Is the Saw Palmetto Supply Sustainable?

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Part 1: Revelations from European Contact to 1990

By Steven Foster

Saw palmetto is a conservation and sustainability conundrum. The question of “where does the supply of saw palmetto berries come from?” is easily answered. Nearly the entire commercial supply of saw palmetto fruit (*Serenoa repens*, Arecaceae), or berries as they are called in the herbal trade, is wild-harvested primarily in Florida and to a lesser extent, southeastern Georgia. The question, “where will saw palmetto berries come from in the future, and is their supply sustainable?” is inextricably woven into differing human views of the natural world, and the overriding impact of observable climate disruption in a single human lifetime. Climate disruption leading to hotter drier soils, periods of greater precipitation intensity, and rising sea levels are long-term threats; coupled with high demand, and frequent supply shortages. These factors combine to make saw palmetto berries’ future sustainability tenuous.

See *Adulteration of Saw Palmetto* for information on current...
In this the first installment of a two part series, we will begin to explore the experience of human interaction with saw palmetto berries as food and medicine from the time of European contact to the entry of saw palmetto products to consumer mass markets in Europe and North America in the early 1990s. Part two of the series will focus on the saw palmetto conservation conundrum from the 1990s to the present time.

Where it grows

Sometimes called "sabal," (based on a now obsolete botanical name Sabal serrulata) saw palmetto is a three- to nine-foot (or more) tall shrubby palm family member found exclusively in the southeastern United States from the lower coastal plain in southeastern South Carolina and Georgia, to Florida, west to coastal Alabama with isolated populations along the Mississippi coast and a few scattered populations.
recorded in Tammany Parish, Louisiana. It is most common in Florida, where it is found in hundreds-of-thousands of acres, especially in the eastern, central and southern parts of the state.[1]

Endemic to the southeastern United States, saw palmetto is the most abundant native palm in North America. It is adapted to a variety of habitats, thriving in sandy soils, often in dry conditions. In short it is a ubiquitous and common plant in many of Florida’s terrestrial ecosystems.[2]

In 1998 Bennet and Hicklin, quoting a 1947 paper report about 10% percent of Florida’s land surface (1.42 million hectares or 3.5 million acres) was covered with saw palmetto. Conversion of saw palmetto scrub into citrus plantations, rangeland, surface water drainage, along with suburban and urban development have greatly reduced saw palmetto’s natural habitat.[3]

**Saw Palmetto “The Plant from Hell”**
In some land use management schemes saw palmetto was (is) considered a nuisance plant in the face of development, competing with more desirable native species (for farm animals), blocks power pole and utility access, reduces livestock forage, and hinders livestock ranching operations in general. In Florida, some call it “the plant from hell.” Developers bulldoze thousands of acres of saw palmetto each year. “For these reasons, control of this common native plant is often necessary,” according to authors of a 2012 Institute of Food and Agricultural Sciences (IFAS) University of Florida Extension publication. This publication provides details on chemical control using the herbicide metsulfuron (and others) for spot and broadcast application for control of saw palmetto.[4]

Another IFAS extension publication provides details on how to mechanically control saw palmetto with roller shoppers, brush cutters and web plows. Since cattle were introduced in 1521, 7.6 million acres of Florida wildlands have become livestock rangeland.[5] In the 1950s, mixtures of various herbicides such as equal parts of 2,4,5-T and 2,4-D were used to control saw palmetto.[6]

A Foundational Species

Saw palmetto is a foundational species in many of its varied habitats. Individual plants were once thought to be upwards of 700 years old, through recent genetic studies reveal that clonal networks of 10,000-year-old genetically identical individuals may be common.[7]

Saw palmetto primarily propagates by vegetative sprouts. It is resilient to and thrives on fire disturbance, with fire being a natural part of the life cycle of the plant.
is resilient to and thrives on fire disturbance, with fire being a critical component to stimulating reproduction of stem tips. It is adaptable to seasonally arid environments in nutrient-poor acidic soils. Saw palmetto is remarkably adapted to photosynthesis efficiency in both low light conditions (as an understory shrub) and in full sun. It has extremely slow-growing seedlings, and human-caused disturbance to its native habitats can have long-lasting impact. The greatest threat to saw palmetto is habitat loss due to human development.[8]

Wildlife Food

Many observers in last 500 years have noted the importance of saw palmetto fruits as both forage and cover for wildlife including the Florida black bear, Florida’s eastern most populations of the North American panther, along with raccoons, rats, twenty other wild mammal species, over 100 bird species, twenty-five amphibians, sixty-one reptiles and innumerable insect species. As a keystone species in Florida’s varied habitats, the fruits are characterized as fueling the engine of Florida’s wildlife communities.[9]

Unloading saw palmetto berries from a truck to a conveyor belt. Photo by Steven Foster.

