REPORT
Drone Survey of Reclaimed Salt Marsh
off Dataw and Oak Islands, Beaufort County, South Carolina
performed for Dataw Historic Foundation, November 21, 2022

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Introduction

The following Report concerns Drone Flights made on Monday, November 21 , 2022 for **Dataw Historic Foundation** by Benjie Morillo, AIA (*Frederick and Frederick Architects*, Beaufort, SC) in association with Colin Brooker *(Brooker Architectural Design Consultants*, Beaufort) to document historic impoundments and remnant earth dikes located south and northwest of Oak Island, a small densely wooded feature located immediately west of Dataw Island.

Drone and base station south side of Pine Island, November 2022

Except for Oak Island itself and two smaller islets offshore known as the Pine Islands, the subject area consists of tidally influenced salt marsh which is largely inaccessible to ordinary foot traffic. Man- made features identified and nominated to the National Historic Register by Dr. L. Lepionka in 1988 as being related to a salt marsh reclamation project for cotton initiated by Dr. Berners Barnwell Sams - the last Antebellum owner of the property - are now heavily eroded and barely visible at ground level.

When designing the survey we therefore relied upon public domain satellite imagery by *Google Earth* to determine flight paths. Two base stations- one on elevated ground adjacent to the Cotton Dike Golf Course, Dataw Island, the other on the south side of the smaller Pine Island were established to ensure maximum coverage of the survey area.

In order to set the B. B. Sams salt marsh reclamation project into its historic context, a review

was subsequently made of pertinent literature referencing cotton cultivation on reclaimed marshes in Beaufort County. While archaeological reports proved scarce, early nineteenth century periodicals yielded two articles by Edward Barnwell entitled *On the Culture of Cotton on Reclaimed Marsh Land* published by the *Southern Agriculturalist* in 1828 and 1831 respectively. Since these writings were almost certainly known to B. B. Sams and may well have influenced- if not guided- his own project, extracts are quoted at some length below.

Also included are extracts from the undated *Memoir* of the latter's son James Julius Sams which provides the only first hand account yet found of his father's failed reclamation project and subsequent reuse of impounded land as ponds which prefigured more recent activities by ACE Basin landowners to establish wildfowl habit for hunting and conservation purposes.

Whether or not J. J. Sams understood the full extent of his father's reclamation work is questionable.

Nevertheless, the *Memoir* contains valuable clues which strongly suggest that B. B. Sams re-purposed as ponds a series of pre-existing impoundments which satellite and drone images indicate were fed by Sparrow Nest Creek, a fresh water stream rising between Dataw and Oak Islands. This is likely indicative of an otherwise forgotten episode in Dataw's agricultural history involving the cultivation of so-called inland rice, either by B. B. Sams, his father or an earlier owner. But, while surviving physical evidence provided by aerial imaging seems convincing it must be emphasized that confirmation of such a scenario in the form of documentary, cartographic or oral evidence is lacking. Similarly, archaeological data for rice culture on or adjacent to Dataw Island has yet to emerge.

Acknowledgments
We wish to thank Marilyn Peck and all other members of Dataw Historic Foundation for their generous support and enthusiasm during the course of this project. Tom Watkins and Jackson Brown merit special recognition for assistance in the field and dealing with practical matters including access and timing. Historic investigation was greatly facilitated by staff and archival resources at the Georgia Historical Society Research Center in Savannah, Ga.

Harrison Thompson and family on Judge Island, SC allowed us to view Dataw Island and its surroundings from fresh perspectives besides screening for our benefit current high resolution satellite images of the study area.

Additional context has been drawn from notes and photographs made during past visits to former rice plantations along the Combahee and Broad Rivers, including Nemours, Hobonny and Whitehall.

