



Coastwatch

UNC SEA GRANT ■ OCTOBER 1990



◆
**Big
Sweep
'90**

◆
**160
Tons
of
Trash**



Photo by C.R. Edgerton

Volunteers Pick Up Everything

Tar Heel citizens made a Big Sweep across North Carolina. They turned out in record numbers Sept. 22 from the mountains to the coast to pick up litter from the state's beaches, lakes, rivers and streams.

Armed with garbage bags donated by GLAD and data cards to record their trashy finds, more than 9,000 North Carolinians bagged 160 tons of trash along Tar Heel shorelines.

Approximately 160 sites across the state were designated for pickup during The Big Sweep '90, the nation's largest statewide waterway cleanup.

Big Sweep '90 was the most successful cleanup in the history of the event, which began in 1987. The 1990 litter totals were double the amount of trash collected in 1989. And volunteers almost tripled. In 1989, 3,600 volunteers bagged 81.5 tons of debris.

Volunteer turnout for this year's 1990 pickup was heaviest along the beaches and in the Triangle and Charlotte areas. Along the Tar Heel coast, 6,600 volunteers collected 81.5 tons of debris—half of the state debris tonnage.

Showers in the mountains and northern Piedmont put a damper on the cleanup in those areas, reducing volunteers and the amount of litter collected.

In their efforts to tidy up our shorelines, volunteers bagged everything from cigarette butts to the kitchen sink.

Unusual finds included an inflatable woman, a two-ton truck, a 1947 Orange Crush bottle, a boarding pass from a Pakistan airlines, an unopened bottle of pickled pig brains, a band leader's hat, a disassembled houseboat and a pay phone.

And although it's these bizarre finds that capture initial attention, it's the more mundane trash that keeps Big Sweep organizers planning cleanups.

Again, plastic and plastic foam items—beverage containers, jugs, lids, cups, cartons—were prevalent at all sites.

Along the beaches, volunteers and site coordinators reported finding abandoned beach chairs, discarded crab traps, lumber, metal and lots of cigarette butts.

Emerald Isle site coordinator Jean Zappia says her volunteers amassed more than 10,000 cigarette butts. That's more butts than were collected for the entire state during the 1989 Big Sweep. At Lake Wheeler in Raleigh, another 3,953 butts were reported.

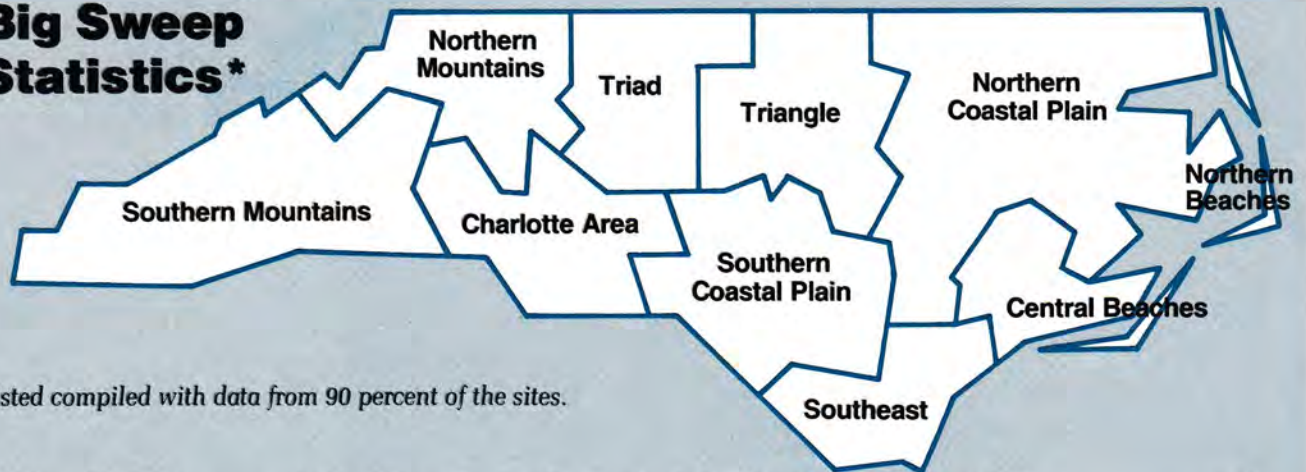
Cigarette butts, or filters, were a new item listed on this year's data cards. Although many people consider the paper-covered filters biodegradable, they are not. Most are made of a synthetic material called cellulose acetate.