Late nineteenth century interest in saw palmetto as medicine was in part stimulated by observations on value as food for Florida wildlife. In his 1898 book on saw palmetto, E. M. Hale, M.D., quoting J. B. Read (1879), without attribution, “Several years ago, while on a hunting trip through the wilds of Florida, my attention was drawn to the great fattening properties of the berries, and peculiar quality of the fat of the animals that feed on them. Most animals in the palmetto region are very fond of the fruit . . . . as the palmetto berries begin to ripen the animals improve rapidly and in a few weeks have acquired an enormous quantity of fat . . . The berries, when dropped into water are seized and eaten with avidity by the fishes. Even water fowl and other birds frequently acquire a taste for the berries and eat them
Overlooked Human Food

Since the period of European anthropogenic alien invasion and subsequent environment disturbance to what is now the Southeastern United States, humans have exhibited a love-hate relationship with saw palmetto. Native groups throughout the plant's range consumed the fruit as a staple food. In 1575 Spanish explorer Hernando Descalante Fontaneda was the first to record the use of the berries as food by indigenous groups in Florida. Cultures now extinct, existing at the time of first European contact in 1513, including the Calusa, Tequesta, Mayamis, Jaega or Job, and Ais, collectively known as the “Glade Indians” of southern Florida were observed to consume saw palmetto fruits. The Ticuma and Apalachee ate fresh berries. The Choctaw were observed drying the fruits for winter consumption. The Alabama, Creek, and Miccosukees as well as the Seminoles consumed the fruits.[11, 12]

Pharmacist John Uri Lloyd in a footnote on saw palmetto writes “Since the saw palmetto berries contain much fixed oil it might also be inferred that the food side of the subject should not be overlooked.” He also observed that people became interested in the berries following its apparent effect on animals, investigations by physicians followed, then it was introduced into medical practice as a new remedy, and became one of the most important native remedial plants harvested from the South in the late nineteenth and early twentieth centuries.[13] Earlier in 1884-85, J.U. and C.G. Lloyd noted use as a substitute for cod liver oil, and that saw palmetto oil was then offered for sale by Solomons & Co. of Savannah, Georgia.[14]
In 1791, William Bartram who encountered the plant in the 1770s, is the first to botanically describe the plant in the modern sense and coined the phrase “saw palmetto.” He notes “this fruit is of the form and size of dates, and is delicious and nourishing food.”[15] In a 1768 manuscript of William Bartram discovered in 1847 and published in 1853, he describes the taste of the fruits as “a little bitterish and stinging on the palate, at first using it, but soon become familiar and desirable.”[16]

Precolonial and colonial works such as Bartram’s Travels and other accounts of faraway lands served as the early American equivalent of reality TV. While native groups and early Western naturalists include saw palmetto fruits among important wild foods of Florida, one famous and often quoted travel account recorded great disdain for their flavor. Jonathan Dickenson’s sensationalized journal of a shipwreck on the Florida coast in 1696, first published in Philadelphia in 1699, and reprinted in numerous editions in at least three languages, up until 1869, is among the most famous of all traveler captivity tracts from the seventeenth century. The
traveler captivity tracts from the seventeenth century. The book becomes a page-turner with the title itself: “God's Protecting Providence, Man's Surest Help and Defence in time of the greatest difficulty, and most eminent danger. Evidenced in the remarkable deliverance of Robert Barrow with divers other Persons, from the devouring waves of the sea; amongst which they suffered Shipwreck; And also, from the cruel Devouring Jaws of the Inhumane Canibals of Florida.”

Dickenson sullied saw palmetto’s future as food, as described in the 1700 London edition:

“At first their Sorrows were so great, and their Alarms so many, they could not eat; afterwards their Diet so uncouth, they could not away with it; until, at length, Hunger bad so far prevailed over them, that they could eat with an Appetite the Palmetto-Berries; the taste whereof was once irksome, and ready to take away their Breath [at first] . . . they gave us some of their Berries to Eat: We tasted them, but not one amongst us could suffer them to stay in our Mouths, for we could compare the taste of them to nothing else, but rotten Cheese steep’d in Tobacco.”[17]

