

EXTENSION OF NATIVE RANGE OF *SABAL MEXICANA* (PALMAE) IN TEXAS TO INCLUDE CENTRAL COAST

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ABSTRACT

Authors report discovery of a wild population of *Sabal mexicana* Mart. in the Central Coast (Coastal Bend) region of Texas, present evidence that the species is indigenous to that region, and discuss conservation prospects.

RESUMEN

Los autores relatan el descubrimiento de una población salvaje de *Sabal mexicana* Mart. en el litoral central de Texas, presentan evidencia de que esta región es parte de la distribución nativa de la especie, y discuten las perspectivas de su conservación.

Although *Sabal mexicana*, the caulescent palm native to Texas, has undergone several changes in its classification since first identified as a species distinct from *Sabal palmetto*, most botanists have described its native range in the U. S. as limited to the Lower Rio Grande Valley, at the extreme southern end of Texas. In identifying this palm as *S. texana* Small (1927), for example, described its distribution as "confined to a comparatively small area in the lower Rio Grande Valley."

Orator F. Cook, however, apparently believed otherwise. Cook (1908, p. 5n.a) stated that "Tall palmettos were seen in Jackson County as late as 1876 by Mr. J. D. Mitchell, of Victoria," and in 1913 (p. 11) Cook noted that "*Inodes texana*," as he called it, "seems to have extended much farther northward only a few decades ago, and specimens may still be found about Indianola or at other points along the Gulf coast."

Cook (1913) goes on to describe a new taxon — *Inodes exul* — in order to identify a population of sabal palms, of unknown origin, that for many years had been cultivated in Victoria, Texas. Beccari (1907) had by then rejected the genus *Inodes*, and a careful comparison by Davis (1942) eliminated *exul* as a separate species by showing that the morphological features Cook considered distinctive for *exul* fell within the range of variation of

Sabal texana. Finally Moore (1971) reduced *S. texana* to synonymy of *S. mexicana*, a single species ranging from Texas to Central America.

But the basic mystery remained. Where had the Victoria palms come from? No Victoria resident, either in Cook's time or today, seemed to know. Prompted by Cook's footnote, however, we suspected that Victoria's mystery palms were of local origin, and in August of 1989 initiated a search. We were soon rewarded by the discovery of a wild population of *S. mexicana* in the Central Coast, as well as of evidence that this species is native there.

After our inquiries in Victoria about wild palms, either past or present, resulted in an article in the THE VICTORIA ADVOCATE (Bowen 1989), four fishermen called to tell of palms, up to twenty feet tall, on nearby Garcitas Creek. Historian Brownson Malsch, of Edna, told us of a tall palm on the east bank of Garcitas Creek that used to be visible from the Highway 616 bridge. Rancher John M. Bennett took us to the fallen remains of this palm, which we found to have a trunk of at least 37 feet. Nearby stood a living specimen of *S. mexicana* with a 13-foot trunk, and scattered about the Bennett ranch, in the bottomland forest along Garcitas Creek, were other caulescent specimens, and seedlings. Bennett told us the tall palm had been standing there when his grandfather bought the ranch in 1890, and that there had been no prior settlement on the east side of the creek.

A boat trip up Garcitas Creek revealed a population of *S. mexicana* beginning approximately 300 yards north of the Highway 616 bridge and extending for 2 – 3 miles upstream. Specimens ranging in size from seedlings to 20 – 25 feet stood along the bank and were scattered through the bottomland forest, up to perhaps 50 yards from the creek. Some were on the edge of the water and looked as though they would soon be lost to erosion. Others stood on relatively high banks. All but two of the specimens we saw were on the east or Jackson County side of Garcitas Creek. The two on the west (Victoria County) side were both near the southern end of the population. Upstream from these two the only palms seen on the west side were an occasional specimen of *S. minor*. We saw no *S. minor* on the east side, or anywhere in association with *S. mexicana*. Specimens were sent to US (Lockett 101, Aug 1989) and SMU (Lockett 102, Sep 1989).

Sabal mexicana is readily distinguishable from *S. minor*, the only other palm known to occur in the Central Coast. Aside from being caulescent, mature specimens show highly filiferous, strongly downcurved leaves having a costa measuring at least two feet, and dead petioles with split bases cling to their trunks. Even young specimens differ from *S. minor* by their relatively longer petioles and leaf segments, lighter color, and highly fili-

ferous, strongly costa-palmate leaves. The long, lax segments of the many seedlings give them a grass-like appearance.

