ENVIROMENTAL IMAGES AND FLORIDA'S INCIPENT SUGAR INDUSTRY

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"The way that men perceive or understand their environment is significant for explanations of human spatial activity" (Allen 1979, p. 34)

Sugar cane has long been a staple of Florida's agricultural landscape. Introduced to Florida shortly after the founding of St. Augustine, the sucrose yielding grass became commercially significant during the nineteenth century and currently ranks as the leading commodity in dollar value of farm sales among the state's field crops (Fernald 1981, p. 153). Florida's contemporary cane growing region is located on lands bordering Lake Okeechobee. This area of rich, organic soils has remained the focus of the state's sugar industry throughout most of the present century, but earlier sugar enterprises flourished along both the Atlantic and Gulf Coasts and in central Florida. Economic and political forces are preeminent in explaining the peripatetic nature of Florida's cane industry, but spatial instability has also been engendered by disparities between the perceptions and realities of the state's sugar growing potential. Landscapes believed to be amenable to cane cultivation often proved wholly inappropriate, and sugar production subsequently relocated to more "ideal" locales.

This article examines the role of environmental perception in fostering a sugar industry in northeastern Florida during the eighteenth and nineteenth centuries. Contemporary materials are used to convey the positive impressions of the region which were held by residents and writers, impressions that encouraged cane cultivation in a physical milieu ill-suited to the crop.

Sugar in Northeast Florida, Sixteenth to Mid-Nineteenth Century

The Formative Years: 1763 - 1783

Although the Spanish introduced sugar cane to Florida during the middle of the sixteenth century, it was not until the abbreviated British occupation from 1763 and 1783 that commercial production commenced. Whereas Spain had viewed Florida as little more than a military outpost, the British settled with the intention of exploiting the region's agricultural potential. Since Florida's climate was perceived as being comparable to that of the West Indies, the British deemed the area suitable for the cultivation of semi-tropical commodities. Large land holdings were dispensed to planters, and bounties were provided to stimulate farm production. The plantation system that evolved after 1763 focused on the province of "East Florida," a British designated unit that included the peninsula and the mainland between the Atlantic Coast and the Apalachicola River. Rice and indigo quickly emerged as the staples of East Florida's estate economy, but a variety of other crops were commercially produced on a small scale. Despite some concern that it would compete with West Indian production, sugar cane was cultivated along the Atlantic coast as early as 1768. Lieutenant Governor John Moultrie harvested a crop on his plantation south of St. Augustine in 1770, and in the opinion of a Jamaican planter the cane was as rich and produced as well as in most parts of the West Indies, and the sugar "was allowed to be good" (Doggett 1919, p. 51).

Sugar cane was also grown in the vicinity of Dr. Andrew Turnbull's New Smyrna colony, located some sixty miles south of St. Augustine. The naturalist William Bartram visited a plantation near New Smyrna around 1775 and reported that a severe storm had destroyed the crops, among them "the Indigo...and several acres of very promising Sugar-cane." Commenting upon the fertility of the land in the New Smyrna region, Bartram concluded:

These rich low grounds when drained and ridged, are as productive as the natural high land, and vastly more durable, especially for Sugar-cane, Corn and even
entitled, The Superior Advantages to be Derived From the Culture of Sugar Cane in Florida. Cleland's main objective, as stated in the preface, was to "exhibit a delineation of the capabilities and resources of East Florida for the production of sugar-cane..." and to "point out the best method of cultivation together with the advantages to be derived and the cost of a sugar estate, compared with those of Louisiana and the West Indian Islands" (Cleland 1836, p. vi). Cleland believed that East Florida was the only region in the United States where cane could be profitably grown with any degree of certainty because of its unique "capabilities and resources." Those capabilities and resources led Cleland to conclude that

When we look at the geography of our country, and discover the numerous local advantages and adaptations of both climate and soil for the various agricultural pursuits, we must, at a glance, unhesitatingly confess, that East-Florida is destined at no distant period, to become a great and profitable Sugar region (Cleland 1836, p. x).

Cleland provided few specific insights regarding East Florida's resource base, but he favored the province as a cane growing area because he was convinced that it possessed inherent environmental advantages over sugar districts in Louisiana and the West Indies. He also asserted that East Florida sugar could be produced at half the annual labor and expenditures of its North American counterparts if judicious management practices were adopted by local growers.

