Coastwatch

UNC Sea Grant May/June 1991

Revisiting The Lower Cape Fear

INCLUDING

Wilmington's Bright Future.

PLUS

Beaches With Character.

ALSO

Legend And Lore.

Coastwatch Staff :
Kathy Hart, *Managing Editor*
C.R. Edgerton and Carla B. Burgess, *Staff Writers and Editors*
L. Noble, *Designer*
Julie Snyder, *Circulation Manager*

The University of North Carolina Sea Grant is a federal/state program that promotes the wise use of our coastal and marine resources through research, extension and education. It joined the National Sea Grant College Network in 1970 as an institutional program. Six years later, it was designated a Sea Grant College. Today, UNC Sea Grant supports several research projects, an 11-member extension program and three communicators. B.J. Copeland is director. The program is funded by the U.S. Department of Commerce's National Oceanic and Atmospheric Administration and the state through the University of North Carolina.

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From The Top

Dear Readers:

Welcome to the new *Coastwatch*. We hope you'll enjoy reading our expanded magazine as much as we enjoyed researching and writing it.

We chose as our initial topic: New Hanover County and the lower Cape Fear River.

In my story, I'll introduce you to New Hanover County's largest city — Wilmington. I interviewed city leaders and economists to get an idea how the completion of Interstate 40 had impacted the port city and what role the four-lane would play in Wilmington's future.

C.R. Edgerton walked the boardwalk at Carolina Beach and sifted the renourished sands of Wrightsville to contrast New Hanover's blue-collar and white-collar beaches. Edgerton also toured uninhabited Masonboro Island, one of the state's estuarine sanctuaries. You'll relive the visit.

Carla Burgess poured over books, strolled through a graveyard and took a chair at Pollock's Shoeshine to get an insight into the region's history. She'll tell you what she learned in three stories about the port city's past.

Then we'll introduce you to our new sections: Field Notes, Marine Advice, Sound to Sea, Young Mariners, Back Talk, Aft Deck and The Bookstore. Some of these sections also have a New Hanover angle.

We hope you like our first effort. This copy is free. But if you want to continue receiving our magazine, you must pay an annual subscription fee of $12. You will be receiving subscription information in the mail in a few days. Just return your form and your check, and we'll make sure you continue to receive our magazine.

Hope to see you next month,
Kathy Hart

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Wilmington:

Photo by C. R. Edgerton

By Kathy Hart

A decade ago Wilmington may have been the best kept secret in North Carolina.

The sleepy little port city that hugged the left bank of the Cape Fear River oozed southern charm, hospitality and history.

It was a city of church steeples, brick-paved streets, antebellum homes and stalwart southern families who had laid down their foundations along with that of the city.

Adorned in azaleas, magnolias and live oaks, Wilmington anchored New Hanover County and southeastern North Carolina. It perched alongside a river that brought tall ships, steamers and cargo vessels to call.

It was graced with cool summer breezes and warm winter winds. It boasted a university by the sea and 36 miles of nearby public beaches.

It had all the elements that attracted thousands to Charleston and Savannah.

All but one.

Wilmington lacked connections.

There was no main artery feeding the city a steady diet of commerce, tourists and would-be residents. Wilmington was the only major city on the Eastern Seaboard not linked to the nation's interstate highway system.

And halfway through this century, Wilmington lost its Atlantic Coast Line Railroad to a merger. With the railroad went much of New Hanover County's economic stability.

The city that had turned the 20th century as North Carolina's largest had stagnated while Charlotte, Greensboro and Raleigh-Durham moved ahead to become retail, research, banking and industrial meccas.

Many blamed that stagnation on the lack of four-lane highways feeding into the port city.

But in the 1980s, Wilmington began to grow despite its lack of connections.

As the largest city in southeastern North Carolina, it drew people from the surrounding counties of Pender, Columbus and Brunswick in North Carolina and Horry County in South Carolina, says Joe Augustine, executive vice president of the Greater Wilmington Chamber of Commerce.

"Wilmington has become a regional shopping center," Augustine says. "People commute up to 75 miles to come to Wilmington to shop for big-ticket items such as cars, boats and furniture; for medical and educational services; and for recreation."

And the beachfront building boom of the 1970s and 1980s sent folks scurrying to the New Hanover shores of Wrightsville, Carolina and Kure beaches to buy seaside retreats.

"Weekend warriors," as they were called by native Wilmingtonians, flooded the area from Friday until Sunday as they traveled from points west to their second homes.

But neither its weekend warriors nor its reputation as a regional shopping

A Brighter Future at the End of the Road

hub were enough to put Wilmington in the same league as Charlotte, the Triad or the Triangle.

It still needed a four-lane highway to tie the port city to the rest of state.

Finally, in 1984 the U.S. Department of Transportation approved plans to extend Interstate 40 from Johnston County to Wilmington, some say with assistance from North Carolinian and then-Secretary of Transportation Elizabeth Dole.

Wilmington waited.

Some businesses, such as hotels and retail shops, were so sure I-40 was the golden egg Wilmington needed that they built ahead of the highway's completion.

College Road, the planned terminus for I-40, developed into a shopper's paradise as several sprawling retail centers were built side by side. Hotel chains and fast food restaurants jockeyed for position along the main thoroughfares of College Road, Market Street and Oleander Drive.

To entice high-salaried professionals and rich retirees who might move to the river city, the late J.P. Goforth began development of a 2,200-acre exclusive residential haven.

Named Landfall, the development sports two golf courses and one tennis complex, all designed by big-name pros. Lots, most less than an acre, average more than $200,000; homes built on them cost $400,000 or more.

As the outskirts of Wilmington developed, downtown spruced up too. Using federal, state and local money, the city of Wilmington built a riverfront park about one block from the heart of downtown.

Private investors renovated Chandler's Wharf and The Cotton Exchange. Low-interest federal loans were offered to other downtown businesses for facade improvements. And the city laid brick streets, hung special lights, planted trees and put a few police on horseback all for the benefit of tourists.

Wilmington was ready.

On June 30, 1990, I-40 was opened, completing the connection between Raleigh and Wilmington. The four-lane, limited-entry highway opened the artery that connected Wilmington to the rest of North Carolina and the nation, and it began slowly to pump economic adrenaline into the city by the sea.

If Wilmington's business leaders expected an overnight boom town, it was not to be.

"I-40 didn't open at the most auspicious of times," says David Hartgen, a professor of transportation at the University of North Carolina at Charlotte. Hartgen has been authorized by the state to complete an economic impact study of I-40's final link.

The Persian Gulf deployment began a month later and the economy was sluggish, Hartgen says. As a result, people weren't traveling, vacationing or buying new homes last year, and I-40 failed to be the immediate economic shot in the arm everybody anticipated.

Photo by C. R. Edgerton

But that doesn't mean I-40 will not pay off.

"I-40 should have a steady, but significant effect on Wilmington's growth," Hartgen says. "The opening was a watershed event similar to the coming of the railroad. It should be the most significant event on the local economy for 50 years either side."

"Now people are going to realize there are two Wilmingtons on the East Coast," says economist William Hall, referring to Wilmington, Del.

Hall and a colleague at the University of North Carolina at Wilmington, Claude Ferrel, have been keeping a finger on the economic pulse of Wilmington for the past ten years.

They project that the area's economy will double in the next ten years. Augustine says the Wilmington Chamber of Commerce forsees similar growth.

"We expect the next big explosion of growth in North Carolina to come in Wilmington," Augustine says.

And it's already starting.

A new regional international airport located on the north side of the city has just opened. Its completion means Wilmington has all the right connections — air, sea and land.

The airport has U.S. Customs and U.S. Department of Agriculture inspection and international landing rights, which is prompting a growing stream of foreign traffic.

"Our international arrivals have increased 30 percent over last year," says Robert Kemp, airport director.

The first big international charter began in May, flying between Wilmington and Jamaica. The New Hanover airport lies directly beneath one of the main air routes to the Caribbean, which may assure more tropical flights in the future.

The airport also does a brisk

continued

business in cargo, corporate aviation and military traffic. And three commercial carriers — USAir, American and Delta — serve the public.

As for the future, the airport has big ideas. Plans call for an adjacent commercial and industrial park that will include a hotel and convention center.

On the south end of town, another transportation link, the state port, is beefing up its image and its facilities. After several years of running in the red, the State Port of Wilmington is showing a profit.

In competition with neighboring ports in Virginia, South Carolina and Georgia, the Wilmington port has lagged because it was not linked to the nation's interstate system, Hall says.

But the completion of I-40, the introduction of intermediate transportation terminals in Charlotte and Greensboro, and a more aggressive marketing campaign spell a brighter future for the Wilmington port.

Wood pulp and tobacco are the most prevalent cargoes leaving Wilmington; steel is the top imported item. But cargoes run the gamut from soybean oil to mobile homes.

Almost 33,000 tons of military equipment, shipped from Fort Bragg and Camp Lejeune to the Persian Gulf, passed through the North Carolina ports. This meant weeks of round-the-clock, seven-day-a-week operations in Wilmington, says Karen Fox, the ports' public affairs manager.

