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Forest Cover of the Cape Hatteras
Seashore Area in Historical Times

by

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Memorandum to Mr. Lisle

Subject: Forest Cover of the Cape Hatteras
Seashore Area in Historical Times

A complete and exhaustive essay on this subject would require years of historical and archeological investigation. However, enough data in the form of old maps and 16th Century writings is at hand to outline the nature of our problem and to suggest a policy to be pursued in the early stages of developmental work in the Seashore area.

A survey of thirty-five maps already collected by our Office and covering the period from 1585 to the present day strikingly illustrates the ephemeral character of physiographic features in the whole chain of barrier islands along the Carolina coast. The small sand dunes whip around almost over night; the big dunes march about and sometimes can be found encroaching upon the forest cover like gigantic steam rollers. On the other hand, in the Mags Head Woods and on Collington Island, old dunes can be found which are covered with a thick growth of trees. But most astonishing of all, the inlets open and close like doors on a hotel corridor. Thus, of the inlets shown on the John White map of 1585-1586, only the inlet called Wokokon (generally conceded to be modern Ocracoke) has survived. Caffey's Inlet closed in 1800; Roanoke Inlet closed in 1806; Currituck in 1828. Oregon Inlet cut through in 1846 and Hatteras was opened in the same year. It is said that no less than ten inlets have been open at intervals since 1580 [American Historical Association, Report, 1895, pp. 49-51]. The Diamond Shoals alter so rapidly that lighthouse builders and submarine engineers have almost been driven to despair.

On the other hand, despite these changes, the general character of the Seashore area remains the same. Now, as in 1580, two great rivers, the Roanoke and the Neuse, and many lesser streams, flow into the shallow waters of the sounds. Roanoke Island still retains its characteristic shape; the giant dunes shown on the early maps have their existence, or their counterpart, in the Great Mags Head dunes of today. The early descriptive accounts correspond to the physical aspect of the land today, due allowance being made for the

natural exuberance and exaggeration of the early sixteenth and seventeenth century writers, who, be it remembered, were often land speculators, real estate salesmen, or just plain promoters as well as explorers.

The first Englishmen to view the Seashore area, Amadas and Barlowe, entered at an inlet seven leagues (21 miles) from Roanoke Island /Hakluyt, Principal Navigations (Goldsmid edition, 1889) Vol. XIII, pt. I Am. 2., p. 288/. They soon went ashore to claim the country for England. They found the land "very sandie and low towards the waters side, but so full of grapes, as the very beating and surge of the sea overflowed them, of which we found such plentie, as well there as in all places else, both on the sand and on the green soile on the hills, as in the plaines, as well on every little shrubbe, as also climbing towards the tops of high cedars, that I thinke all the world the like abundance is not to be found"---This glowing description is not inapplicable to the Kitty Hawk-Collington Island area, which Colonel William Byrd of Westover identified as the first landing place over two hundred years ago /American Historical Association, Report, 1895, p. 53, citing William Byrd, Notes, p. 12, "Not far from Roanoke Inlet. They ventured ashore near that place upon an island now called Colleton, where they set up the arms of England."/ From thence, Amadas and Barlowe proceeded "from the Sea side towards the toppes of those hilles next adjoining." /Hakluyt, XIII pt 1. Am. 2, p. 284/. From the top of these hills which were said to be "but of meane high" they first perceived that they were on an island twenty miles long and not above six miles broad. The hills were almost certainly the great Mags Head dunes, the only hills within a radius of 21 miles of Roanoke Island which would permit a view such as is described in the early account:

---"from thence wee behelde the Sea on both sides to the North, and to the South, finding no ende any of both wayes. This lande lay stretching it selfe to the West, which after wee found to bee but an Island of twenty miles long, and not above sixe miles broad. Under the banke or hill whereon we stooode, we behelde the valleyes replenished with goodly Cedar trees, and having discharged our harquebuz-shot, such a flocke of Cranes (the most part white) arose under us, with such a cry redoubled by many ecchoes, as if an armie of men had showted all together.

"This Island had many goodly woodes full of Deere, Conies, Hares, and Fowle, even in the midst of Summer in incredible abundance. The woodes are not such as you finde in Bohemia, Moscovia, or Hercynia, barren and fruitless, but the highest and reddest Cedars of the world,

farre bettering the Cedars of the Acores, of the Indies, or Lybanus, Pynes, Cypres, Sassaphras, the Lentisk, or the tree that beareth the Masticke, the tree that beareth the rine of black Sinamon, of which Master Winter brought from the streightes of Magellan, and many other of excellent smell and qualitie." [Hakluyt, XIII pt 1 Am 2, p. 284.]

