



# Santa Cruz River

## REGIONAL INITIATIVE

"Running water is something for a Southwesterner to get excited about. It's scarce, it's cool, it's wet, and it creates an oasis of shade, a green retreat from the sun and desiccation of the surrounding country."

- *Going Back to Bisbee*  
Richard Shelton

### OUR GOALS

The Santa Cruz River has drawn people to its life-giving waters for over 12,000 years. Desert communities in southeastern Arizona, northwestern Mexico, and the Tohono O'odham Nation dot the river's 200-mile course from its headwaters near the international border to its confluence with the Gila River near Phoenix. Prominent mountain ranges, including the Santa Rita and Santa Catalina mountains, serve as the scenic backdrop to these cities and towns. Rain coursing down mountainsides replenishes the river and its groundwater, supplying drinking water, irrigating crops, and fueling industry and commerce. Those living along the river also enjoy the respite and spiritual renewal provided by shade-giving trees and roaming wildlife.

Modern society's water demands have stressed this water system, and much of the Santa Cruz River is dry. Over time the region has shifted from dependence on the river's surface flows, to the pumping of local groundwater and the reliance on the distant Colorado River as a water source. Some sections of the Santa Cruz with year-round water depend primarily on treated wastewater, or effluent, released into the riverbed. This practice supports wetland habitats that are not only becoming increasingly rare but are also some of last living examples of the river heritage that long supported people in the region.

The Santa Cruz River Initiative focuses on restoration of watershed health with an aim to improve local water supplies. Efforts to restore water systems must consider many strategies that encompass conservation of mountains, rivers, and underground water aquifers. Our overall goals are to:

- secure river flows;
- improve water quality;
- protect and raise groundwater levels;
- reduce runoff by increasing the amount of water that soaks into the ground;
- and bring the successful model to other communities.



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# Challenges and Opportunities

## **Disconnect Between Water Use and Supply**

In the modern world people turn on the faucet, and water flows. We may not think about where water is coming from or how personal water use can impact, or be impacted by, the conditions of the nearby river or surrounding watershed. In the arid southwest, many people think that saving water simply fuels more urban growth and does not lead to environmental benefits.

*The Opportunity:* To help bridge the disconnect, we help people understand the origins of their water supply and the benefits they receive from a healthy river and watershed. We also develop innovative programs that link water conservation directly with local environmental benefits.

## **Increasing Demand For Effluent**

Although once seen as a nuisance, effluent is becoming a valued commodity in the desert southwest. Communities are selling effluent to municipal, commercial, or industrial interests, and water that was once released into riverbeds is being diverted for other uses. As a result, the sections of the Santa Cruz River that depend on effluent are facing a renewed risk of drying, jeopardizing the region's cultural and ecological integrity.

*The Opportunity:* Three wastewater treatment plants along the Santa Cruz River discharge over 90 million gallons per day into the river; this water supports approximately 45 miles of wetland habitat. We will develop a portfolio of strategies and water polices to ensure that treated effluent can be legally and economically secured to support river flows and wildlife habitat.

## **Efficient Water Use**

In desert environments, the greatest challenge to conserving river systems is balancing competing water needs among residential, industrial, agricultural, and natural systems. Another challenge is maximizing efficiency in water use. For example, a high percentage (over 40% in Tucson) of commercial and residential water use is for outdoor landscaping.

*The Opportunity:* In most urban landscapes, rainwater quickly runs off into drainage systems rather than soaking into the ground and replenishing groundwater supplies. When utilized correctly, rainwater harvesting allows time for infiltration and can meet up to 100% of the water needs of residential and commercial landscaping. Additionally, reusing gray water from sinks and showers provides supplemental water for landscaping. We promote water harvesting and work with partners to increase the practice throughout the watershed, which helps balance competing water needs.

## **Natural and Cultural Resource Overlap**

Long-term conservation successes depend on collaboration and coordinated efforts between myriad partners. Priority natural and cultural resources physically overlap along river corridors due to the life-giving properties of running water. However, there is often a disconnect between natural and cultural resource conservation efforts.

*The Opportunity:* We will work with partners to develop a conservation inventory and establish regular opportunities to share successes and lessons learned, with the aim of increasing synergies both within and across the natural and cultural resource sectors.



# The Santa Cruz River



## COMMUNITY SUPPORT



With 20 years of experience, the Sonoran Institute is able to provide communities with direct assistance to help advance local strategies and achieve results that benefit the community and provide models for the region. Our support includes:

**Research**—providing clear information, facts, and perspective for effective local decision making.

**Policy reform**—aligning community conservation goals with state and federal policy efforts to advance sustainable communities.

**Education and Outreach**—strengthening local decision making and promoting informed community dialogue by building awareness of challenges and potential solutions.

**Training**—providing leadership training and development for local officials, community leaders and conservation partners.





## Current Activities

### Living River Reports

Healthy rivers provide many benefits to adjacent communities. The Sonoran Institute developed and produced the Living River report series to chart the health of the upper Santa Cruz River from Rio Rico to Amado. The report uses scientific data to communicate current conditions, explains the benefits of a healthy river system, and ultimately helps inspire river stewardship. This successful model is currently being adapted for the lower Santa Cruz in northwest Tucson, thus creating a sister report to chart the health of another effluent-dependent stretch of the river. We need to continue tracking change on the upper Santa Cruz, as recent observations point toward a drying river. This change is a concern for the resurgent fish population documented in earlier reports.

### Securing Water For the Environment

Recent reductions in flows along the upper Santa Cruz highlight the urgent need to investigate methods to sustain an environmental flow for the river. “Environmental flow” refers to the quantity, timing, and quality of water needed to sustain freshwater systems. The Sonoran Institute is working with Tumacácori National Historical Park to track river conditions and identify strategies to sustain flows during the driest months.

### Conserve to Enhance

The Sonoran Institute and the University of Arizona are leading an innovative water efficiency program known as “Conserve to Enhance,” or C2E. Participants in this Tucson program reduce water consumption and donate the value of their water savings to local wash restoration projects. Since 2011, sixty pilot participants saved over 2 million gallons of water and donated \$2,000 to the restoration of Tucson’s Atturbury Wash. Additional private funds contributed via a “donation checkbox” for C2E on the Tucson Water utility bill brought in over \$30,000 for local wash restoration and will allow the completion of three projects to enhance neighborhood washes over the coming year. If brought to scale (just 5% of Tucson Water customers), donations would bring in half a million dollars per year to restore local waterways.

### Santa Cruz River Research Days

The Sonoran Institute and partners organize an annual event that has become a valuable forum for those interested in conservation efforts in the watershed. Initially focused solely on the natural resources along the upper Santa Cruz River, the event has expanded in both geography and scope to include both natural and cultural resources along the entire river corridor. The purpose is to spur greater impact by increasing synergies across the natural and cultural conservation sectors.



Our Living River reports can be found on our website at [www.sonoraninstitute.org](http://www.sonoraninstitute.org)

*The Sonoran Institute inspires and enables community decisions and public policies that respect the land and people of Western North America.*

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### DONATE NOW

Your contribution today will enable us to continue our work along the Santa Cruz River. To direct a gift in support of this initiative, visit: [www.sonoraninstitute.org/support-our-work](http://www.sonoraninstitute.org/support-our-work), click “Donate Now” and select Santa Cruz River from the drop down menu or email [ebrott@sonoraninstitute.org](mailto:ebrott@sonoraninstitute.org)



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