On June 30, 1990, I-40 was opened, completing the connection between Raleigh and Wilmington. The four-lane, limited-entry highway opened the artery that connected Wilmington to the rest of North Carolina and the nation, and it began slowly to pump economic adrenaline into the city by the sea.

Although the military movement gave the ports a short-term boost, the ports authority is looking to North Carolina businesses to give it long-term stability.

North Carolina is among the top 10 states in the nation in manufactured goods and the top in the Southeast. Yet only 20 to 30 percent of ocean-bound cargo leaving Tar Heel companies passes through our state ports, Fox says.

The ports are striving to capture a larger percentage of Tar Heel business. And if successful, the Port of Wilmington could have a greater impact on the city's future.

But for now, a larger player in Wilmington's economy is "UNC By The Sea."

The seaside university draws 7,000 students and is growing at a rate of 6 percent a year, Hall says.

Hall calculates that the university, renowned for its marine science curriculum, accounts for eight cents of every dollar spent in an area that encompasses New Hanover, Pender, Columbus and Brunswick counties.

"That's two and a half times the impact the port has on the same region," Hall says.

In recent years, the university elevated its academics to the same level as East Carolina, Western Carolina and Appalachian State universities. "UNC By The Sea" now offers master's degrees, and it's working with North Carolina State University to offer a Ph.D. in marine science.

Once seen as a regional university, UNC-Wilmington drew its students from southeastern North Carolina. Now its academic reputation attracts students from across the state and the nation, and the completion of I-40 makes access to the campus even easier.

University buildings and other major Wilmington landmarks have been a part of another major player in Wilmington's economy — the movie industry.

Filmmaker Dino DeLaurentis opened shop in the Cape Fear city in the early 1980s. At the height of production, his DEG Studios were working on four films simultaneously and pumping $1 million a week into the local economy, Augustine says.

Photo by C. R. Edgerton

Photo by Kathy Hart

But DeLaurentis hit hard times and left town more than three years ago. Many thought that would end Wilmington's role as a movie mecca.

Not so. Carolco Pictures bought DEG Studios and continued to reel off box office hits, though not at the same rate as DeLaurentis. Carolco uses the studios for its own features and commercials, and it rents to other filmmakers.

Recent Wilmington films include "Sleeping with the Enemy" and "Teen-age Mutant Ninja Turtles II."

But Hall questions the movie industry's staying power.

"They came here because it's an inexpensive place to make movies," he says. "But if costs rise as Wilmington grows bigger, then they may start to look elsewhere."

But others say the opening of I-40 offers the studio added incentive to stay. It not only makes Wilmington more accessible to moviemakers, but it makes areas outside the port city reachable too.

As for industrial growth, New Hanover County is at its limit. "We're running out of space for any large-scale industrial growth," Hall says. "There are a few sites in the northwest, and that's it."

Economists are predicting that any new industries brought to the area by I-40 will locate in adjacent counties, where land is more available and unemployment rates are higher.

Even there, industrial growth on the Cape Fear River may be limited by state water quality standards.

One economic factor nobody wants to limit is tourism. Although Wilmington doesn't want to be known as a tourist town, visitors still make the largest contribution to the New Hanover economy.

Most are drawn to the beaches at Wrightsville, Kure and Carolina, but others come to play — golf, tennis, sailing and boating. According to Augustine, 20 golf courses are scattered across New Hanover County

"The area is changing its image from a port city and beach community to a recreational community," Hartgen says. "The local economy will not be driven by residents but by those coming from outside the area to spend their disposable income."

But for all the positives I-40 brings, there's also trouble right here in river city.

One problem begins where I-40 ends: College Road. The interstate is dumping 12,000 cars a day into an area teeming with shopping centers, fast food restaurants and college students.

"That area is being hit with a slug of traffic," Hartgen says. "It was predictable but not well-planned."

Now Wilmington and New Hanover County officials are scrambling to work out some solutions. They are discussing the possibility of an outer loop to route beach traffic around the city.

Others are concerned about the capability of Wilmington's water and sewer systems to handle additional residents and businesses. And still others worry about the effects of the development on the nearby river and estuarine ecosystems.

Many long-time residents, accustomed to Wilmington's sleepier days, complain that the quality of life in the port city is declining. They rue the day when I-40 was opened.

But if these folks are upset, economists and planners say they "ain't seen nothin' yet."

Hartgen predicts that the summer of 1991 will be prosperous because the Gulf War has ended and the economy is rebounding.

"You can't go back," Hartgen says. "The ribbon has been cut. Now all you can do is plan for the future."

Sister Beaches Have Little in Common

By C.R. Edgerton

Photo by C. R. Edgerton

A subtropical wind coming off the ocean grabs sand and hurls it against elaborate beach cottages and expensive cars.

Fashionably dressed beachgoers search for shells among rusty pipes called into service every winter to resupply the sand-starved beach.

Sunbathers recline on lounge chairs and blankets, seemingly unaware of surfers just beyond the breakers and fishermen on the pier above.

A tern soars behind the island's now non-existent dune line. He finds little landing space, for the last lot on Wrightsville Beach has been sold.

Farther south, at Carolina Beach, a young couple —honeymooners perhaps — drift into the Seven Seas deli and grill. He orders a sub, she a hot dog. At the bar, a man in tattered clothes finishes a sandwich, gulps beer and grabs a hot dog to go.

"See you tomorrow," he tells the woman behind the counter.

About a hundred feet beyond the deli, a woman squints as she walks from the Carolina Beach bingo parlor into the full light of the sun. Her hair is curled and pinned tightly to her head. A cigarette dangles from her bottom lip. She checks her huge leather pocketbook and turns south down the boardwalk.

At the Kure Beach fishing pier, just south of Carolina Beach, life goes on as it has for decades: folks from all over the southeast sling their lines into the swelling surf, hoping for the big one that always eludes them.

When the fishing's bad, some wander off the pier and into Bud and Joe's Tavern on the north side of the parking lot, or the small restaurants on the southside.

Sandwiched between the popular beach resorts, Masonboro Island stands totally undeveloped, a monument to nature, a stretch of unspoiled coastline amid overdeveloped shores.

These, with the exclusive Figure Eight Island to the north and Fort Fisher to the south, are the beaches of New Hanover County. They exhibit a curious contrast of the wealthy and the not-so-rich; the white-collar condo and the blue-collar boardwalk; the tall-masted yacht and the fiberglass skiff.

Unlike most North Carolina coastal communities, change is slow here. But it hasn't always been this way.

A century and a half ago, New Hanover's beaches were as barren and uninhabited as Masonboro Island is today. They were sought as places of refuge and recreation, yet their inaccessibility left them undeveloped and pristine.

That was before the Carolina Yacht Club made its appearance on Wrightsville Beach. In the mid-1850s, several men, tired of rowing their small boats to the island only to have no bathing facilities, joined forces to build the bath house. It was one of the first of its kind in the nation.

A railroad was built to the island between Wrightsville and the mainland in 1883 and local folks began to catch a vision of the playground the beach might become. Finally, the waterway between Harbor Island and Wrightsville was breached by a walkway. The development of the beach had begun in earnest.

The Wilmington Sea Coast Railway Company played a major role in the development of Wrightsville as a rendezvous for the wealthy. The company offered moonlight excursions to the island.

The beach's popularity grew and by 1897 about 50 beach cottages and several hotels had sprung up where before there had been only sand dunes and sea oats.

The greatest and perhaps most famous of the structures was the Lumina, a hotel ringed by hundreds of lights. The resulting night scene became not only a symbol of prosperity on the beach but a navigational aid for passing ships.

The rich and famous cavorted on Wrightsville Beach and gave to this narrow strand its reputation as a place

Photo by C. R. Edgerton

of affluence. In the 1930s, the island's electric cable car system was replaced by a state-maintained highway and more common folks invaded the Wrightsville domain. Yet, through the years, the wealthy have found a place of refuge on the island.

The story of Carolina Beach isn't glamorous. Carolina was developed primarily by Wilmingtonians who desired a place at the beach away from the exclusive lifestyle at Wrightsville.

For decades, the best route to Carolina Beach was via one of Captain John Harper's famous Cape Fear River taxi boats. By the 1920s, state-maintained roads were built and the community blossomed as a resort.

For the average family with limited vacation funds, Carolina Beach's primary attraction has been its boardwalk, a long train of restaurants, amusement centers and gift shops.

Today, Wrightsville and Carolina beaches still offer their own styles of coastal life.

"Wrightsville is more of a family vacation type beach," says Jane Peterson, executive director of the Cape Fear Coast Convention and Visitors Bureau.

Though parking is limited on this island of 5,000 permanent residents, several access points open the door to the public beaches for day trippers and college students from the University of North Carolina at Wilmington.

"And Carolina is a fun beach with fishing and lots of things to do," Peterson says. "It has a great feeling of nostalgia."

The differences in the two beaches are emphasized in her office's promotional material, Peterson says.

