGION MAP](#)

29

RESOURCE TYPE: Natural
REGION/LOCATION: Red Rock Canyon
EFFORT TYPE: Restoration
GROUPS/PARTNERS: Arizona Game and Fish Department
ACTIVITIES: Fish and aquatic habitat restoration, removal of non-natives
TIMEFRAME: In development

30

RESOURCE TYPE: Natural
REGION/LOCATION: San Rafael Important Bird Area
EFFORT TYPE: Monitoring
GROUPS/PARTNERS: Tucson Audubon Society, Audubon Arizona, Rocky Mountain Bird Observatory
ACTIVITIES: Bird monitoring, recognition of important habitat for birds or Important Bird Area
TIMEFRAME: Active

31

RESOURCE TYPE: Natural
REGION/LOCATION: Las Cienegas National Conservation Area—Empire Ranch
EFFORT TYPE: Monitoring
GROUPS/PARTNERS: Bureau of Land Management, The Nature Conservancy
ACTIVITIES: Grassland response to brush treatment; rainfall monitoring
TIMEFRAME: Active

32

RESOURCE TYPE: Natural
REGION/LOCATION: Las Cienegas National Conservation Area—Cienega Creek
EFFORT TYPE: Restoration
GROUPS/PARTNERS: Arizona Department of Water Resources, Arizona Game and Fish Department, Bureau of Land Management, Cienega Watershed Partnership, FROG Conservation Project, National Audubon, University of Arizona, U. S. Fish and Wildlife Service
ACTIVITIES: Aquatic and threatened/endangered species restoration, stream channel restoration, wetland restoration
TIMEFRAME: Active

33

RESOURCE TYPE: Natural
REGION/LOCATION: Santa Cruz River—through Tucson
EFFORT TYPE: Restoration
GROUPS/PARTNERS: Pima County
ACTIVITIES: Water quality and wetland habitat in the effluent dependent reach
TIMEFRAME: Active

34

RESOURCE TYPE: Natural
REGION/LOCATION: Atturbury Wash
EFFORT TYPE: Monitoring
GROUPS/PARTNERS: Tucson Audubon Society
ACTIVITIES: Bird monitoring
TIMEFRAME: Active

35

RESOURCE TYPE: Natural
REGION/LOCATION: Santa Rita Experimental Range
EFFORT TYPE: Research/Outreach
GROUPS/PARTNERS: University of Arizona
ACTIVITIES: Ecological function—water, energy, carbon cycle; community outreach regarding conservation of wildlife and vegetation
TIMEFRAME: Active

36

RESOURCE TYPE: Natural
REGION/LOCATION: Las Cienegas National Conservation Area—Cienega Creek
EFFORT TYPE: Inventory
GROUPS/PARTNERS: Desert Botanical Gardens
ACTIVITIES: Locate and map wetland; identify water sources with isotope analysis
TIMEFRAME: Active

37

RESOURCE TYPE: Natural and Cultural**REGION/LOCATION:** Sands Ranch**EFFORT TYPE:** Land Protection**GROUPS/PARTNERS:** Pima County**ACTIVITIES:** One of the many historic ranch properties purchased in the Cienega Basin as part of the Sonoran Desert Conservation Plan; management includes monitoring and restoration**TIMEFRAME:** Active

38

RESOURCE TYPE: Natural and Cultural**REGION/LOCATION:** Santa Rita Mountains**EFFORT TYPE:** Coalition**GROUPS/PARTNERS:** Save the Scenic Santa Ritas**ACTIVITIES:** Protecting the Santa Rita and Patagonia mountains from development and environmental degradation—focused on Rosemont mine**TIMEFRAME:** Active

39

RESOURCE TYPE: Natural and Cultural**REGION/LOCATION:** Sahuarita—treatment plant**EFFORT TYPE:** Public Utility**GROUPS/PARTNERS:** Town of Sahuarita**ACTIVITIES:** Wastewater treated from Rancho Resort and Rancho Sahuarita**TIMEFRAME:** Active

40

RESOURCE TYPE: Natural and Cultural**REGION/LOCATION:** Tucson**EFFORT TYPE:** Education/Research**GROUPS/PARTNERS:** Watershed Management Group**ACTIVITIES:** Soil Stewards—piloting site-based composting toilets along with comprehensive soil education series**TIMEFRAME:** Active

