

# Protecting Sentinel Waters Fort Huachuca Sentinel Landscape

*The Sentinel Landscape Restoration Partnership brings parties together to conserve natural resources, protect working lands, and preserve the mission of Fort Huachuca in Cochise, Santa Cruz, and Pima counties, Arizona. This article introduces work that creatively conserves water in non-urban areas and keeps it available for nature.*

Southeastern Arizonans know how to protect diminishing water supplies. We install low-flow devices in our homes, landscape with water-thrifty plants, and harvest rainwater. Fort Huachuca applied these sorts of measures and reduced its groundwater pumping by 60% from the mid-1990s to 2010. We are lowering water bills and putting water back into the system by slowing depletion of groundwater reserves.

Beyond our towns or backyards, partners on the Sentinel Landscape are keeping water in the system to make sure nature stays in business. Healthy natural systems increase quality of life for residents, attract tourists, and allow Fort Huachuca be the area's economic engine. Loss of rare species could require the installation to scale back operations.

## Healthy watersheds

Southeastern Arizona's grasslands are good at intercepting and slowing water. Where plant cover is lost, heavy rains can scour soil, form gullies, then hurry downstream. For over 60 years, scientists at the Walnut Gulch Experimental Watershed have been studying how rainfall affects runoff, groundwater recharge, and movement of material on our landscape. Many Sentinel projects are aimed at capturing surface flows, reclaiming lost soil, and re-establishing vegetation. Bureau of Land Management installed erosion control structures and seeded with native grass above the St. David Cienega to protect wetland habitat for rare plants and birds. Area ranchers have built thousands of low-profile erosion-control structures that retain soil and moisture and encourage plant-nurturing local infiltration.

## Waters for wildlife

Water for land and water-based wildlife can be hard to come by in a dry place. Where area ranchers provide water for livestock, many have created separate, fenced sources for wildlife. The Coronado National Forest, Arizona Game and Fish Department, Bureau of Land Management, and Sky Island Alliance are restoring natural springs and adapting seriously altered springs to keep them functioning to benefit wildlife. Where wildlife habitat has been fragmented and animals rerouted from traditional areas, groups like the Arizona Antelope Foundation have placed and maintained new water sources on the landscape.

## Groundwater recharge

The Cochise Conservation and Recharge Network (CCRN) is betting that groundwater recharge projects can help keep water in the San Pedro River. CCRN is working through the challenges that come with this approach. The physical collection of water across a large area is difficult, so the best sites are downstream of where washes have come together. Only "excess" runoff from hard surfaces is legally available. The holders of water rights downstream in the system are entitled to the "normal" flows. Costs are high, and testing is necessary to find the best techniques. Engineers have to find sediments that allow for easy infiltration. But the CCRN is now adding water at suitable sites close to the river. To date the Palominas and Horseshoe Draw projects capture sheetflow, and the Sierra Vista Environmental Operations Park releases treated effluent to recharge groundwater that feeds the San Pedro.

The availability of water for all uses and a wet San Pedro in particular mean healthy local ecosystems and a healthy local economy.