Because *S. mexicana* is widely cultivated in South Texas it would be easy to suggest that the Garcitas Creek population has escaped cultivation. Historic evidence, however, indicates that tall, trunked palms have been found in the Central Coast since the earliest attempt at colonization. According to Weddle (1987, p. 11), in 1685 French explorer René-Robert Cavelier, Sieur de La Salle, established his short-lived Fort Saint-Louis colony on Garcitas Creek. The colony's historian, Henri Joutel, devoted several pages of his account of the colony to a careful and impressively accurate description of local flora and fauna. As related in Margry (1876–86, vol. 3, p. 212), this description includes the following passage: "*Il y a une autre espèce d'arbres qui ont des branches longues d'environ trois ou quatre pieds, et leurs feuilles sont comme celles des lataniers, seulement plus grandes et plus larges. Ils portent un petit fruit, mais je n'en sçaurois dire le goust, n'en ayant point mangé; mais un de nos gens me dit qu'il luy avoit semblé bon.*"

Carlos E. Castañeda (1936–58, vol. 1, pp. 289–290) called him "the trusty Joutel, a man of sense and observation." This is evident from Joutel's account. Though knowing no names for many of the creatures and plants of the Texas coast, he describes recognizably everything from horned lizards to yucca — which, by the way, he clearly distinguishes from palms. There is no reason to suppose Joutel was imagining the plants he described in the quoted passage.

What were these plants? If palms, were they *S. mexicana*, or *S. minor*? *Latanier* is the vulgar name applied to *Sabal* in Haiti. Bomhard (1935) remarks that "*Latanier* is the French form of the native name of tall, fan-leaved palms indigenous to certain islands belonging to France off the southeast coast of Africa." She adds that in Louisiana this name, or "*latania*," is commonly applied to *S. minor*. Perhaps Joutel had *S. minor* in mind when he used the word *latanier*. If so, he clearly distinguished the "trees" (*arbres*) he saw on the Central Coast of Texas from *S. minor*. The 3- or 4-foot petioles (*branches*) would be within normal range for *S. mexicana* (Davis, p. 94), but too long for most *S. minor*. The blades (*feuilles*) are "*plus grandes et plus larges*" than those of the *lataniers*. Most important of all, Joutel describes the palms he saw as bearing an edible fruit. This clearly fits the fruit of *S. mexicana* (Tull 1987), but not the very small fruit of *S. minor*.

In 1688 Karankawa Indians massacred the adult inhabitants of Fort Saint-Louis, but spared a few children, including Jean-Baptiste Talon. Almost 10 years later Jean-Baptiste and his brother Pierre, whom La Salle had left with the Tejas Indians, had made their way to France, where they were

interrogated about their years spent with Indians in what is now Texas. In their deposition the Talons reported that there were "*palmiers*" along all the rivers, including one — possibly the Guadalupe — to which the Karankawas had taken their women and children (including Jean-Baptiste) while they waged war against another tribe. (Weddle 1987, Part IV.)

During the 300 years since the time of La Salle's colony most of the Central Coast palms appear to have been lost to wharf building. *Teredo navalis*, the shipworm, destroys wood immersed in warm salt water. Because *Sabal* palm trunks were immune to such destruction palm logs were in demand for wharf construction, and during the 19th century many were used as piles for the wharves at the port of Indianola, on Matagorda Bay (Malsch 1988). According to Malsch (pers. comm.), Francis E. Huck, whose father operated a lumber yard in Indianola before the city's destruction by a hurricane in 1886, reported to him that locally acquired palm logs were used for wharf pilings until the supply was exhausted, and that thereafter Huck's father had had to import them.

This evidence from Malsch fits with J. D. Mitchell's statement to O. E. Cook. If Mitchell saw tall palmettos in Jackson County "as late as 1876," the implication is that something happened to them after that, but before the destruction of Indianola in 1886. Cook's notes, salvaged by Dr. Andrew Archer of the Smithsonian Institution (where they are now housed) after they had been discarded by Cook's employer, the United States Department of Agriculture, help complete the picture. In an item dated "Kingsville, [Texas] Aug. 3, 1906" Cook records Mitchell's tall-palmetto remark, then adds, "They were cut down for the sake of the wood. This may be taken to indicate that the native palmetto of Texas ranged at one time much farther North than at present, and that it will grow freely in the open air over the whole southern part of the state, as many casual plantings also prove."

Mitchell, whom Burke (1978) called "the first native Texas naturalist," was in contact with Cook because from 1904 almost until his death in 1922 Mitchell did field work for the U.S.D.A. Entomologist W. D. Hunter (1922), with whom Mitchell collaborated for years, called Mitchell "a fountain of accurate information."