The woods were probably the Mags Head woods. Whether the writer confused cedar trees and pine trees is an interesting question, though doubtless the cedar was far more plentiful then than now. The hills are probably the Mags Head dunes, as we stated above, and they are probably synonymous with the "Kenricks Mounts" which Governor John White speaks of as lying between the old harbor of "Hatorask" and Roanoke Island [Hakluyt, XIII pt. 2, Am. 2, pp. 381 and 385.]

The partial destruction of these woods probably began early. On returning to look for the "Lost Colony" of Roanoke in 1590, Governor John White found a forest fire burning "to the Southwest of Kindrikers mountes." [Hakluyt, XIII pt. 2, Am. 2, p. 381.]

Hakluyt's accounts of the early explorations were intended to give impetus to English colonization. He exuberantly describes the good things in the new land, but tends to pass over in silence that which would discourage settlement. Only now and then does the brutal truth get into the narrative. From "Hatorask" harbor to the forest fire near "Kendrikers mountes" no drinking water was found, [Ibid., p. 381 and at "Hatarask" harbor it was necessary "to digge in those sandie hills for fresh water." [Ibid., p. 382].

The earliest map of importance showing the Cape Hatteras area is the John White map of 1585-1586, the original of which is in the British Museum. Our photostatic copies of this add nothing to our knowledge of forest cover.

In 1590, Theodore de Bry published engravings made from John White's drawings. One of these, a perspective view of the Roanoke Island area and adjacent coast, shows a line of trees stretching the entire length of each of the barrier islands. [See photostat attached entitled "The arrival of the Englishmen in Virginia"]. This would accord with the description of the Cape Henry area (which has the same ecology as the Cape Hatteras area) at the time of the first landing of the Jamestown settlers, May 13, 1607. "The cape of this bay, on the south side, we call Cape Henry---where the land shewes white hilly sand, like unto the Downes, and all along the shoare growe great plenty of pines and firrs." [William Strachey, gent. (1585-1618) The History of Travaile into Virginia Britannia. Reprint, Hakluyt Society, London, 1849, p. 28; Captain John Smith, The Generall Historie of Virginia, Bradley's edition, Edinburgh,

1910, I, p. 244⁷. However, it should be noted that De Bry's map is self-evidently pictographic and generalized. It was intended to entice settlers to Virginia. The statement concerning Cape Henry is also a generalization which must not be taken too literally. One hundred and thirty-nine years ago, Cape Henry was covered with large dunes which were encroaching upon the forest cover, as we learn from the writings of B. H. Latrobe, 1799. The area looks much the same now as it did then, and it is fair to assume that the same processes have been in operation in historic time (1584-1938), with the forest cover and the dunes alternately having the upper hand. ⁷["Botanical Survey of the Dismal Swamp Region," in U. S. Department of Agriculture, Contributions from the U. S. National Herbarium, Vol. V No. 1 (1897) pp. 335-336, citing American Philosophical Society, Transactions, Vol. IV (1799), pp. 439-443⁷.

The next oldest map in our collection is that of "The South Part of Virginia, Now the North Part of Carolina," (last line added in a later hand) by Nicholas Comberford, 1657. Forested areas are designated by trees (pictographic). While admittedly a generalization like the De Bry engraving, it is inserted here because it shows that at that early date the wooded areas on the barrier islands were regarded as so ^{un}important that no indication of them was made on the map. ⁷[see photostat attached⁷.

More to the point is a manuscript map of "North Carolina" by William Hack, about 1684 ⁷[British Museum, Add. Mss. 5415-G-6⁷. Reference to the photostatic copy attached will show that it clearly indicates "Broken Sand hills" from Cape Hatteras to an old inlet near the present Oregon Inlet. Likewise it shows continuous "sand hills" on the small barrier island parallel with Roanoke Island. On the next barrier island, the sand hills continue to be shown as far north as the great "Sand hill" in what is now the Nags Head area. The last is perhaps the first attempt to show the great Nags Head dune. This map is proof positive that in 1684, one hundred years after the explorations of Amadas and Barlowe, the Cape Hatteras National Seashore area, was a country of broken sand hills with a general aspect similar to that of today.

Evidence of a like character is found on John Lawson's map of the Carolinas, 1709, which designates the great barrier island from Currituck to Roanoke Inlet as the "Sand Banks."

A survey of Roanoke Island by William Maule, 1718, adds to our knowledge of forest cover on Roanoke Island by stating "Pines all the Trees on the Island are Such." This again is a generalization and

must not be interpreted as precluding the existence of a small number of live oaks such as may be found on the island at the present time.

H. Moll's "Map of the Province of Carolina, 1739," also designates the Currituck-Nags Head section as the "Sand Bank," and numerous maps in the Seventeen-seventies show the big Nags Head dune and three other dunes some miles to the north known as the "Three Sand Hills," likewise a big dune near New Currituck Inlet called the "Sand Hill."