1. Site Description

The subject of this report **Site 38BU640** as designated by Dr. Larry Lepionka in his *Dataw Island Cultural Resource Survey* submitted to ALCOA South Carolina in March 1988 consists of a series of heavily eroded earthen dikes "located *on very poorly drained Capers soil located in the high marsh zone north and east of Oak Island and west of the north end of the narrow southern part of Dataw."*

> *The layout of the dike system [is] essentially the same as depicted in the 1872 US Coast Survey Map...Maximum dimensions are 3,700' north south (measured from the extreme north and south points i.e. from the southernmost dike junction with Dataw to the point farthest north in the marsh) by 2,800' east west (measured from the part farthest west in the marsh to the northernmost junction with Dataw). The longest single dike line is 1650', extending north from the northeast corner of Oak Island. The shortest single line is 300', linking the central east shore of Oak Island with Dataw..... two marsh hammocks (the Pine Islands) are incorporated, the larger one anchoring the west angle of the system, the smaller one linking two internal dikes. Whole sections of the original dike lines are missing, other areas are truncated by drainage..the northern dikes ... are deeply penetrated by the upper branches of the northward flowing Sparrow* [Nest] *Creek drainage."* [1].

2. Identification

Referencing the *Memoir of James Julius Sams* (n.d. pp1-2) Lepionka noted these dikes were designed to exclude [salt] water and reclaim salt marsh land for cultivation, the relevant text by J. J. Sams reading as follows:

> *Between Datha, Oak Island and the Pines* [Pine Islands] *were a number of Ponds. These ponds were the result of an attempt made by my father* [Berners Barnwell Sams] *to obtain salt land for the planting of cotton. At one time there was a great rage among the Sea Island planters for salt lands. It had several advantages over other kinds of land. From the time the seed was up there was little or no trouble. The cotton growth on it required very little working. Did not suffer much from either excess of rain or sun. After, however, the dams were built, my father found there was little or no soil, no soil near the surface or lower down. It was all sand. He tried the cotton. It came up badly and grew worse. It was a failure.*

3. Nineteenth Century Salt Marsh Reclamation for Cotton - a Wild Experiment?

Having discovered that spreading their fields with marsh mud tended increased the vigor and yield of long staple cotton, Sea Island planters began experimenting during the later 182O's

[1] Lepionka, Larry. Dataw Island, Beaufort County, South Carolina. Cultural Resources Survey. Submitted to Alcoa, South Carolina Inc. March, 1988: 95

with reclaiming salt marshes in the belief that exploitation of such otherwise unutilized areas would enhance the value of their property, besides significantly increasing financial returns, a difference in price of 32 cents per pound reported in 1828 "*between the Cotton raised on the marsh land, and that raised on highland of the same* [unspecified] *plantation, in favour of the marsh land"* encouraging the practice. But, notwithstanding promotion by W. B. Seabrook of Edisto Island and other influential Low Country magnates- planting cotton on reclaimed marsh could (as the elder Sams learned to his cost) be a risky, labor intensive, expensive and disappointing activity.

Among contemporary accounts two articles by Captain Edward Barnwell entitled *On the Cultivation of Cotton on Reclaimed Salt Marshes* published in the *Southern Agriculturalist* for the years 1827 and 1831 respectively are the most informative.[2] Moreover, their relevance to Dataw's history is enhanced by the strong possibility that B. B. Sams read them since besides being the author's kinsman he was an occasional contributor and subscriber to the *Southern Agriculturalist*. Additionally, the Captain farmed land on the Coosaw River, possibly on Coosaw Island itself- a property located in near vicinity of what was then called Dathaw. Be this as it may, it is certain Edward Barnwell was a careful observer with strong interests in agricultural science and novel management practices developed to improve productivity among his land-owning peers, whether engaged in growing sugar (which enjoyed short- lived popularity at this period) or more especially, long staple (Sea Island) cotton.

Regarding the raising of cotton on impounded salt marsh land, Edward Barnwell observed the following:

> *The lands I have in the culture of Cotton, are situated at the heads of salt-water creeks, and commonly called coves or hard marshes. They produce several kinds of salt weed; such as rushes, wire-grass, samphire or marsh mallows, and common marsh. In some places too soft to bear the weight of cattle; but generally, fed upon by them. The lower parts covered by common tides, the upper, by spring tides, and when especially strong easterly winds prevail. The soil for six inches deep, principally consists of the fibrous roots of these grasses; but below this, black mud, blue, and sometimes yellow clay is found. The labour of breaking in these lands must depend much on their situation; but the labour of bedding up for planting, is very great, the ablest hands completing but four or five rows of 105 feet per day. They can scarce be ditched too much, as the land should be kept very dry, and as the mud and clay thrown out from the ditches, tend exceedingly to the quick growth and maturity of the Cotton. I plant in holes, on the beds about three*