Borderlands Restoration

**Low-profile erosion control structures retain soil and moisture.**



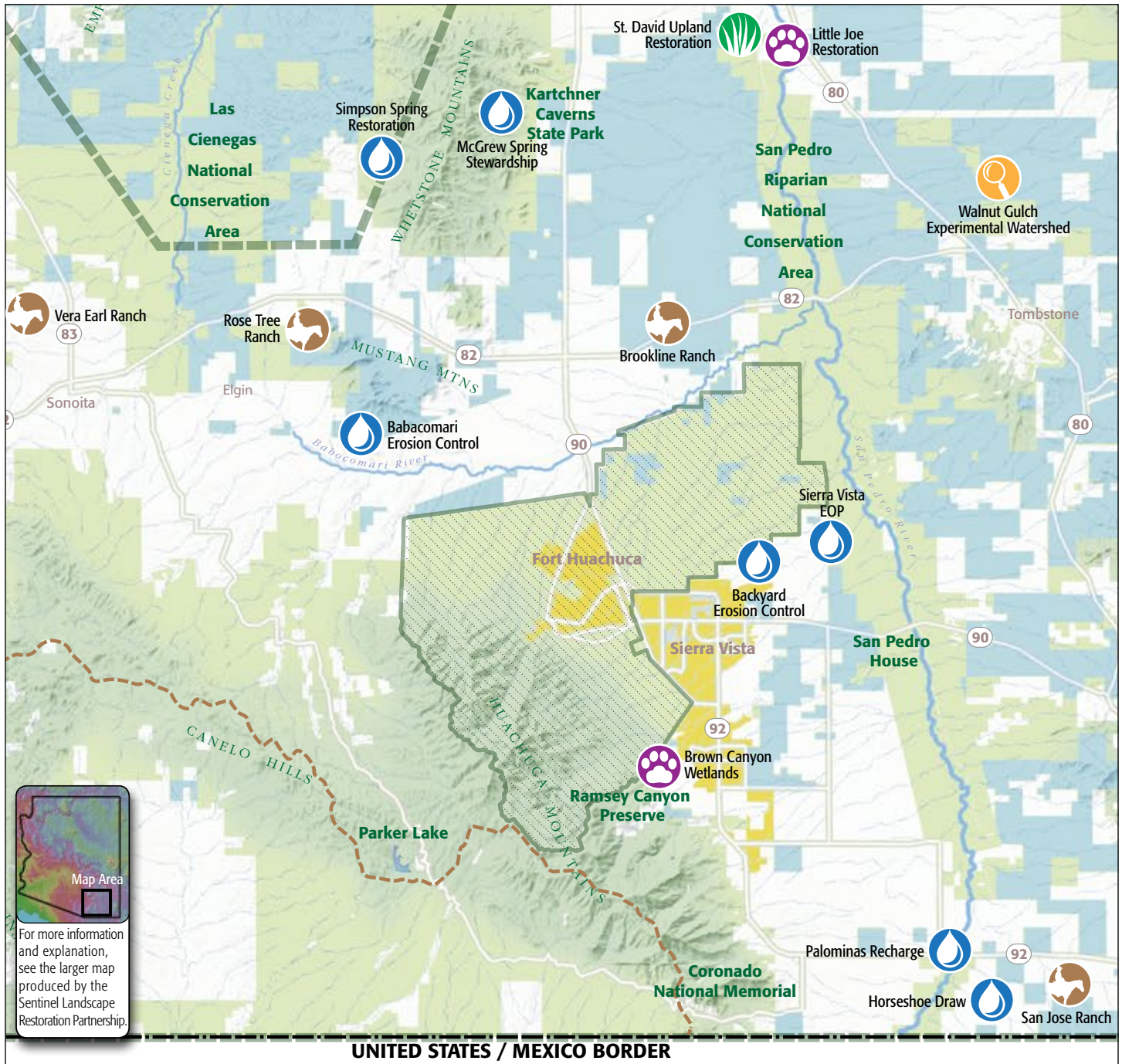
CCRN

**Palominas Recharge Project captures stormwater to enhance San Pedro River flows.**

## Protecting Sentinel Waters

For decades, people have worked together to protect precious natural and cultural features of southeastern Arizona’s sky island region. In 2015, the Sentinel Landscape Restoration Partnership came together with an added twist—preserving the electromagnetically quiet area for the U.S. Army’s Fort Huachuca Buffalo Soldier Electronic Test Range. The **Fort Huachuca Sentinel Landscape Restoration Partnership** conserves grasslands and forests that provide habitat, water, livelihoods, and recreation in Cochise, Pima, and Santa Cruz counties, Arizona.

This “working landscape” hosts world-class biodiversity and offers recreation opportunities for residents and visitors. The diverse partnerships dedicated to maintaining these riches are made up of landowners, concerned citizens, scientists, and staff of local, state, and federal governments. This piece highlights Sentinel area work that conserves water and makes it available for nature.



### Examples of Projects that Protect Sentinal Waters

Babacomari Ranch/Erosion Control (water-slowing structures, water monitoring), Backyard Erosion Control (water-slowing structures), Brookline Ranch (spring rejuvenation, water monitoring), Brown Canyon Wetlands (wildlife waters), Horseshoe Draw/San Jose Ranch (San Pedro recharge), Little Joe Restoration (spring rejuvenation), McGrew Spring Stewardship (water monitoring), Palominas Recharge (San Pedro recharge), Rose Tree Ranch (wildlife waters), St David Upland Restoration (water-slowing structures), Sierra Vista EOP (San Pedro recharge), Simpson Spring Restoration (wildlife waters), Vera Earl Ranch (wildlife waters), Walnut Gulch Experimental Watershed (runoff/recharge research).