



COAST WATCH

BEACH SWEEP '88 Coastwide Cleanup September 24th



Photos by Scott Taylor

Keeping The Coast Clear

BY KATHY HART

It was a perfect mid-September Saturday. The orb overhead was shining brightly, and highs were predicted in the 90s. Two friends and I were rolling down the highway toward Wrightsville Beach.

In another 30 minutes, we'd be there. Then it would be time.

Time to roll out the beach blanket, slather on the suntan lotion and catch the rays, right?

Not exactly.

Our plan called for rubbing on the sunscreen, pulling on a gardening glove and picking up a trash bag. It was finally time for Beach Sweep '87.

We'd been planning it for months.

Lundie Spence, a Beach Sweep coordinator and Sea Grant's marine education specialist, had checked everything twice to make sure North Carolina's largest beach cleanup was organized and ready.

But she need not have worried. A lot of people had pitched in before the first piece of trash was picked up.

The four coordinating agencies—Sea Grant, the N.C. Aquariums/Office of Marine Affairs, the Division of Coastal Management and the Division of Parks and Recreation—had donated countless hours of staff time and paid printing costs for posters, press kits, data cards, volunteer stickers and certificates.

Waste Management Co. and the N.C. Department of Transportation supplied trash bags. And Southern Golf Distributors made sure every volunteer had a pencil to record the litter.

All that was needed now were trash gatherers.

If everyone could have just seen the photographs I had, they would have had no trouble getting themselves out of bed for a few hours of cleanup.

We had pictures of birds that had starved to death because they were tangled in fishing line, fish whose bodies were nearly cut in half by six-pack yokes and sea turtles that had gagged to death on plastic bags.

For me, a lover of all lesser creatures, the photographs were heart-wrenching. The message was clear: Litter kills.

And if the message was clear, so was the solution. Pick up the trash.

So when we arrived at Wrightsville Beach, I was ready to bag it.

The first zone captain we checked with said he had plenty of volunteers—a class from the University of North Carolina at Wilmington and several families. He suggested we go to the south end of the beach and catch a boat to Masonboro Island.

As we got back in the car, I was disappointed. How much trash can there be on an uninhabited island? I wanted to make an impact. I wanted to bag lots of debris.

A volunteer with a boat ferried us over to the island. We took a data card, a pencil and three 30-gallon trash bags apiece and headed across the dunes for the beach.

There, we saw groups of trash collectors to the south and north. We opted for the southern route.

We walked close to the dune line, noticing that the group ahead had fanned out close to the water's edge. We could pick up the few things they missed.

We had not taken more than five steps, when friend and fellow Sea Grant communicator Nancy Davis found the first plastic drink bottle. And just a few feet ahead of that was a partially buried Styrofoam cup.

And so it began. For the first hour, Judy Hunter, our other companion, acted as recording secretary, noting each piece of litter on the data card.

"Piece of glass," I yell as I stoop to pick up the broken shard.

"Can," Nancy follows.

"Egg carton," I say.

Judy calls us to a momentary halt. We're picking up litter faster than she can mark the trashy finds on the card.

Soon we caught up with the group ahead. By then, Nancy and I had each collected a bag of trash.

The group was heading back. They were out of bags. Along just a half mile of uninhabited beach, 12 collectors had amassed 25 to 30 bags of trash. It certainly didn't speak well for people who use the remote island's beaches and offshore waters.

We moved ahead. Nancy took over recording duties, and Judy became trash collector. Now that we were sweeping uncleaned beach, the amount of trash increased drastically.

A shoe.

Pieces of glass.

A truck tire so big we couldn't get it out of the sand.

Large plastic soda bottles, 30 or more.

Drink cans, 15 to 20.

Plastic bags.

Styrofoam pieces, more than 50.

Matted fishing line.

Twisted pieces of metal.

Another quarter of a mile and our bags were full. It was time to turn back.

Yet, down the beach at the base of the dunes, I could see at least five more soda bottles. I wanted to pick them up because with each can and bottle I stuffed into my trash bag I became more intent on picking up the next.

