

*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 reviews some climate change factors for this area.*

Though not arid by desert standards, the climate on the Sentinel Landscape is nevertheless dry, and water is a limiting resource. Sierra Vista has averaged about 14" of precipitation over the last 30 years, with well over half of it falling during July, August, and September. That amount seems ample compared with Yuma, Arizona, at 3" per year but not much compared with places like Seattle (about 35") or Houston (over 50").

Year-to-year variation from rainfall and temperature averages is normal—we have wetter, drier, hotter, and cooler years. Sustained deviation from the norms changes the averages, and we are currently seeing shifts that line up with what climate scientists predict for the Southwest. Temperatures are rising, and winter precipitation is becoming scarcer. The picture for summer moisture is less clear except that heavy rainfall events (if and when they occur) have the potential to become even heavier.

If current trends persist, what might they mean for the Sentinel area? Simple predictions include greater potential for wildfires, erosion caused by increasingly powerful summer storms, drying up of waters fed by winter rain, and changes in plant distribution. Work on the Sentinel Landscape aims to lessen negative effects of climate change.

### Fire

Until the late 1800s, southeastern Arizona grasslands, woodlands, and forest burned every 5 to 20 years. Lack of regular fire, warming, and drying have led to hotter, bigger fires. Thinning, such as carried out by Sentinel area Firewise Communities, and agency prescribed fire projects (Fort Huachuca, Bureau of Land Management, Coronado National Forest) help tame the behavior of future wildfires and make for safer management of fires.

### Erosion

Small structures to slow water and capture soil are a low-tech tool to heal land and pretreat areas for future heavy rainfall events. Work by Borderlands Restoration, partners on the Teran Watershed, and many area ranchers is being monitored such that erosion-control techniques can be further improved.

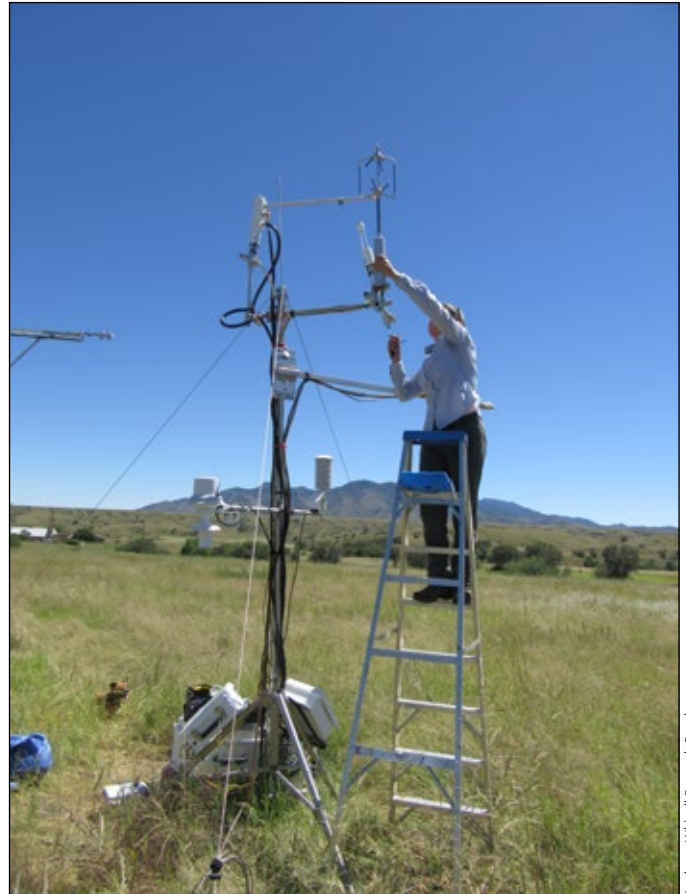
### Water

Projects on the Sentinel landscape both capture more runoff for use by people and ecosystems and directly provide water for wildlife. Sky Island Alliance's spring monitoring program keeps land managers informed about the extent of drying of natural waters and guides efforts to restore them.

### Vegetation

On Bureau of Land Management's Las Cienegas National Conservation Area, partners realized that resource management goals might be affected by climate change. So they developed "no-regrets" actions such as restoring sacaton grasslands to increase resilience of floodplains in the face of heavier rain events.

Addressing the causes of climate change is both difficult and controversial. But reducing carbon emissions in economically viable ways falls in the "no-regrets" category. Fort Huachuca is at the forefront regionally with that activity. It is now the site of a 17 MW solar array which at peak production can provide enough electricity for 3000 homes.



**Weather station records data that document climate trends.**

Appleton-Whittell Research Ranch



**Prescribed fire reduces fuels and rejuvenates grassland on the Babacomari Ranch.**

Appleton-Whittell Research Ranch

## Fort Huachuca Sentinel Landscape

### Climate Change Basics

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. There are dozens of active projects in the Sentinel area that make the landscape more resilient in the face of climate change. This piece highlights a few of them.

### Projects that Buffer Climate Change

Babacomari Erosion Control (water-slowing structures), Babacomari-Research Ranch Firewise (fire danger reduction), Brown Canyon Wetlands (wildlife waters), Fort Huachuca Prescribed Fire (fire danger reduction, vegetation restoration), McGrew Spring Stewardship (water monitoring), Ramsey Canyon Firewise (fire danger reduction), San Pedro Prescribed Fire (fire danger reduction, sacaton restoration), Simpson Spring Restoration (wildlife waters).