[2]Eldest son of Colonel Edward Barnwell, Captain Barnwell's principal plantation was located on Keans Neck. In 1829 he experimented with growing sugar, describing his small mill driven by one horse near Cossa River- see Edward Barnwell, *On the culture of Sugar* *Southern Agriculturalist* vol 10, no 11 1828: 485 -89. The 1827 *Agriculturalist* article discussed above is signed X Y however the 1831 article on the subject published under Edward Barnwell's name makes it obvious that X Y and Edward Barnwell were the same individual.

feet apart, putting into each hole , at the time of planting, large double handful of high ground earth. This I have carried in baskets, and find extremely slow, laborious work.

This year, 1827, I have planted these same thirty acres. This spring being the finest I have seen for years, the cotton came up immediately and throve vigorously, until the middle of June; when the salt water breaking over my banks, covered the tops of the beds and injured the cotton considerably, by making it cast off a quantity of leaves, forms, blossoms and pods. In August, very heavy rains, in quick succession, overflowed my beds again, and caused shedding as before. And now I have largely got fields well drained of another flood, by rain on the 7th and 8th of this month.

These three inundations have injured the cotton considerably; but as [this year] has commenced opening tolerably, I may reach three thousand pounds, if we have not any severe frosts before the first week in November. If I make this I shall esteem myself fortunate, after my missteps, and after this trying season. I am now busy banking-in more of this land, and hope my expectations, that it will prove an advantageous mode of culture may not be disappointed. The pods are certainly more numerous and larger, adhere more tenaciously to the stalks in trying seasons and mature sooner.

Although little may be made some years, from the destruction by hurricane or caterpillar, yet the higher price it bears on account of its superior quality, may occasion no loss, and I'm clearly of the opinion, the product by quantity can be very great (quantity and higher price making it still greater) as the power, of guarding against inundations of either salt or fresh water, is in our own hands, by increasing the banks and drains.

Still optimistic despite his various 'missteps', Edward Barnwell injects a caution, observing:

But I hope I may not mislead others. There is something yet to be correctly ascertained, about this wild experiment as I have heard it frequently called. I know Planters who have tried some years, who are now against it. They state these lands, by repeated culture, to be disposed to take what we denominate, the blue rust ; that is overgrown stalks, falling to the round with large leaves of a dark, blueish green, sometimes grey colour, and a few or no pods. .... Draining will perhaps, therefore be the best remedy. [3]

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[3] Barnwell, Edward, On the Culture of Cotton on Reclaimed Marsh Land, *Southern Agriculturalist*, The editor of the Southern Agriculturalist added the following commentary to Barnwell's 1828 article: *The subject of cultivating Salt Marsh Lands, is one of importance, when we consider the immense number of acres which border on our sea coast , and we hope that this communication will tend to draw the attention of our Planters more to these lands , which may hereafter become a most valuable portion of our territory, and capable of being employed for the cultivation of various other plants as well as cotton. The manuring of our lands with salt-marsh mud, has improved the staple of our Sea Island Cotton very much; the product has also been improved. If these advantages have been gained by the mere application of mud to our highlands, is it not very probable that the cultivation of*

At the request of the Agriculturalist's editor, Edward Barnwell returned to the same subject a year or so later reporting how heavy rains in October had adversely impacted the thirty acres of reclaimed land he previously described to the degree that they yielded but 20 lbs of cotton to the acre. Eighteen more acres banked-in during 1828 yielded 275 pounds to the acre while a further 10 acres produced no more than 175 lbs to the acre "*in consequence of leakage through fiddler [crab] holes in the bank* [i.e. dike] *the land becoming to much saturated with salt water."* Undaunted, Barnwell was determined to continue his experiment by reclaiming more marsh and remaking damaged dikes, which he said:

> *Should be at least twelve feet wide at the base, and no ditch dug inside, or not nearer than thirty feet. The fiddlers being amphibious will make horizontal perforations from the side of the inner ditch, to the outer, if they are nearer than forty or fifty feet, that the water may, at high tide may flow through. The earth or mud must be well rammed when forming the bank* [4] *and the best obstruction I have yet found, to prevent this enemy from boring along the side of the trunks which is their favorite place of resort is our common green moss rammed in with still mud or clay.* [5]