Hundreds of deflated balloons scattered the beach at the Pea Island Wildlife Refuge on Hatteras Island. Site coordinator Bonnie Strawser said she was surprised by the number collected. One couple picked up 92 balloons in a short stretch of beach.

At Radio Island near Morehead City, Bruce Naegelen's volunteers sacked bag after bag of military debris—cans of MRE's (meals ready to eat), flares and other items.

But no matter what kind of debris they confronted, volunteers were

Big Sweep Statistics*



*Listed compiled with data from 90 percent of the sites.

Northern Beaches	3,514 volunteers	50.4 tons	Triangle	1,168	17.6
Central Beaches	616	18.6	Triad	283	8.0
Southeast	1,870	18.0	Charlotte Area	930	25.8
Southern Coastal Plain	97	1.3	Northern Mountains	115	2.6
Northern Coastal Plain	401	5.7	Southern Mountains	264	10.8

(Including the Kitchen Sink)

By Kathy Hart

dedicated to the cause.

Ed Brooks, site coordinator at Wrightsville Beach, said one group of high school volunteers spent more than an hour digging out an enormous sheet of plastic that had blown off a nearby construction project.

At inland Big Sweep cleanup zones, citizens heaved satellite dishes, stoves, refrigerators, sofas, chairs and car parts from muddy creek beds and lake shores.

Troop after troop of Boy Scouts, Girl Scouts and Brownies flocked to shorelines to pick up debris. Members from church groups, 4-H clubs, environmental alliances, school classes and college organizations deposited can after bottle after plastic bag after cigarette butt into their bags.

"It was gratifying to see the number of people who came to The Big Sweep and to see their dedication to the cause," says Lundie Spence, Sea Grant's marine education specialist and the coordinator for The Big Sweep.

"We feel like we're building a base of awareness about litter, especially



Photo by C.R. Edgerton

among young people," she says. "And we hope this awareness eventually translates to less litter in our waterways."

In some cases, Big Sweep has already made a difference. Officials from coastal beach communities have installed more beach trash cans and often send out municipal cleaning crews.

Some coastal site coordinators are actually beginning to see a decrease

in the litter amassed during The Big Sweep.

But that's not the case inland.

At lakes Jordan, Norman, Wylie, Hickory, James and High Rock, debris—bait containers, beer cans, soft drink bottles and plastic foam pieces—is often as much a part of the scenery as the oaks, pines and maples.

The natural currents of the Cape Fear, Tar, Dan, Uwharrie and Neuse rivers leave deposits of filthy debris in the curvature of their banks.

Boating access sites on these waterways are treated as giant trash cans.

"We definitely have our work cut out for us inland," Spence says. "We need to mount an educational campaign among boaters and recreational fishermen. And we need to find a way to get trash receptacles placed at access points."

Only a few days after Big Sweep '90's completion, Spence and the coordinating committee are already planning for 1991.

The date will be Sept. 21.

