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Seafood & the Bay

contents

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Chesapeake Quarterly explores scientific, environmental, and cultural issues relevant to the Chesapeake Bay and its watershed.

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Cover photo: *Oysters come streaming into Harris Seafood from the Chesapeake but also from the Carolinas, the Gulf, and New England. Local processors depend on product from waters far away and workers from other countries — especially guest workers from Mexico — to keep afloat.* PHOTOGRAPH BY SKIP BROWN. ***Opposite page:*** *Unloading crabs trucked in from BWI Airport, where they arrived from the Gulf of Mexico, Art Oertel continues a long tradition of providing quality seafood to customers on Maryland's Eastern Shore.* PHOTOGRAPH BY SKIP BROWN.

Eat Local?

Lobsters in Maine. Crayfish in Louisiana. Blue crabs by the Chesapeake.

What's better than local seafood, eaten fresh and close to where it's caught? There is just something special about the taste of home. Not only that, but local food doesn't burn a lot of fuel to get to our plates.

In the Chesapeake, a bounty of oysters, crabs, and fish has provided a livelihood for local communities and enriched the experience of living here.

But what happens when local waters turn cloudy, and local seafood gets scarce? When demand outstrips the local catch, and it's easier to get oysters from the Gulf and crabmeat from Asia?

Nowhere are these questions more poignant than in the Chesapeake Bay, where the storied oyster and blue crab fisheries struggle to survive.

What does the future now hold for the Bay's traditional seafood industry?

And here's the biggest question of all. Won't the future of local seafood depend on whether or not we succeed in restoring the Bay itself?

Photo courtesy of Robin Olson, www.robinsweb.com

Bringing It All Back Home

Bay Seafood in a Global Market

By Jack Greer

Karen Oertel walks along the wintry edge of Kent Narrows, a slash of slate gray that runs between Kent Island and Maryland's Eastern Shore. She glances toward the Route 50 bridge and at the marinas and pleasure boats that now line the Narrows. There's not much room here for traditional seafood processors anymore.

Arriving at an unassuming white shed, she steps inside, parting heavy plastic strips, like those that might mark a supermarket food locker. Here, amid the sounds of oyster shucking, the Chesapeake seafood industry seems very much alive.

Oertel ducks to avoid the metal cages that creak around the ceiling on a track, like miniature coal cars. The cages deliver a steady stream of oysters from the loading room. When tilted, they spill their white coal onto the table with a clatter. She circles around a group of large metal tables, where two rows of oyster shuckers wearing big yellow rubber gloves face each other across piles of shell. As she inspects the work she stands out in her red jacket, covered by a white windbreaker.

The tables take up the whole center of the tight room. It's loud. This is Harris Seafood, in February, after a fresh shipment of oysters has arrived from Pamlico Sound in North Carolina, along with some oysters from Deal Island down the Bay. The shuckers — almost three dozen of them — are a miracle of movement. They first jab each oyster against an electric grinder to knock off a spot on the shell. Then they use a short shucking knife to pry open the shell and slice the adductor muscle. The oyster slips out and into a pail. The shuckers get paid a dollar

a pound and can make $20 an hour. This is piecework. Move on.

There are men and women here of every hue. Above the noise one friendly woman, African American, says there used to be more money in shucking oysters. Now business is down. She only does this sometimes — other times she drives a school bus.

Talking is difficult, and most focus on their work, casting quick glances around at the mayhem. When conversation does come, it may be in Spanish. More than a third of these workers hail from Mexico. Everyone is working like crazy. One man rocks from foot to foot as though hearing music in his head. Oertel says that sometimes they play the radio — loud — and then you can hardly talk at all. It used to be hymns.

And the oysters all used to be from the Chesapeake.

Born into Seafood

While cash crops like tobacco first fueled the Chesapeake's growing economy, another harvest sprang up that did not require large capital investment and did not depend on owning large stretches of land. This was the Chesapeake seafood business, and it proved the lifeblood for many Bayside settlements. Up any good-sized creek or cove a traveler would find watermen's workboats, crab shedding floats, oyster shucking houses. Some eked out a living along the shore, others launched full-fledged seafood businesses and prospered. Either way, those who harvested, processed, and sold Chesapeake seafood shaped a rich waterside culture soon known around the country. They passed on a heritage of sleek workboats, weather-toughened watermen, and legends of bountiful fish and shellfish. That heritage is now threatened by dwindling stocks, labor shortages, and global competition.