"But both of the beaches realize how unique they are on the whole East Coast," she says. "Having seen beaches from Maine to Florida, I can say that ours are great."

Unique enough, she says, to foster lots of economic input from local governments who have become accustomed to a steady stream of tourist dollars.

At Wrightsville, a $2 million, four-year beach renourishment program guarantees that the 25 to 30 feet of shoreline eaten annually by Mother Nature will be replaced. This gives visitors and permanent residents all the sand they want and assures the town's fathers a juicy tax base.

And, at Carolina, old and unsightly beach cottages have been renovated or torn down and replaced by more modern structures. Beach renourishment and a recently completed facelift on the town's once sagging boardwalk attract new and return vacationers.

"There are some really great things happening on our beaches right now," Peterson says. "There are chambers of commerce at both Wrightsville and Carolina Beach. The businesses are organizing to promote things there."

Their efforts have created what Peterson calls "a real spruce-up and a tourism feeling.

"We've even got someone who's sponsoring a water taxi out to Masonboro Island," she says.

Recent completion of Interstate 40 into Wilmington can't hurt the flow of dollars from the pockets of beachgoing tourists either.

But, Peterson says, a new superhighway doesn't automatically open the floodgates of tourism. So far, I-40 hasn't been the economic pie-in-the-sky Wilmingtonians have longed for.

"I don't think I-40 has made a big difference in the amount of traffic itself coming to the beaches," Peterson says. "But it has made it more convenient for those who do come."

She sees the new highway more as a tool. "You see, it helps us market what we do have," she says. "Now it's up to us to get out there and market it." •

Photo by C. R. Edgerton

Photo by: C. R. Edgerton

Masonboro Island: *An Unspoiled Gem*

By C.R. Edgerton

The wind whips up small white-caps in the tidal waters of Masonboro Sound.

The small boat pops the water like a fishing lure.

From his seat on the bow, John Taggert points to a high dune near the north end of Masonboro Island.

"It's the highest point on the island," he says. "You'll be able to see most of the island from there."

The pilot cuts the engine and the boat drifts to the small beach on the sound side. The anchor holds fast in the smooth sand, and we step ashore – alone on a nine-mile stretch of uninhabited, undeveloped barrier island.

At the top of the small dune, we are amazed at what we see: no beach cottages, no streets, no high-rise condominiums, except those across the inlet on neighboring Wrightsville Beach. To the east, the island is black skimmers, least terns and dune plants; to the west, it is extensive salt marsh.

"This is great," says Taggert, who oversees the island as part of the National Estuarine Research Reserve program. "I love coming out here."

And why not? Unspoiled Masonboro Island is a dream-come-true for naturalists and others who enjoy coming to the beach without worrying about walking where they aren't wanted.

The island is one of four Tar Heel estuarine reserves under Taggert's care (the others are Zeke's Island south of Fort Fisher, a small section of Currituck Banks near Corolla, and the Rachel Carson Reserve on Bogue Banks near Beaufort).

In winter, the island is seldom touched by human feet.

In warm weather, dozens of small boats line up on the island's soundside beaches. Swimmers, sunbathers and beachcombers cut their ties with the overdeveloped mainland and join gulls and terns, skinks and spiders on unspoiled beaches and wind-kissed dunes.

To many folks in New Hanover County, Masonboro Island is a rare gem in a costume jewelry store.

And recent designation as part of the estuarine reserve program guarantees an ecologically bright future.

Taggert explains that Masonboro Island's weaknesses – in terms of its developability – are its major strengths. For example, the island's uplands, those areas that are never under tidal waters, are too narrow for buildings. The rest of the island's 5,000 acres is salt marsh, incapable of supporting development.

"The people around here love this place," Taggert says. "Even the landowners want it preserved as a natural area."

They do indeed. Hundreds of acres have been ceded to the reserve by

conservation-minded landowners. Others aren't quibbling with the reserve designation, happily signing over their property to the federal government for a fair price.

"We still have some landowners who are holding out and some we haven't contacted about purchasing their land," Taggert says. "But I believe all of them will come around."

Taggert steps down the beach side of the dune. His feet sink into the warm sand, sliding past the hungry thorns of a prickly pear. He points to a flattened hollow between the larger dune line and a smaller dune toward the beach.

"Look here," he says. "Signs of campers. The burned sticks, shells piled up. Someone gathered them and just left them there."

Camping is only one of the traditional uses of Masonboro Island. Though it's accessible only by boat, mainlanders visit the island frequently in warmer months, using its resources for typical beach activities.

They leave hundreds of footprints in the island's ecologically-sensitive sands. But that doesn't worry Taggert.

"People have been using the island for many decades, even before Carolina Inlet was cut to the south and while it was just an extension of Carolina Beach," he says. "And, while litter sometimes becomes a problem in the summer, we don't think the island is being abused."

Photo by C. R. Edgerton

"I love coming out to Masonboro, and it's always hard for me to leave. It's one of my favorite places to be." ---John Taggert

He says he'd like to see someone survey the island's users. "That would give us some idea of whether or not we should regulate some uses," he says. "Still, you can just look around and see that things are pretty much in their natural state."

Perhaps that's why people aren't the only users of the island. Because of its extensive undisturbed beach, loggerhead turtles depend on the island as a prime nesting site. Turtle eggs laid at Wrightsville and Carolina are sometimes transferred from those busier beaches to the safer sands of Masonboro.

"The people who use the island are proud of the turtle sites and protect them well," Taggert says.

Other significant fauna that have found safe refuge on Masonboro include the threatened piping plover and the endangered peregrine falcon. The falcon uses the island as a stopover on its annual migratory routes.

"These are the things that make Masonboro Island valuable not only to the average person, but to researchers and scientists as well," Taggert says.

He gives much credit for the island's preservation to a wide-ranging grassroots movement and "solid local legislative support," including efforts by the members of the Society for Masonboro Island.

"These people have been instrumental," he says. "You can tell they really love their island. It makes me feel good about the future of this place."

Back at the sound, we step lightly into the small aluminum skiff. A rope is pulled and the motor churns. As the boat cuts the water toward the ramp at Harbor Island, we watch Masonboro Island hide behind the high-rise condos on Wrightsville and the tall-masted pleasure yachts lining Banks Channel.

"This is the part I always hate," Taggert says, catching a last glimpse of the island reserve. "I love coming out to Masonboro, and it's always hard for me to leave. It's one of my favorite places to be."•

Photo by C. R. Edgerton

Tracing Cape Fear Legend and Lore

By Carla B. Burgess

Nearly two centuries of Cape Fear history sleep beneath the canopy of oaks, dogwood and Spanish moss in Wilmington's Oakdale Cemetery. The tiny lamb that shelters 6-year-old "Annie," the mausoleums as big as houses and the mass grave of Confederate soldiers tell the story of this river town.

Just west, the river and its main tributary from the northeast converge and begin a 30-mile southern journey to the Atlantic Ocean.

In the days when rivers were highways, the 200-mile Cape Fear connected New Hanover to a family of inland counties and their commercial offspring. In 1853, it was said to be the outlet for the products of more than 28 North Carolina counties. Through its mouth at the Atlantic breathed vital trade between the West Indies, Spain and other ports of call.

As the wind whips around granite crosses and white stone angels in Oakdale's 160 acres, one can almost hear voices whispering the Cape Fear legend. Wilmington owes its existence to the river, whose waters carved this high, dry outpost for early settlers and their ancestors.

The river put New Hanover County on the map and in the history books.

In Oakdale lies Rose Greenhow, a rebellious woman and Confederate spy who drowned while attempting to run the federal blockade at Fort Fisher, 18 miles south of Wilmington. When President Lincoln ordered his navy to block all Southern ports, the inlet there provided vital access for blockade runners bringing supplies through the town, the last major Southern port to fall.

Through this breach, swift, shallow-draft vessels with such names as *Beauregard*, *Banshee*, *Spunkie* and *Night Hawk* fueled General Lee's Richmond army and the ire of federal officials.

One night in 1863, another woman who desperately wanted to visit her son in England boarded the blockade runner *Advance* leaving Wilmington for Nassau. Anna Matilda McNeill Whistler was born in Wilmington, where she lived much of her childhood. A widow, she had just visited her other son, a Confederate army surgeon in Richmond.

Mrs. Whistler's journey was safe. Her son "Jamie," an artist, took her in to his London home and later immortalized her in a painting he called "Arrangement in Gray and Black." Most of us know it as "Whistler's Mother."

War and commercial traffic benefited from New Inlet, which was cut by a hurricane in 1761. But although this second mouth made Wilmington more accessible, it let in sand and silt with every change of the tide. The river's channel was barely 9 feet deep under the most favorable conditions.

Photo by Carla B. Burgess

After the war, talk of closing the inlet resumed.

Henry Bacon, whose grave marker can also be seen in Oakdale, supervised the U.S. Army Corps of Engineers' late-19th-century construction of the "Rocks," a rubble stone dam across New Inlet and nearby swashes. More than 181,000 cubic yards of stone were used in the New Inlet dam, equivalent to a wall 8 feet high, 4 feet thick and 100 miles long.