Be there. ■

Big Sweep '90 Organizers

UNC Sea Grant
Keep America Beautiful
N.C. Division of Water Resources
N.C. Division of Coastal Management
N.C. Wildlife Resources Commission
N.C. Division of Parks and Recreation
Keep North Carolina Clean and Beautiful
N.C. 4-H
N.C. Aquariums
Duke Power
Western North Carolina Development Association
WGHPiedmont in the Triad
WRAL in Raleigh
WSOC in Charlotte
WLOS in Asheville
WWAY in Wilmington
WCTI in New Bern

Big Sweep '90 Contributors

The N.C. Beer Wholesalers Association
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Duke Power
Waste Management Inc.
Telecom USA
Texasgulf Inc.
Weyerhaeuser
GLAD Wrap & Bags
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Fiddler's Gallery and Framing
House of Raeford, Inc.
D-G Enterprises
Wake Soil and Water Conservation District

A Special Thanks to These Coordinators for Making The Big Sweep '90 a Success:

Rex Peters	Lois Nixon
Nancy Cowal	Kay Rogers
Diane Warrender	Linda Ritter
Nancy Pritchett	Lynne Leonard
Jan Manning	Lucinda Trew
Caroline Parker	Pat Brinkley
Anne Morriss	Sarah Humphries

Cape Fear Trek Yields Boatloads of Garbage

By Carla B. Burgess

Three fishermen sit along the banks of the Cape Fear River, watching their lines and, every now and then, casting a glance at the commotion on the water.

Six canoes glide over the glassy surface of the river just outside of Fayetteville, darting in and out of the arches of draping willow oak branches along the shore. Small motor boats hum along the river too, making frequent stops on the bank near the fishermen.

Cathy and Bill Merritt motor to the shore with their first haul of the morning. Four large trash bags yield the catch of the day—bottles, cans, bait cups, a pair of pants, a tire and rim, a shoe, plastic bags.

They anchor the front of the skiff

Off and on all morning we motor up the river until we see a trashy stretch of bank that is accessible. Then we get out and search for debris. We find it along the water's edge, nestled in the ground cover, wedged in fallen trees and even hidden under blankets of poison ivy.

"This is disgusting," Cathy says, wondering what impact it would have if we dumped the debris into the offenders' kitchens.

Bill and Cathy are perturbed that Big Sweep doesn't entice people who need its educational message most.

"The ones that throw this stuff down aren't the ones out here picking it up today," Bill says.

Bill and Cathy say they heard about Big Sweep on the radio, then



"I think fishermen are the worst offenders," says Mike Hillenbrand, a motorboat volunteer. "I've seen a lot of bait cans and cups."

A canoe volunteer, Candace Curry, is surprised by all the containers of chicken livers apparently left by fishermen who use them for bait.

"You'd think they're the naturalists," she says.

The canoes stay downriver during the cleanup, and the powerboats go the other way, checking back with the paddlers often to relieve them of any full trash bags. By the end of the cleanup, the group has netted more than a half-ton of debris from the river.

Many things impress me about my first Big Sweep, including the attitude of the volunteers. Most of the people don't know each other, yet they are friendly and cooperative.

In their pursuit of trash—things that are often wet, filthy and heavy—they are determined and ambitious. Volunteers pull tires and even a TV set from the water. Cathy Merritt wrestles with a hollowed-out appliance filled with mud.

Even after everything I have heard about Big Sweep finds, I am unprepared for the grossness of it all. Especially the coils of steel belts and charred patches of ground we find all along the banks—the remains of mounds of tires that have been burned there.

Even leader Anne Morriss, who heads Cumberland Urban Recycling

Photo by Carla B. Burgess



in the wet sand, and I help Cathy add the bags to the pile on the shore.

"Catch anything?" Bill hollers to the fishermen on the bank.

One of the men nods his head left and right.

Bill motions with his head toward the pile of bags. "You see all this trash we've been picking up. You're not going to leave any of yours behind, are you?"

"Naw," the fisherman says, as we push off.

called Anne Morriss, the coordinator for the region and also for this site cleanup. They live on the river a few miles away and use it for boating and skiing.

The Merritts are among 20 volunteers who came this morning to the boating access area on N.C. 87 south of Fayetteville. By early afternoon, they will have cleaned nearly 4 miles of the Cape Fear River, which feeds into the Atlantic Ocean below Wilmington.

and Beautification, is unprepared for what volunteers find on the banks of the Cape Fear.

It's nearing the end of the cleanup, and the motorboats and canoes congregate around a steep bank littered with a water heater, a bathtub and a bicycle. Some people around me suggest we might be able to haul some of the junk back.