Most of all, it's threatened by the ecological decline of the Bay itself. This is the theme struck most often by Oertel, who's become a prominent voice for the Bay's traditional seafood industry.

The morning Karen Oertel came into the world, in November 1946, her father harvested 78 bushels of oysters near the mouth of the Corsica River on Maryland's Eastern Shore. That's the story told by her husband, Art Oertel, now sixty-five, and the historian in the family. Her life, it seems, was bound to oysters from the start.

Together Art and Karen Oertel, along with her brother and sister-in-law, Jerry and Pat Harris, have built a life on oyster shells — and now on crabs and other seafood as well.

Oertel says they could have sold out to condos a long time ago. But they didn't. "We're in this for the long run," she says.

With her sharp brown eyes and quick wit, she soon became a spokesperson for the family business and eventually for the local seafood industry. She's served on advisory committees, councils, task forces, and chambers of commerce. Now she's on the Board of Directors of the Maryland Agricultural and Resource-Based Industry Development Corporation (MARBIDCO), created in 2004 by Maryland's General Assembly to give the state's farming, forestry, and seafood industries an economic boost.

Champion of traditional industries, *Karen Oertel (above) and Jerry Harris (opposite page, lower right) inherited a love of seafood from their father, William H. Harris. Sixty-two years after its founding, Harris Seafood still shucks and packs oysters (left and opposite page, lower left), often counting on seasonal workers from Mexico. Oyster cans (opposite page, above) bear mute witness to hundreds of packing plants, now gone.*
PHOTOGRAPHS BY SKIP BROWN, EXCEPT OYSTER CANS BY JACK GREER.

It has not been an easy path. The Bay has seen sharp declines in oysters since her father, W.H. Harris, first launched his seafood business back in 1947, after he returned from serving overseas. That year Maryland's oyster harvest came in around 2 million bushels a year. Though it saw some ups and downs, thirty-five years later the catch was still hovering around 2 million bushels. It must have seemed that the oysters would go on forever.

Then, in the mid-1980s, two oyster diseases, MSX and Dermo, rode a drought-driven salt wedge well into Maryland waters. They soon decimated oyster bars in the northern Bay, as they had in Virginia. The harvest plummeted, reaching rock bottom in 2004, with a commercial haul of less than 7,000 bushels.

All through this time, the Harris-Oertel clan worked to keep their seafood business going. They now run a seafood restaurant that sits right next to the oyster shucking plant. Seated around a cozy table there, they recall the heyday of the oyster business.

Art Oertel points along the walls of the restaurant, where two rows of shelves hold a collection of oyster packing cans. Their labels sport all manner of graphic designs and names. There's Jack's Oysters, Sailor Boy, and Silver Sea. There's Tred Avon River and J.C. Lore.

The best lithographs grace cans from about 1900 to 1920, he says. The companies could afford to pay for them — the oyster canning business was booming.

Back before World War II, Karen Oertel's uncle told him, a local company, A.C. Harris, shucked 1,900 gallons of oysters in a single day. The shuckers went to work at midnight, he says, and didn't stop until 4 o'clock that afternoon.

Around Kent Island alone, he figures there were some two dozen packing houses. Oscar Dunn, Brown Brothers, Calvert Jones, Alec Thomas, Harvey Ruth, Kneeland Shellfish, Diggs Seafood, John Coursey, B & S Fisheries, and many others. There was also A.C. Harris, Holton Harris (Karen Oertel's grandfather, who owned Kent Oyster Company), and W.H. Harris.

More than 650 old oyster cans fill Oertel's collection, tin ghosts of hundreds of oyster companies — companies that have all faded away. Or almost all.