41

RESOURCE TYPE: Natural and Cultural**REGION/LOCATION:** Santa Cruz River—Tucson**EFFORT TYPE:** Coalition/Planning**GROUPS/PARTNERS:** City of Tucson, Pima County Regional Flood Control District**ACTIVITIES:** Management plan for Lower Santa Cruz River to maintain/protect riparian corridor**TIMEFRAME:** In development

42

RESOURCE TYPE: Natural and Cultural**REGION/LOCATION:** Paseo De Las Iglesias**EFFORT TYPE:** Restoration**GROUPS/PARTNERS:** Pima County Regional Flood Control District, U. S. Army Corps of Engineers**ACTIVITIES:** Restoration of vegetation along on Santa Cruz River between Ajo Road and 29th Street, water harvesting and flood control, development of river park paths and neighborhood paths, interpretive signage regarding cultural and natural resources of the site**TIMEFRAME:** Active

43

RESOURCE TYPE: Natural and Cultural**REGION/LOCATION:** Corazón de los Tres Rios Del Norte**EFFORT TYPE:** Restoration**GROUPS/PARTNERS:** Pima County Regional Flood Control District**ACTIVITIES:** Idea of using old gravel pit and area around three rivers as recreation/economic development zone with recharge facility**TIMEFRAME:** In development

44

RESOURCE TYPE: Natural**REGION/LOCATION:** Black Wash**EFFORT TYPE:** Restoration**GROUPS/PARTNERS:** Pima County Regional Flood Control District, Pima County Regional Wastewater Reclamation Department**ACTIVITIES:** Use of treatment plants for restoration**TIMEFRAME:** Unknown[RETURN TO TUCSON REGION MAP](#)[RETURN TO NOGALES REGION MAP](#)

45

RESOURCE TYPE: Natural**REGION/LOCATION:** Santa Rita Mountains**EFFORT TYPE:** Research**GROUPS/PARTNERS:** Borderlands Jaguar, U. S. Geological Survey**ACTIVITIES:** Camera traps and phenology, comparing phenology and fire pattern to animal observations**TIMEFRAME:** Active

46

RESOURCE TYPE: Natural**REGION/LOCATION:** Tumacácori foothills**EFFORT TYPE:** Monitoring**GROUPS/PARTNERS:** University of Arizona—Brian Powell**ACTIVITIES:** Bird surveys in oak woodland (1997-1998)**TIMEFRAME:** Complete

47

RESOURCE TYPE: Natural**REGION/LOCATION:** Santa Cruz River near Cortaro Road**EFFORT TYPE:** Restoration**GROUPS/PARTNERS:** Arizona Native Plant Society—Tucson Chapter**ACTIVITIES:** Restoration of riparian vegetation along the river, seeding, native trees/shrubs, removal of buffelgrass**TIMEFRAME:** Active

48

RESOURCE TYPE: Natural and Cultural**REGION/LOCATION:** Southeastern Pima County**EFFORT TYPE:** Land protection/Coalition**GROUPS/PARTNERS:** Coalition for Sonoran Desert Protection, The Nature Conservancy, Sonoran Institute, and others**ACTIVITIES:** Areas with efforts to attain permanent protection of state trust lands for conservation via ballot initiative**TIMEFRAME:** Active

49

RESOURCE TYPE: Natural and Cultural**REGION/LOCATION:** Santa Cruz Valley—U.S. portion**EFFORT TYPE:** Coalition**GROUPS/PARTNERS:** Santa Cruz Valley Heritage Alliance**ACTIVITIES:** Effort to give the Santa Cruz Valley federal recognition as a National Heritage Area**TIMEFRAME:** Active

Conservation Priorities

Conservation Priorities

INVENTORY MAPS

The maps on the following pages show the general locations of priorities. Each is marked with a discrete number. We overlaid these numbers on a base map of natural and cultural resources. This base map includes archaeological preserves identified by Santa Cruz Valley Heritage Alliance in the *Feasibility Study for the Santa Cruz Valley National Heritage Area*, historical districts, and protected lands that preserve both natural and cultural resources. For example, Pima County acquired thousands of acres of land specifically to protect ranches, historic sites, and other important cultural and natural resources as part of the Sonoran Desert Conservation Plan (learn more about the plan at: <http://www.pima.gov/cmo/sdcp/index.html>).