To date, Bacon's enterprise is considered the most outstanding Corps project in the South Atlantic. Bacon's son, Henry, buried nearby, is also credited with a memorable structure. He was the architect of the Lincoln Memorial in Washington, D.C.

Other graves reveal less celebrated names, but famous stories. The tugboat captain who lost his life fighting a fire at Front and Dock streets, buried with his dog who tried to rescue him. A young girl who died at sea, preserved for burial in a cask of rum and whiskey, seated in a chair.

A Confederate soldier cast in bronze guards the grassy repose of his comrades near Oakdale's front gates. Outside, the ghost of Cape Fear past dances about olden streets and the wrecks of wooden ships beyond the river's bank. •

Reproduced Courtesy of the New Hanover County Museum of the Lower Cape Fear

Engineer Henry Bacon Sr. (in white beard and long coat) supervises the construction of "The Rocks" below Fort Fisher.

A County's Claim to Fame

By Carla B. Burgess

The saga of the lower Cape Fear region is a litany of firsts, bests and biggests.

North Carolina's first lighthouse was constructed at Bald Head Island, the southernmost tip of the cape. Lighted in 1795, it helped ships navigate the treacherous Frying Pan Shoals that extend almost 20 miles outward from the river's turbulent mouth.

It was here that a group of 16th-century Spanish explorers wrecked as they tried to enter the river. The vessel they built to replace their ship is said to have been the first built by Europeans in America.

If Lucas Vasquez de Ayllon and his fellow Spaniards had remained, the Cape Fear region would have been home to the first white settlement in America.

Ayllon's predecessor is the first known visitor to the Cape Fear region. Verrazano, an Italian in service to the king of France, explored the area in 1524 on a voyage to find a faster route to Asia.

Reproduced Courtesy of the New Hanover County Museum of the Lower Cape Fear

Workers load naval stores on a wharf at Eagles Island.

Verrazano's report of friendly Indians, fragrant bay laurel, and vibrant fields and forests didn't tempt the king, preoccupied by troubles at home, to settle the area.

A settlement attempted near present-day Wilmington by New Englanders in 1662 was abandoned in a matter of months.

In 1664, a group from Barbados established Clarendon County along the west bank of the river. The settlement reportedly numbered 800 people and extended 60 miles along the Cape Fear, which they called Clarendon. Its capital, Charlestown, was the first English town in Carolina.

Lack of British support and hostilities from Indians that the settlers tried to enslave contributed to the colony's demise by 1667.

The first permanent colony on the Cape Fear came much later with the 1726 settlement of Brunswick Town. A rival town was settled opposite on the east bank in 1733. Called New Carthage, New Liverpool, then New Town or Newton, the settlement was finally incorporated in 1740 under the name Wilmington.

In addition to the river, early settlers recognized the value of the vast pine forests towering over them. The product of these trees – tar, pitch, turpentine and rosin – eventually earned Wilmington the distinction as the world's leading exporter of naval stores.

The region also lays claim to the first student of the University of North Carolina. Hinton James distinguished himself further by reportedly walking the 150 miles from his New Hanover County home to Chapel Hill to enroll in 1795. For two weeks, he was the entire student body.

James, who earned his degree in engineering, was credited later with some initial work to deepen the channel of the river in the 1820s. The project, which included dredging and jetties, was the first effort made to keep the Cape Fear navigable.

Here are some other exclusive claims made by the port city.

- *The Prince of Parthia*, the first play written and produced in America, was penned by the author the same year he arrived in Wilmington, 1759. Thomas Godfrey died four years before its 1767 premiere in Philadelphia, and is buried in St. James churchyard on Market Street.
- The Temple of Israel, the first synagogue in North Carolina, stands at the southeast corner of 4th and Market streets. When it was dedicated in 1876, nearly 70 percent of the state's Jewish population lived in Wilmington. •

For more information about the lower Cape Fear region, check these references:

Chronicles of the Cape Fear River by James Sprunt

The Cape Fear by Malcolm Ross

Stories Old and New of the Cape Fear Region by Louis T. Moore

To Great and Useful Purpose: A History of the Wilmington District, U.S. Army Corps of Engineers by Ronald B. Hartzer

Tales and Traditions of the Lower Cape Fear by James Sprunt

Land of the Golden River by Lewis Philip Hall

New Hanover County: A Brief History by Lawrence Lee

Cape Fear Adventure: An Illustrated History of Wilmington by Diane Cobb Cashman

Swapping Stories

By Carla B. Burgess

The sign in back of the narrow room is a little dusty. But its plastic letters plainly state the menu. Shoeshine, $2. Pig feet, 75 cents. Alka Seltzer, 30 cents.

If Haywood Graham is around, you might also get an earful.

From the vantage point of Floyd Pollock's Shoeshine Parlor and lifelong residency in this port city, Floyd and Haywood can give you a personal history of Wilmington. Loudly. And they don't always agree.

Ask them where television newsman David Brinkley used to live in Wilmington, and you might see their arms pointing in more directions than signs at an intersection. Consensus is not an issue at Pollock's Shoeshine.

On an early spring day, Pollock and Graham talk about old times over a game of cards. A tiny gas heater takes the chill off the small room and heats a coffee can full of water.

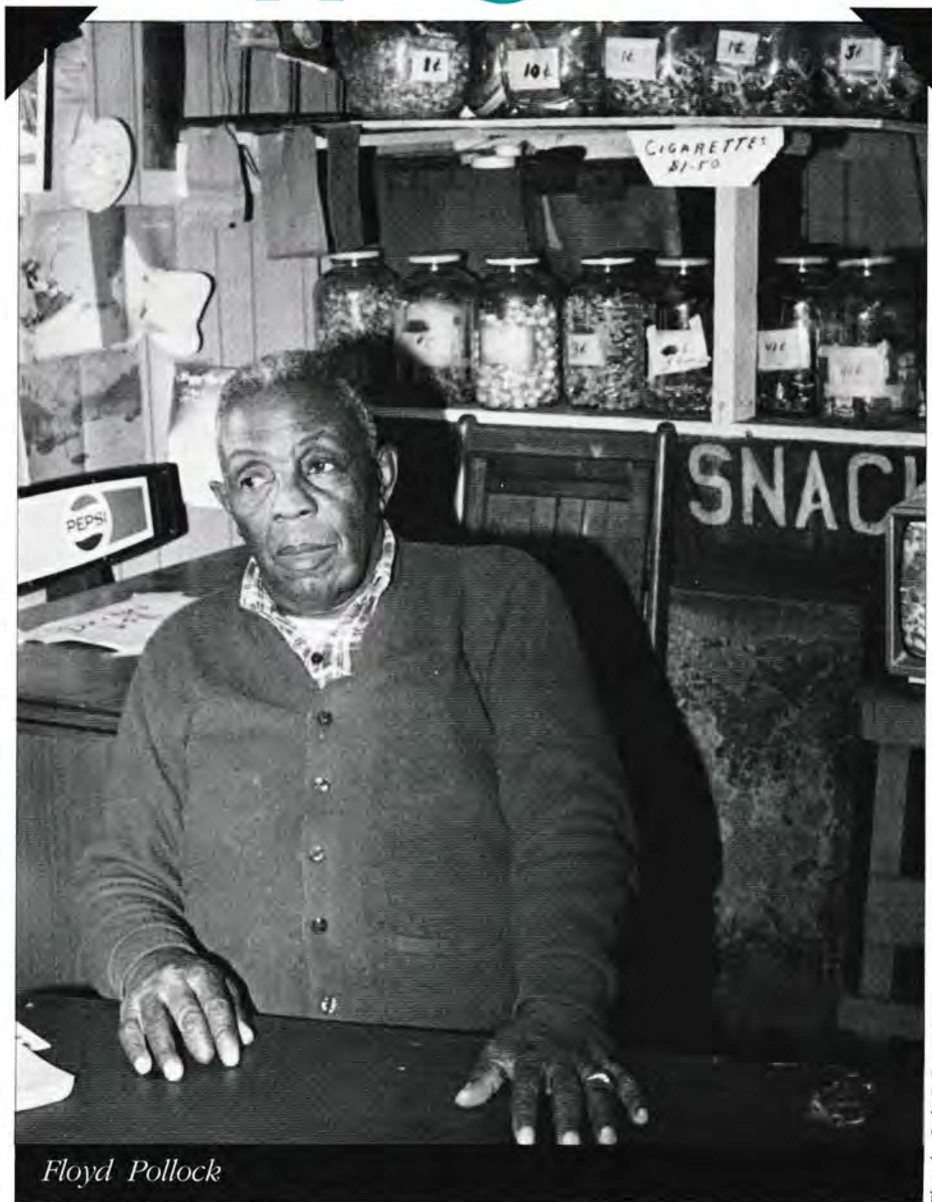
Pollock was born in Wilmington in 1918 and is retired from Almont Shipping Company on the waterfront. He worked in the warehouse there "all my life." His shoeshine parlor at 708 N. 4th St. keeps him busy and out of the house, he says.

