Christina Mild
RIO DELTA WILD

"Walker's Manihot grows near Santa Ana's entryway in xeric gardens."

FLORA FACTS

Scientific Name: *Manihot walkerae*
Common Names: Walker's Manihot
Family: Euphorbiaceae

Plant Sleuthing Requires Amateurs and Professionals

The bulk of what I've learned about Walker's Manioc comes from an article by Chris Best, plant restoration ecologist for the LRGV National Wildlife Refuge System, entitled "Walker's Manioc Rediscovered" and from e-mail conversations with him.

"In general, Walker's Manioc is found from Starr and Hidalgo County to Aldama in southern Tamaulipas, always in places where sandy, calcareous soil shallowly overlies indurated caliche or, in the case of the Aldama population, limestone." Best tells me.

Thus we move away in this article from the usual flat clay haunts near my home in Harlingen to the geologically diverse counties to our west.

This rare and endangered plant was first collected by Arthur Schott in 1853 at Ringgold Barracks near Rio Grande City in Starr County, TX. The unusual plant was assumed to be a South American species. Inasmuch as closely-related and similar-appearing plants are widely grown as food crops along the equator, this was a logical assumption. In 1888, the plant was sighted again on the Mexican side of the Rio Grande.

In 1942, an amateur botanist, Mrs. E. J. Walker, collected the plant near Mission and La Joya and sent a specimen to the University of Texas in Austin for identification. On careful examination, it was recognized as a distinct species and named for Mrs. Walker. Dr. Al Richardson explains that *–ae* on *walkerae* designates this feminine contribution to botany.

Cuttings of the original plant discovered by Mrs. Walker still grow at San Antonio Botanical Gardens, though I can best describe their growth habit in that location as puny.

During the 1940's, the plant was occasionally encountered in south Texas. Most populations were destroyed by the extensive brush clearing of that era.

In 1960, Marshall C. Johnston discovered Walker's manioc among grasslands at two locations in east-central Tamaulipas. Until 1990, no further sightings were made and the plant was feared to be extinct in the wild.

At that point Phil Clayton of Fish and Wildlife Service located *Manihot walkerae* on private land. Those landowners have carefully guarded the plant, allowing botanists an opportunity to study it and collect seed.

In 1992, Mexican botanist Francisco Gonzalez Medrano rediscovered a small population in southern Tamaulipas, growing near those discovered earlier by Marshall C. Johnston. Almost 300 plants are known to occur in Tamaulipas.

In June of 1995, Americorps worker Tom Patterson located *Manihot walkerae* while surveying the vegetation on a USFWS tract with Chris Best. A prompt survey of that land was required, as an oil company was planning to clear it for drilling. Tom's reflection on his discovery: "A botanist lives for those moments when you come across a rare and beautiful plant that so many others have failed to find."

Chris Best tells me: "The populations that we have found contain from a half-dozen to 150 individual plants, widely spread over many acres; individual populations are often many miles from the next nearest population. It is very likely that additional populations still exist on unsurveyed private lands that have not been cleared."

Knowing this, Best utilized a small crew of Americorps workers to search out other plants near those spotted by Tom Patterson. They pinpointed the location of each with a GPS (Global Positioning System) device and imported that data to pinpoint each plant on an accurate map.

Using that data, the oil company relocated the proposed drilling pad to a partially-disturbed area where no manioc plants occurred.

Best has been working on propagation of Walker's Manihot for many years. The plant is closely-related to cassava, a staple food for people of the tropics worldwide. As Walker's Manihot survives very different conditions than those of the tropics, it could be an important tool in breeding new food sources for the future.

Healthy specimens of *Manihot walkerae* can be admired at Santa Ana in the xeric gardens near the entrance. Viewing specimens in the wild is not that simple. The plant is typically found in dense stands of native brush, often in areas which are somewhat shaded, often growing within another shrub. Plants may attain a height of five feet. In response to prolonged drought, freezing weather, or hungry herbivores, the plants are found without leaves.

Best has learned much about the plant which was previously unknown: "Walker's Manioc flowers during warm weather, following rain, both in May-June and September-November. Many species of bees and flies visit and apparently pollinate the flowers, which possess nectaries. The three-seeded capsules ripen in about 6-8 weeks; when dry, they dehisce violently, scattering the seeds for a distance of several yards."

"Like many members of the Spurge family, the seeds possess a caruncle, a knob of waxy, and perhaps nutritious, material at one end of the seed. Ants appear to be attracted by the caruncles, and have been observed hauling Walker's Manioc seeds to their colonies. Ants may be very important to the ecology of this plant."

"The ripe seeds are dormant at first, requiring at least 6 to 12 months before they can germinate. … The seeds germinate best under warm, moist conditions. Within a few months, the plants begin to form thumb-sized tubers that can eventually reach two inches in diameter and 10 inches in length, in nursery containers. …. Walker's Manioc is also very easy to cultivate from cuttings of mature stems…"

Chris Best notes: "The fact that this species is endemic to caliche outcroppings makes it very vulnerable, since many of these outcroppings have been strip mined for road-building material."

On a positive note, new sightings of *Manihot walkerae* have been made following rains which occurred during this year.

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Return to Website: www.riodeltawild.com.

Manihot fruit, enlarged.