The overview map shows the portion of the Santa Cruz River Watershed represented in this inventory and provides the legend for the base map. Maps on the pages immediately following the overview map display the priorities identified in the Tucson and Nogales regions. **Click within the boxes on the overview map to easily navigate to the regional map of interest.**

To study a particular priority, locate the corresponding number, or Map ID, in the list that follows the maps. **Click on the priority icon in the map to easily navigate to the page that includes the corresponding priority description.** Buttons at the bottom of each page will take you back to either regional map.

The description of each **conservation priority** outlines the following:

- Map ID;
- resource type (natural, cultural, or both);
- region or location; and
- brief justification explaining why the area is of high value.

WHAT ARE WE MISSING?

We recognize that this inventory is far from complete. We hope this will be a useful reference for the natural and cultural conservation community to learn from each other and better coordinate efforts. We trust that this reference will continue to grow and have designed this publication in such a way to permit easy updates with new information. Currently this resource is a digital publication, but we hope it will evolve into a more interactive tool in the future.

SUBMITTING NEW INFORMATION

Please submit new information or modifications/updates to existing information in this document to: Claire Zugmeyer at czugmeyer@sonoraninstitute.org. Type “Conservation Inventory” in the subject line and we will update the document.

A map showing the border between Arizona (USA) and Sonora (Mexico). The Santa Cruz Watershed is outlined in pink and crosses the border. Two yellow dots mark the locations of Phoenix in Arizona and Tucson in Sonora. The Sea of Cortez is shown to the southwest.

-  Historical Districts
-  Archaeological Preserves
-  Anza Trail Corridor
-  Wastewater Treatment Plant
-  Flow Direction

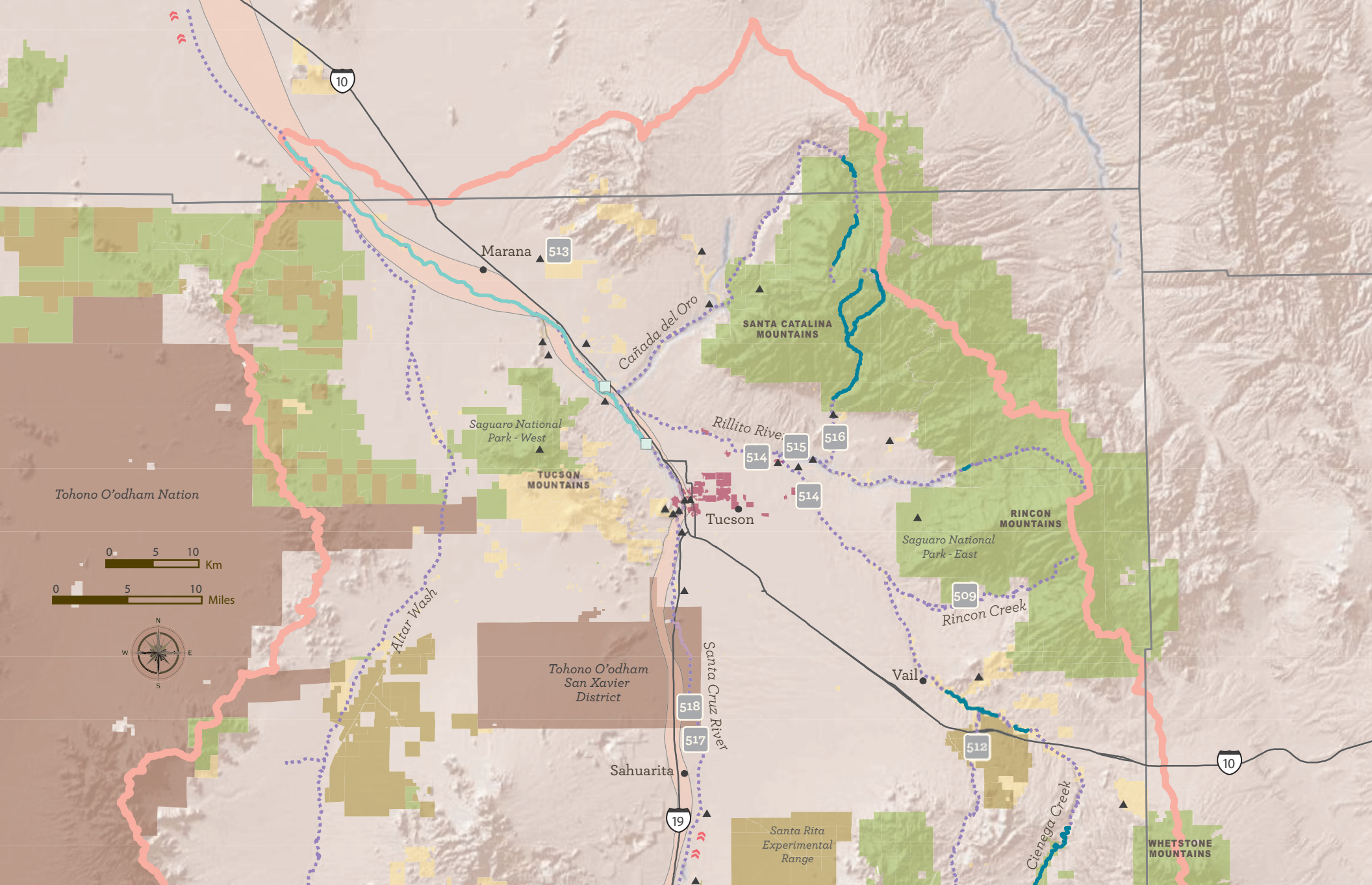
— Perennial (year-round) — Effluent Dominated
— Formerly Perennial ⋯ Seasonal/Intermittent