But when volunteer Ron Potter follows the trail of debris up the more than 50-foot bank, he finds a dump site laden with household and electrical waste, appliances and furniture. Another dump site is a few yards away.

Potter opens a bag from a recent deposit of household garbage searching for an address.

"I think a lot of it was what I had expected to find," says Morriss. "But I don't think I expected to find an illegal dump today."

Morriss says she will report the dumps to the county health department.



Through cleanups such as The Big Sweep and by regular monitoring of the water in the Cape Fear, people are able to be watchdogs for the environment, says Bill Merritt, who recently applied to join the state's Streamwatch program.

Merritt says volunteers affiliated with the program blew the whistle last year on a local feed company that was dumping raw sewage and chicken parts into the river.

Photographs of the dump site are

taken, and the group prepares to head upriver. Now horsepower takes over and the paddlers get a chance to rest. The powerboaters throw out their towlines and the canoeists take hold.

Back at the landing, the volunteers get out data cards and tally the trash collected. There are some 30 bags in the piles and a mound of tires and rims.

"That was just a dent, but I guess you've got to start somewhere," says Bill Merritt. ■

Big Sweep Leader Wants to Change Attitudes

By C.R. Edgerton

She woke up September 22 with trash on her mind.

It was 6 a.m.

As Big Sweep regional coordinator Diane Warrender sipped on her first cup of coffee, she thought of her 20 cleanup sites in the Carteret County area.

In her mind, she traced the day's planned agenda:

- Stop at McDonald's to pick up donated orange drink for volunteers.
- Drive to Pivers Island to put up Big Sweep signs.
- Meet Ranger Mike Rickart at the Fort Macon State Park cleanup site.
- Drive to the landing to check on the 90 or more folks who were shoving off to clean up Cape Lookout and Shackleford Banks.

Then she stopped. An hour and a half had passed since she'd first

opened her eyes. There was no time left to daydream. The day would work itself out.

Barring bad weather, Big Sweep '90 would be a success. Months of planning would pay off in one four-hour stretch. Hundreds of volunteers would clean as much of North Carolina's central beaches as possible.

Diane Warrender was ready to hit the road running.

Warrender hasn't always been an environmentalist.

Until about four years ago, the Salisbury native lived like the majority of Americans. She didn't think twice about what happened to her trash once it left her home, car or boat.

Continued





She was concerned about clean water and air, but she had not translated that concern into action.

Before she was named Keep America Beautiful coordinator for Carteret County, she had what she calls "inklings of experience" with water quality problems as secretary of a homeowners association.

"And my husband and I had always been boat owners," she says. "We had been sailing in Hudson Bay and dodging all the debris in the water there. That was background."

Then she landed the KAB job in 1986.

"As time went by and as I was exposed to more pollution problems, especially marine pollution, my awareness was heightened," she says.

"I began to feel our own program here in Carteret County could make a difference. I saw no government agencies doing anything to deal with these problems, so we met the challenge."

Now, she says she has become "a bit obsessed." "I eat, sleep and work the whole concept of a cleaner marine environment," she says.

Warrender was one of Big Sweep's original coordinators in 1987, when the cleanup was confined to the beaches and was called Beach Sweep. She entered the Beach Sweep arena skeptical about how much difference a handful of people picking litter from the beaches could make.

"That first Beach Sweep we picked up bags and bags of trash," she says. "They were lining the beach. Back then there weren't many garbage cans on the beach and not much awareness on the part of the municipalities."

Beach Sweep changed all that forever, she says.

"The towns didn't like all the bad publicity they were receiving about the trash on their beaches. So, the next year, they had town workers pick up trash the day before Beach Sweep '88. Now, they have placed more garbage cans on the beaches and they pick up the trash on a regular basis."

That change in attitude is what Big Sweep is all about, Warrender says. The metamorphosis extends not only to town officials, but to recreational fishermen and others who contribute much of the litter that washes ashore.

