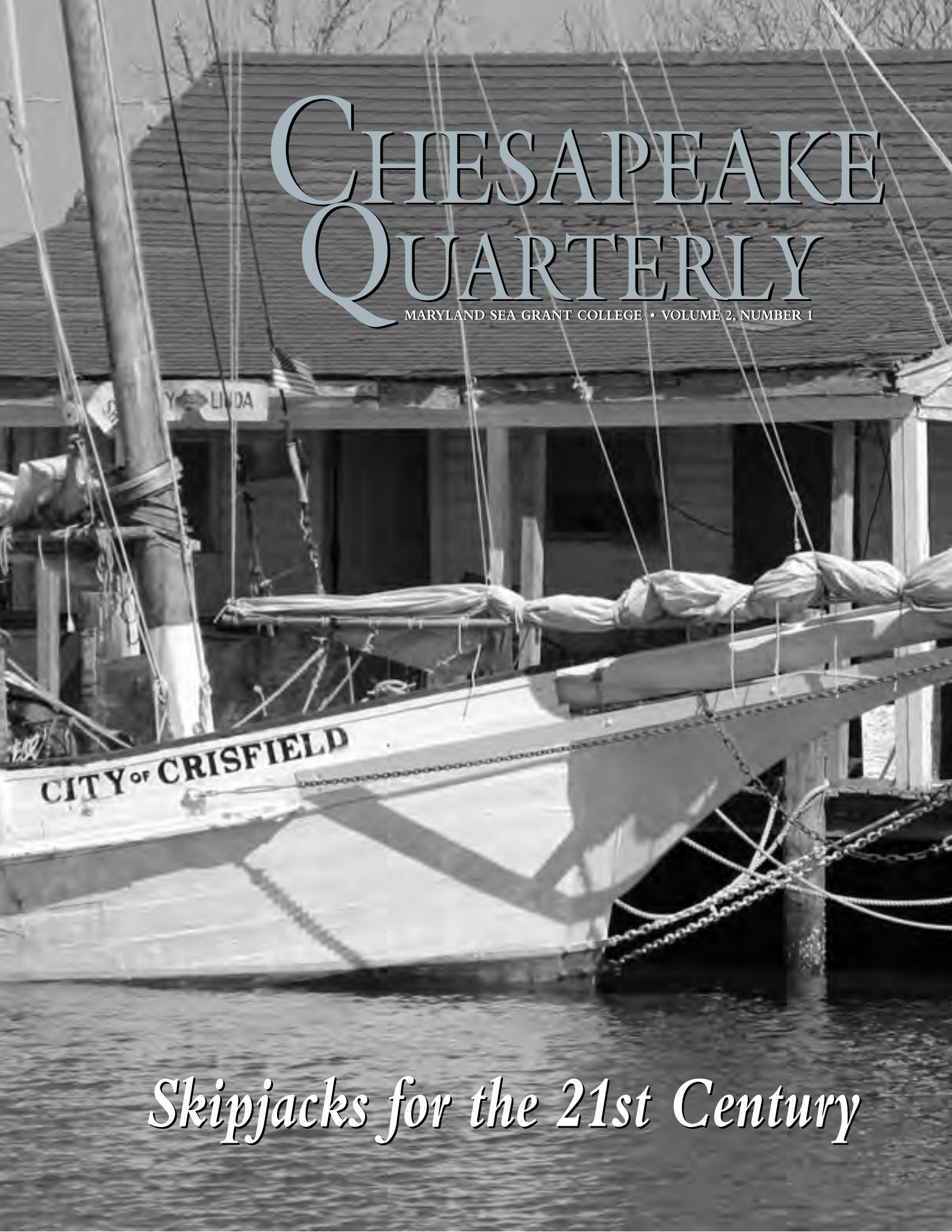

Chesapeake Quarterly

MARYLAND SEA GRANT COLLEGE • VOLUME 2, NUMBER 1

Skipjacks for the 21st Century

Uncertain Future for Skipjacks?

Skip Brown

Call them killer angels. With their long lifting bowsprits, raked wooden masts and sweeping sheer lines, skipjacks not only recall but actually sustain the age of sail as we move into a new century. The official Maryland state boat, skipjacks have become a symbol of the Bay itself and its rich maritime history. At the same time, these and other sailing craft with their heavy metal dredges have garnered a large share of the blame for dismantling — especially during the latter half of the nineteenth century — the Chesapeake's virgin oyster reefs.

Both keepers of a tradition and exploiters of an important ecological resource, skipjacks have captured our imagination while presenting us with a poignant dilemma. How do we preserve the precious past while safeguarding the Bay's ecological future? In "Saving Oysters...and Oystermen: The Paradox of the Commons" Michael Fincham considers this question, while tracing both current scientific efforts to restore the Bay's vertical oyster reefs and maritime heritage programs aimed at repairing and keeping afloat the nation's last commercial sailing fleet — the skipjacks of the Chesapeake Bay.

This issue complements and serves as a companion to the last issue (volume 1, number 3) of *Chesapeake Quarterly*, which posed the question, "Does the Bay need a new oyster?" Taken together, we hope that these two issues help to explain many of the complexities — ecological, scientific, social and historical — that face the Chesapeake's struggling oyster fishery.

— *The Editors*

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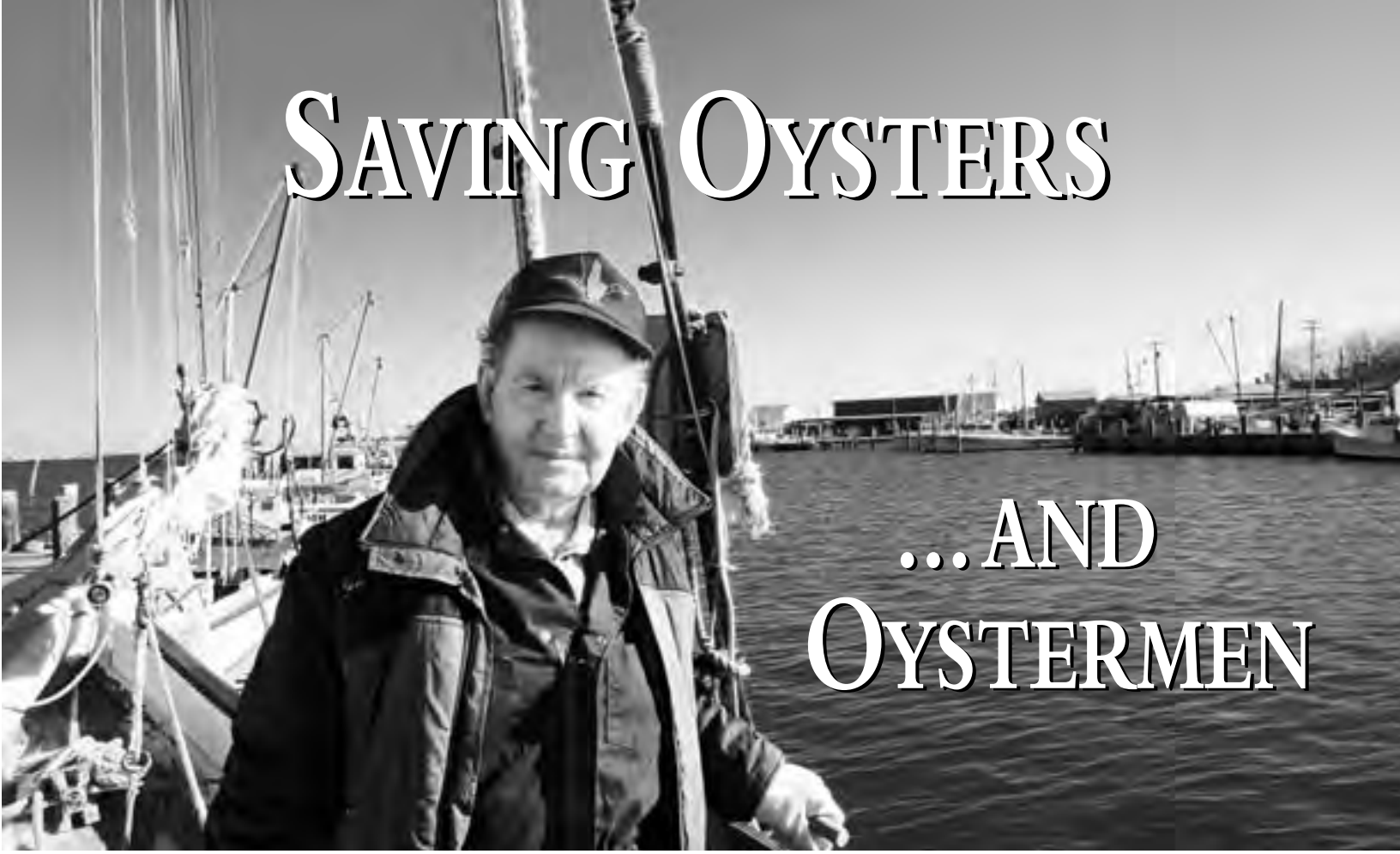
Photos: Cover photo by Skip Brown. Photo on opposite page, by Michael W. Fincham, shows Captain Art Daniels on the deck of the *City of Crisfield* at home in the village of Wenona, on Deal Island, Maryland.