But our bags were full and heavy. We were worried we wouldn't be able to carry what we had collected back to the rendezvous point. Faced with reality, we turned our backs on several more miles of littered beach.

I was angry.

The coastal waters I had written about for eight years, the waters that cooled us on a hot summer day and yielded delicious offerings of shrimp, crabs and fish were being used as garbage disposals. People were carelessly tossing their refuse aside.

I wanted to find every person who had left his litter to linger and ask, "Why didn't you pack it back?"

Unfortunately trash doesn't bear the name of its user. But it does provide clues. From the looks of our litter, we had a good idea that our culprits were picnickers, sunbathers, boaters and recreational anglers.

One hour and a boat ride later, we were back at Wrightsville Beach talking to regional Beach Sweep coordinator Andy Wood. He was busy collecting data cards so the trash could be tabulated.

Several weeks later the results were in and reported to the media. More than 1,000 volunteers had bagged 14 tons of trash along 150 miles of beach.

The tonnage included 33,375 plastic items, 18,597 Styrofoam pieces and 13,448 metal objects. Paper products amounted to 10,090, glass bottles and shards to 7,971, wooden objects to 3,372 and rubber toys and tires to 787.

Volunteers and organizers rated the event a success and began planning for the next year. Meanwhile, Beach Sweep coordinators accepted a national Take Pride in America award at the White House.

But it's not awards or publicity that make Beach Sweep a success. It's changing the attitudes and actions of people who use our beaches and coastal waters that makes a difference.

I know a walk along the beach will never be the same for me again. Now, instead of collecting shells or driftwood, I collect trash.

(For details on this year's Beach Sweep, see page 5.)

Plastics— Breaking Up Is Hard To Do

BY SARAH FRIDAY

It's just like an old Western standoff.

On one end of town are the world's plastic producers. On the other end, environmentalists.

Plastic producers manufacture the materials that make our bottles unbreakable and our panty hose more durable.

Environmentalists say we're paying a price for this convenience in the lost lives of marine wildlife and the pileup of trash.

Some dust flies, but there's no real shooting yet. And each claims to be wearing the white hat.

Plastic, from packaging to paint to polyester, has changed our lives since its genesis in the 1930s. Now it's an explosive \$15 billion a year industry.

The sturdy, yet flexible miracle material is chemically engineered to last. Most of the 200 forms of plastic can endure up to 450 years, scientists say.

So the plastics we throw away don't go away. They stay buried in landfills, locked in plastic bags and heaped in our oceans.

Environmentalists are worried.

At least 70,000 tons of plastic debris are dumped or lost each year in the world's oceans, estimates the National Academy of Sciences. Worldwide, the trash contributes to the death of thousands of sea turtles, birds, seals and fish each year.

The durability of plastic has caused problems on beaches, in waterways and in landfills.

Now environmentalists and lawmakers want

plastic producers to meet them halfway. The solution, it seems, is degradable plastic.

Their targets include mostly manufacturers of discarded plastics such as fast-food containers, six-pack rings, diapers and tampon applicators.

U.S. companies such as Dow Chemical Co. and Exxon Corp. are pouring millions of dollars into new technologies for degradable goods. And companies such as Webster Industries, which produces plastic bags, and Illinois Tool Works, a six-pack ring manufacturer, have had degradable products on the market since the 1970s.

Some in the industry scoff the move, saying "the quest for plastics degradability is a fantasy driven more by political pressure than common sense," according to an article in *Modern Plastics* magazine.

They are worried the anti-plastic movement could send packagers and consumers back to paper, glass and aluminum goods. And they favor more research of other choices such as improved landfill, incineration and recycling techniques.

Degradable plastics are more expensive to make, says Richard D. Gilbert, a professor of textile chemistry at North Carolina State University who has researched biodegradability. Industries can count on a 15 percent increase in costs, which will eventually be passed on to consumers.

In addition, the time some of these plastics can be used will be limited, Gilbert says.

And that's not good if you're a store-owner who sets six-packs of sodas outside your store, for example. Depending on the makeup, photodegradable rings could deteriorate before someone buys the drinks.