*United States – 2010, The Nature Conservancy; Mexico – 2003, Arizona-Sonora Desert Museum

- U.S. Federal Protection
- U.S. State, Local, Private Protection
- U.S. State, Local, Private – Managed for Conservation

*Mexican landownership differs, conservation status unknown

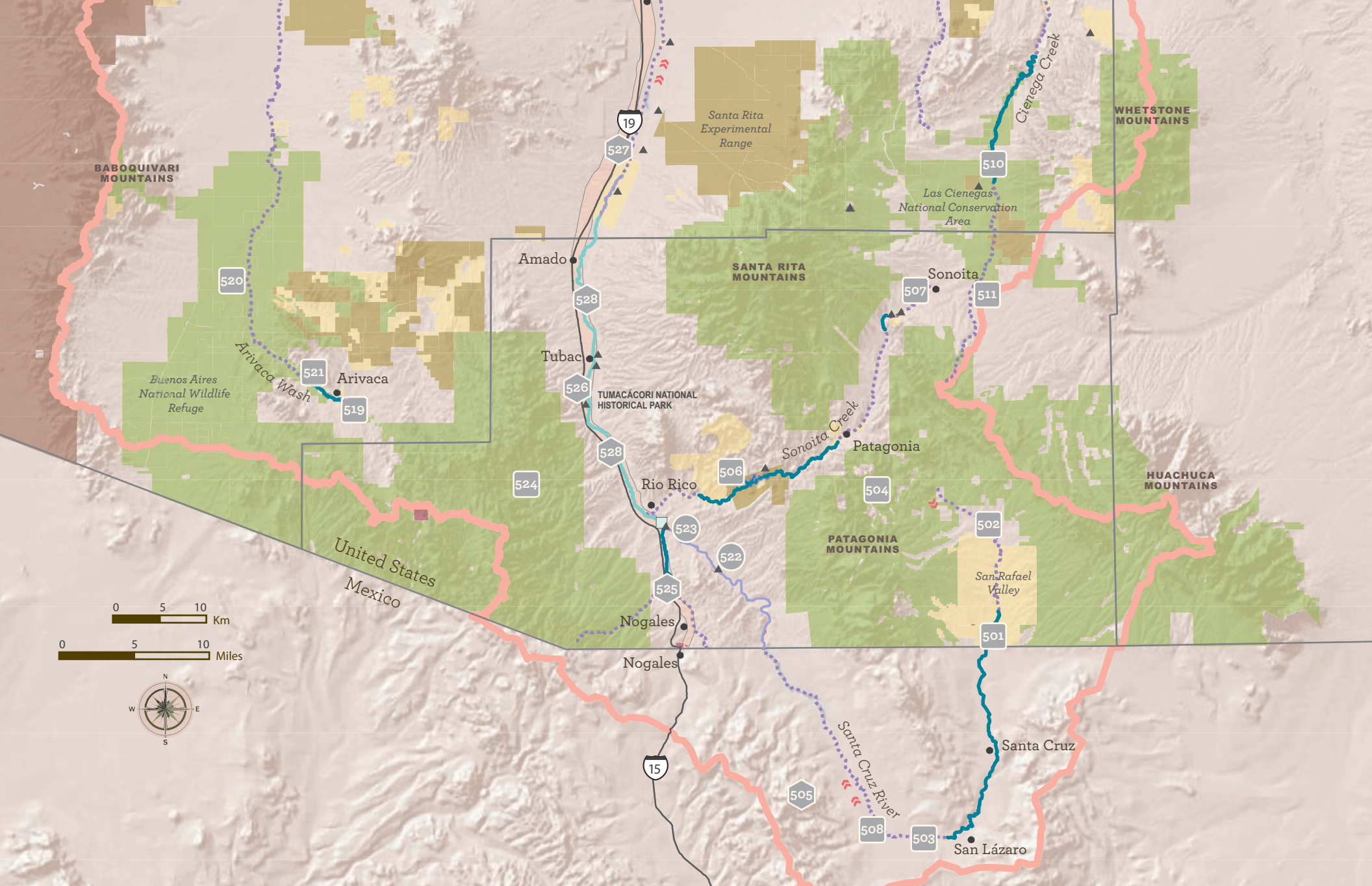




SANTA CRUZ RIVER WATERSHED TUCSON REGION

PRIORITIES LEGEND

- Natural
- Cultural
- Natural and Cultural



SANTA CRUZ RIVER WATERSHED NOGALES REGION

PRIORITIES LEGEND

- Natural
- Cultural
- Natural and Cultural

CONSERVATION PRIORITIES DESCRIPTIONS

501

RESOURCE TYPE: Natural

REGION/LOCATION: San Rafael Valley—State Natural Area

DESCRIPTION: Perennial flows and associated riparian habitat

502

RESOURCE TYPE: Natural

REGION/LOCATION: San Rafael Valley

DESCRIPTION: Valley recognized as one of best remaining grassland landscapes in region

503

RESOURCE TYPE: Natural

REGION/LOCATION: Santa Cruz River—San Lázaro

DESCRIPTION: Perennial flow, high diversity of riparian species (riparian obligates and birds)

504

RESOURCE TYPE: Natural

REGION/LOCATION: Patagonia Mountains