Saving Oysters ...and Oystermen

The Paradox of the Commons

By Michael W. Fincham

Rooted in Maryland's rich maritime tradition, the 19th century working sailboats we now call skipjacks may face extinction in the 21st century. Can we restore the great oyster reefs of the Chesapeake as well as the historic fishing boats that helped tear them down?

The 20th century was ending well for the oldest oysterman on the Chesapeake, until Art Daniels of Deal Island hauled up something in his dredge he had never seen before in all his years as a skipjack captain.

It is November of 1999, the start of the last season of the century, and Daniels, small and wiry and nearly 80 years old now, is hauling up some good-looking oysters as he works the lower reaches of the Choptank River with his aging, patched-up sailboat, the *City of Crisfield*. Fifty or sixty bushels a day would have been bad news 52 years ago when he started in the business. He brought in 207 bushels his first day out as captain of a long-ago sloop named the *Molly Leonard*. But now down at the dead end of the century, 50 bushels a day is good news for Art Daniels. That many bushels means he can still get a crew together and go out dredging under sail.

Captain Daniels spins the wheel and his *City of Crisfield*, orange and glowing in the early light, slides into an eastward tack along the north shore of the lower Choptank River. The boom with its flapping mainsail swings by his head and then he feels the deck sloping to starboard and the main and jib beginning to fill.

Ahead of him, Daniels can see two other skipjacks out on the river under sail. The mild November weather and the hope of 50 bushels is bringing out Dicky Webster with the *Caleb Jones* and Walt Benton with the *Somerset*, both boats up from Deal Island. With three skipjacks sailing the river during this last Indian Summer of the century, oystering on the Choptank looks something like oystering all around the Chesapeake during the early decades of the century. From farms and houses and lawns along the shore, from cars on the Route 50 bridge at Cambridge, anyone could glance out and catch a glimpse of the Bay's disappearing past. Five miles down river, there they are: white and sleek and graceful, gliding slowly out of time, drawing the eye and dominating the riverview with their slashing bowsprits, towering masts and huge, sun-catching sails.

The Art of Oystering

But why are watermen still dredging oysters from sailboats?

It's been called "the Maryland solution." To save its oyster grounds from overfishing, the state of Maryland over a century ago came up with an usual conservation technique. Dredging would only be legal from a moving sailboat. And tonging would only be legal from a stationary workboat. For the next hundred years, there would be no legal dredging from power boats except for a few restricted areas opened up in the late 1990s. Innovations in fishing gear would be few: power winders for all the skipjacks, hydraulic "patent" rigs for some tongers, and for some watermen scuba gear for diving on oyster bars. For the most part, however, oystermen on the upper Chesapeake would work the entire 20th century with the same fishing gear used in the 19th century. The "Maryland solution" to overfishing: save oysters by making oystermen work hard.

Dredging under sail took more than hard work. Dredging well enough to make money also took a lot of art — and a little science. Standing in the stern, steering the *City of Crisfield* along the Choptank, Art Daniels dips his head, peers down the cabin hatchway and eyeballs the black and red screen of an electronic depth finder. Daniels long ago learned to find underwater oyster bars by reading winds and tides and key landmarks along the shore, but like most skipjack captains he has learned to find them more quickly with sonar scanning technology. The river channel is about 30 feet deep along here, and Daniels — reading the winds, the flooding tide and his sonar screen — is trying to sail right along its shallow edge. "Most of the hills follow the channel," he says. "If we can get the depth of the water, we can tell where the hills are. We can be running about 20 feet and then all of a sudden it jumps up to 12 feet, and we know we're on a hill then."

At midship, the men in his culling crew are still down on their knees, sorting through the last haul, looking for live and legal-size oysters amid all the old shell and dead oysters and random debris. When the red bar on his depth finder jumps to 12 feet, Daniels quickly pops back up by the wheel and barks, "Get ready to let 'em go." His cullers scramble to their feet on both sides of the boat and begin muscling the clanking iron dredges overboard for yet another lick across another oyster bar.

Oystermen on the upper Chesapeake would work the entire 20th century with the same fishing gear used in the 19th century. The "Maryland solution" to overfishing: save oysters by making oystermen work hard.

A skipjack working under sail like this has been a rare sight these recent winters. During the last decade most dredge captains only went out on "push days." Two days a week the law allows them to drop a small motor yawl boat down behind the rudder and use power to push their big white sailboats back and forth across the oyster grounds. Driving a big boat under bare poles was a lot easier than sailing it, and it usually brought in more oysters at the end of the day. The rest of the week, on "sail days," the Bay was usually empty of skipjacks.

Back when Art Daniels started out, there were only sail days, and that's still the way he likes to go oystering. When he was 12, his father would take him out on Saturdays and tell him to take the wheel of the big dredge boat. "He would let me steer," says Daniels with a smile, and 70 years later the memory is still as sharp as yesterday. "And I got that thrill of the boat coming alive, you know, when you touch that wheel and feel that wind in the sail."

His mainsail was set. His father lent him a small skiff so he could go trotlining for crabs every summer in the waters around Deal Island. The oldest son among 11 children, he quit school at 17 in the middle of the Depression to help his family and for the next 10 years went winter dredging with his father. By the time he was 26, he was ready to run his own rig and got a neighbor to lend him a small sloop. He did so well on his own that he was hired next year as captain of the larger *Molly Leonard*. He did so well again he was able to buy the *City of Crisfield* when he was 28 years old. Then he sailed her through the second half of the 20th century.

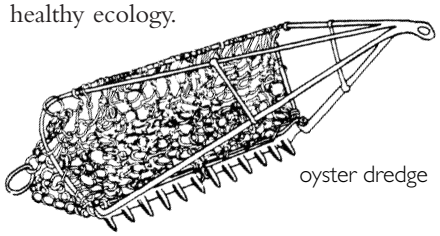
What he saw over 50-plus years on the water was a series of small booms and large slumps in the oyster harvests of the Chesapeake. When Daniels first went out oystering on the *City of Crisfield*, there were dozens of skipjacks harbored around Deal Island and maybe a hundred working Maryland waters. Some of those boats could bring home 500 bushels on a great day. When the state imposed a daily cap of 150 bushels per boat, dredgers would often get their limit by lunch.