One by one the packers around Kent Narrows closed, he says, until there were only two. B & S Fisheries and W.H. Harris. About four years ago, Jean Stelmach, the owner of B & S, closed up shop. That left W.H. Harris, now operating as Harris Seafood, as the last full-time oyster shucking plant in the Narrows and — according to Art Oertel — in the entire state of Maryland.

Whether counting on oysters or fish or crabs, so many of the seafood businesses that supported Bayside communities from Kent Island, Maryland to Hampton, Virginia, have slipped away.

A sad irony, since all around the country the seafood business is booming.

The World of Seafood

Low in bad fat, high in good fat, full of protein and nutrients, seafood has risen toward the top of many American menus. Americans now spend over $50 billion a year for fishery products, according to the National Oceanic and Atmospheric Administration (NOAA). U.S. consumption has topped 16 pounds per person per year. That's a lot of seafood, and that means a lot of business. Big business.

Just ask big-time buyers like Bob Arnold or Steve Schneider.

Arnold directed the seafood programs for Marriott Corporation for seventeen years and now buys shrimp for the seafood company, Contessa. Schneider worked for years in Cambridge, Maryland for Icelandic Seafood and now lives in Boston, where he buys seafood for Fishery Products International.

To them, the seafood business now means large companies and increasing consolidation. Schneider's move to Boston, for example, came after a merger closed the Cambridge plant — bought out by another Icelandic company, Samband of Iceland. It was, he says, a sign of the times.

While traditional Bay processors may handle crabs by the bushel and oysters by the gallon, dealers like Arnold and Schneider buy their shrimp in 40-foot containers that arrive on oceangoing ships.

Seafood companies have moved toward becoming "global sourcing entities," says Schneider. For shrimp. For salmon. For tilapia and other popular species.

Where a specialty seafood business may once have sold local catch and regional favorites, he says, now seafood moves through large brokers, distributors, and grocery chains. They bring a much broader selection — and they get it wherever they can, from anywhere in the world.

According to Schneider there's a "threshold" for national markets, a minimum of 40,000 pounds a year for small suppliers to "a quarter million pounds" a year for the larger suppliers. He says the big suppliers also want large quantities at a uniform size, a demand small-scale operators may find difficult to meet.

With more big businesses getting into the game, competition is stiff. The difference of a few cents per pound can mean getting a large contract or losing it, say Schneider and Arnold.

In the new global economy, the seafood marketplace — as with other commodities — is fluid. Labor and sources shift as supply and demand change, as big money moves. In this climate of big business, how can local small-scale Chesapeake seafood businesses ever expect to survive?

Kristi Bahrenburg Janzen

Optimism, youth, and market savvy *fuel Marvesta Shrimp Farms, a new high-tech aquaculture enterprise on Maryland's Eastern Shore. Guy Furman (left), a bioengineer, teamed up with friends Scott Fritze (right) and Andrew Hanzlik (center), both with degrees in finance, to bank on growing shrimp. They target high-end restaurants with a penchant for sustainable, local food and add a new twist to the Bay's seafood tradition.*

Thinking Outside the Shell

Scott Fritze is banking on the Bay's seafood business taking a different turn. Fritze, along with partner Guy Furman, grew up not on the Eastern Shore but in the North Baltimore neighborhood of Roland Park. They represent a new generation that uses the word "sustainable" often. Fritze thinks that seafood buyers and restaurant owners now care more about where their seafood comes from, and whether those sources are sustainable — whether fishers will leave enough behind to allow stocks to continue to reproduce at a reasonable rate. Fritze, Furman, and their third partner, Andrew Hanzlik — all under thirty years old — feel that consumers are now more concerned with food that's fresh, not frozen, and with "what they put in their bodies." And they believe that they are providing the product those customers want — shrimp grown in completely controlled conditions.

Fritze and his partners have launched Marvesta Shrimp Farms, a high-tech aquaculture operation near Hurlock, Maryland that's gotten good press in the *Washington Post* and elsewhere. Marvesta's idea is intriguing: ship tiny (one-sixth of an inch) post-larval shrimp up from Florida then grow them from start to finish in large covered pools that look like greenhouses. No destruction of the mangrove forest. No by-catch that kills other sea creatures. No chemicals or impurities. No pollution. And, they're grown right here on the Eastern Shore. Marvesta's business plan is very specific. They grow large shrimp (5 to 8 inches long) and sell it fresh, not frozen, directly to high-end buyers — especially to the chefs of fine restaurants (see "A Good Catch," page 12.)