If, in the face of his unrealized expectations, Barnwell's decision to task his enslaved work force with the endless, backbreaking labor of maintaining and planting embanked marsh land was influenced by William Elliot, Beaufort District's then preeminent planter (credited with introducing long staple cotton to the area) is impossible to know. However, the following advice Elliot gave to those individuals "*undismayed by former disappointment, and disposed not to abandon....their hope of success"* was both realistic and pertinent*:*

> *I would suggest the following instructions, for such individuals - to prepare their salt marsh land (where capable of a safe embankment) as the most certain mode of procuring a very fine staple. This result is too well established for further question, though from the great uncertainty of the product, and the liability of failure, even with the fairest early promise, such land is too hazardous to become the sole dependence of the Planter.* [6]

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these Marshes will prove highly profitable, properly reclaimed.

[4]Barnwell Edward, *On the Culture of Cotton on Reclaimed Marsh Land*, Southern Agriculturalist, 4, 1831: 238-39 previously cited Porcher and Fick, *Story of Sea Island Cotton, Wyrick* andCo. Charleston, 2005: 140

[5]No details are given about the actual process of ramming earth for the construction of these banks. Thus it cannot be said whether or not timber formwork was utilized resembling that employed locally in tabby construction.

[6]Elliot, William, *On the Culture and High Prices of Cotton* Southern Agriculturalist, April, 1828, I; Art.II.161-162. Elliot mentioned how he planted nine acres of reclaimed marsh land '*the plants grew well till the drought in May, when they perished to the stalk - for such a season the land was too salt*."*He also observed "Where the salt*

It is obvious from his son's testimony that disappointed and probably frustrated by the failed outcome of his ambitious and expensive attempts at salt marsh reclamation, Berners Barnwell Sams took an entirely different approach, capitalizing on what might otherwise be dismissed as a wild experiment, by skillfully transforming formerly unused land into a productive food source for his family and pleasurable recreation area for himself. If this transformation was unique is difficult to say since land management is a neglected topic in recent plantation archaeology. However It is known from the literary record that marsh reclamation for cotton was relatively widespread across the Sea Islands down until the 1840's, the practice being discontinued during the Civil Way and never revived.[7]

4. Salt Marsh Reclamation for Cotton off Dataw Island

When exactly Berners Barnwell Sams began his reclamation of salt marsh for cotton cultivation is unknown, however a time period roughly coincident with or soon after the publication of Edward Barnwell's two article on the subject - say the late 1820's or early 1830's- seems likely. If so, James Julius Sams who was born in 1826 can have had no direct memory of the event. Nevertheless, although almost certainly defective with regard to detail and not fully informed about the scope of work, the latter's undated *Memoir* does allow tentative identification of some key components of the reclamation scheme as first executed and describes how impoundments were ultimately managed by his father to attract wildfowl.

Thus, following the failure of cotton to thrive on his newly reclaimed marshland, Bernard Barnwell Sams:

> *Determined to put the work done and money spent to some use. Being quite a sports-man, and looking upon the wild duck as the very best of game for his family .... he converted his experiment into a kind of game preserve. Hence the ponds that added largely to the beauty of Datha and contributed to the suppling of the table during the winter season.*
>
> *The ponds around Oak Island and between that island and Datha and the smaller islands were the favorite place for shooting.... Before daybreak we would get up, go down and taking our position ....behind one of the blinds on the Dam we would wait and wait, and just about sun rise we would blaze away.*

On another occasion J .J. Sams (*Memoir*:21) records when *"getting near what had been a pond ...which opened into a creek I heard black ducks quacking."* Unfortunately, no specific details

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marsh land is deemed too hazardous, the salt mud, the salt marsh grass cut green or in its drift state saturated with salt water and applied to the high lands, are excellent manure, and have the ascertained effect of giving fineness to the fibre, as well as increasing the product."