All plastics are photodegradable to some extent, but the process is very slow, says Vivian T. Stannett, a professor emeritus in the NCSU Department of Chemical Engineering.

What scientists seek now are ways to greatly speed this process.

Conventional plastics are made of synthetic polymers—long chains of molecules of the same chemical unit.

Think of it as a beaded necklace, Stannett suggests.

A natural polymer such as sugar is small and does not have many "beads." But polymers for plastics can contain up to 10,000 molecules, Stannett says.

The long chains contribute to the plastics' high strength, flexibility and toughness, Gilbert says.

And these properties allow them to be used in hundreds of ways.

Plastics used in textiles, say, are different from those in latex paint. Acrylic differs from the plastic in a Styrofoam cup.

To make plastics degradable, the chemical bonds that hold the beads together must be sensitive to light, oxidation, other chemicals, bacteria or enzymes.

In 1976, Webster Industries began adding a chemical to raw plastic resins to produce a line of degradable garbage bags, says Doug Klem, a regional sales manager in Charlotte, N.C. All it takes is a few hours of sun to start the process.

When ultraviolet light strikes the photosensitive bonds in the long polymer chain, it breaks the bonds and divides the molecules into shorter and shorter chains. Eventually, you can bury the bag, and it will shred to almost nothing.

The time it takes to disappear varies, Klem says. Variables include the time of year, temperature and the amount of available ultraviolet light.

In Raleigh, N.C., a bag might take one and a half years to two years to decay, Klem says. In Maine, it would take about five years.

To make plastics biodegradable, a natural or synthetic polymer must be added to the long chains that can be eaten by bacteria and enzymes. Starch and cellulose are two natural polymers often added.

One Illinois industry added cornstarch to a plastics mixture to create such a bag. Once the bag is buried, the cornstarch becomes food for the bacteria and other microbes in the soil. As they eat the "bonds," the long chains become smaller. The more cornstarch used, the faster the bags degrade.

Although salespeople agree the market for degradables is small now, they expect to see an increase as people become more environmentally aware and more legislation is passed.

New state laws requiring degradable six-pack rings haven't hurt business for the Hi-Cone Division of Illinois Tool Works. They make a photodegradable ring that can rot in two to 15 weeks, depending on the sunlight.

Although such degradable items could alleviate problems for wildlife in the long-term, they can still be harmful in the short-term.

After all, even one month is too long for a brown pelican to escape a tangled mesh of discarded fishing line.

Litter Laws

BY NANCY DAVIS

You've just drained the last few drops of a diet soda. And you figure it'll be OK to casually drop the plastic drink bottle to the sand.

No one will see, right?

WRONG.

You've been caught. A concerned citizen sweeps down on you with all the zeal of Gomer Pyle yelling "Citizen's arrest! Citizen's arrest!"

How dare you trash his beach? How dare you endanger the lives of marine wildlife? How dare you?

You don't have to live in Andy Griffith's Mayberry to get turned in for breaking the law.

All it takes is a soft drink bottle, a cigarette butt or a plastic sandwich bag carelessly tossed aside. You've broken the law, and now you have to pay.

In North Carolina, littering is a crime whether you're on the highway, the beach or the water, says Donna Moffitt, assistant director for the N.C. Office of Marine Affairs and an attorney.

The state's litter laws are twofold, she says.

The criminal statute makes littering a misdemeanor punishable by a fine of \$50 to \$200 for the first offense or a term of community service.

The water safety statutes prohibit littering of waters. The maximum fine is \$250.

Both laws are enforced by law enforcement officers and wildlife protectors.

Moffitt says officers are more likely to cite beachgoers for littering if they see the violation. But officers will also take the word of a witness.

Even so, few folks are bold enough to confront a litterbug with his crime. If an officer is nearby, you can point the offender out to him, she says.

If not, you may have to play detective. Follow the litterbug to his car and get his license plate number. A description of the person is also helpful. Then call the local police department and report the crime.

If the violator doesn't admit his crime, you may have to go to court to help prove the case, Moffitt says.