Graham was a longshoreman many years on the lower Cape Fear River and loaded and unloaded everything from paper and tobacco to automobiles and fish meal.

"We had a gang system here in this port," Graham says, explaining how they worked the waterfront.

Graham, a "header" or foreman, would choose his crew from the group of longshoremen who "badged in" at the union hall each morning. Then he was ready to start to work a shipment.

"I've got two crane operators, two bulldozer operators, and I got a signal man and about 20 more men in the gang," he says, describing how a gang of workers would empty a ship loaded



Floyd Pollock

Photo by Carla B. Burgess

with nitrate of soda — fertilizer in bulk.

Graham says a crane would lower a bulldozer onto the ship to move the fertilizer so it could be placed in a bucket and raised to the deck. The work could be dangerous, and longshoremen were sometimes killed.

"Sometimes it would take two or three days to get to the bottom of a ship," he says. The "hatch" or signal man would be the liason for communication between the crane operator and bulldozer drivers, he says.

The crew washed down the decks afterward, but tougher environmental regulations have banned that practice. "The EPA don't play," Graham says, studying his hand of cards. "Containerization" has become the name of the game, he says. "They don't want anything but clean cargo in this port now."

A few blocks southwest of Pollock's business — in a spacious building at 201 Chestnut St. — you can get a different historical perspective.

Almost any weekday morning you'll find Robert Fales on the second floor of the New Hanover County Public Library. Since his retirement from 53 years as a Wilmington physician, he

# of Old Wilmington

keeps regular office hours in the local history room.

If you arrive before Fales does, the librarian can point out exactly where he'll sit.

He arrives dressed in a suit and sweater vest. Once seated, he talks for hours about the town.

The native Wilmingtonian has studied the history of this region for 25 years. He started out collecting information about doctors who practiced here during the past century.

"As the work went along, I found I could not separate it from the town itself," says Fales, who has written two books on Wilmington history. "My father ran a wholesale at 116 South Water Street, and when I was not in school I was down there with him," he says. "The only paved street we had then was cobblestone."

The cobblestones came from wooden ships that sailed into the harbor, casting overboard the stone ballast used to stabilize the empty vessels. The ships left with a cargo of cotton or turpentine; the townspeople salvaged the material to surface their streets.

"When I was a child, everything was downtown, but scattered all around the neighborhoods. Chinese laundries, we had lots and lots of them," says Fales.

Back at the shoeshine parlor, a thin, black man in sunglasses leans against the wall, listening. He is exasperated because Floyd and Haywood aren't telling stories as vividly as they usually do.

He's not as old, but he recalls 4th Street in the 1940s as a center of activity.

"On a day like today, this place would be just like the mall," says the man, who declines to identify himself. "There were gypsies telling people's fortunes for money and medicine men peddling medicine for corns."

An electric streetcar served the hustle and bustle in the city from 1893 to 1939.

There was five cents in it for you if you helped the driver change direction when the trolley reached the end of the line, Haywood says. He would wait with other children for the chance to pull the cord that would reverse the arm over the car.

"It didn't matter how long you had been waiting, you just had to get up there first," says Graham. "Then the driver would throw you a nickel."

In the 20s, a nickel would buy you a trip across the river's toll bridge on foot or bicycle. It cost 35 cents for the Pollock family's old Dodge to pass.

Times were tough then. Pollock remembers going down to the river bank with his mother to collect coal that the dredges had kicked up from the bottom. This excess coal that had spilled from barges during loading kept his family warm in winter.

Haywood Graham

Photo by Carla B. Burgess

The room is a haze of cigarette smoke, dust and late afternoon sun. Graham apologizes for leaving, but he has to go pick up his wife. He steps out into the bright light on the 4th Street sidewalk. Come back some other day when he's got more time, he says, and he'll really tell you some stories. •

Young Mariners

Coastal Adventures for Curious Minds

Mole Crabs: Can You Dig 'em?

Imagine spending your lifetime tumbling and scurrying about in a surge of sand and water.

Now you know how a mole crab feels.

As waves crash onto the beach and retreat, the egg-shaped crab pops out of the **swash**, races to a new spot and digs in the wet sand as a new wave breaks.

Watching this over and over again, you might think the mole crab a hapless creature. But this tiny **crustacean** is actually well-suited to its unstable home.

One of the few creatures that can survive in the **surf zone**, the mole crab adapts beautifully to its rumble-tumble life. Having no claws or pinchers, the crabs use feathery **antennae** on their heads to sift food from the water.

Its powerful legs help the mole crab burrow backward in a hurry. The crab orients itself to the outgoing wave so its antennae can filter plankton — tiny microscopic plants and animals — from the water.

You may notice a pattern of tiny Vs that remain on the sand as the water retreats from the burrowed crabs.

Meanwhile, these speedy crustaceans have predators from land, sky and sea. Mole crabs that are too slow make a mouth-watering meal for gulls and sandpipers hovering over them.

The crabs are also a tasty treat to fish such as pompano and flounder swimming in shallow waters. That's why experienced fishermen scout out soft-shelled mole crabs to bait their lines.

Next time you're at the beach, take off your shoes and let the surf lap at your bare toes. You might feel the tiny creatures scurrying around your feet as you wade.

Scoop up a handful of wet sand and you'll probably catch a few. They may tickle the palms of your hands but they can't bite you.

In the summer months, you may notice bright orange eggs clinging to the bellies of the females.

Another thing you may notice is how crabs of the same size tend to hang out together at the beach.

"The big crabs like to stay where the waves are crashing harder, and smaller crabs tend to be farther up the beach where it's calmer," says Lundie Spence, Sea Grant's marine education specialist.

Scout around, she says, and you should be able to find crabs of all sizes.

VOCABULARY:

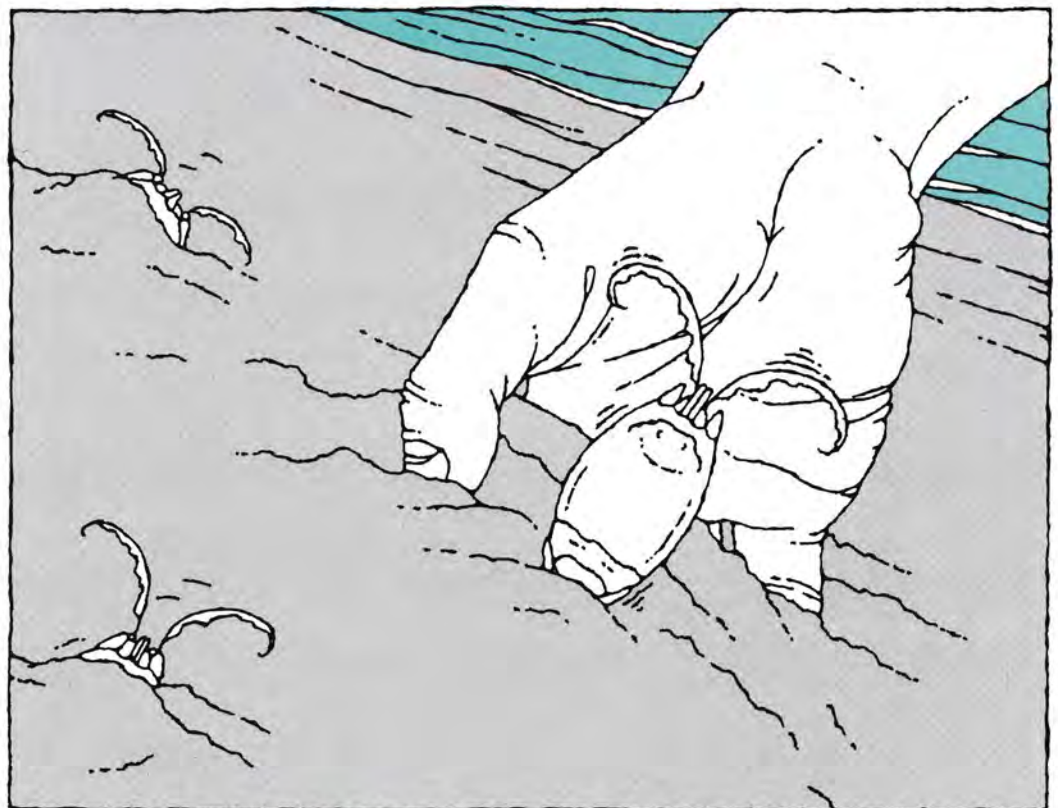
swash - swift, dashing water.

crustacean - one class of arthropods that usually live in the water and breathe through gills; they have a hard outer shell and jointed appendages and bodies.

surf zone - Area of the beach where the waves break and recede.

antennae - a pair of movable, jointed sense organs on the head of arthropods such as insects, crabs, lobsters, etc.

--- *Carla B. Burgess*



The Plant With an Unusual Appetite

Charles Darwin called it "the most wonderful plant in the world."