Cleland, like Forbes and Vignoles before him, focused on East Florida's Atlantic coast region. Indeed, from the early 1820s until 1836, sugar estates were established between St. Augustine and New Smyrna, and the Atlantic coast emerged as Florida's first large-scale commercial cane producing district. Plantations along the Matanzas, Tomoka, and Halifax Rivers utilized state-of-the-art technology and employed hundreds of slaves to harvest and process thousands of acres of cane. Typical of the scale of operations was the St. Joseph's plantation of Joseph M. Hernandez. Located on the Matanzas River, St. Joseph's fields were scientifically drained by canals four, five and seven feet wide, with identical depths. Each channel extended from one-half mile to one and one-half miles in length. Two hundred acres of cane land were cross-ditched with ditches twenty-five and twenty feet deep. The accompanying physical infrastructure included causeways, bridges and roads, a curing house, boiling house, and engine house. St. Joseph's was considered "the most valuable plantation, as respects soil, in Florida" by a former Bahamian planter who described it in the Farmers' Register of July 1835. In the judgment of this anonymous observer the "swamp lands of East Florida, and especially those lying on the branches of the Matanzas and Halifax Rivers, are superior in strength and character for the production of sugar, to the most valued lands of the West Indian Islands - only excepting the ashy loams of St. Kitts" (Hanna and Hanna 1950, pp. 60-61).

The success of Florida's Atlantic coast "sugar empire" encouraged farmers in other parts of the territory to experiment with the crop on a commercial basis. An entry in the June, 1836, Farmers' Register detailed the efforts of one planter to produce sugar in Florida's "Middle District."6 Farquhar Macrae was a former West Indian farmer who migrated to Wascissa (near Tallahassee) with the expectations of establishing a combined sugar and cotton estate. In detailing his experiences Macrae articulated both the promise and the problems of raising cane in northern Florida. Macrae initially sowed forty acres of sugar cane on a trial basis during March, 1834. The cane was planted in swamp lands adjacent to area waterways because Macrae believed that higher lands were too sandy to successfully support sugar cane. The cane had a "favorable" season, and at six months it was equal in sweetness to West Indian cane of nine months. Unfortunately, a late October frost destroyed much of the crop, and only mattressing helped the remainder regain its "vitality."7

In analyzing his experiment Macrae concluded that overcropping and a shortage of laborers were the prime factors contributing to the failure of sugar. But he was also cognizant of northern Florida's environmental limitations vis-a-vis cane cultivation, and he cautioned against establishing a sugar monoculture because of the "liabilities of our climate." Macrae nevertheless averred that cane was grown in combination with cotton it could be "shown not only practicable in this climate, but profitable. Indeed, the time must come, when, with all the fluctuations of climate, Florida will be the sugar-growing section of these United States" (Macrae 1836, p. 69).

Macrae's observation regarding the future of sugar cane in Florida is ironic because it coincided with the abrupt termination of the Atlantic coast sugar empire. In December, 1835, a long simmering dispute between the United
State Government and Seminole Indians over the latter's removal to lands west of the Mississippi erupted into armed conflict. Within weeks after the Second Seminole War commenced, a succession of Indian raids devastated East Florida's sugar industry. Buildings were looted, fields burned, planters abandoned their estates for the relative security of nearby towns and forts, and a once flourishing agricultural region was transformed into a landscape devoid of people and economic activity.

1836 to the 1860s

The Second Seminole War ended in 1842, and with the cessation of hostilities the East Florida countryside rapidly filled with new settlers. As local crop production increased many farmers anticipated that sugar and tobacco would emerge as the dominant cash commodities of the region's revivified agrarian economy. Not surprisingly, glowing accounts of East Florida's cane growing potential reappeared in local and national print. Typical was an entry in the October 1847 issue of DeBow's Review. In discussing the "general productions" of Florida an anonymous contributor cited sugar cane as being of paramount importance:

Sugar, where the quality of the land will allow for its cultivation, is undoubtedly the most certain crop among the staples. Florida is superior to Louisiana for the sugar cultivation in this respect - the season is longer, which allows the cane to ripen higher before the occurrence of frost. The rich swamps and hammocks, after having been properly prepared, will doubtless raise sugar crops in succession... (Debow's Review 1847, p. 248).

Enthusiasm such as this fostered sugar cultivation throughout the state during the late 1840s and 1850s. Indeed, the 2,750,000 pounds of sugar produced by Florida farmers in 1850 represented a tenfold increase over the territorial output of 1840 (Sixth Census of the United States - 1840, and Seventh Census of the United States - 1850). By 1860, however, sugar output had experienced both a relative and absolute decline, and cotton was firmly entrenched as the state's leading money crop. Furthermore, relatively little sugar emanated from East Florida's Atlantic coast hearth. By the end of the ante-bellum period cane cultivation was concentrated in central and northwestern Florida, and in the Gulf Coast counties near Tampa Bay.

Demise of Sugar Production in East Florida

Prior to the Second Seminole War East Florida plantations produced most of the territory's sugar. Few of these estates survived the war with their elaborate and expensive sugar mills intact. George R. Fairbanks, a St. Augustine lawyer and political leader, commented in 1848 that the war had broken the back of the flourishing sugar industry (Fairbanks 1848, p. 12).