DESCRIPTION: Priority area with a wildlife corridor from Mexico through Patagonia Mountains up to Cienega Watershed

505

RESOURCE TYPE: Natural and Cultural

REGION/LOCATION: Santa Cruz River—Mexico uplands

DESCRIPTION: Subwatershed of the Yaquis with high biodiversity

506

RESOURCE TYPE: Natural

REGION/LOCATION: Sonoita Creek—Tributaries

DESCRIPTION: Restored habitats for native fish—Coal mine Creek and Fresno Creek, tributaries to Sonoita Creek below Patagonia Lake

507

RESOURCE TYPE: Natural

REGION/LOCATION: Sonoita Creek—Headwaters

DESCRIPTION: Headwater springs for Sonoita Creek (Willow, Cottonwood, and Monkey Spring)

508

RESOURCE TYPE: Natural

REGION/LOCATION: Santa Cruz River—“Paredes”

DESCRIPTION: Perennial flow and associated habitat, Paredes is a monitoring site

509

RESOURCE TYPE: Natural

REGION/LOCATION: Rincon Creek

DESCRIPTION: Rincon Creek is an important tributary to Cienega Creek and Pantano Wash; Rincon Creek headwaters are protected in Saguaro National Park, but lower reaches are getting increasingly subdivided into ranchettes, reducing connectivity for plants and animals south to the Santa Ritas and southeast to the Whetstones