The great naturalist had traveled the globe, seeking clues to the mysteries of plants and animals. Yet, no plant fascinated him more than the Venus' flytrap (*Dionaea muscipula*), a botanical marvel found only within a 75-mile radius of Wilmington, N.C.

No one has come up with a satisfactory answer as to why this strange plant does not prosper elsewhere, but legends abound. One traces the original flytrap spores to a wandering meteor that struck the earth millions of years ago.

Of course, that's hogwash to most botanists. But none can explain the flytrap's choice of habitat. They will tell you, however, that the Venus' flytrap, and other insectivorous plant species, are ideally suited to the low-lying, semi-bog savannahs common along North Carolina's southeastern coastal plain.

The soils in these savannahs are seriously lacking in the one nutrient essential for plant survival: nitrogen. Over millenia, the Venus' flytrap and its cousins developed ways of snaring insects to supplement their diets, thus getting the much needed element.

In the Croatan National Forest near New Bern, biologist Wayne Starnes keeps a careful watch over these unusual plants.

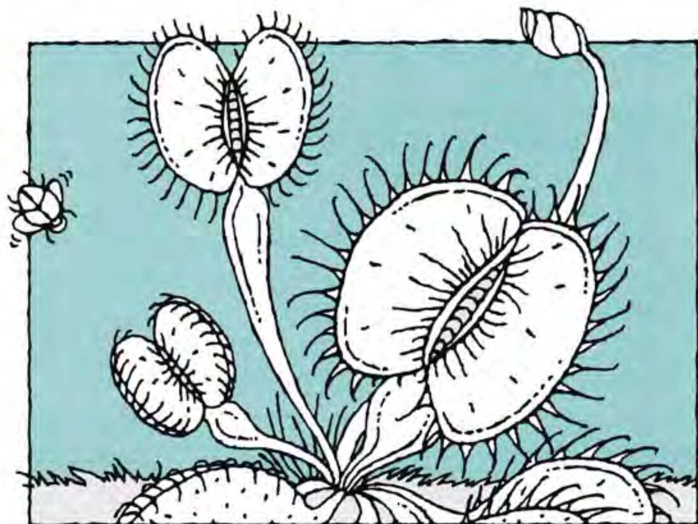
Over millenia, the Venus' flytrap and its cousins developed ways of snaring insects to supplement their diet, thus getting the much needed element.

"They are extensive over the southern part of the forest," he says. "They love the little shallow areas between the sandy uplands and the mud bottoms."

Starnes says the plants are not endangered, but are considered "sensitive." They are protected by policy, but not by law. People who take them from the national forest can be fined, he says.

Contrary to popular belief, Venus' flytraps do not actually "eat" their prey. A small insect crawls onto the flytrap's oval leaves — perhaps attracted to the leaf's bright red lining — tickling the tiny hairs that coat the surface.

This action encourages the flow of juices stored under pressure inside the plant, releasing the woody tissue hinge that holds the plant's "jaws" open. The sides of the leaf snap shut, often in less than a second, creating a cellulose prison. Over several hours, the released juices digest the insect.



Dionaea muscipula

Oddly enough, the tiny hairs on the leaf's surface require two "tickles" to begin the trapping process. This prevents the plant from closing on a dead leaf or other inanimate object.

The Venus' flytrap spreads its leaves close to the ground. In May or June, the plant shoots tendrils about a foot into the air. On these tenderils grow small white or yellow blossoms.

Many people touring the southeastern area of North Carolina refuse to go home without buying at least one sample of the amazing insect-eating plant. Plant stores and roadside stands sell Venus' flytraps and bulbs that have been propagated in private nurseries. Jimmy Northrop of Northrop Insectivorous Plant Farm near Wilmington ships them around the world.

Someone once remarked that the existence of plants such as the Venus' flytrap has given rise to fictions involving "man-eating trees" and other hungry greenery.

But who needs fiction when the truth is strange enough?

--- *C. R. Edgerton*

Marine Advice

Extending Knowledge to the Coastal Community

Relief For Ailing Shores

As long as there have been wind and waves, there's been coastal erosion. But people have made the problem worse. Our intensive use and mismanagement of estuarine shoreline has created even more of a need to preserve its condition.

Methods of controlling estuarine erosion — such as bulkheads, groins or breakwaters — are as diverse as the shoreline itself. A number of them work. Others are ineffective. Some are even environmentally detrimental. And all are expensive.

Sea Grant is looking at a new strategy, breakwater-marsh, which actually combines two veteran erosion-control methods — offshore breakwaters and planted marsh.

"The method is combining very small wooden breakwaters with planted marsh grasses to provide a lower cost alternative," says Spencer Rogers, Sea Grant's coastal engineer. "It's perceived as an environmental asset because it turns an eroding shore into marshland."

The Albemarle-Pamlico Estuarine Study has recently provided some funding so that Rogers and selected property owners can construct marsh-breakwaters as demonstration models.

"Sea Grant has been doing research in marsh grass for erosion control for many years," says Rogers. Marsh grass plantings alone can control erosion in some sheltered areas. These usually control bank erosion for three to five years; some last even longer.

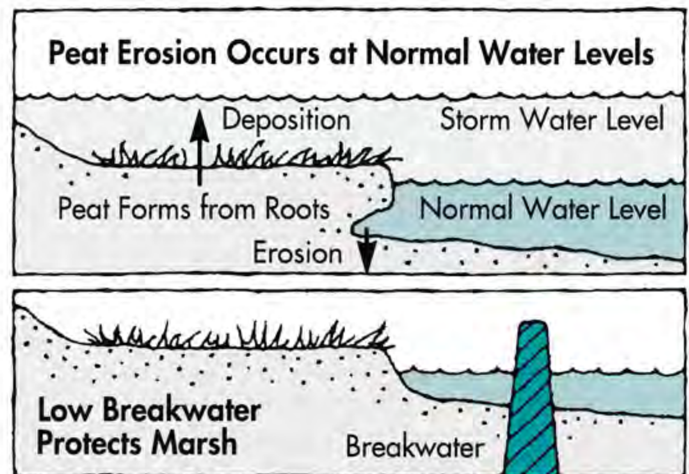
But used to control an eroding shoreline, marsh grass has its limitations. In areas of moderate to high wave activity, a short life is one of them.

The grasses develop a dense bed of stems that gradually dissipates waves, and form a root mat or peat layer that is very dense and erosion-resistant on the surface. But the outer edge of this peat layer is gradually undermined and eventually collapses and disappears.

Combined with a small breakwater that protects the outer edge of the marsh, grasses can be survive much longer.

"The purpose of the breakwater is purely to prevent the marsh erosion. It doesn't actually protect the upland," Rogers says. "The marsh or breakwater alone would not control bank erosion."

A good test of the combination occured unintentionally in the late 1970s on the Pamlico River west of Bath. The owners of a church camp, struggling to deal with their eroding shoreline, built an illegal wooden bulkhead. Before they could backfill it, the state learned of the violation.



After some negotiation, the state allowed the camp to leave the structure in place as an offshore breakwater. A Sea Grant researcher planted some grasses behind one section; other grasses sprang up voluntarily.

"This breakwater was very low — about 6 inches above high water, and in water depths of 2 to 3 feet," says Rogers. "A marsh very rapidly became established, and it built up a good peat layer."

After the church sold the camp, the property was subdivided and purchased by individual owners who, unaware of its significance, removed the breakwater. Within six months, most of the marsh was gone; in two years it had completely disappeared. The bank erosion returned.

"Eventually all the property owners built bulkheads to protect the shoreline," says Rogers. "There's no marsh or beach now. And all that was needed to keep the marsh in place was this very low inexpensive breakwater."

Construction of marsh-breakwaters costs $25 to $35 per foot of shoreline protected, including the cost of planting marsh grass. Typical bulkhead prices range from $40 to $75 per foot.

All areas aren't suited to a breakwater-marsh, Rogers says. The method is most useful in areas where there's too much wave activity for marsh grasses alone to work.

To keep the cost reasonable, the offshore waters must be shallow — less than 3 feet deep 50 feet offshore.

The demonstration projects will be constructed in the northeastern part of the state during the next year.

— *Carla B. Burgess*

Field Notes

Insights into Current Sea Grant Research

A Helping Hand for Nesting Waterbirds

Jim Parnell's a little worried.

Worried that a beachcomber's dog might play deadly havoc with a nesting colony of royal terns.

Worried that unwary children might think nothing of tramping through a pelican hatchery or use hundreds of bird eggs in a fight.

In short, he's worried that one careless human act could spell death for thousands of terns, gulls, skimmers and pelicans. He's hoping folks and their animals will leave shorebird nesting sites alone.

Since the early 1970s, Parnell, a professor of biology at the University of North Carolina at Wilmington, has been counting and studying North Carolina's colonial waterbirds, those that nest in colonies instead of individually. Now, with the counting done, he's recommending ways to manage them.

He'd hate to see two decades work come to nothing at the hands of people who just don't know what they're doing.

"These birds are still fairly common so they like to gather in large groups for nesting," he says. "That makes them susceptible to disaster."