As harvests dropped, the number of boats in the sail fleet plummeted. A few skipjacks were sold as pleasure yachts, but most were simply abandoned by their captains to rot away in river guts and marshes and marinas. The few skipjacks still licensed to dredge almost all come from only two Eastern Shore communities: Tilghman Island and Deal Island. By 1999, the last season of the century, there were fewer than a dozen boats working, many in poor shape, and their captains seldom hoisted sail.

A growing number of skipjacks, however, have been rescued from rot. A few enterprising captains began rehabbing aging boats and offering off-season educational tours to school groups and the general public. Environmental organizations and maritime museums were soon using restored skipjacks as a key part of their educational outreach programs. By now tens of thousands of school children and parents and tourists have learned some of the lessons of Bay ecology aboard the decks of upgraded skipjacks. Once they were nearly gone, these dredge boats became a *cause célèbre* as a

symbol of the Bay's rich biological and cultural heritage.

A skipjack may be a popular symbol, but it's a paradoxical one with some tough lessons to teach. With its jib and huge mainsail out on a reach, a skipjack like the *City of Crisfield* comes across an oyster bar like a freight train. When the crew throws the dredges overboard, these heavy iron claws drop onto the bar, shooting vibrations back up the line as they dig and scrape across the bottom with implacable force. Daniels says the drag of a dredge against oyster shell feels like metal grinding across glass and that tells him when he's on top of a bar. He's after an oyster called *Crassostrea virginica*, a reef-building species that has been piling up in the Bay for all its ten thousand years. According to some scientists, however, a century and a half of this kind of dredging has broken apart and scattered the Bay's ancient bars, destroying a system of massive, vertical oyster reefs that had played several key roles in the Bay's once-healthy ecology.



oyster dredge

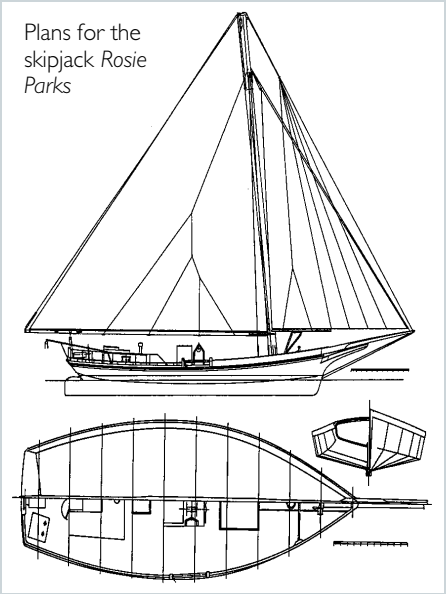
According to most watermen, the great oyster declines of Art Daniels' era were the result of two parasitic diseases, Dermo and MSX, which first struck the lower Bay in the late 1950s and became devastating epidemics in Maryland in the 1980s and 1990s. According to a number of scientists, however, overfishing was also a culprit, an underlying cause that would have cut harvests, though not as dramatically, even if these diseases had never struck. Watermen and scientists have been arguing about overfishing for a hundred and twenty-five years, and the debate may well outlive the last oyster and the last oysterman. "It's not overfishing," Daniels says, "because we don't have that many boats out there."

As the *City of Crisfield* plows east this day along the Choptank, Daniels is listening to his dredge lines. When the glass

The Rise and Fall of the "Two-Sail Bateau"

By Michael W. Fincham

Skipjacks were born in the 1890s during the first great slump in the oyster stocks of Chesapeake Bay. They were single-masted sailing craft, so cheap to build that they soon outnumbered two-masted schooners, bugeyes and pungys, the large boats that first dredged out many of the Bay's huge oyster bars during the decades following the Civil War. Fewer oysters led to smaller boats.



Plans for the skipjack *Rosie Parks*

John Lord, courtesy Chesapeake Bay Maritime Museum

For their first 50 years, skipjacks were usually called "two-sail bateaux" by the Eastern Shore watermen who built them and sailed them — but the origins of the names and the boats are still under debate. Howard I. Chapelle, a wooden boat historian who once ran a boatyard in Cambridge, Maryland interviewed numerous dredge boat captains and carpenters about the evolution of this commercial sailing craft. They used "skipjack" to describe a sail rig and "bateau" to describe a hull design.

The two-sail bateau, he concluded, echoed elements of earlier flat-bottomed boats like the "sharpie" from Long Island Sound and the Hampton "flattie," a crabbing skiff from the lower Chesapeake Bay. For their oystering bateau, tidewater boatbuilders designed a V bottom with planking and a straight deadrise slanting up to a hard chine. They also gave their boat a shallow draft so it could go dredging in shoal waters for oysters that bigger boats couldn't reach.

According to one formula, a skipjack sail rig usually featured a bowsprit as long as the boat was wide, a boom as long as the deck, and a raked mast as tall as the boat length and beam added together. The two-sail design included a jib foresail and a large, loose-footed, "leg of mutton" mainsail. All that canvas gave skipjacks the power to pull dredges in light winds that left larger boats becalmed.

So where did the names "bateau" and "skipjack" come from? Chapelle's guess was that "bateau" was a term brought to the Eastern Shore by French Huguenots, Protestant exiles who settled in Dorchester and Somerset counties in the late 1600s to escape persecution back home by the Catholic forces of Louis XIV. According to the Oxford English Dictionary, "bateau" was in use by the 1800s as an American term for a French Canadian flat-bottomed river boat — a style that may have been adapted for Chesapeake Bay crabbing skiffs.

And "skipjack"? In 1901 a *Baltimore Sun* reporter guessed that the new fast-sailing "skipjacks" may have been named after the bonita, a fast-swimming fish found in the ocean, not the Bay. A better guess would have been the skipjack tuna, a fish often found feeding near bonita. Another guess by another historian: "skipjack" is an archaic English word meaning "inexpensive but useful servant." Take your pick.

The birthplace of these two-sail bateaux may have been a boatyard near Crisfield, but they were soon being hammered together in boatyards and backyards all along the lower Eastern Shore from Tilghman Island, Maryland down to Pungoteague Creek, Virginia. The greatest number of boats came out of the towns and villages down along the Deal Island peninsula of Maryland. A few came out of the Western Shore of Virginia. Perhaps 700 hundred two-sail bateaux were built in all, most of them between 1891 and 1916.

The decade after World War II, however, brought a bustle of new bateau construction, beginning with the *Helen Virginia* (1948) built in Crisfield, Maryland and the *City of Crisfield* (1949) built in Reedville, Virginia. Other boats begun in Virginia included the *Somerset* (1949), the *Caleb W. Jones* (1953) and the *H.M. Krentz* (1955). And in a backyard in Wingate, Maryland, boatbuilder Bronza Parks turned out his last three bateaux: the *Rosie Parks* (1955), the *Martha Lewis* (1955) and the *Lady Katie* (1956). When he finished each one, he had it hauled down the road by cart for a riverside launching. Bronza Parks died in 1958, ending this last Indian Summer of Eastern Shore skipjack building.

Last winter, during the worst oyster season on record, just eight of these boats went dredging for oysters. They motored out for two "push days" a week, the only days they could haul out enough oysters to pay a crew. These graceful, historic sailing bateaux with their clipper-like bowsprits, leaning masts and long booms had become motor-driven platforms for power dredging. Not one of them ever raised a sail. One carried no sail for its mast. One carried no mast.

grinding reaches critical vibration, he begins waving his arm and yelling at his crew. "Let's see if we did any better this time." A culler kicks a gas-powered winder in gear, and with an ear-numbing noise, it slowly winches the loaded dredges up off the bottom. Leaning over the side, the cullers, two to a dredge, grab hold and lurch backwards, yanking each dredge on board with a loud clunk. Dropping to their knees yet again, they begin sorting and culling.