Once an offender is found guilty, the judge may order the person to pay a fine or to perform a community service.

Moffitt would like to see more offenders sentenced to clean up the beaches that they helped trash.

To encourage that, she sent a letter to all district attorneys with coastal counties in their jurisdiction, encouraging them to ask for sentences to make litterbugs pick up trash as their punishment.

Law officials in coastal counties say littering is a minor offense compared to some of the crimes they encounter, but that doesn't stop them from issuing citations.

Police Chief William R. Duke, of the Atlantic Beach Police Department, estimates his force hands out about 25 citations for littering each month.

But his officers encounter many more offenders than that.

Sergeant Alan K. Miller of the Atlantic Beach squad usually gives offenders a tongue lashing. If they're cooperative and offer to pick up their litter, he'll let them go.

But not everyone is cooperative. "A lot of times, they act surprised when I approach them," he says. "They'll know they violated the law, but they don't see anything wrong with it."

Miller sets them straight by issuing a citation.

With more frequent reports of sunbathers being injured and wildlife being harmed, Police Chief Duke predicts his officers will crack down even harder.

The U.S. government is also getting tough on litterbugs.

Last year Congress ratified an amendment to the MARPOL Treaty (marine pollution), making it illegal for ships and boats to dump plastics in the ocean. The treaty, which goes into effect at the end of this year, will be enforced by the Coast Guard.

The beauty of the amendment, Moffitt says, is that "it applies to all boats, no matter what size, from the very smallest fishing boat all the way up to the supertankers."

The states are cracking down, too. More than a dozen states have passed laws requiring that plastic six-pack yokes be photo- or biodegradable. North Carolina officials are considering introducing a similar bill to the legislature next year.

Some localities have gone even further. Suffolk County on Long Island passed a law forbidding retail food establishments to use plastic grocery bags, food containers and wrappers beginning next year, according to a report in *Newsweek*.

But despite all the legislation passed, cleaning up the coast ultimately lies in the hands of the individual. So remember, if you see someone littering, don't be afraid to yell, "Citizen's arrest."

Beach Sweep '88

Do your part to keep our coast clean. Join us for Beach Sweep '88, Sept. 24 from 9 a.m. to 1 p.m.

To volunteer, call the coordinator for your favorite beach. If your beach isn't listed, contact the regional coordinator.

We'll supply the trash bags. You bring shoes, a pair of gloves, a hat and some sunscreen.

See you on the 24th.

Beach Sweep '88 Zones and Zone Captains

Northern Region: Duck to Ocracoke
Regional Coordinators: Rich Novak
(919/473-3937)

Duck to Southern Shores: Rex Peters
(919/261-8148)
Kill Devil Hills: Tommy Zincome (919/473-2161)
Nags Head: Bob Oaks (919/441-8274)
Oregon Inlet to Hatteras: Al Stein (919/995-5059)
Pea Island Wildlife Refuge: Bonnie Strauser
(919/473-1131)
Cape Hatteras to Frisco: Shay Clanton
(919/986-2279)
Cape Hatteras National Seashore: Tom Hartman
(919/473-2111)
Ocracoke: Howard Bennick (919/928-1981)

Central Region: Cape Lookout National Seashore to Swansboro
Regional Coordinator: Diane Warrender
(919/728-8595)

Cape Lookout National Seashore: Pat Linebacker and Felix Ravello (919/728-4121)
Rachel Carson Estuarine Sanctuary/Core Banks: Patty Hay (919/728-7317)
Radio Island: J.T. Stevens (919/728-2019)
Morehead City Waterfront: JoAnn Braun (919/247-4003)
Fort Macon State Park: Ranger Scott Hartley (919/726-3775)
Atlantic Beach East: Ruth King (919/223-4176)
Atlantic Beach West: John McKay (919/728-3877)
Pine Knoll Shores: Maureen Parker (919/247-5479)

Indian Beach: Dave and Eva Gagnon
(919/247-3614)
Emerald Isle: Jean Zappa (919/354-6776)
Hammocks Beach State Park: Sam Bland
(919/326-4881)
Swansboro: Sarah Humphries (919/455-4470)