Through funding from Sea Grant and other agencies, Parnell and colleagues have done away with at least one danger that these multitudes of birds once faced.

In the mid-1970s, he and Bob Soots of Campbell University discovered that many common colonial waterbirds built their nests on the numerous dredge islands along the Tar Heel coast.

These islands were the domain of the U.S. Army Corps of Engineers. They frequently dredged navigational channels and dumped their spare sand on the islands, sometimes destroying the habitat desired by many of the nesting birds.

Jim Parnell

Photo by C. R. Edgerton

The Corps wanted to stop this destruction, but they didn't know when certain species of birds would be nesting on certain islands.

Enter Jim Parnell and Bob Soots.

Through their research, they identified not only the numbers of colonial nesting birds on the North Carolina coast, but they learned when they nest, where they nest and in which habitats the different species thrive.

The Corps of Engineers was glad to gain this knowledge. Now they use this information and plan their dumping and dredging in conjunction with the schedules of nesting waterbirds.

"It was a natural extension of our research," Parnell says. "My concern had been to institutionalize what we'd been doing in our research, to get established agencies to use the information."

The Corps program was so successful, the North Carolina Wildlife Commission eventually got involved in waterbird management. Through it's non-game species program, the commission began to use Parnell and Soots' research to institute a program aimed specifically at protecting nesting colonies of waterbirds.

And, the National Audubon Society uses the information in managing its Battery Island refuge at the mouth of the Cape Fear River. One of Parnell's former graduate students manages the refuge.

"So, both public and private lands are being managed with our research and suggestions," Parnell says. "All this started with our initial Sea Grant work that was funded in the early 1970s."

But the work doesn't stop here.

"We still need to learn to manage better," Parnell says. "We need further research on refining our waterbird managing techniques."

As the coast gets more crowded, management becomes more important," he says. "Now, more than ever, colonies of nesting waterbirds are vulnerable. It's up to us to protect them."

— *C.R. Edgerton*

The Aft Deck

A Bulletin Board of Updates and Events

Copeland Chairs Board

Sea Grant Director B.J. Copeland has been named chairman of the South Atlantic Regional Marine Research Board. The South Atlantic Board is one of nine such regional boards established last year by federal legislation to protect the nation's water quality.

Each board will include nine members: three appointed by the National Oceanic and Atmospheric Administration, two by the Environmental Protection Agency and six by the governors of the states located in the region.

One of the NOAA appointees will always be a Sea Grant director, who will act as the chairman. Copeland was chosen by the administrator of NOAA.

The South Atlantic region includes North Carolina, South Carolina, Georgia, Florida, Puerto Rico and the U.S. Virgin Islands. North Carolina is also represented in the Mid-Atlantic region, which spans from North Carolina to New Jersey.

In their first year, board members will assess the coastal water quality of the region and develop a plan for protecting and improving it.

In subsequent years, the board may be given federal appropriations to fund research and extension projects that relate to water quality.

Proposals Flood Sea Grant Office

On April 4, the Sea Grant office in Raleigh needed a traffic controller as a barrage of researchers and messengers dropped by to deliver 1992-1993 research proposals.

At the end of the day, 43 proposals were stacked on the floor of Director B.J. Copeland's office. The proposals fell into five research categories: fisheries, aquaculture, coastal processes, seafood technology and estuarine studies.

Copeland says he was happy with the scope and quality of research represented by this year's proposals.

The proposals will now undergo intense peer and state agency review. These reviews will dictate which proposals are selected for the Sea Grant omnibus proposal that will be presented to the National Sea Grant College Program in July.

Sea Grant Programs Help Reduce Deficit

The United States imports about half of the seafood consumed by Americans, resulting in an almost $7 billion annual trade deficit.

Across the country, Sea Grant programs are funding research projects and extension programs aimed at reducing this deficit by increasing foreign sales of our own products.

Here are a few examples.

- A U.S. company called on a North Carolina Sea Grant specialist to assist them in developing harvesting technology for blue crabs in Turkey. Today, this company is selling more than 3,000 pounds of blue crabs per day to European markets, with profits accruing to the U.S. firm.
- Virginia Sea Grant worked with a seafood processing firm to develop at-sea chilling and handling procedures for scallops. The higher quality scallops now being produced by this firm are being sold in Europe and Hong Kong.
- Until recently the Japanese turned up their noses at the tuna available in the United States. It wasn't fresh enough for their raw fish market. Recognizing the problem, Sea Grant specialists along the East Coast began working with tuna fishermen to improve their handling procedures. As a result, annual exports of fresh tuna have soared from less than $300,000 to more than $2 million in just five years.
- The Japanese import more than 7,000 tons of the seaweed, *Gracilaria*, every year for food and agar, a gelatinous product used as an additive in cosmetics, air fresheners and pharmaceuticals. In fact, so much of the seaweed is being harvested that natural supplies are dwindling. But Hawaii Sea Grant has supported basic research that may allow commercial cultivation of the seaweed in fish ponds soon.
- To reduce the need for imported fishery products, Sea Grant scientists from Maine to Hawaii are improving culture techniques for these species: mussels, clams, oysters, scallops, hybrid striped bass, crawfish, salmon and prawns.

Buying and Cleaning Soft Crabs

For many seafood connoisseurs, there's no greater coastal delicacy than a soft crab battered and fried.

If you have a hankering for these soft crustaceans, then late spring and early summer is the time to feed your need for this seasonal catch.

You can buy soft crabs from seafood markets or from fishermen who shed the crustaceans for $1 to $2 each.

Soft crabs should be bought either alive, freshly dressed or frozen, says Sea Grant seafood education specialist, Joyce Taylor.

If you buy them alive, be sure to clean them before cooking, Taylor says.

To clean, use kitchen shears to remove the eyes and mouth by cutting across the body just behind the eyes. Turn the crab on its back. Lift and remove the apron and vein attached to it.

Turn the crab over and lift one side of the top shell. With a small knife, scrape off the grayish-white gills. Repeat on the other side. Rinse with cold water and pat dry.

Never store freshly dressed crabs in the refrigerator more than one day, Taylor says. Crabs have a short shelf life and spoil easily. It's best to use the crabs the day they are bought.

Although most coastal cooks prefer to fry their soft crabs, the cushy crustaceans can be baked, broiled, grilled, stuffed and used with sauces. Here's a recipe for you to try.

Stuffed Soft-Shell Crabs:

8 soft-shell crabs, cleaned
1/4 c. chopped onion
1/4 c. chopped celery
2 T. chopped green pepper
1 clove garlic, minced
1/4 c. melted margarine
1 c. cracker crumbs
2 T. milk
1 beaten egg
1 T. chopped fresh parsley
1/2 tsp. dry mustard
1/2 tsp. Worcestershire sauce
1/4 tsp. salt
1/8 tsp. cayenne pepper
1/4 c. melted margarine

Sauté onion, celery, green pepper and garlic in margarine until tender. In medium bowl, combine sautéed mixture with crumbs, milk, egg, parsley, mustard, Worcestershire, salt and cayenne. Place crabs in a shallow, well-greased baking pan. Remove top shell from crabs, and fill each cavity with stuffing mixture. Replace top shell. Brush crabs with melted butter. Bake at 400 degrees for 15 minutes or until shells turn red and crabs brown slightly. Serves 4.

Big Sweep T-shirts HOT OFF THE PRESSES

North Carolina is celebrating the Big Sweep '91 with a brand new cast of characters.

"The Big Sweep Bunch" makes its debut on our white, all-cotton T-shirts, hot off the presses. Against a vivid splash of aquamarine, these five litter-

busters lead the attack on shoreline pollution.

The girl and boy, along with their aquatic animal companions, fish, bird and turtle, have their hands full — of cups, plastic and other throwaways. And you will too, if you join them in helping to clean our littered waterways.

This year's Big Sweep is Sept. 21. Join the Big Sweep Bunch by ordering your T-shirt now. They're available in a variety of sizes for children and adults, priced at $7 and $8.

Children's T-shirts come in small (6-8) and medium (10-12), and cost $7 each. Adult sizes, small (34-36), large (42-44) and extra large (46-48), cost $8.

To order, write The Big Sweep, Box 8605, North Carolina State University, Raleigh, N.C. 27695. Checks should be made payable to The Big Sweep. Include $1 per shirt for postage and handling. Please specify size and quantity.

Big Sweep '90's Dirty Dozen

The Dirty Dozen has finally emerged from the 165 tons of trash picked up across North Carolina during Big Sweep '90.

After analyzing the data recorded by the 10,000-plus volunteers who cleaned the state's waterways, the Big Sweep has come up with the 12 most prevalent shoreline litter items.

Cigarette butts, new to last year's data cards, were number one – volunteers picked up 77,080 in all. The filthy filters accounted for 19 percent of all the trash items collected.

Metal beverage cans came in second, with 25,443 retrieved. Glass and plastic beverage bottles followed in third and fourth places, respectively, with 24,073 and 20,704 recovered.

Paper pieces ranked fifth at 17,350, plastic pieces sixth at 16,624 and plastic foam pieces seventh at 15,060.