In one of their dredge hauls in November of '99, they found something odd, something they had never seen before. Lying on the deck among all the shells and dead oysters and debris was a dark piston, a tube about two feet long, with cryptic, technical labels.

It looked like a tool from another planet, except for the technical print and a hand-painted name that said: Ken Paynter. Who, the watermen wondered, was Ken Paynter? And why was one of his weird tools out here on one of their oyster bars?

The Science of Oyster Reefs

When Ken Paynter goes out to work the oyster bars of the Choptank, his boat is a 30-foot Grady White cabin cruiser he calls *Crassostrea*. It comes equipped with twin outboards, radar, depth finder and GPS, fairly standard gear on this popular sportfishing model. Paynter, however, is not a fisherman by trade or a waterman or a charter boat captain. He's a biologist who studies how to rebuild oyster reefs in the Chesapeake.

Shortly after dawn he meets his two-man crew at a marina at the Route 2 bridge on the South River, several miles below Annapolis. They load the cockpit with wet suits and oxygen tanks for three divers as well as several video cameras, a monitor and VCR.

One of Paynter's key tools, however, is missing. He also used to carry a dark piston, a two-foot long tube called a YSI Data Sonde that can measure water temperature, oxygen, salinity and pH through a whole tidal cycle. A year ago, he scrawled "Ken Paynter" on the tool, clipped it on a line and left it hanging from a buoy above an oyster bar in the Choptank River. When his crew came to retrieve it 24 hours later, the buoy was still there, but their high-tech tool and all their data were gone. The tool had been unhooked, then stolen or deep-sixed to the bottom of the river.

Watermen claim that dredging helps oyster reefs, creating broader areas of cleaner shell for new oysters to settle on, but most scientists, including Paynter, believe long-term dredging eventually scattered the bars so widely that it interrupted the natural cycles of oyster reproduction.

As Paynter fires up the engines, his crew throw off the lines, and the *Crassostrea* glides down to the mouth of the river where Paynter kicks his twin engines full out. With 500 horsepower firing, they are soon planing and bouncing across the mainstem of the Bay at 40 miles an hour, headed for the Eastern Shore. After a one-hour, bone-rattling ride, the scientists anchor above Beacon's Bar in the Choptank River, the site where they lost their sampling tool.

As the boat swings in the current, two divers squirm into their wet suits, check their camera gear, and buckle on their oxygen tanks. The chief diver is Tim Koles, head assistant for Paynter's lab at the University of Maryland. For the researchers, Beacon's is one of their best sites for monitoring oyster restoration. Replanted with half a million hatchery-spawned baby oysters (spat), it is now an oyster sanctuary, declared off limits to commercial dredging and tonging. With their underwater cameras they are hoping to get video pictures here that will show the public what restoration could do for an undisturbed oyster reef — and what oyster reefs could do for the restoration of the Chesapeake.

A research professor with a joint appointment at the University of Maryland's College Park Campus and its Center for Environmental Science (UMCES), Paynter had been studying oysters for more than a decade when he decided to find out first hand what the historic oyster grounds of the Bay looked like. He signed up for scuba training in swimming pools, but that left him unprepared for the murkiness he often found along the bottom of the Bay, most of it caused by floating phytoplankton and drifting sediment. Some days the water was so dark, "I was mostly diving blind," he says. He learned to feel his way by hand across oyster bars.

On sunny, windless days, however, especially in late fall when the water clears and visibility jumps out to 30 feet or more, Paynter and his divers would get a glimpse of the Bay's fast-approaching future. And it didn't include dredge hauls of even 50 bushels a day for skipjacks under sail. At least not for long.

Most of the reefs he swam across were broken down now, with shells and oysters scattered thinly across the bottom, so thinly that drifting sediments, stirred up by winds and tides, can easily shift over and bury them. Many of the oysters break open in their hands, exposing empty, meatless shells. These are "boxes" caused by the parasites MSX and Dermo which have spread through most of the Bay's oysters over the last four decades.

As they glide across the larger bars, Paynter and his divers can often see the scars left by skipjack dredging. "You'll see a path where a lot of stuff is cleared out," says Koles, "and if you follow that path to where it ends, you'll find a mound of stuff that was pushed up in front of the dredge." Where the dredge has plowed through, the divers find oysters knocked over so they are no longer upright with their bills open, filtering and feeding on plankton in the water. Many oysters end up sideways or upside down with their bills buried in the mud. "Effectively that kills them," says Koles. "It suffocates them."

Once upon a time those bars looked very different. "Oysters formed vast underwater reefs in the Chesapeake Bay," says Paynter, "reefs probably similar to the coral reefs of the Caribbean — providing

structure and habitat to hundreds of organisms." These vast assemblages helped clear the water, filtering out phytoplankton at prodigious rates, turning it into shell and meat and energy for reproduction.

Here's what happened to those reefs: overfishing, sedimentation and disease. Heavy fishing, especially in the late 19th and early 20th centuries, began breaking and scattering the ancient reefs. Watermen claim that dredging helps oyster reefs, creating broader areas of cleaner shell for new oysters to settle on, but most scientists, including Paynter, believe long-term dredging eventually scattered the bars so widely that it interrupted the natural cycles of oyster reproduction.

Oyster recruitment requires a critical mass of oysters, larvae and shell. For a good spawn, male and female oysters need to be living in the same place in large numbers and releasing their gametes into the water above the bars at the same time. If a lot of these gametes meet and mix in the waters, there will soon be a lot of new oyster larvae floating and feeding in the water — and looking around for hard places to settle on, places like oyster shells. But all that tonging and dredging had been thinning out the live oysters and scattering the shells needed for spat set.

Overfishing, according to his theory, also exacerbated the effects of sedimentation — especially during the population and construction booms of the last half century. As builders and developers were putting up new buildings and highways and parking lots all around the watershed, they were sending millions of tons a day of loose sediment into all the rivers flowing into the Chesapeake.

All this sediment could easily cover up oysters that were already lying flat and bars that were already broken down, according to Paynter. A fishing boom may have broken down the old oyster reefs — but a population boom helped cover them up.

Why, with all this tonging and dredging, did oyster recruitment last as long as it did?

***Ken Paynter** hands off an underwater video camera to diver Tim Koles. After naming his boat for the oysters he studies, biologist Paynter captured video evidence that oyster reefs, once restored, can create habitat for all kinds of marine life.*
Photograph by Michael W. Fincham

One answer, according to Paynter, is oyster refuges — secret, unharvested clumps scattered around the Bay. "One could imagine, especially before divers were common, that there were *refugia*, bits of oyster population that were too deep for tongs or dredges or were secluded on some sort of shelf or shoulder," says Paynter. The Bay is so large that watermen with their antiquated gear simply never found every pocket of oysters that was sitting out there in all those rivers and coves and creeks. From these undiscovered oysters would come strong spawns and then clouds of larvae cast afloat on the currents, ready to create spatfall on harvest bars nearby. Those hidden refuges would once again kick off enough recruitment to sustain a shrinking number of watermen.

Diseases like MSX and Dermo, however, spelled doom for all these obscure oyster grounds, at least in high salinity locations. "When you think about a disease coming in that is spread through the water column," says Paynter, "then you can imagine these pockets of undiscovered oysters being decimated, simply because they breathe the same water." With oysters dying on the hidden bars as well as on the old harvest bars, there is seldom the critical mass needed for large-scale spawning and spat set.

The Tragedy of the (Oyster) Commons

The drama of the oyster fishery in the Chesapeake was, according to some, an example of the "tragedy of the commons." Since oyster reefs were a common resource — owned by no one, open to everyone — they were, like all commons, doomed to inevitable ruin. The concept of a "tragedy of the commons" came from Garrett Hardin, an ecologist whose 1968 essay in *Science* magazine made a fundamental contribution to ecology, population theory, economics and political science.