[7] See Porcher and Frick, *The Story of Sea Island Cotton*, Wyrick, Charleston 2005:139-41

are given but the creek mentioned must surely be Sparrow Nest Creek, a tidally influenced source of freshwater that flows from a point between Oak Island and Dataw Island roughly north and northwest into the Morgan River. Apparently modified by dike construction, this waterway was likely utilized on occasion by Berners Barnwell Sams to flood or freshen his ponds (see below) which once abandoned (probably during the Civil War) allowed the creek to recover its earlier dendritic configuration.[8]

Identity of the dam mentioned is less certain. According to J. J. Sams, the dam supported two flimsy hunting blinds ("*generally made of soft palmetto*") which faced more or less east into the ponds. [9] This remark indicates the dam ran counterwise, i.e. more or less north/south which strongly suggests that the heavily disturbed dike extending 1,625 feet slightly northeast from Oak Island's northeastern shore (here recorded as part of Drone Path # 5) does in fact represent the dam in question. [10] If so, it appears from satellite imagery that a drainage ditch running along the inside face of this feature was ultimately invaded in part by a subsidiary branch of Sparrow Nest Creek, the dam itself having now all but disappeared through the combined actions of time and tide. [11]

At its most north easterly point the supposed dam line junctions with another dam or dike running 1,432 feet roughly west (actual bearing 284 degrees) which after intersecting with two other smaller dikes served to complete an irregularly shaped impoundment off the two Pine Islands. A dog-leg created at the junction of the northeasterly and westerly dam/dike lines doubtless marks the position of a former water control device. [12]

During the heyday of rice cultivation, local growers with the help of itinerant Dutch engineers developed sophisticated expertise in water management as indicated by intricate field and control systems installed on a prodigious scale along waterways such as the Combahee and Broad Rivers, the Coosaw and tributaries of the Savannah River.

One ingenious device, the so-called Santee or Combahee trunk not only allowed water levels between fields to be adjusted but opened and closed automatically with tidal ebbs and flows. Given the proximity of tidal marsh, one or two trunks of the Combahee type located here is a

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[8]Drone photographs clearly show the latter pattern is now superimposed over old dike lines.

[9]J. J. Sams (*Memoir*, n/d.:21) wrote "the blinds mostly faced the rising sun, the sun blinded us but not the ducks."

[10]A dam designed to prevent the uncontrolled intrusion of salt water was the first element of an inland swamp rice field.

[11]Starting from the northeast shore of Oak Island the supposed dam line extends between Lat. 32.425951, Long. -80.594943 to Lat. 32.430303, Long.-80.594943 at a heading of 12 degrees.

[12]The approximate position for this conjectured feature is Lat 32.430381, Long. -80.594139

plausible if speculative possibility. Alternatively a spillway or sluice might have sufficed for drainage purposes.

Probable position of water control device. Junction dam and marsh impoundment (satellite view).

Combahee style trunk, Beaufort County, SC

Whether or not a drainage pattern seen intersecting the most northerly dike in aerial images marks the former position of another drainage device is unclear. Whatever the case, the large area of salt marsh (comprising about 32 acres) impounded north of the Pine Islands was doubtless a major component in the reclamation project initiated by B.B. Sams and intended to play a key role in his future efforts if all had gone to plan and cotton cultivation here proved viable.

There is evidence for another impoundment extending east of the two Pine Islands and Oak Island's northern shore. How, or indeed if, this was this was functionally linked to the large impoundment to the north (as strongly suspected) is unclear. It does appear that this and several other dikes extending radially out from the Pine Islands were anchored by the supposed dam.[13] To what height these features were constructed is now impossible to determine. However, there is no reason to doubt that major enclosing segments of the system were originally *"at least twelve feet wide at the base"* as Edward Barnwell recommended. It is

[13] A diagrammatic representation of Salt marsh cotton fields reproduced by Porcher and Fick, 2005: 141. (Figure 7-1) shows an analogous situation where reclaimed marsh extended between a marsh hammock and the mainland.

also likely that fiddler crabs burrowing into the dikes hastened their erosion, Antebellum earthen examples now abandoned on Lady's Island, SC appearing honeycombed by these crustaceans.

The Inlet Plantation, Ladys Island, SC. Antebellum dike honeycombed by fiddler crabs

Small Pine Island view showing radial dike extending toward the dam.