Southern Region: Sneads Ferry to Caswell Beach
Regional Coordinator: Andy Wood
(919/458-8257)

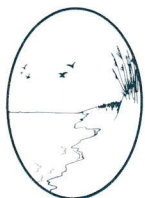
Sneads Ferry: Sarah Humphries (919/455-4470)
Surf City to Topsail Beach: Inez T. Bradt
(919/328-2071)
Figure Eight Island: Duncan Phillips
(919/686-9448)
Wrightsville Beach: Ed Brooks (919/763-8661) and Tere Barrett (919/341-4191)
Masonboro Island: Richard Gwathmey
(919/686-9761); Bill Woodhouse
(919/395-3348); and Gail Miller
(919/458-5498)
Carolina Beach: Town of Carolina Beach
(919/458-8291)
Kure Beach: Nancy Pritchett (919/762-0965)
Carolina Beach State Park: (919/458-8206)
Zeke's Island: Mike Johnson (919/799-5998)
Bald Head Island: Bill Brooks, Bald Head Nature Conservancy, P.O. Box 10999, Bald Head Island, NC 29416
Lee Island: Ron Sykes (919/762-1806)
Oak Island (Caswell, Yaupon and Long beaches): Sam O'Leary (919/279-5518)
Holden Beach: Pat Weaver (919/763-2931 Ext. 271)
Ocean Isle: Hayden O'Neill (704/375-4349)
Sunset Beach: Hubert Reeves (919/763-1312)
Wilmington Beach: John Crowder (919/763-1312)
Hutaff Island: Charlie Baker (919/686-9674)

Beach Sweep '88 has been made possible through donations and support from the following organizations:

McDonald's
Webster Industries/Good Sense bags
Hatteras Yachts
Southern Golf Distributors
Highland Press
Waste Management Company
WWAY-TV Wilmington
Center for Environmental Education

THE BACK PAGE

"The Back Page" is an update on Sea Grant activities — on research, marine education and advisory services. It's also a good place to find out about meetings, workshops and new publications. For more information on any of the projects described, contact the Sea Grant offices in Raleigh (919/737-2454). For copies of publications, write UNC Sea Grant, NCSU, Box 8605, Raleigh, N.C. 27695-8605.



The White House lawn must have been impeccable July 26 or someone from North Carolina would have noticed. That's when Beach Sweep coordinators went to Washington to receive an award for last year's cleanup.

In June, the Take Pride in America awards program named North Carolina's Beach Sweep '87 a national winner.

Coordinators for last year's cleanup were UNC Sea Grant, the N.C. Division of Coastal Management, the Office of Marine Affairs and the N.C. Division of Parks and Recreation. Representatives attended the national awards ceremony July 26 on the south lawn of the White House.

In January, Beach Sweep '87 placed first in the government agencies category of North Carolina's Take Pride in America Awards and became eligible for the national competition.

Take Pride in America is a national public awareness campaign to promote wise use of public lands and resources. Its awards program was established to recognize outstanding resource stewardship projects and programs. This year, 540 award nominations were received from 48 states and the District of Columbia.

Beach Sweep '87 brought more than 1,000 people together Sept. 19 for the North Carolina's largest coastal cleanup.

Participants collected more than 14 tons of trash during the three-hour event and recorded each piece on data

cards. The cleanup's success spurred organizers to plan Beach Sweep '88, which will be Sept. 24.



The N.C. Aquaculture Development Conference will be held Nov. 1-2 at the Sheraton Hotel in Greenville.

The two-day conference will attract researchers as well as leaders in the aquaculture industry. Conference topics include: an overview of the industry and its economic potential for the state; culture techniques for potential aquaculture species; research; and marketing. Discussion will center on catfish, crawfish, shrimp, hybrid striped bass, mountain trout and tilapia. Participants also will tour aquaculture sites in Pitt County.

Sea Grant Director B.J. Copeland will lead a panel on future research needs for the aquaculture industry. And Associate Sea Grant Director Ron Hodson will describe the potential for the hybrid striped bass.