510

RESOURCE TYPE: Natural

REGION/LOCATION: Las Cienegas National Conservation Area

DESCRIPTION: Considered best example of habitats/communities formerly typical of Tucson – e.g. riparian areas with frogs and fish

511

RESOURCE TYPE: Natural

REGION/LOCATION: Sonoita Plains

DESCRIPTION: High value for conservation because of grasslands and grassland-dependent species

512

RESOURCE TYPE: Natural

REGION/LOCATION: Davidson Canyon

DESCRIPTION: Outstanding Water of Arizona, critical habitat for wildlife

[RETURN TO TUCSON REGION MAP](#)

[RETURN TO NOGALES REGION MAP](#)

513

RESOURCE TYPE: Natural**REGION/LOCATION:** Tortolita Fan**DESCRIPTION:** Tortolita Fan preservation area is high value habitat and currently preserved

514

RESOURCE TYPE: Natural**REGION/LOCATION:** Tucson bridges**DESCRIPTION:** Bridges in Tucson that are roosting habitat for bats

515

RESOURCE TYPE: Natural**REGION/LOCATION:** Swan Wetlands**DESCRIPTION:** Swan Wetlands preservation and restoration project

516

RESOURCE TYPE: Natural**REGION/LOCATION:** Sabino Canyon**DESCRIPTION:** High value area that could be higher if groundwater pumping were turned off

517

RESOURCE TYPE: Natural**REGION/LOCATION:** Pima Mine Road Bridge near Sahuarita**DESCRIPTION:** Great bat habitat and Town of Sahuarita plans to rebuild this bridge in the distant future

518

RESOURCE TYPE: Natural**REGION/LOCATION:** Sahuarita Central Arizona Project (CAP)**DESCRIPTION:** High value with groundwater recharge from CAP

519

RESOURCE TYPE: Natural**REGION/LOCATION:** Arivaca Creek Cienega**DESCRIPTION:** Cienega at the headwaters of Arivaca Creek

520

RESOURCE TYPE: Natural**REGION/LOCATION:** Buenos Aires National Wildlife Refuge**DESCRIPTION:** Multiple arroyos with high value bob white quail habitat that is/was eroding

521

RESOURCE TYPE: Natural**REGION/LOCATION:** Arivaca Creek**DESCRIPTION:** Major riparian corridor

522

RESOURCE TYPE: Cultural**REGION/LOCATION:** Tumacácori National Historical Park—Guevavi**DESCRIPTION:** Federal protection of historic artifacts and ruins, discussions with City of Nogales about possible expansion that would include conservation easement

523

RESOURCE TYPE: Cultural**REGION/LOCATION:** Tumacácori National Historical Park—Calabazas**DESCRIPTION:** Federal protection of historic artifacts and ruins, area could be expanded in terms of land area by working with Nogales municipality

524

RESOURCE TYPE: Natural**REGION/LOCATION:** Tumacácori Wilderness**DESCRIPTION:** Proposed wilderness area (Atascosa and Tumacácori Mountains), oak woodlands, grasslands, pinyon/juniper up to Ponderosa pine on peaks

525

RESOURCE TYPE: Natural and Cultural**REGION/LOCATION:** Las Lagunas**DESCRIPTION:** Natural wetland on private property with historical, ecological, and recreational values; being developed as a community environmental and heritage education facility

526

RESOURCE TYPE: Natural and Cultural**REGION/LOCATION:** Tumacácori National Historical Park**DESCRIPTION:** Federal protection of historic artifacts, ruins, and river ecosystem (only reach of river with federal protection); Important Bird Area, mature cottonwood/willow[RETURN TO TUCSON REGION MAP](#)[RETURN TO NOGALES REGION MAP](#)

527

RESOURCE TYPE: Natural and Cultural

REGION/LOCATION: Green Valley Wastewater Treatment Plant

DESCRIPTION: Run by Pima County—possible recharge basins offer potential resource

528

RESOURCE TYPE: Natural and Cultural

REGION/LOCATION: Santa Cruz River—effluent dependent reach

DESCRIPTION: Ecosystem services of the river from Rio Rico north of the Nogales wastewater treatment plant

[RETURN TO TUCSON REGION MAP](#)

[RETURN TO NOGALES REGION MAP](#)

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