

# Babacomari River Riparian Protection Project, Dan Robinett, Linda Kennedy, Coronado Resource Conservation and Development Area, The Babacomari Ranch and the Appleton-Whittell Research Ranch of the National Audubon Society

The Babacomari river is a major tributary of the San Pedro River in Santa Cruz and Cochise Counties, Arizona. Most of the watershed for this river lies west of the highway bridge on State Route 90 at Huachuca City. This 140,000 acre catchment includes rolling grasslands on the Sonoita plain, oak woodlands in the Canelo Hills and the pine-oak forests of the Huachuca Mountains. The Babacomari river runs for 22 miles from its headwaters near Sonoita at 5000 feet elevation, eastward to join the San Pedro at Fairbanks at an elevation of 3850 feet. The Arizona Dept. of Water Resources funded this 5 year study with a grant (09-164WPF) in 2009. Monitoring transects were installed in 2009 and 2010 and will be re-read each year through 2013.

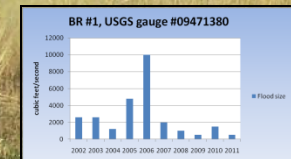
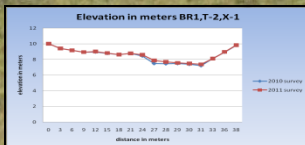
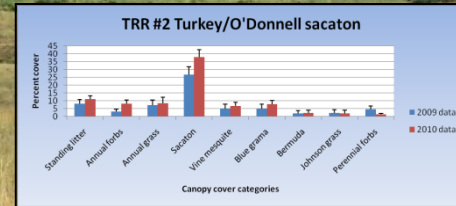
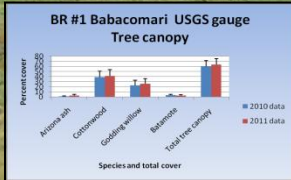
The GOAL of this project is to help preserve the Babacomari River System of SE Arizona

- Objectives:
- Construct 2 miles of riparian boundary fence to restrict access by livestock from the Babacomari River .
  - Install six riparian vegetation and geomorphic monitoring transects to gather data for five years on the response of the river and tributary riparian system to climatic influences, natural disturbances and management activities
  - Install six vegetation and geomorphic transects on riparian grasslands (sacaton) tributary to the Babacomari and monitor for five years to evaluate their impact upon the river and riparian system and water resources
  - Analyze and summarize data annually and present that information to the participating ranch properties and the public to be used for management decisions.

Riparian green-line and tree transect on the Babacomari Ranch at BR #1 below the USGS stream Gauge

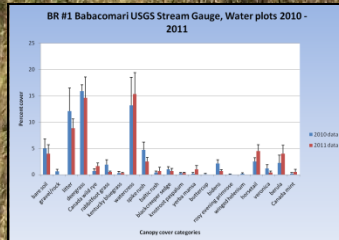
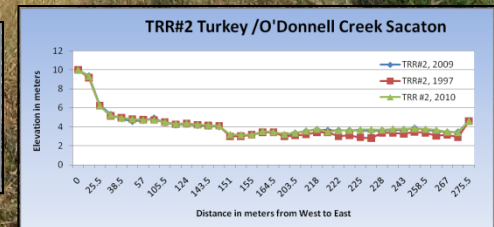
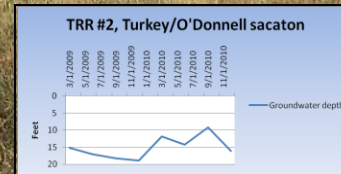


Sacaton transect on the Audubon Research Ranch at TRR #2 just below the confluence of O'Donnell and Turkey canyons



Riparian monitoring stations were established in May of 2010 at three locations along the Babacomari River below the Babacomari Ranch headquarters. Riparian monitoring stations were established at three locations in June of 2010 on the Audubon Research Ranch.

Each riparian transect include a cluster of three green-line transects along both banks with herbaceous cover recorded by species in 10 x 26 centimeter plot frames. In addition three 3 x 40 meter belt transects along each bank are employed to record canopy cover of riparian tree species. Three geomorphic cross sections per transect are re-surveyed annually. At BR #1 the USGS stream gauge records base flow as well as flood flows just upstream of the vegetation monitoring transect.



Riparian grasslands include large bottomlands of giant sacaton (*Sporobolus Wrightii* Monro ex Scribn) on both the Babacomari Ranch (BR) and the Audubon Research Ranch (ARR). One site is on the Babacomari Cienega. This is grassland occupied by a mixture of sacaton and grass-like plant species of wetlands (sedges and rushes). These grasslands are vital floodplain components of the upper watershed of the Babacomari River. They also contribute greatly to the forage supplies for livestock on BR and as critical wildlife habitat on both the BR and the ARR. Transects include ten, 50 meter lines, placed perpendicular to and along the x-section baseline with 100 points each, sampled for both basal and canopy cover by plant species. Geomorphic cross sections are re-surveyed annually with a surveyors level and metric rod from fixed benchmarks. A piezometer located just downstream TRR #2 is used to record depth to groundwater.