Other featured speakers for the conference include Richard Lord of New York's Fulton Fish Market, the largest wholesale seafood market in the United States; Larry Delabrettonne, a Louisiana State University extension specialist on crawfish production; and Peter Redmayne, editor of *Seafood Leader* magazine.

The conference is sponsored by the N.C. Chapter of the Soil and Water Conservation Society, N.C. Agribusiness Council, N.C. Small Business and Technology Center, N.C. State University College of Agriculture and Life Sciences and the N.C. Department of Agriculture.

To register, contact Rodney Johnson, N.C. Aquaculture Development Conference, 412 W. Queen St., Edenton, N.C. 27932. Or call 919/482-7437.

Governor James Martin has established a task force to make recommendations for boosting the state's fledgling aquaculture industry. He has

appointed several experts from Sea Grant to serve on committees for the task force.

Sea Grant Director B.J. Copeland is chairman of a committee on aquaculture education, research and technology. Walter Clark, Sea Grant's coastal law specialist, will help to analyze the legal issues surrounding the new industry.

Sea Grant marketing specialist Skip Kemp and economic specialist Jim Easley are on a committee to assess the financial issues of aquaculture in the state.

And seafood specialist Frank Thomas will help analyze the production and processing aspects of the aquaculture industry.

The task force was established to analyze an aquaculture plan recommended by the N.C. Marine Science Council last year.



Walter Clark, Sea Grant's coastal law specialist, recently received an Outstanding Extension Service Award from North Carolina State University. He and nine others were selected from more than 800 eligible extension specialists in the state.

Jim Murray, director of Sea Grant's marine advisory service, nominated Clark for his work with several successful projects in the past year.

In response to numerous requests for legal information regarding beach property, Clark wrote a concise guidebook titled "Your Place at the Beach: A Buyer's Guide to Vacation Real Estate." It was published in conjunction with the N.C. Real Estate Commission and distributed to more than 20,000 people.

Clark also teamed up with Dan McLawhorn, an attorney with the N.C. Attorney General's office, to devise a management plan for water use in the state's estuaries. This work led to a project with the Albemarle-Pamlico Estuarine Study Program that

Continued on next page

will implement the recommendations in North Carolina's Core Sound.

Clark's involvement includes membership on two aquaculture task forces, development of coastal law workshops and conferences, and continued work with the public.

"His programs have had impact in the wise development and conservation of our state and nation's marine resources," Murray says.

Coastwatch is published monthly except July and December by the University of North Carolina Sea Grant College Program, 105 1911 Building, Box 8605, North Carolina State University, Raleigh, N.C. 27695-8605. Vol. 15, No. 8, September 1988. Dr. B.J. Copeland, director. Kathy Hart, editor. Nancy Davis and Sarah Friday, staff writers.

Coastwatch is a free newsletter. If you'd like to be added to the mailing list, fill out this form and send it to Sea Grant, Box 8605, NCSU, Raleigh, N.C. 27695-8605.

Name _____

Address _____

City•State•Zip Code _____

To help us specialize our services, please answer these questions.

I am in the following line of work:

- | | |
|---|--|
| <input type="checkbox"/> Boatbuilding/Repair | <input type="checkbox"/> Marina operator |
| <input type="checkbox"/> City/County government | <input type="checkbox"/> Marine recreation |
| <input type="checkbox"/> Commercial fishing | <input type="checkbox"/> Mass media |
| <input type="checkbox"/> Educator | <input type="checkbox"/> Seafood processing/marketing |
| <input type="checkbox"/> Farming | <input type="checkbox"/> State government |
| <input type="checkbox"/> Homemaker | <input type="checkbox"/> University professor/researcher |
| <input type="checkbox"/> Lawyer | <input type="checkbox"/> Other _____ |

Coastal property owner yes no Boat owner yes no

\$_____ contribution to defray printing costs for *Coastwatch*

COASTWATCH

105 1911 Building
Box 8605
North Carolina State University
Raleigh, NC 27695-8605

Nonprofit Organization
U. S. Postage
PAID
Raleigh, N.C.
Permit No. 896

Address correction requested