Her challenge now, she says, is to involve more local people in the annual waterway cleanup.

"The first two years, I was discouraged at the number of local people participating," she says. "We had more people from other areas coming in."

Then, in 1989, the first year of Big Sweep's statewide effort, Hurricane Hugo's winds and rains came ashore and kept potential Big Sweepers indoors.

"This year I've seen a real change in local attitudes," she says. "Earth Day helped here and opened up a lot of doors for us to visit local schools."

Warrender steps out of her station wagon at a Big Sweep site and witnesses the fruit of her school visitations. She meets a busload of 47 middle school students from Havelock and about 50 students from West Carteret High School. All have come to pick up litter.

"This year there have been more young people," she says. "There are large numbers of groups, such as Brownies and Girl Scouts, church groups, clubs, that kind of thing."

Those young people are more than just litter grabbers. They are the key to a brighter future for the marine environment, Warrender says.

"Since the whole focus of Big Sweep is changing attitudes, what better people to start with than the youth," she says. "They begin to think about the trash they generate and their responsibilities for doing something about it."

"They won't be thought of as environmentalists," she says, "because taking responsibility will be a natural part of their lives, like brushing their teeth. Everyone will be doing it."

"And, in 20 years, we're all going to be more intimately involved with our garbage, whether we like it or not."

She gets back into her car and drives in the direction of the Grayden Paul Bridge at Beaufort, where another cleanup crew has gathered to meet the challenges of Big Sweep '90. ■



Photo by C.R. Edgerton

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, Box 8605, NCSU, Raleigh, N.C. 27695-8605.



Fish farming is alive and well in North Carolina. And there are plenty of aquaculture experts who want to share their know-how with you.

They'll get their chance at the third annual N.C. Aquaculture Development Conference, scheduled for October 30-31 at North Carolina State University in Raleigh.

The conference will feature an impressive slate of experts including Sea Grant's Associate Director Ron Hodson, who will speak on the culture of hybrid striped bass. Sea Grant Marine Advisory Service agents Skip Kemp and Wayne Wescott will talk about clam nurseries and crab shedding, respectively.

Participants in the two-day conference will hear the latest research on pond culture systems, aquaculture in existing farm ponds, raceway and tank systems, and estuarine aquaculture.

A technology session will introduce participants to recirculating systems, biological filtration technology, and aeration and oxygen injection systems. Discussions will center on problems in production with recirculating systems.

The conference will end with a tour of "the fish barn," a new aquaculture demonstration and research facility at the university. An organizational meeting of the N.C. Aquaculture Association will be held after lunch on the second day of the conference.

Registration for the conference is \$45 (\$55 after October 25). This includes handout material, lunch, tours, break

refreshments and the Aqua-Food Festival, featuring heavy hors d'oeuvres made from Tar Heel aquaculture products.

For registration information, contact Debra Williams at 919/338-6200.

If you missed the wave of aquatic fashion that swept through North Carolina during the statewide shoreline cleanup, you didn't miss the boat.

Big Sweep '90 T-shirts are still available with a price tag that's hard to beat. You'll never be out of style in the colorful all-cotton T-shirt with the Big Sweep logo.

Regional coordinator Diane Warrender is pictured sporting hers in this issue. Take a look!

To order, send \$6 per shirt to UNC Sea Grant, Box 8605, NCSU, Raleigh, NC 27695. Please specify size (S,M,L,XL) and quantity. Make checks payable to The Big Sweep.

Make an environmental statement and help a worthy cause; order a Big Sweep T-shirt today while quantities last.

Fishermen in South America are taking some tips from the Turks on who to consult about crabs.

A group of 15 fishermen and management representatives visited Sea Grant Marine Advisory Service agent Wayne Wescott in October for a lesson on crabbing and trawl fisheries.

"They're very interested in our blue crab fishery because they're thinking about starting a fishery themselves," Wescott says. "This might even result in some consulting from Sea Grant to South America."

Wescott is not a stranger to these out-of-country experiences.