The facility has the capacity to grow some 40,000 to 50,000 pounds of shrimp a year, according to Fritze and Furman. Construction now underway will multiply that amount by three or four times.

That's a lot of shrimp for the Eastern Shore, but not a big haul compared to the shrimp farms of, say, Central America. According to the upscale chain, Whole Foods, the Bluecadia shrimp operation in Belize covers more than 20,000 acres, has three farms, two hatchery sites, a modern processing facility, and provides jobs for 350. Their facility is capable of freezing 100,000 pounds of shrimp per day. That's *per day*.

Nevertheless big seafood buyers like Arnold are intrigued with the Marvesta operation. They will have to be careful not to expand too fast, Arnold thinks. It

Sibling synergy emanates *from Karen Oertel and her brother, Jerry Harris. Along with their spouses, Art Oertel and Pat Harris, they have pooled their energies to run a thriving seafood business and popular restaurant in the face of sagging local harvests and tough competition.* PHOTOGRAPH BY SKIP BROWN.

A Chesapeake Seafood Sampler Of Commercially Harvested Species

Striped Bass (*Morone saxatilis*)

Wild – After a harvest moratorium brought striped bass back from steep decline, the fishery now enjoys a reputation as a model of successful recovery. Possible certification by the Marine Stewardship Council could put eco-labels on Maryland striped bass and give the fishery a boost in the marketplace.

Farmed – The culture of striped bass has expanded in the past two decades, but not in the Chesapeake region. This is primarily due to the high cost of land, lack of high volume groundwater, and competition with the wild fishery.

Oysters (*Crassostrea virginica*)

Wild – Overharvesting and diseases like MSX and Dermo have left the wild oyster fishery at a fraction of historic levels. This year should bring findings from a long-awaited Environmental Impact Statement on the potential introduction of *Crassostrea ariakensis*, a non-native oyster considered more resistant to disease than the failing native oyster, *Crassostrea virginica*.

Farmed – Practiced in the Bay for over a hundred years, oyster culture declined at the end of the 20th century due to the proliferation of disease. Growth of aquaculture operations such as Bevins and Cowart oyster companies in Virginia, and Circle-C Oyster Ranchers, Great Eastern Chincoteague, and Marinetics in Maryland, indicate increased interest in cultured oysters. A preliminary report recently released by the Maryland Oyster Advisory Commission stated that the greatest opportunity for expanding oyster production for economic benefit will be through aquaculture. But expanding oyster culture in Maryland will likely require changes in some longstanding laws.

Blue Crabs (*Callinectes sapidus*)

Wild – Blue crabs support one of the Bay's largest and most valuable fisheries, but low stock sizes and reports of harvests at or near record lows in both Maryland and Virginia have sparked concerns over the health of the fishery.

Farmed – Although crab culture has been part of groundbreaking research on blue crab life cycle and hatchery technology, there are as yet no commercial crab culture businesses in the Chesapeake. One form of aquaculture, the long-standing practice of shedding crabs for soft-shells, provides a robust industry with national and international sales.

Hard Clams (*Mercenaria mercenaria*)

Wild – Hard clams support a small commercial fishery in the Virginia portion of the Chesapeake Bay, and an even smaller fishery in Maryland's coastal bays. The forthcoming ban on hydraulic harvest gear beginning in October 2008 may bring the end of Maryland's wild hard clam fishery.

Farmed – Hard clam mariculture (aquaculture in saline water) is a multi-million dollar industry in Virginia. Work is underway to ramp up successful efforts in Maryland's coastal bays, but the current small industry has met opposition from environmental groups and riparian property owners.

Soft Clams (*Mya arenaria*)

Wild – An important commercial fishery in the Chesapeake since the 1950s, most soft shell clams are exported to New England states where clam populations have declined. Consistently low landings in recent years suggest that Bay soft clams have declined as well.