Overgrazing of open rangelands, overcutting of open forests, overhunting of wild animals, overfishing of the oceans — all these ecological disasters were, according to Hardin's theory, clear examples of the tragedy of the commons. As in Greek tragedy, each disaster was both forseeable and inevitable. Everyone could see catastrophe coming and no one could stop it.

Overgrazing of open rangelands, overcutting of open forests, overhunting of wild animals, overfishing of the oceans — all these ecological disasters were, according to Hardin's theory, clear examples of the tragedy of the commons.

Consider oysters in the Chesapeake. Driven by self-interest, the engine of all economic progress in classic capitalist theory, each waterman in the Chesapeake was locked into a competitive race with every other waterman, a race to fish off all the oysters before his neighbor did. The result of the race, according to the classic script, would be overfishing and collapse of the commons.

But the oyster commons belonged to everybody, and it provided more than money for watermen and oyster meat for the rest of us. There's evidence that reefs created habitat for all kinds of animals. And there are theories that the reefs were also great filters for cleaning the Bay's waters, part of a linked system of filters that included seagrasses and wetlands and woodlands. Oysters were a "keystone" species that helped hold up an entire ecosystem. When those filters go out, then turbid water comes in, along with seagrass dieoffs, anoxia and fish kills. Whatever knocks down oyster reefs alters the ecosystem.

While those reefs lasted, however, they also played a role in sustaining the social ecology of the tidewater region. In dozens of waterside towns and on half a dozen small islands, the oyster business was one of the best ways for hard-working men and women to make a good-enough living off the Bay — some from harvesting, others from shucking, packing or shipping. Until the early 1980's, cold-weather oystering was the "keystone" industry for a way of life that, for many, also included fishing and crabbing in the spring and summer and fall.

Down at the end of a long neck of flat woodlands and wide-open wetlands, Deal Island, for example, is home to 900 people clustered around three harbors and three villages and at least six Methodist churches, and it was here that Art Daniels was able to raise his sails every winter and through hard work and summer crabbing raise his five children. His three sons all went to work as watermen, and so did some of their children. His skipjack, some days, has three generations of Daniels men on board. All his children still live nearby.

For most of the 20th century, during decades of rural outmigration to the cities, fishing villages like these created habitat for thousands of men and women who carried on the pace and pleasures and traditions of small town life in supportive communities, close-knit by kinship, work ethic and church. Would these Bayside communities break down and thin out like those underwater oyster reefs?

Rebuilding the Reefs

There was, finally, an unexpected plot turn late in this tragedy as ecological crisis finally forced some old adversaries to work together. In the early 1990s watermen, seafood packers, state managers, scientists and environmental organizations began planning joint restoration efforts. With new funding from the federal government, the states of Maryland and Virginia launched an ambitious program to increase the number of new oysters in the Bay by tenfold over the next 10 years. The two states would begin rebuilding the oyster commons.

The idea was breathtaking in scope, hope and hubris, a *deus ex machina* designed by scientists, a solution that seemed to fire the energies of dozens of organizations and thousands of volunteers. Hatcheries run by the UMCES

Skip Brown

Planting oysters: *Citizens around the Bay have been helping in the effort to restore oysters. Paynter's research shows that restoration could work, at least in the upper, low-salinity reaches of the Chesapeake and its rivers. After two years in the Choptank, his oysters were flourishing.*

Horn Point Laboratory and the Department of Natural Resources have been turning out disease-free oyster spat. The Oyster Recovery Partnership, a non-profit corporation, has been organizing ambitious replanting efforts, using volunteers ranging from grade school kids through college students, working professionals and retirees. The Chesapeake Bay Foundation has been recruiting and teaching citizens how to grow out oysters in creekside and Bayside trays and racks.

These programs have proved immensely popular with citizen activists looking for ways to get their hands wet working to help clean up Chesapeake Bay. Raising baby oysters in a back creek and then dumping them overboard on a depleted oyster bar seemed deeply satisfying work for thousands of citizen volunteers. Now that they are nearly gone, oysters — in a typically American turnabout — have also become a *cause célèbre*.

But is it possible to ever rebuild the Bay's oyster reefs?

Aboard his cabin cruiser *Crassostrea* anchored over Beacon's Bar in the Choptank River, Ken Paynter gets his crew ready for another dive. He turns on a video monitor that attaches via a long cable to an underwater camera. Koles snaps his goggles twice, clears his mouthpiece and then leans backwards out of the cockpit, somersaulting slowly down into the river. Seconds later, another diver follows.

Within minutes, Koles is gliding towards the oyster bar with a camera and sending video pictures back up to the boat. As he swims closer, his camera shows shell scattered over mud, then a jumbled, jagged pile of replanted oysters. Watching the monitor on the boat, Paynter sees good evidence that oyster restoration might work — at least in small protected plots.

The bar looks jagged because so many of the oysters on top are sticking straight up, with their bills slightly open. According to Paynter, that vertical stance, seldom seen on a harvested bar, is critical to the survival of a living reef. It's hard for drifting sediment to cover over oysters that are erect compared with oysters lying flat on their sides. Upright oysters can filter more food out of the water, and they create more nooks and crannies where other animals can live. Darting among the oysters in the video are small fish, like blennies and gobies and grass shrimp. Clinging to the oysters are mussels and barnacles with their thin little food strainers waving like tiny flags in a liquid wind.

Paynter's team has put a lot of time into trying to capture video like this, a tough trick in water that is so often murky. Tim Koles first pushed the idea, lining up a loaner camera to test. Since then they have experimented with hand-held cameras, cameras dangled off the back of the boat, and remotely operated cameras that they can move around the bottom via a joy-stick control box. Some of the best footage came from stationary cameras they propped up and left on the bottom. When there are no divers around to spy on them, other animals are willing to come out and appear on camera.

Those video clips show lots of animal and plant life clustered around oyster bars. Blue crabs are climbing on the bars and burrowing in the mud; big rockfish are slipping along the reefs, dozens of other fish are swimming through, looking for food. From dozens of dives Paynter has put together highlight reels that are now widely shown to educate the public, lobby legislators for funds and recruit volunteers for work on restoring the great oyster commons. From the clips, it is clear that reefs can be rebuilt and that they can, like the ancient reefs, create filtering power and habitat for fish and crabs.

It is not so clear whether rebuilt reefs can survive disease, but Paynter is finding some hopeful signs. "Many of those oysters, by the way, are still alive and very healthy," says Paynter, pointing at the monitor. They came from disease-free hatchery seed planted on a bottom scraped clean of parasite-infected oysters. After two years in the Choptank, most are flourishing. That's evidence that restoration could work, at least in the upper, low-salinity reaches of the Bay and its rivers.

But Paynter never found out whether the oysters on Beacon's Bar could survive a third year. The next time he fired up *Crassostrea* and motored across the Bay, he found the bar scraped clean of oysters.

Shortly afterwards, Daniels sent Paynter the funny-looking, piston-shaped tool he had dredged off the bottom of the Bay. Thanks to the good will of a waterman, the scientist got his high-tech

Chesapeake Bay Maritime Museum

Drowned at the dock: *in November 2000, Art Daniels' aging skipjack, the* City of Crisfield*, filled with water, caught a rail, then rolled on its side and sank in the Cambridge harbor.*

tool back a year after it disappeared. But he lost his prize oyster bar.

The waterman lost more. Soon there were newspaper stories about workboats "poaching" on oyster sanctuaries, reports that Daniels, an associate pastor in a Deal Island church, found insulting. Then came investigations by Maryland's Natural Resource Police. There were, however, no buoys marking the sanctuaries, no witnesses to any harvesting and no charges ever filed.

