

*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 invasive species that are being addressed in the Sentinel area.*

As humans have traveled the globe over the last 500 years, they have moved other species around. Some of this movement has been accidental, but much of it has been deliberate. Some introduced species are unable to establish without help in their new habitats. The negative term “invasive species” implies that a plant or animal has no trouble spreading rapidly and ends up where it is not wanted.

On the Fort Huachuca Sentinel Landscape, species introduced by well-meaning humans continue to have far-reaching effects on the ecosystems they inhabit. Weeds that are native species can also cause problems. Partners on this landscape are working to stop the spread of invasives on a number of fronts.

### **Invasive grasses**

Several non-native grass species were introduced into the Sentinel Landscape region in the mid-20th century to help restore degraded rangeland. The imported grasses also turn out to be less palatable and nutritious as forage for livestock. Fewer native plants and animals persist in areas dominated by non-native grasses. The Appleton-Whittell Audubon Research Ranch works with federal, state, and university partners to test means to eliminate non-native grasses.

### **Tamarisk**

Tamarisk trees were brought to the Southwest in the 1800s from the Mediterranean and other parts of Eurasia for use as ornamentals, shade trees, windbreaks, and erosion control. They colonized drainages and have displaced native species throughout the region. Tamarisk also spreads rapidly after fire. Bureau of Land Management has removed invasive tamarisk along 25 miles of the San Pedro River to protect native cottonwood-willow forest. Removing this species that has little food value improves riparian habitat used by almost 400 species of birds.

### **Tree of heaven and Johnson grass**

The Coronado National Forest is removing these invasive plants downstream of Parker Canyon Lake to protect native cottonwood-willow habitat that is home to rare Northern Mexican gartersnake, Yellow-billed Cuckoo, and Gila topminnow.

### **Woody native invaders**

Mesquite and juniper are native to the region, but thanks mainly to fire suppression these species are encroaching on grasslands. Bureau of Land Management, Fort Huachuca, Coronado National Forest, and area ranchers are taking steps to reverse this invasion.

### **American Bullfrog**

Frog-leg lovers brought North America’s largest frog west in the late 1800s, and it was stocked in Arizona as a game species until 1982. Bullfrogs stuff any animal they can subdue into their mouths. Freed from predators like water snakes and raccoons in eastern North America, they have thrived in slow-moving waters throughout much of Arizona and contributed significantly to the decline of native fish and amphibians. The Coronado National Forest and many partners, including Fort Huachuca, have been restoring Scotia Creek on the west side of the Huachucas. The project includes regular removal of bullfrogs that have excluded rare native amphibians, particularly Chiricahua leopard frog, Sonora tiger salamander, and Arizona treefrog. The FROG Project has successfully removed bullfrogs at Las Cienegas and nearby ranches.

To help, concerned citizens can learn to recognize invaders, garden with native plants, refrain from releasing aquatic pets into the area’s waters, and volunteer to help remove unwanted species when the opportunity arises.



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**Removing tamarisk improves riparian habitat for birds and other wildlife.**



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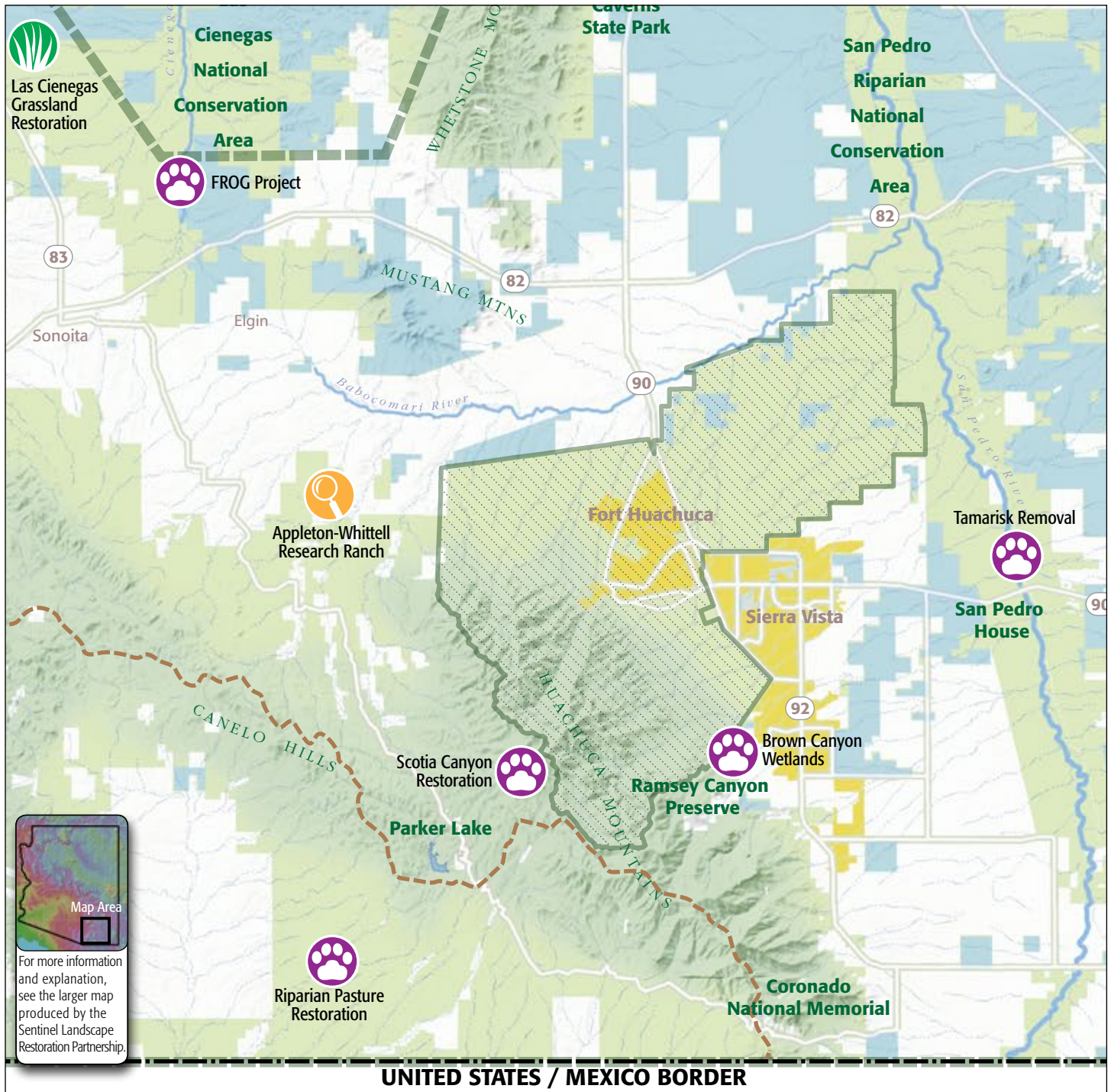
**Non-native bullfrogs prey on riparian and aquatic wildlife species, significantly impacting their numbers.**



## Invasive Species

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 a some of the Sentinel area invasive species and projects that work to keep them in check.



### Examples of projects that combat Invasive Species

Appleton-Whittell Research Ranch (Lehmann and Boer’s lovegrasses), Brown Canyon Wetlands (bullfrogs), Las Cienegas Grassland Restoration (invasive mesquite removal), FROG Project (bullfrogs), Riparian Pasture Restoration (Johnson grass and tree of heaven), Scotia Canyon Restoration Project (bullfrogs), Tamarisk Removal (tamarisk).