Plastic food bags represented 12,719 pieces of litter and the number eight item. In ninth place was plastic foam cups – 11,889 were picked up. Pieces of glass – 11,302 of them – came in at 10th place. Metal bottle caps ranked 11th, with 9,282 collected. And the 12th most prevalent item – representing 9,208 pieces – was plastic caps and lids.

Boating Tips for Cleaner Water

As a boat owner, you can do a lot to preserve the water whose resources you enjoy so much.

Remember the following rules of the aquatic road.

- Use onshore restrooms and pump-out facilities when possible. Never release garbage or raw sewage from your boat.
- Keep a trash container on board, keep it covered and make sure everyone on board uses it. If you dispose of your garbage at a marina, follow their recycling rules.
- Avoid bringing disposable plastic products on board.
- Make it a rule that no trash goes overboard, including old fishing line.
- Retrieve trash found in the water.
- Make sure your motor is not leaking gas or oil. Don't drain engine fluid into the water. Be careful not to spill when adding oil to your engine.
- Place a bilge pillow — an oil-aborbing sponge available in marine stores — in your bilge to remove oil from your bilge water.
- Clean your boat with non-phosphate detergent and a scrub brush. Avoid using toxic polishes or stain removers on or near the water.
- Obey posted speed limits, and go slow near banks that your wake can erode.

From Earth Guide: 88 Action Tips for Cleaner Water, *published by the Connecticut, New York and New Jersey Sea Grant programs.*

Back Talk

A Forum for Coastwatch Readers

Coastwatch encourages readers to write concerning topics relating to North Carolina beaches. We also seek feedback on articles and features appearing in the pages of *Coastwatch*. Letters should be no longer than 250 words and should contain the author's name, address and telephone number. Send all correspondence to *Coastwatch*, UNC Sea Grant, Box 8605, North Carolina State University, Raleigh, NC 27695. Letters may be edited for style. Opinions expressed on this page are not necessarily those of UNC Sea Grant employees or staff.

Sharks and Rays at The Point

Dear *Coastwatch*,

Many years ago, about 10, we were on The Point (at Buxton) when local netters brought in their catch in their nets.

I can never forget the giant manta or sting ray (and I mean giant!) that they left on the beach to die, along with all the sharks.

I know they are hardened salts, and it is hard to change them. I think they are not allowed to net at The Point anymore. I know how dangerous the rays are (my husband was stung by one!), but can anything be done about this?

I respect the fishermen and their ways, but what can be done? I will never forget that ray trying to get back to the water.

Sincerely, Mrs. James W. Morrison, Wayne, Pa.

You are correct, it is illegal to use a net to catch fish at The Point at Buxton. For those who may not know, The Point is that narrow sand spit that juts farthest into the ocean at Cape Hatteras.

It is a shame that the fishermen you witnessed allowed the ray and the sharks they caught simply to die on the beach. They may have been afraid of the creatures or the large ray may have been too heavy for the fishermen to lift.

They probably did not know that both of these fish are edible. The shark, in fact, is a marketable fish.

Sea Grant research has shown that skates and rays are a little known delicacy of the seas.

Many fishermen reject these broad, flat fish because they are considered a nuisance. This prejudice is a result of the fish's ugly appearance and the idea that they are dangerous because of their long, stinging tail, says Sea Grant researcher David Griffith.

In reality, skates and most rays are less dangerous than bluefish, for example. Skates do not have stingers, but a few species of rays have barbed stingers on their tails. These barbs contain a toxin that can cause painful puncture wounds. If you catch a ray, exercise caution and cut or clip off the tail.

For a free copy of our brochure about how to catch and prepare skates and rays for the table, write to us at the above address.

Our First Paid Subscriber!

Dear *Coastwatch*,

I know the first new 16-page magazine is free, but I hope I'm the first to send in a subscription for the balance. It's well worth it.

I've been participating as a *Coastwatch* recipient and sponsor for about 10 years now and aim to continue as long as your good work does. Sign me up!

Again, thanks and keep up the good work.

Sincerely, Cornelius Cummings, Allentown, Pa.

Coastwatch Survey Revealing

We learned a great deal about our readers in a recent survey of randomly selected *Coastwatch* subscribers.

We found that you liked our newsletter but would support an expanded magazine format.

We also discovered that most of you are older than 35 years, have subscribed to *Coastwatch* more than three years and share your copy with others.

The survey confirmed our belief that you are very concerned about what's happening on North Carolina's coast. Most said water quality and rapid coastal development are the major issues facing the coast in the 1990s. In your opinion, other important issues include tourism, coastal research and aquaculture.

We asked you about the job we do here at *Coastwatch*, and here's what you think. You like the way we focus each issue on a single topic. You would like to see more pages per issue, more in-depth reporting, more nature writing and more information about the results of Sea Grant research.

The magazine you hold in your hand is the result of your views about *Coastwatch*. We hope that you enjoy the changes and that you continue to let us know how you feel about what we're doing. Most of all, we hope you will continue to support our magazine by subscribing.

The Book Store

Publications to Enrich Your Coastal Library

Almost everyone makes a trip to the beach during the summer. Why not use a little of your beach time to learn more about this salty environment. If you want to know how to spot a rip current or identify a shell, send for these Sea Grant selections.

SEASHELLS BY THE SEASHORE

No day at the beach is complete without a shell search at the surf's edge. We're all attracted to these wonders of molluscan architecture, but how many of us know a coquina from a cockle?

To identify the shells you collect, send for a copy of *Seashells Common to North Carolina.* This 36-page booklet lists more than 100 shells frequently found along Tar Heel beaches.

Most listings have a brief written description of the shell and an accompanying photograph or drawing for easy identification. The guide can be used on the beach or in the classroom.

For a copy, write Sea Grant. Ask for UNC-SG-72-09. The cost is $2.

RIP CURRENTS

This poster can save your life.

Rip currents can be deadly if you don't know how to spot them and how to get out of them.

Sea Grant's *Rip Current Poster,* 11-by-28 1/2 inches, explains what causes the dangerous currents, how to detect them and what to do if you're caught in one.

This valuable information saved the lives of a Charlotte woman and six swimming companions. It can save yours too.

For a copy, write Sea Grant. Ask for UNC-SG-86-09. The poster is free, but please enclose $1 to cover postage.

DELIGHTFUL DUNES

Dunes are a beautiful backdrop to the roaring ocean. But the sandy mounds and the plants that stabilize them offer more than beauty.

They offer protection. They buffer inland areas from wind, waves, tides and storms.

Although sand makes the dune, vegetation holds it in place. And the plants that stabilize dunes have some special adaptive features that enable them to withstand the harsh beach environment.

To learn more about the ecology and biology of our coastal dunes, send for a copy of *A Guide to Ocean Dune Plants Common to North Carolina.*

This 72-page guide will teach you about dune habitat and the plants – trees, shrubs, vines, herbs and grasses – that call this environment home. It contains more than 50 botanically accurate drawings of dune plants frequently found on Tar Heel beaches.

For a copy, write Sea Grant. Ask for UNC-SG-87-01. The price is $4.50.

SALT MARSH PLANTS

As a companion to our dune plant guide, Sea Grant offers a smaller, but equally informative *Guide to Salt Marsh Plants Common to North Carolina.*

This guide describes the plants that live in the brackish tidal waters of the salt marsh. Like their cousins on the dunes, salt marsh plants also have some special features that allow them to adapt to the tidal marshes.

To identify the marsh plants, this guide also includes botanically accurate drawings of more than 25 shrubs, vines, herbs and grasses.

For a copy, write Sea Grant. Ask for UNC-SG-81-04. The cost is $2.

HOT OFF THE PRESSES

When it comes to soft crabs, demand still exceeds supply.

But Sea Grant agent Wayne Wescott has developed some new technology that may increase supply of these soft crustaceans.

Until recently, thousands of miles of waterfront property were unusable for soft crab production because of poor, murky water. In some areas, water was so turbid that the gills of peelers being held in shedding trays would clog and the pre-molt crustaceans would die.

Now, Wescott has developed a pool filtration system that will remove suspended sand, silt and debris from the water of flow-through shedding systems. Used in marginal water, the same filtration system prolongs the holding time for peelers.

To learn how to construct a filtration system, send for the four-page illustrated Blueprint, *Improved Flow-Through Shedding Using Sand Filtration.* Ask for UNC-SG-BP-91-02. It's free.

When ordering Sea Grant publications, please use your mailing label from Coastwatch *or the customer identification number that appears above your name. This will speed delivery. Also be sure checks are made payable to Sea Grant unless otherwise specified.*

Send all publication requests to: Publications, Sea Grant, Box 8605, North Carolina State University, Raleigh, NC 27695. If you wish to order multiple copies or need further assistance, contact Carole Purser, publication distribution manager, at 919/737-2454.

Photo by C. R. Edgerton

UNC Sea Grant
105 1911 Building
Box 8605
North Carolina State University
Raleigh, N.C. 27695-8605

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