For Daniels the old century ended with controversy — and the new one opened with disaster. In November of 2000, during the first dredge season of the 21st century, his aging skipjack, *City of Crisfield*, sank at the dock.

The Paradox of the Commons

The first time Mike Vlahovich saw Art Daniels' boat, he started worrying. After lying on its side in the water for three days, the *City of Crisfield* had been pumped out, refloated and towed to a dock at the Chesapeake Bay Maritime Museum in St. Michaels. Vlahovich was the boatbuilder newly hired by the museum to run their ambitious Skipjack Restoration Project. This was not the boat he wanted to start with.

The skipjack sat at the museum dock for eight months while a committee of four skipjack captains and one judge tried to decide which boat in the aging fleet should go up on the railway first. While the captains debated, Vlahovich and his staff surveyed the damage on Daniels' boat — and worried some more.

"She was in horrendous shape," explains Rich Schofield, head rigger at the museum. Skipjack dredging not only tears up oyster bottom, it tears up oyster boats. "You are putting a dredge off each side and you are dragging across the bottom, digging up the bottom as you go," says Schofield. The dredge cables are lifting hundred pound hauls on both sides of the boat, dozens of times a day. "As you're dragging this, that is just pulling the boat apart at all times. It is awfully hard on a hull." Daniels' boat would need a new hull to start with and then at least a dozen additional repairs.

This brand new Skipjack Restoration Program, however, was working under a very small grant from the Maryland Historical Trust, a grant of $150,000 that was supposed to repair three working skipjacks a year. With all the work it needed, the *City of Crisfield* could easily suck up all the money by itself — and sink the new program.

When Art Daniels, as the oldest oysterman, got the committee's vote, Vlahovich pulled his boat up on the railway in late August and went to work. A new bottom meant new chine logs along both sides, new transverse strong backs to stiffen the hull, new planking, and new bow staving. They would also have to replace the bowstem and bowsprit, rebuild the transom and build a new longhead. Then there would be recaulking and refastening and repainting. The plan was to get the boat back in the water before Christmas.

One of the keys to the low-cost restoration is a master boat builder like Vlahovich. An ex-salmon fisherman from the west coast, he is lean and dark bearded, slow talking and deliberate, and years ago he decided that his second calling would be historical boat restoration. His new vocation made him a vagabond for a while, as he moved his family back and forth between the west coast and the Chesapeake. His first east coast job, ironically, was in the Virginia boatyard where the *City of Crisfield* was first assembled.

Later he was hired several times by the Chesapeake Bay Foundation to repair their flagship skipjack the *Stanley Norman*, a job that brought him to nearby Tilghman's Island. There he found himself working in a harbor that still held half a dozen skipjacks. When he heard a museum up the road wanted to repair all the boats in the fleet, the vagabond had found a new home.

There was, of course, a contradiction buried in the heart of the Save Our Skipjacks movement, a contradiction that could sink the new program all by itself. Earlier efforts to rehab skipjacks, for the most part, turned them into ecological tour boats. This new program, on the other hand, funded during the depths of

an ecological crisis, was not primarily about education — but exploitation. It's goal: get the old skipjacks back out on the water, get them back to work dredging oysters off an oyster commons that's already depleted.

The state of Maryland was trying to put oysters back in the Bay to revive water quality; at the same time it was rebuilding the boats that helped tear down the reefs in the first place.

Call it a contradiction or, better yet, call it a paradox. Maryland is taking a two-pronged approach to the tragedy on its oyster commons: it is trying to save both oysters and oystermen. What looks like a contradiction, however, has an underlying logic at work.

Call it the paradox of the commons: these wooden boats, dredging out oysters despite leaking hulls and rotting sails, still stand for a way of life, and that way of life is a kind of cultural commons that Marylanders still draw on. Oystering in Maryland, by design, always demanded hard labor and a savvy reading of weather and winds, natural cycles and market forces. It also seemed to breed a self-reliance and an individualism bordering on recklessness and, occasionally, on lawlessness. And those who endure on the water will admit unabashedly that they love the work.

This way of life survives mostly in a handful of towns and villages and islands, but the myth of the waterman symbolizes so much about early American values and the history of the tidewater region that it is still widely admired by urbanites and suburbanites all around the state. These are men and women, let's face it, who manage to get by without submitting to rush hours, desk work and office buildings with sealed windows. "It is a significant way of life that is really threatened," says Vlahovich, the fisherman turned boat builder. "I guess it's just a personal belief that the value of the culture is just too great too lose."

Saving oysters without saving oystermen could be yet another tragedy of the commons. We would gain cleaner water, but lose for good some of the colorful communities whose workboats and waterfronts and festivals helped create the history and cultural flavor (and spice) of the tidewater region. That's why the skipjack, not the sailing yacht or the cabin cruiser, is still the state's symbolic boat.

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Rebuilding the Boats

On a blustery morning in December, one day before the darkest day of the year, five days before Christmas, the *City of Crisfield* was ready to go back in the water. "There's nothing like a boat launching," John Valliant likes to say. He's president of the Chesapeake Bay Maritime Museum and he'd like to host a lot of launchings as his museum, boat by boat, tries to repair all the working skipjacks in the oystering fleet.

The morning begins in the wood boat shop with a breakfast of roasted oysters and scrapple amid the smells of sawdust and wood oils. Wandering among the saws and planes and drills and rigging tools, there are dredgers and tongers, locals and tourists, several reporters and a film crew. Playing host are the carpenters and apprentices who rebuilt the boat and the grant writers and researchers and museum staff who raised the money. Mike Vlahovich is giving the first of many interviews. Everyone is wondering whether Art Daniels will make it up from Deal Island.

Outside in the early morning chill, the *City of Crisfield* sits alone on the marine railway, perched high in her cradle, her wide bottom and curving sides closed up with new wood, her raked mast pointing at the shifting clouds, her lean new bowsprit throwing a long left jab at the wind. Like most skipjacks, she can look bargey and sleek at the same time. At the end of the bowsprit, someone has pinned a clump of Christmas holly.

Topside there is still work to do: towards the stern is a neatly framed hole where a new cabin has to go, and most of the old rotting deck still has to be replaced. The museum spent all the $50,000 allotted for this one boat and then some. It raised additional funds, spent part of its own operating funds and found some donations of wood.

Art Daniels will now have to finish his own boat, but her bottom structure may be as sound as the day she was built, says Rich Schofield, the rigger. "And that's where you drown — from the bottom up."

When Daniels drives up in his red pickup, he is carrying a bushel of Deal Island oysters in the back, and the first thing he does is start showing them off. "Look at that," he says to a young waterman, pointing at the new spat on his oyster shells. "Little oysters, all over, millions of 'em." The newly set oysters excite him as much as his newly built boat.

The speech making begins in earnest with Valliant as host trying to set a theme for the day. "The program is not about that boat right there. It's about Captain Daniels going back and dredging," he says. "It's about the community of Deal Island, of Tilghman Island, of Cambridge, and all the communities that have skipjacks — and what it means to have that boat, the icon of the Chesapeake, still working today."

The skipjack as icon clearly means a lot to this crowd, now grown to 150 or more and gathered from small communities and large cities on both sides of the Bay.

They've come here to a museum campus that features an old lighthouse rescued from the shoals of Hooper Strait and a fleet of restored workboats including a bugeye, a skipjack, a crab dredger and a draketail workboat, all of them a lot older than the *City of Crisfield*.

A deadrise rises again: *with its classic V-bottom deadrise hull now replanked and restaved, the* **City of Crisfield** *stands ready for re-launching, thanks to the skilled shipwrights working with the Skipjack Restoration Project of the Chesapeake Bay Maritime Museum.*
Photograph by Michael W. Fincham

There are more speeches and applause and hundreds of photographs. All this energy and interest in the relaunching of a 50-year-old boat and an 80-year-old captain. All these people trying to capture this piece of the past with film and tape and memory. On a chilly morning in a St. Michaels boatyard, an old commons comes alive again.