Palms are prized as ornamentals, and early settlers encountering them in the wild sometimes eliminated whole populations by digging them up for transplant. Brown (1976b, p. 152) documented cases where "two populations [of *S. palmetto*] north of North Inlet [S. Carolina] have been either completely removed for landscaping purposes or otherwise destroyed since 1930. A small group of trees near North Litchfield Beach at Midway Inlet were removed in the early 1960's. At Murrells Inlet a much larger popula-

tion on Drunken Jack Island was removed beginning in the early 1930's. This extinct population represents the northernmost modern extension of the species on the South Carolina coast . . ."

Historian Malsch's notes indicate that in 1925 Mrs. Alexander Lowe told him that in 1875 her husband bought two small palms from a wagon lot that pioneer nurseryman Gilbert Onderdonk brought from Jackson County for sale in Victoria. According to Malsch (pers. comm.) a few of these original transplants are still standing in Victoria, and many younger palms have been propagated from their seed. Cook (1913) identified the "type individual of the new species" (*Inodes exul*) as the tree that "graces the lawn of Mrs. Martin O'Connor, of Victoria." Mrs. O'Connor's nephew, Mr. Dennis O'Connor (pers. comm.) reports that this palm, today over 40 feet tall, still stands at the junction of Liberty and Power streets. Although he has no record to prove it Malsch, who as a child was a neighbor of the Martin O'Connors, believes this palm is one of Onderdonk's original transplants.

Even if historical evidence were lacking we believe it would be reasonable to conclude that the native range of *S. mexicana* includes the Central Coast. The existence of a wild, viable, reproducing population, only 200 miles from the known native range, is in itself evidence that the site of this population is part of the native range. Noting that sea currents on the southern Atlantic coast are northerly in late spring and summer, when the fruit of *S. palmetto* is dry and buoyant, Brown (1976a) suggested sea dispersal as the mechanism that could have carried seed of that species from Florida up the Carolina coast to the northern extreme of its range. Although alongshore currents on the Texas coastal bend are normally southerly, approximately twice a year, usually in spring and early summer, this flow may be reversed. Likewise eddies off of the northerly loop current, in the central gulf, can cause a northerly alongshore current when they split upon arrival at the coast. (Kerry Whitley, Senior Marine Scientist, University of Texas Marine Science Institute, Port Aransas, TX, pers. comm.) Brown also demonstrated that dry *S. palmetto* fruit remains buoyant several weeks. Since we have observed that dry *S. mexicana* fruit floats readily, the dry skin forming an air chamber in which the seed rattles, we see no reason why *S. mexicana* could not follow the same dispersal pattern as that suggested by Brown for *S. palmetto*. According to Davis (1942, p. 85) *S. mexicana* in the lower Rio Grande Valley may bloom almost any time of year, meaning dried fruit would be available year round. Floating fruit, washed down the Rio Grande, or rivers in Mexico, could be carried north to the Central Coast where tides and storms could push it into rivers and lowlands. Once mature trees were established on the Central

Coast their fruit could be spread by birds and small mammals. Coyotes, raccoons, chachalacas and rodents have been observed to eat *S. mexicana* fruit. (Rose Farmer, Manager, Sabal Palm Grove Sanctuary, Brownsville, TX, pers. comm.).

Obviously there are no cold stress restrictions on establishment of *S. mexicana* along the stretch of coast now determined to be populated with this species. As stated by Read (1974, p. 41) “. . . over a broad area of uniform edaphic and climatic conditions the same species of palm will likely be seen. On the other hand a change in the substrate is likely to support distinct species, . . .”

We thus believe it is safe to assume that in prehistoric times currents would have carried the seeds to all nearby suitable habitat. Putting it another way, it is questionable to speak of escape from cultivation when we find a population so well adapted to its environment, and showing evidence of having grown in that environment for many years, if the site of that population appears to be within the natural dispersal radius of the known native range.

Since we know of no age studies of *S. mexicana* we do not know the age of the larger Garcitas specimens. We suspect, however, that since their height is well below the approximately 50 feet the species can attain (Texas Forest Service 1989, p. 8), and since we found a dead specimen with a trunk of at least 37 feet, the Garcitas trees are younger generation, seeded by a few specimens that survived lumbering and transplantation. Further, we suspect that since the days of wharf building transplantation has continued to be a factor tending to limit the wild population. In Bennett Park, a small, unimproved and unpoliced county park on Garcitas Creek, we saw many young specimens of *S. mexicana*, but none that were caulescent, even though caulescent specimens were observable on adjacent private land.

Given the apparent reproductive vigor of the Garcitas population, we believe that conservation prospects for this and other possible stands in the Central Coast (or elsewhere) are promising, if habitat remains undisturbed and if, through education and protection, transplantation can be discouraged. Meanwhile we continue to look for other wild populations of *S. mexicana*, as well as further evidence of the species' historic range. We urge all who discover specimens in the wild, or historic references to trunked palms (“tall palmettos,” etc.), whether in the Central Coast or beyond, to contact us.

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