A changing land tenure situation also contributed to the decline of commercial cane growing. In an effort to attract settlers to Florida after the Second Seminole war, the U.S. Government enacted the "Armed Occupation Act" in 1842. Under its provisions 160 acres were allotted to any "head of family or single man over 18 who was able to bear arms and was willing to live on the land for five years and cultivate at least five acres" (Covington 1961, p. 45). Most of the pioneers who subsequently migrated to northeastern Florida were subsistence farmers who grew provision crops on small plots of land. As such, they lacked the capital to initiate and sustain large-scale sugar endeavors. Said one observer, "the sugar cane...is now cultivated for home consumption by almost every planter, small and great; but the expense of machinery, and the time required to get under way, has deterred many from abandoning their cotton to raise cane" (Debow's Review 1848, p. 21).

The transition from sugar to cotton also reflected midcentury market demands and prices. During the 1850s, rising prices for cotton engendered a rapid expansion of cotton acreage throughout the state, and a cotton "belt" developed between the Apalachicola and Suwanee Rivers in Middle Florida. Sugar could still be successfully cultivated throughout northern Florida, but the comparative advantages of cotton and other crops made it unprofitable on a commercial basis.
A final factor that unquestionably contributed to East Florida's failed sugar industry was a growing cognizance of the region's environmental limitations vis-à-vis cane growing. The climatic and edaphic needs for sugar cane are relatively rigid. To attain maximum yields the plant requires ample moisture, well-drained soils, and a lengthy frost-free season. In northeastern Florida frost was the most serious environmental hazard. Seed cane was planted in early spring after the fields were plowed and prepared, and the first cane was cut in October. From October through March, slaves stripped, cut, and hauled the cane to the sugar mill where it was converted to sugar and molasses. Given this annual round, it became imperative that frost-free conditions persist at least through the end of the year, a situation that rarely occurs in northeastern Florida. Publications dating back to the middle of the eighteenth century noted the danger to sugar cane of the bitter northwest winds and winter freezes that periodically affected northern Florida. A French planter, of "considerable planting experience in the West Indies and in Florida," observed in 1826 that while sugar could be grown to advantage in Florida, inexperience, a lack of manure, storms and cold were severe handicaps to its profitable cultivation (American Farmer 1826-1827, pp. 339–40). In fact, while parts of northern Florida could support a cane culture under ideal climatic conditions, there was always the risk of losing the crop to inclement weather.

The perception of East Florida in the eighteenth and nineteenth centuries with respect to the region's cane growing potential was invariably positive. However, a close inspection of the area's economic and physical realities shows that sugar production would be at best problematical, and subsequent sugar production moved elsewhere in the state. Notwithstanding, East Florida benefited from its positive image, an image that helped establish and nurture the first large-scale commercial sugar producing district in the state.

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1. Mowat (1943) provides an interesting and thorough account of the public relations campaign mounted by political and mercantile interests in Great Britain to overcome prevailing prejudices against Florida and attract British settlers to the region.

2. In describing the commerce of "East Florida" during the 1780s, Luis Fatio observed that the region's soils were suitable for a variety of crops, including sugar, and that sugar cane was already growing well in some parts of the province (Whitaker 1931, p. 131).

3. For a detailed account of the individual planters who moved to East Florida during the early years in the nineteenth century see Siebert (1957).

4. An 1845 issue of the Niles Register described hammock land soils as a "black, loose, sandy loam from ten to twelve inches deep, resting on stiff compact clay."

5. By the fall of 1832, ten large riverine estates were each producing eighty to one hundred hogsheads of sugar (Niles Register 29 September, 1832).

6. Although the Royal Proclamation of 1763 officially defined the boundaries of "East" and "West" Florida, the same regions are occasionally divided into "West," "Middle," and "East" Florida. West Florida comprised the territory between the Perdido and Apalachicola Rivers, Middle Florida that land between the Apalachicola and Suwannee Rivers, and East Florida the land east of the Suwannee. These regional boundaries are shown in Miller and O'Sullivan 1980, Fig. 1 (cover) and Fig. 2.

7. "Mattressing" was the practice of laying cane in the fields with the leaves toward the south in beds about two feet in height in such a manner that the leaves of each layer covered the stalks of the preceding layer. This protected the cane from frost (Sitterson 1937, p. 185).

8. The location, history, and characteristics of Florida's antebellum cotton belt are well documented by Smith (1973).
9. Although the average monthly temperatures at St. Augustine from December through March are 58.6, 57.8, 59.4, and 63.1°F respectively, freeze data indicate that the mean date of the first fall occurrence of frost is December 18. During the period 1921-1950, St. Augustine experienced fifteen fall freezes (Bradley 1974, pp. 55, 57).


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*Sixth Census of the United States - 1840, and Seventh Census of the United States - 1850*