We are attaching a remarkable "Map of Roanoke Island and Adjacent Coast," by Lt. W. B. Franklin, 1852. This was discovered by the writer in the War Department files, Washington, D. C., where it is designated H54 Roll. It is an unusually careful and accurate survey tied in with a lighthouse and a seven-mile base-line. The hatched lines represent marsh and the curly lines indicate the extent of forest cover. It also shows the old position of the great dunes, as well as the location of the dune called "Wreck Hill," and there are written notations on old forest cover, such as "dead cedars." One may assume that there were once cedars at Cedar Point and on Cedar Island. The extent and location of the wooded sections of the area agree with the information gleaned from the foregoing maps and from the writings in Hakluyt given in the earlier part of this report. For this reason we are taking the liberty of submitting Franklin's map (1852) as the answer to Inspector Mackintosh's request that we send him a map showing the ancient forest cover of the Seashore area. Franklin's map is of course supplemented by the other photostats attached.

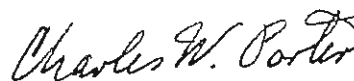
Summary and Conclusion: For many centuries the sand dunes and the forests have waged a mighty battle on the barrier islands along the Carolina coast. On the Atlantic side, the dunes have probably always remained supreme. (The discovery of stumps in the Ocean may often represent nothing more than a swamp or growth in one of the many ephemeral inlets that gradually closed in past time). Forests naturally survived best on the Sound side, away from the salt spray of the Ocean. The general aspect of the Seashore area in historical times we believe is rather faithfully represented on Lt. Franklin's map of 1852, which shows the area and its cover essentially as it is today. It is this general Picture that we should like to see preserved.

If trees must be planted, it is suggested that they be planted only where woods exist today and for the sole purpose of maintaining a proper balance in the dune-forest combat.

More particularly we should like to see Collington Island, Ocracoke Island, and the North end of Roanoke Island "put on ice" until a well-studied and well-balanced plan of development based on careful research

has been made. Sand fixation and grass planting are justifiable where needed to preserve valuable structures such as the Cape Hatteras Lighthouse and the Wright Memorial Tower. Doubtless it can also be extended to other areas, if due care is taken not to destroy all semblance of beach character and if archeological values are not disturbed. Zoning and more planning by the Regional Office technical staff (which is close enough to the National Seashore to take a special interest in it) would seem to represent a better solution of our problem than removal of the work camps, which will certainly be needed for developmental work later on when the Park is actually acquired.

Respectfully submitted,

A handwritten signature in cursive script, reading "Charles W. Porter". The signature is written in dark ink and is positioned above the typed name.

Charles. W. Porter,
Assistant Historian.

UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

REGION ONE
RICHMOND, VIRGINIA

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Cape Hatteras Sea
May 13, 1938

Memorandum to Mr. Lisle:

In answer to your request for our opinion on the extent of forest covering within the proposed boundaries of the Cape Hatteras National Seashore in colonial times, the following is submitted:

As far as I am aware, the best indication of former cover is noted on "Map of Roanoke Island and Adjacent Coast by Lieutenant W. B. Franklin, 1852." Copy of this map is being supplied to Mr. Mackintosh. It shows Roanoke Island and that part of Bodie Island from Oregon Inlet, north to Nags Head. According to this map, which was made eighty-six years ago, the forest was about in the same place that it is at the present time, but it was a little more extensive. South of the present Whale Bone Filling Station, the map indicates some old cedar stumps, which make it appear that this area was forested at an earlier date.

Going back to a writing of 1799 (B. H. Latrobe), we find the following condition north of our present holdings, but part of the same type of country as the Cape Hatteras National Seashore, "These easterly winds, blowing during the driest and hottest season of the year, carry forward the greatest quantity of sand, and have amassed hills, which now extend about a mile from the beach." In 1779, it seems probable that the dunes were a natural phenomenon, as it seems unlikely that at such an early date man would have cut the forests and allowed cattle to graze the lands so heavily that erosion would have produced the results Latrobe mentions.

In his "The Book of the Seashore", Shannon writes of shore lines and dune lands along the Long Island coast. He indicates that the scarcity of vegetation, which is similar to that at Hatteras, is natural.

At certain places along the North Carolina Banks, there are old stumps in otherwise barren spots. This might be taken as an indication that the area was at one time forest covered. After having read extensively on dune lands in various parts of the country, I cannot believe that the Banks have been totally covered by forests at any one time. I do believe, after having done some research on the problem, that the Banks' forests have been more extensive in the past, and that they have occurred in places which are now barren and wind swept. After a certain length of time, sand dunes have killed these forests and have covered them in much the same fashion as is occurring at the present time. It is quite probable that the axe, fire, and cattle

have accelerated the process in some places. Certainly there are locations on the treeless plains where grazing and fire has caused wind erosion to start, and barren areas have resulted.