At the podium Vlahovich, in a faded flannel jacket with a broken zipper, thanks the funders and all his apprentices. Daniels, his hat cocked to one side, thanks the Lord, the museum and the carpenters. A bottle of champagne is bashed across her bowstem — and steady on her cradle the *City of Crisfield* starts inching downhill towards the harbor. A long steel cable holds cradle and boat on the railway, and back in a small wooden shack, Rich Schofield works brakes and gears, unwinding the cable, letting the cradle and boat roll downhill, one safe foot at a time.

A boat launching from a marine railway like this is always a slow-motion event. There is time for visiting and catching up, for questions and answers, for story telling and memory telling. Pete Sweitzer, the only German captain on the Bay, sidles up to Art Daniels, one of various Irish captains, and soon there are tales of old storms, of canvas sails that froze stiff, of boats that sank, of men and women who passed on.

And in the face of oyster disease and decline and the death of friends, there is also hope. When a television reporter from Washington asks whether oysters can still support skipjacks, both the German and the Irishman erupt. "Down where we live the whole bottom is full of little oysters," says Daniels. "They're coming back," says Sweitzer. "Good Lord took 'em away. He'll bring 'em back."

A Future for the Commons

As an oyster biologist Ken Paynter thinks the good Lord will need some help. "We're going to become ecological engineers to some extent," he says.

Since the weather started warming he's been driving out on the Bay again in his boat *Crassostrea* and putting divers down onto oyster bars. Their findings are encouraging *and* discouraging. It's clear that oyster bars, properly replanted, can create habitat for all kinds of crabs and fish and plants — and get there within two years. The first piece of bad news: not a lot of new oyster spat are being recruited to these replanted bars. The second piece: most oysters on high-salinity bars are killed off by disease by their third year.

How could ecological engineering help? Perhaps by replanting the Chesapeake with *Crassostrea ariakensis*, an Asian oyster that grows to market size faster and resists disease better. For Paynter, Asian oysters might be an answer in time, but he thinks there are still some engineering options to try with the Bay's native species, *Crassostrea virginica*. Those options could not only help watermen, they could also help focus all the volunteer energy unleashed by oyster restoration programs around the Bay.

In moderate salinity waters, oysters could be replanted and then harvested as soon as they reach market size and before disease overwhelms them. With these short-lived oysters, he says, "it's okay for watermen to take them."

In low salinity waters, on the other hand, replanted oyster reefs would be left alone in sanctuaries. "There they can live longer," says Paynter, "get bigger, create more structure and filter more water."

Oysters for commerce — and oysters for ecology. Not a bright future, not a dark future, but for the oyster commons of Maryland, perhaps a workable future. That, at least, is the gospel according to Paynter and many other oyster scientists.

Nearly a year would pass before Daniels went oystering again.

A Second Season for Skipjacks

With the winter dredge season now done, some skipjacks are ready to raise sails again — not for catching oysters but for carrying people of all ages out on the Bay. This second season, the teaching season, runs from April into November. This year at least nine skipjacks will be carrying educational and recreational and sightseeing tours.

Skipjack trips are offered by a number of environmental organizations, an outdoor school and by the dredge boat captains who pioneered this form of environmental education: Ed Farley and Wade Murphy of Tilghman Island and Jack Russell of St. George's Island. Here, working up from the south, are the boats, captains and contact numbers.

Dee of St. Mary's
Captain Jack Russell
St. George's Island, Maryland
301.994.2245

Herman M. Krentz
Captain Ed Farley
Tilghman Island, Maryland
410.745.6080

Rebecca Ruark
Captain Wade Murphy, Jr.
Tilghman Island, Maryland
410.886.2176

Nellie L. Byrd
Captain Michael Hayden, Jr.
Tilghman Island, Maryland
410.886.2906

Nathan of Dorchester
Dorchester Skipjack Committee, Inc.
Cambridge, Maryland
410.228.7141

Stanley Norman
Chesapeake Bay Foundation
Annapolis, Maryland
443.482.2112 or call toll free,
1.888.SAVEBAY (728.3229)

Sigsbee and *Minnie V*
The Living Classrooms Foundation
Baltimore, Maryland
Jennifer Riley
410.685.0295

Martha Lewis
Chesapeake Heritage Conservancy, Inc.
Havre de Grace, Maryland
410.939.4078

Saving (Working) Skipjacks By Michael W. Fincham


Michael W. Fincham

A book called *Chesapeake* first brought Mike Vlahovich to the tidewater region. And a boat called skipjack brought him back.

In the early 1980s, Vlahovich read James Michener's best-selling novel and started looking for a job in a tidewater boatyard. As a west coast salmon-fisherman-turned-boat carpenter, Vlahovich had already seen one historic fishery sink, taking with it a lot of boats and captains and working waterfront. He soon found work as a carpenter foreman in a boatyard near Reedville, Virginia, beginning a back-and-forth-again career working with the boats and yards and people in the Bay's historic fisheries for blue crabs and oysters.

On his west coast sojourns, he kept trying to save old salmon boats — but with minor success. "I was growing frustrated trying to make a similar program happen on the west coast," he says. "So when I heard there was a program over here already funded, it was perfect for me."

Fishermen and boat builders are clearly risk takers — and so are some museum directors. When Maryland assembled a task force in 1999 to find a way to save the state's decaying skipjacks, John Valliant came up with a plan to turn his Chesapeake Bay Maritime Museum into a center for repairing old skipjacks and training new boat carpenters. That was the perfect job Vlahovich was looking for. In 2001, the Skipjack Restoration Project was launched with high hopes, $150,000 in first-year funding, and Vlahovich at the helm.

There were, of course, some big risks buried below decks: old boats can become sinkholes for money and state funding can suddenly shrink. The first repair job brought the museum its first crisis: costs on the *City of Crisfield* ran high. And its second year brought its second crisis: state funding dropped by two thirds.

Both crises, however, brought the same response: Valliant and the museum's Board of Directors decided to keep working on skipjacks. "This is a project that we feel very strongly about." says Valliant. "It fits into our mission, and we are committed to finding the funds to keep this program on track."

The museum scraped through the first two years by raising money from foundations and individuals and by re-allocating some of its operating funds. Like a skipjack captain tacking across an overfished oyster rock, Valliant knows the museum won't be hauling in a lot of state dollars during the current budget crunch. Like all watermen, he thinks he'll do better next season.

The payoffs have been worth the risks. The apprenticeship program has been drawing skilled and experienced applicants. Six skipjacks so far have come in for major repairs and long-deferred maintenance. The museum is building stronger ties with watermen communities around the Bay. And best of all, the public can now find at the museum an unusual interactive exhibit: a traditional working Bayside boatyard — but one where anyone can walk in, watch, ask questions and learn how these historic sailboats were built and rebuilt again.

For Valliant, the museum captain, skipjack restoration will be a rough sail for a while — but still worth the ride. "It was a gleam in our eye, then all of a sudden it was a reality. And then it was like, 'Oh my god, what have we gotten into,'" he says. "Now it's: 'Wow! It's really working.'"

For Vlahovich, the quiet-spoken boat builder from the west coast, the payoff is personal: "I'm a dreamer, but I really believe the efforts of this program — if we succeed in doing restorations on the entire fleet — are going to speak really loudly. "And hopefully," he says, "it will be a model for other coastal communities to do the same."

On a November morning in 2002, he motored out of Wenona harbor in his rebuilt skipjack and once again began throwing dredges overboard into the waters around Deal Island. He went out with a culling crew of relatives and locals, and they spent a long day looking through dredge haul after dredge haul, only to find thousands of dead oysters and empty shells. They came back to the dock with a day's haul of 25 bushels.