5. Rice Cultivation on Dataw - an Unrecorded Episode?

Elsewhere, cross dikes extending between the supposed north/south dam line and eastern shore of Dataw Island itself are visible in satellite and drone images. These features (now heavily eroded) formerly defined a sequence of rectangular impoundments presumably identical with ponds seen by J. J. Sams when looking east from the dam. Significantly, three or probably four individual impoundments were sequentially intersected by Sparrow Nest Creek, the cross dikes being constructed at right angles to the flow of water from said creek.[14] Toward this creek's head the cross dike measured 400 feet in length; lower down (i.e. roughly south) the next cross dike widened (measuring about 500 feet in length) to follow the adjacent shore line (see Drone Survey Path 4 and Path 3 respectively). This type of infrastructure finds close parallels with methods commonly adopted by local planters for the culture of so-called inland rice (as opposed to tidal irrigated rice) from the mid- 1700's onwards. As Hayden states:

[14] *"A cross dike crosses a large area of rice fields. These were interior dikes, and may run from dike to dike or dike to hill....a dike is an embankment for controlling water within the fields. Historically, this was referred to as a facing embankment"* Rice Fields and Section 106, SC Department of Archives and History.

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"*inland rice cultivation depended upon the simple flow of water from high to low ground.*[15] In the same context Folk *et al.* remark: "*cross dikes would have allowed a planter to retain water in the area immediately upstream. When he needed to dewater* [i.e. drain] *the field, a water control structure in the downstream cross dike could be opened."*[16] Likewise a string of similar impoundments might be drained or flooded as required given that control devices were installed between individual impoundments of a kind which allowed water levels to be heightened or lowered at will.

Satellite image showing probable rice fields (in red) on Sparrow Nest Creek

Such operations required monitoring by individuals- both free and enslaved - who possessed detailed knowledge of local topography, rainfall patterns, and tidal movements. While it is possible B.B. Sams harnessed such water management skills in order to maximize the number of wildfowl attracted to his property, comparison with historic estate maps of known rice fields and reviews of recent technical literature leads to the conclusion that despite losses due to time and tide the system represented by the supposed dam and its associated cross dikes are relics of a now forgotten episode in Dataw's agricultural history involving production of so-called inland rice. [17]

Edward Barnwell's testimony indicates that *"land employed for cotton should be kept very dry"* which suggests land intersected and perpetually watered by Sparrow Nest Creek was unsuitable for this purpose. More likely is a scenario in

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[15]Hayden, Ros Smith. *Rich Swamps and Rice, the Specialization of Inland Rice Culture in the South Carolina Low Country.* Dissertation, Athens, Georgia, 2002:3

[16]Folk, T.H. ; E.P.Wiggins; D. Harrigal and M. Purcell, *Rice Fields for Wildlife*. Nemours Wildlife Foundation, no date, Yamassee,SC :10. See also Frederickson, Leigh H. *Management of Seasonally Flooded Impoundments for Wildlife*. US Department of Interior Fish and Wildlife Service, Resource Publication 147, Washington DC, 1982.

[17]*Rice Fields and Section 106* published by South Carolina Department of Archives and History, Historic Preservation Office proved a valuable guide to literature on the subject of inland rice besides providing useful definitions of associated historic terms.

Drone view probable rice fields intersected by Sparrow Nest Creek, Pine Islands in background (right); Oak Island background (left), dam diagonal line above creek.

which Bernard Barnwell Sams - whose willingness to repair and re-purpose architectural elements standing on his Dataw estate is well attested - reused and eventually re-purposed as ponds an existing set of old inland rice fields and a dam installed on Sparrow Nest Creek by himself, his father William Sams or some more distant forebear in an episode whose memory was not passed down to James Julius Sams. This means the extent of actual salt marsh reclaimed by B. B. Sams on Dataw was more limited in extent than might be deduced from his son's *Memoir* and he (i.e. B. B. Sams) was more cautious about investing in his own 'Wild Experiment' than J. J. Sams implied. Indeed, coincidently or otherwise the largest impoundment off Dataw enclosing 30 acres was exactly the same size as the impoundment described by Edward Barnwell in 1828 and 1831.