In my opinion, a reforestation program, which would benefit wildlife the most, would be one in which no attempts to get trees started on level places is attempted. The grassy plains are utilized by waterfowl as pastures and as breeding areas by some of the smaller, but to the scientist just as interesting, species of birds. As grass is a pioneer plant on bare sand, no attempts to reforest level bare areas should be undertaken if wildlife interests are to be protected.

Wildlife would benefit if the present forests were extended by reforestation with the same species which now are found in the forests, or species which are known to have occurred previously.

As far as reforestation of bare dunes is concerned, a wide variety of opinions exists. The efforts at the Kill Devil Hill National Monument seem to indicate that the only successful methods would be with pioneer plants - grasses - and that unless there is heavy maintenance these measures will not be successful in the long run. The big dunes are part of the entire picture on the Banks and as such we are interested in seeing a fairly large percentage of them left untouched. It is my understanding that it is not the intention of the Service to attempt to modify many of them.

In several of the national parks selected areas are set aside for scientific study upon which no development or management is practiced. These areas in time will prove of unusual interest to science, and will probably be the only areas under public ownership where conditions will remain undisturbed in the future. Because of the unusual scientific interest in dune lands along sea coasts the proposed Cape Hatteras National Seashore presents one, if not the only opportunity where such an area may be set up. These portions of parks have several classifications, but the one which would seem most suitable for portions of the Cape Hatteras National Seashore is "Biotic Succession Research Area." This designation is characterized in Wildlife Fauna No. 2 as "An Area set aside for the protection and investigation of biotic or floral succession in a developing or recovering biotic community."

Because of its inaccessibility, limited travel, and the fact that it has already had some botanical research done upon it (The Plant Covering of Ocracoke Island by Thomas H. Kearney, Jr., in Contributions of the U. S. National Herbarium, 1900), we believe that Ocracoke Island is well suited for the first area which should be set aside. There should be no tree or other planting on this island, except the replanting of species which are known to have been present at one time. We regret to learn that sand fences are being placed upon this island.

There is a small field on Ocracoke near the present ERA camp which has been fenced from grazing for some years. Within the enclosure the grass completely covers the ground, and the shrubbery is of a graceful and natural shape. This check plot illustrates what will happen when and if grazing animals are withdrawn from the island and fire protection is practiced. Because of limited travel at the eastern end of the island, which will ultimately become part of the National Seashore, there is presented the best opportunity to set aside an area and allow it to gradually assume a natural character. The labor now used upon Ocracoke would be used elsewhere on the Project to advantage.

Summary:

1. Research of the literature and comparison with other seashore dune lands indicates that in historic times the Banks had more or less the same character they now possess-- treeless grassy plains, moving dunes, and patches of woodland. The forests were probably more extensive than at present.

2. To maintain something approaching the conditions of colonial days, the level areas, whether in grass or bare, should have no trees planted upon them.

3. The present forests could well be extended by planting with native species.

4. Profiting by the experience gained at Kill Devil Hill National Monument, it does not seem expedient to attempt to cover all the large dunes with vegetation. If it is found necessary in some instances to halt the movement of dunes, the use of pioneer plants, rather than those representing the climax species, will probably be most successful.

5. For scientific study of the future, certain areas should be left without development, except the minimum required for administration. Ocracoke Island should be the first portion to be set aside.

We are preparing a Wildlife Report on the Cape Hatteras Region, and in it we will attempt to summarize previous reports and give recommendations for future developments in relation to wildlife protection and restoration.

William J. Howard,
Regional Wildlife Technician.

Maps included in folder at MRC with "Forest Cover of the Cape Hatteras Seashore Area in Historical Times" documents (maps were too large in size to scan):

De Bry, 1590. Map of the Arrival of the Englishmen in Virginia. From Thomas Hariot's "A Briefe and True Report of the New Found Land of Virginia" (Frankfort, 1590 by Theodore De Bry), Plate II. Noted on map: "Generalized – not reliable for forest cover."

Nicholas Comberford, 1657. Map of the South Part of Virginia, now the North Part of Carolina. Original in New York Public Library. Noted on map: "Note that trees are shown on the mainland, but none on the barrier islands."

William Hack, 1684. Map of North Carolina. Noted on map: "Note sand hills" labeled at barrier islands.

John Lawson, 1709. Map of Carolinas. Noted on map: "Note designation of barrier islands as "sand banks".

H. Moll, 1730. A Map of the Province of Carolina.

Lt. W.B. Franklin, 1852. Map of Roanoke Island and Adjacent Coast.