The little oysters Daniels had seen a year ago had not grown up yet, and the ones from two years earlier were already dead from disease. The 50-bushel days of 1999 were long gone and the good Lord apparently wasn't ready to bring them back.

His first day out was a "push day" — and so was every other dredging day the rest of the season. Throughout a winter of snow and ice and only scattered dredging days, Daniels never raised a sail on his refurbished skipjack.

"I did a lot of looking," he said, "and I found a lot of nothing."

But he did get his chance to go sailing. Back on Labor Day weekend, he'd signed up for the Deal Island Skipjack Races. For 43 years now, the races have been the centerpiece of a waterfront festival that brings dozens of watermen and hundreds of visitors down to the island. They come for the races and the workboat contests, but also for the blessing of the fleet, for the food and the music and the small-town friendliness — all blessings of a way of life that still hangs on down here at the end of the marshes at the edge of the Chesapeake.

For that first Monday in September, the oldest oysterman could once more feel his born-again boat come alive in his hands. Over a 12-mile course, around two buoys, in a contest with eight other skipjacks, Art Daniels brought his *City of Crisfield* home in first place.

NEW — See Video Clips on the Web

Starting with this issue of *Chesapeake Quarterly*, we will offer a new and exciting enhancement on the web: video clips related to the articles. To see them, visit the electronic version of this issue of *Chesapeake Quarterly* at www.mdsg.umd.edu/CQ/. Clips include Art Daniels and his crew working aboard the *City of Crisfield*, the launching of his rebuilt skipjack at the Chesapeake Bay Maritime Museum, underwater footage of an oyster reef, and interviews with Art Daniels and scientist Ken Paynter.

For More Information

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Web

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Chesapeake Bay Maritime Museum. St. Michael's, Maryland. Photographs and descriptions of the Skipjack Restoration Project and the museum's collection of historic watercraft. www.cbmm.org

Calvert Marine Museum. Information on the museum's exhibits and its collection of workboats, www.calvertmarinemuseum.com

Mariner's Museum, Newport News, Virginia. On-line essays on Chesapeake Bay history and boats, www.mariner.org/chesapeakebay/

Chesapeake Bay Skipjack *Kathryn*. National Historic Landmark Study. Ralph Eshelman. 1993. This website for the Maritime Heritage Program carries descriptions of hundreds of historic ships. www.cr.nps.gov/maritime/nhl/kathryn.htm

Knauss Fellows for 2003

Two University of Maryland graduate students, both in the Marine-Estuarine-Environmental Science (MEES) program, are recipients of Knauss Marine Policy Fellowships for 2003. The fellowship program, begun in 1979 and coordinated by the National Oceanic and Atmospheric Administration's (NOAA) National Sea Grant Office, provides graduate students across the country with an opportunity to spend a year working with policy and science experts in Washington, D.C.

Named after former NOAA administrator John A. Knauss, the Sea Grant fellowship program was established in 1979 to match highly qualified graduate students with hosts in the legislative and executive branches of the government or with associations and institutions located in or near Washington, D.C.

Olaf Jensen's fellowship places him in the biogeography program led by Dr. Mark Monaco in NOAA's National Ocean Service. His work there is focusing on biogeographic assessment, including habitat mapping and multi-species modeling, of the National Marine Sanctuaries. Jensen received his B.A. in biology and society at Cornell University in 1998, then worked as a naturalist and educator for the King County parks system in Seattle, Washington. He began a M.S. degree program in the MEES program in 2000 with support from the Maryland Sea Grant Research Fellowship program. His thesis research, conducted at the Chesapeake Biological Laboratory and supervised by Dr. Thomas Miller, focused on understanding the distribution patterns and spatial ecology of the blue crab in Chesapeake Bay. Jensen is currently writing his thesis and plans to graduate in the spring.

Taconya Piper is spending her fellowship year with NOAA's National Ocean Service, in the Office of Ocean Exploration. She is organizing, coordinating and

providing special support to expeditions led by the office. She is also focusing on the development of education and outreach programs that will promote ocean exploration and stewardship to the public. Her work this year with education and outreach fulfills a personal goal to implement programs that will expose inner city youths to the many opportunities for careers in ocean and environmental science. Piper earned a B.S. in environmental science from the University of Maryland Eastern Shore in 1999. In 2000, she enrolled in the MEES program under the direction of Dr. Roman Jesien, where she investigated the reproductive potential of American shad in the Delaware and Hudson rivers.

While in the MEES program she was also a research fishery biologist in the Student Career Experience Program (SCEP) through NOAA's National Marine Fisheries Service, an EPA Graduate Research Fellow, and a summer intern with the Maryland Department of Natural Resources. She will receive her M.S. degree in May 2003.

Knauss Fellowships run from February 1 to January 31 and pay a stipend of $32,000, plus $6000 for health insurance, moving, and travel. They are awarded with the help of Sea Grant programs across the nation. For more information, visit both the fellowship web site at Maryland, www.mdsg.umd.edu/Policy/knauss.html, and at the National Sea Grant office, www.nsgo.seagrant.org/Knauss.html. The deadline for fellowships is in early April; those interested in applying for 2005 should contact Susan Leet at the Maryland Sea Grant office two to three months prior to the application deadline at 4321 Hartwick Road, Suite 300, University of Maryland, College Park, 20740, phone 301.403.4220, fax 301.403.4255, e-mail leet@mdsg.umd.edu.

In Memoriam

Eileen Setzler-Hamilton, who distinguished herself for nearly 30 years as a researcher, educator, mentor and scientific liaison to numerous Chesapeake Bay commissions and task forces, died of cancer on March 12 at Solomons, Maryland. A scientist at the Chesapeake Biological Laboratory (CBL), part of the University of Maryland Center for Environmental Science (UMCES), she was passionately devoted to science — her special interests were fish ecology, estuarine ecology and management of Chesapeake Bay living resources. From 1987-1990, she also served as the Environmental Analyst for the Environmental Matters Committee of the state of Maryland House of Delegates.

In addition to research, Dr. Setzler-Hamilton was extensively engaged in teaching — she gave lectures, taught field-oriented laboratories to students from middle school through college, served as Chief Scientist on many research cruises and mentored individual students and teachers as well. She will be greatly missed by her colleagues and by the many students whose lives she touched.

CBL has set up the Dr. Eileen Setzler-Hamilton Memorial Fund in her honor. Tax-exempt contributions will be used to develop a teacher/student outreach program named for her. Send contributions, payable to The University of Maryland Foundation, Inc. to the Chesapeake Biological Laboratory, P.O. Box 38, Solomons, Maryland 20688.

Et Cetera

Coastal Technologies Request for Proposals

Maryland Sea Grant has issued a request for proposals (RFP) for a special omnibus competition in coastal technologies. Full proposals are sought for the funding period February 1, 2004-January 31, 2005. Principal investigators who have not submitted proposals before are especially encouraged to contact the program and find out more about Maryland Sea Grant.

Research proposals should foster creative and innovative thinking in the development of technologies relevant to the needs of the coastal resource management and coastal industries. Priorities for funding include coastal sensors (mechanical, biosensors, etc.), innovative technologies for aquaculture and the seafood industry, natural products and processes (biotechnological, biochemical, etc.), coastal engineering, and data management tools for coastal communities.

Proposals are due no later than 5:00 p.m. June 20, 2003. Submission details and schedule, the RFP and examples of Sea Grant-funded research are available on the web at www.mdsg.umd.edu/Research/RFP/CT. If you prefer a hard copy of the RFP, please contact Maryland Sea Grant at 301.403.4220.

***Chesapeake Quarterly* is also available on the web at www.mdsg.umd.edu/CQ**

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