Regarding rice cultivation on Beaufort's Sea Islands, reports are scarce. Writing in 1828 William Elliott observed *"When I speak of the agriculture of this parish* [St. Helena] *I confine myself....to the production of Sea Island cotton* [which]*.... excepting the provisions for plantation supply ....*[is] *the only staple cultivated."* [18] Preliminary review of commercial satellite imagery tends to

[18]Elliot, William, *On the Culture and High Prices of Cotton* Southern Agriculturalist, April, 1828, I; Art.II.161

support Elliot's remark though a few exceptions occur, notably west of Medowbrook Road, Lady's Island, SC where traces of rice fields and drainage canals associated with a tidal tributary of the Beaufort River attest an extensive operation on lands belonging to the former Inlet Plantation. That rice and cotton might be cultivated on the same holding is confirmed by the 1850 Census Agricultural Schedule for Beaufort District which records small quantities of rice were then being raised on the George Edwards Plantation, Spring Island- one of Beaufort District's largest cotton producers. If rice grown here was intended for the owner's own table, food for his enslaved work force or both is undocumented.

6. Ponds

Further mention should be made of the Ponds or rather hunting activities on Dataw associated with ponds which figure largely in the J. J. Sams *Memoir.* Describing an early duck shoot, the younger Sams recalled in later life how:

> *The ducks generally lit in the middle of the pond .... they would swim forward toward the dam for the purpose of feeding where the water was shallow and grass seed more easily reached..*

On another occasion the author *(Memoir*: 21) records when *"getting near what had been a pond..... which opened into a creek I heard black ducks quacking."* We also learn of *"one of the ponds in which there were a great many widgeon. "*

The two species of duck identified i.e. [American] Black Duck (*Anas rubripes*) and [American] Widgeon (*Anas americana*) provide useful environmental indicators since both are classified as "dabblers" (as opposed to "divers") which reflects their adaptation to relatively shallow water - normally 12" deep or less (10" being considered optimum) for feeding purposes. This likely means that Berners Barnwell Sams deliberately kept water levels in his ponds low, draining the water off at regular intervals during the growing season to allow development of seed bearing plants attractive to wildfowl. Later in the year ponds would be flooded in anticipation of winter migrations which by all early accounts brought vast numbers of duck along with other water loving birds to the Sea Islands.

Such management presupposes the existence of water control structures or devices which not only controlled "*the direction of flow but maintained water surface elevations. Typically in this part of the Low Country these comprised trunks, culverts and or spillway boxes*."[19]

J. J. Sams (*Memoir* :2) provides an anecdote which conjures the richness of bird-life attracted to

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[19] *"A spillway box and riser are placed in interior dikes and used to move water from field to field as opposed to rice field trunk that typically moves water from tidal body to field."* Folk, T.H. ; E.P.Wiggins; D. Harrigal and M. Purcell, *Rice Fields for Wildlife*. Nemours Wildlife Foundation, no date, Yamassee,SC :9-10. See also Frederickson, Leigh H. *Management of Seasonally Flooded Impoundments for Wildlife*. US Department of Interior Fish and Wildlife Service, Resource Publication 147, Washington DC.

Dataw Island by its ponds besides adding a noteworthy ornithological record observing how from a spot positioned: "*between Oak Island and the larger Pine Island*" he and his brothers would hear *"marsh hens crackling on every side"* see wild ducks *"leaving the ponds in batches of six, twelve or twenty.....curlews flying overhead and sometimes the whooping crane."* [20]

J. J. Sams leaves us with a lyrical passage observing: *"Take a clear wintry day, at sunset, and when the ponds were full, and you could not gaze upon a more lovely scene in nature."*

Conclusion

Read in conjunction with archaeological surveys, recent drone and satellite imaging has revealed enough physical evidence to document changes in historic agricultural practice involving the cultivation of cotton and most likely rice which altered part of Dataw Island's natural landscape. The result was a palimpsest since successive agricultural regimes were apparently superimposed - at least in part- one upon another, this already complex picture being further obscured by patterns of reuse and re-purposing of physical infrastructure.

