

## MESQUITE BOSQUES: NOT JUST A BUNCH OF TREES!

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Of the three major plant communities that define the riparian environment of the Santa Cruz River (cottonwood/willow gallery forest, “cienega” or marsh, and mesquite “bosque” or woodland), mesquite bosques are currently the most threatened. In 1905, H.S. Swarth described the land along our river as

“...covered, miles in extent, with a thick growth of giant mesquite trees, literally giants, for a person accustomed to the scrubby brush that grows everywhere in the desert regions of the southwest, can hardly believe that these fine trees, many of them sixty feet high and over, really belong to the same species.”

Today, most of these extensive bosques—once 3-5 miles across in places—have been cut for wood, cleared for agriculture, or built upon. But some remnants of mature bosques still survive in Santa Cruz County, which are critical to wildlife and deserve protection from destruction or further fragmentation.

You might wonder why, as Mr. Swarth noted, mesquites grow so differently along the river than they do in the rest of our region. If their roots can reach water, these adaptable trees create much denser leaf canopies than their upland brethren, held up on huge limbs under which rich soils (mesquites add nitrogen to soil—they’re in the legume family) support a multilayered set of habitats. Bosques can develop where groundwater is shallower than 45’ below the surface, but most have much shallower water tables, usually 20’ or less.

Not only mesquites thrive in these bosques. Netleaf hackberry, velvet ash, and Arizona walnut are some of the other trees making up the top leafy canopy. Below that, Mexican elderberry, graythorn, fourwing saltbush, catclaw acacia, wolfberry and other small trees and shrubs create great nesting, hiding, foraging and hunting habitat. The lowest understory may include carpets of flowers like ruellia (violet wild petunia) and pigeonberry after winter or summer rains; and many species of vines such as virgin’s bower (wild clematis), passionflower, and climbing milkweed connect all the vertical layers as they cloak the bosque in grace.

All that vegetation is a magnet to animals. Insects love mesquite flowers (catkins), which bloom prolifically and over a long time. They also eat the leaves and seeds, and are eaten themselves by many birds, reptiles, amphibians, and mammals (which also love mesquite pods). Bosques support more breeding birds in the Southwest than any habitat other than neighboring cottonwood-willow forests. They are also critical migration corridors, for birds as well as for mammals like mule deer, mountain lion, and the occasional jaguar.

Mesquite bosques also provide protection from flood erosion damage to roads and structures, since they line the active floodplain and take the brunt of any major flood event, the vegetation slowing and filtering the flows. Bosques also filter runoff from upland sources (including polluted road runoff, sediments, agricultural and livestock debris, and trash), so protect the quality of water that reaches the river and recharges our drinking water aquifer.

Unfortunately, since many surviving bosques are out of the “100-year floodplain” (which requires major engineering to build in), they are ripe for residential development. Now is the time to recognize the value of these wonderful forests, and to find ways to keep them as a significant part of our riparian environment. Our updated County Comprehensive Plan specifies riparian protection as an important component of future county development. We are working with the Sonoran Institute and other groups to collaborate with riverside landowners on ways to implement that Plan, and create a future that has room for development, continuing agriculture, and viable bosques.

(Thanks to Dr. Julie Stromberg for her comprehensive “Riparian Mesquite Forests: A Review of Their Ecology, Threats and Recovery Potential”—1993— from which much information for this article was taken)