Origins of Herbal Use

Medicinal use of saw palmetto is virtually unknown until 1877 when J. R. Read, M.D. and Abraham A. Solomons (manufacturing pharmacist) introduced saw palmetto to the medical profession at an 1877 meeting of the Georgia Pharmaceutical Association. An article on its remedial powers soon appeared in an 1877 issue of the Medical Brief. Two years later in 1879, J. B. Read's article in the April issue of the American Journal of Pharmacy introduced saw palmetto’s potential to a wider audience.[18] In the same year J. B. Read and the Solomons Company (wholesale drug manufacturers of Savannah), introduced saw palmetto products to the market. In 1879, Abraham A. Solomons also acquired patents for an “elixir of saw palmetto,” “Solomons' Inspissated Juice of Saw Palmetto,” and “Solomons' Saccharated Oil of Saw Palmetto.”[19] At first touted as a possible remedy for the treatment of coughs, colds, and debility, it soon gained a reputation for treatment of prostate conditions. By the 1880s and 90s various preparations were offered by Eclectic and Allopathic drug manufacturers. “Valuable in catarrh, chronic bronchitis, acute and chronic laryngitis, asthmas and whooping cough,” write the authors of Parke, Davis & Company's Physicians Manual of Therapeutics (1900), “Recently attention has been called to a specially vitalizing action of Saw Palmetto upon the glands of the reproductive apparatus—mammae, ovaries, etc.— hence the value of the drug, in atrophy of the uterus and appendages, and of their male analogues, the prostate and testes.”[20]
Increased demand followed what might be seen today as the Victorian equivalent of Viagra.

By 1895 products were well established in the drug trade with an estimated 150 tons of annual shipments of dried berries to New York, Philadelphia and Baltimore, the largest amount (30 tons) being shipped from Ormud Beach, Volusia County, Florida. One botanical observer from that area described a vast vegetative belt of saw palmetto on Florida’s east coast, but cautioned that only one percent of the plants actually produced fruit.[21] At the same time the stem and leaves were being harvested at the rate of one-half ton to over a ton per acre. When air-dried they yielded an average of about 13 percent tannins, used to make an extract said to produce a very soft, mellow leather of a good color. In 1905, 3500 barrels of the tannin-rich leaf extract was sold.[22] In a letter to the Royal Botanical Gardens at Kew, dated February 4, 1899, Charles Sprague Sargent, the...
Kew, dated February 4, 1899, Charles Sprague Sargent, the first director of Harvard University’s Arnold Arboretum, sent a sample of the dried berries for Kew’s economic botany collection, noting that by 1899, about 250 tons of the berries were being used to make extract. What does 250 tons of saw palmetto look like? Picture about two dozen twenty-foot-long railroad containers with about 10,000 lbs of dried berries each.[23]

Little trade information is available after the decline of the American market for herbal medicine following the demise of the Eclectic medical movement and herbal medicine in general by the 1930s to the herbal resurgence beginning in the 1970s. Use continued in Europe, particularly in France, Germany and Italy where saw palmetto products were a mainstay of homeopathic practice from the 1930s to the 1960s. In the 1960s, in Europe saw palmetto-based phytomedicine products emerged as standard treatments for benign prostatic hyperplasia. These products were largely prescribed by physicians and dispensed by pharmacists.

Interest increased in the early 1990s, as more scientific evidence of safety and efficacy of saw palmetto products was published, particularly in Germany, where German federal regulations at the time, required a higher level of scientific evidence for phytomedicine products which had been on the market for decades. The loss of hundreds of thousands of acres of saw palmetto habitat to rangeland (for cattle grazing), bulldozing for development, dramatic increases in demand for saw palmetto berries in the last thirty years, and potential loss of suitable environmental conditions due to shifting climate patterns, sets the stage for the second installment of this two-part story, exploring where will saw palmetto berries come from in the future and is the supply sustainable?

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A picker's handful of fresh saw palmetto berries. Photo by Steven Foster.
References


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17. Dickenson J. God’s Protecting Providence, Man’s Surest Help and Defence in time of the greatest difficulty, and most eminent danger. Evidenced in the remarkable deliverance of Robert Barrow with divers other Persons, from the devouring waves of the sea; amongst which they suffered Shipwrack; And also, from the cruel Devouring Jaws of the Inhumane Canibals of Florida. Philadelphia and London: T. Sowle; 1700; iv, 29.


Saw palmetto is a popular herbal supplement used to treat benign prostatic hyperplasia (BPH). Research shows saw palmetto improves symptoms of BPH. Male-pattern baldness is the loss of hair in men due to genetics and too much dihydrotestosterone (DHT). Testosterone is converted into dihydrotestosterone (DHT) by the 5-reductase enzyme. Saw palmetto blocks this enzyme, which decreases DHT and

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increases hair growth [R, R]. A study with 50 men with male-pattern baldness found that saw palmetto taken daily for two years increased hair growth on the top (crown) of the head [R]. Saw palmetto, a popular herbal remedy, is used by more than two million in American for enlarged prostate. It is commonly used for low sperm count, low sex drive, hair loss, inflammation, and prostate cancer, as well as hormonal balance and testosterone support. See #1 Product. If you want to experience all the benefits of Saw Palmetto from a product you can trust, your search stops here. With our carefully collected list of the best and most effective Saw Palmetto supplements, you’ll be well on your way to supporting healthy testosterone levels and peak prostate health! See #1 Product. Relate