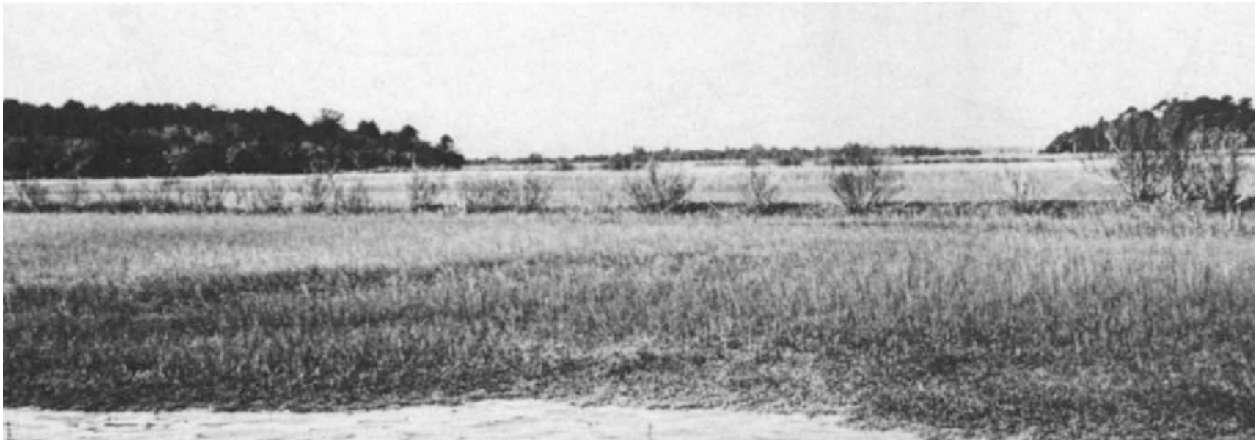
Of course storms, hurricanes and tidal incursions have to varying degrees impacted Dataw's landscape both natural and manmade, so much so in the case of its reclaimed marsh lands that the system of impoundments imposed by Bernard Barnwell Sams has almost eroded away. As far as known, related water control devices such as trunks and culverts necessary for drainage purposes have completely gone or only survive as subsurface features all but inaccessible to excavation.

If losses have accelerated in recent years is difficult to gauge, a photograph published by Kovacik and Mason in 1985 showing dikes associated with reclaimed marsh standing higher and supporting more vegetation than seen at ground level by ourselves in November 2022.[21] Currently, climate change and rising sea levels further compound threats to the long term survival of low lying cultural resources of the kind discussed above. Nevertheless, although threatened and incompletely preserved, surviving remnants of past agricultural endeavor on Dataw add significant data to the plantation era history of its former owners and the largely forgotten one of their enslaved workers. Moreover, recent drone imagery has created for future reference, research and geophysical investigation a tangible record of two historic agricultural regimes rarely recognized in Beaufort County, involving the cultivation of long

[20]Now critically endangered, whooping cranes occurred frequently in South Carolina during Colonial times only becoming scarce during the later 19th century. See Sprunt and Chamberlin, *Birds of South Carolina*, Columbia, USC Press 1970:190-191. The 'curlews' mentioned were probably white ibis, a species still abundant in coastal areas of Beaufort County.

[21]Kovacik, Charles F. And Mason, Robert E. *Changes in the South Carolina Sea Island Cotton Industry*. Southeastern Geographer 25, no.2 (November 1985) 77-104. The so-called Great Hurricane of 1893 is known to have hit Dataw very hard, Coroner's reports recording the death of 37 persons then resident on the island by drowning. *(*Brooker C. *The Shell Builders,* USC Press, Columbia 2020: 13)

staple cotton on reclaimed salt marsh and - with less certainty - so called inland production of rice. [22] Additionally, the drone images help localize with some exactitude the ponds which James Julius Sams so fondly described in his *Memoir*.



Cotton Dikes, Dataw Island view from Kovacik, Charles F. And Mason, Robert E. *Changes in the South Carolina Sea Island Cotton Industry*. Southeastern Geographer 25, no.2 (November 1985) 77-104.

[22] It is to the late Dr. L. Lepionka's credit that in 1988 he recognized the significance of marsh reclamation in the history of Sea Island cotton at a time when the practice was almost unknown to local archaeology. Moreover, he had the foresight to nominate to the US National Register of Historic Places what remained of the scheme installed by Bernard Barnwell Sams which was among the first such nominations made for South Carolina.