In January 1988, he traveled to Turkey to give advice on developing a soft crab shedding industry on the Mediterranean Sea.

South America has a red crab that is larger than our blue crab, Wescott says. The fishermen there are also interested in our trawl fishery.

Wescott says the meeting was "an effort to bring them up to date on the technologies in North Carolina."



As cold snaps clear the air in autumn, the bluefish begin their fall "run," or migration. And when the blues are running, recreational anglers line Outer

Banks beaches like gulls on a pier.

Fishermen land "tailor blues," or snappers, which may weigh only a few pounds. Or occasionally they haul in big "whopper choppers." They can tip the scales at almost 20 pounds.

Whatever the size, bluefish are voracious feeders. They whip through schools of small baitfish, leaving a trail of blood, gore and fish parts for swooping sea gulls to devour.

The diving gulls trace the path of the blues for fishermen anxious to cast a line. And anglers are almost always rewarded when they heave their lures and hooks amidst the feeding frenzy. Even unbaited hooks will score hits.

Catching blues is the easy part. Knowing when to stop depends on how much you like the fish and how quickly you can eat what you keep.

Bluefish, like other predacious fish, have powerful digestive enzymes that cause the flesh to spoil quickly. If bluefish are not gutted or iced quickly, they can acquire a fishy taste and mushy texture.

Joyce Taylor, Sea Grant's seafood education specialist, makes these recommendations.

- Keep only what you plan to eat within a few days. Release the others.

- Gut and ice bluefish immediately. Keep the fish iced as you transport it home.

- If you plan to freeze any of the fillets, Taylor recommends glazing—a technique of coating the fish with a gelatin-and-lemon mix. For a copy of the glazing instructions, send for a copy of *Bringing the Catch Home*. Ask for UNC-SG-86-26. The cost is 50 cents.

- If you do freeze your catch, be sure to label your package with the date. Bluefish do not have a long storage life and you should plan to eat the frozen fillets within a few weeks.

• Because bluefish are an oily fish, frying and broiling are two of the best methods of preparation. Or try smoking your catch. Cold, smoked bluefish, smeared with sour cream, dill and lemon dressing, rivals the salmon in taste and presentation.

Congratulations are in order for three Sea Grant employees who have been recognized for excellence in their fields.

Rich Novak, Sea Grant's marine recreation specialist, recently received the Chancellor's Award for Outstanding Extension Programming from NCSU Chancellor Larry Monteith.

Novak works in Manteo and assists state and local government officials in the difficult task of planning for tourism and other recreational activities. Sea Grant staff members have won the Chancellor's Award six out of the last seven years.

Marine education specialist Lundie Spence was featured as Tar Heel of the Week in the September 23 issue of *The*

News and Observer in Raleigh. "This is a significant recognition of her years of unselfish commitment to The Big Sweep and marine science education," says Marine Advisory Service Director Jim Murray.

Murray himself was recognized recently when he was named to a national Sea Grant committee charged with developing a "think piece" on how the Marine Advisory Service should look by the year 2000.

Health officials have known for a long time that North Carolina's coastal and inland soils aren't always ideally suited for conventional septic tank systems.

That's where UNC Sea Grant's publication *Design and Installation of Low-Pressure Pipe Waste Treatment Systems* can help.

The manual, written by soil scientists from NCSU, points out construction procedures and materials needed for a low-pressure pipe waste treatment system.

The book focuses on the best locations

for LPP systems and provides detailed instructions on installation and maintenance.

Although LPP networks may work for larger buildings, the systems described in the manual are best suited for homes and small businesses.

For your copy of *Design and Installation of Low-Pressure Pipe Waste Treatment Systems*, send \$2.50 to UNC Sea Grant. Ask for publication UNC-SG-82-03.

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. 17, No. 9, October 1990. Dr. B.J. Copeland, director. Kathy Hart, editor. C.R. Edgerton and Carla B. Burgess, staff writers.

Coastwatch

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Raleigh, NC 27695-8605

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