Farmed – There is no soft clam mariculture industry in the Chesapeake, and development of one is unlikely due to widespread anoxia, the lack of hatchery production, disease, and heavy predation by cownosed rays.

Shrimp (*Penaeus vannamei*)

Wild – Several species of shrimp occur as far north as the Mid-Atlantic, but there is no significant harvest for wild shrimp in the Chesapeake region. Major shrimp fishing grounds stretch from the Carolinas south to the Gulf of Mexico.

Farmed – Though not a traditional Chesapeake seafood, the development of high-tech shrimp aquaculture facilities on Maryland's Eastern Shore and in western Virginia may signal the start of a successful industry in the area.

Photograph credits: striped bass, Tim Van Vliet; oyster, Sandy Rodgers; blue crab, Skip Brown; hard clam and shrimp, NOAA Estuarine Reserve; and soft clam, Kirsten Poulsen.

will be a delicate dance between producing enough volume to be a player but not growing so fast that they get ahead of themselves in terms of scale and cash flow.

Will Fritze's faith in astute consumers and discriminating restaurants bear fruit? So far Marvesta's business model seems to be working, and he is not alone in the world of high-tech aquaculture. In western Virginia, for example, Blue Ridge Aquaculture, far from the Bay, raises tilapia, trout, salmon, cobia — and, just beginning, shrimp — all in closed systems. Big retailers from high-end groceries like Whole Foods to high-volume outlets like Wal-Mart are also getting on the sustainability bandwagon, and with so many wild stocks under pressure, eco-friendly aquaculture may be looking better all the time (see "Evolution of a Movement," p. 14).

But what about traditional seafood businesses that rely on getting oysters and crabs the old-fashioned way? Is there room for them in this brave new world?

Navigating the Global Economy

The Mexican workers who shuck oysters around the metal tables of the Harris seafood plant are one sign that the Bay's seafood businesses are already adapting to change. Faced with a severe labor shortage, oyster processors and crab pickers have turned to migrant labor.

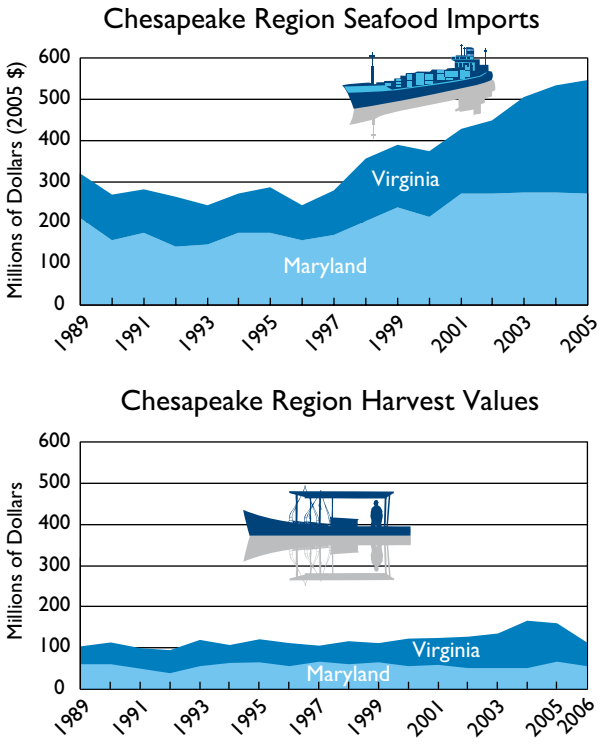
"We tried everything," says Jack Brooks of J.M. Clayton Seafood, a crab picking plant in Cambridge. Even busing in workers from the city. But according to Brooks and other processors in both Maryland and Virginia, the manual labor and seasonal nature of shucking and picking just don't appeal to local workers anymore. Things have changed, and many, they say, would rather work cleaner, more regular jobs in retail or other areas.

The seafood processors have themselves become part of globalization, bringing labor across borders to keep their industry going. They have also run straight into U.S. immigration controversies and the government's strict caps on

guest workers. Brooks and others see guest workers as a make-or-break issue for the industry, and they've taken their cause to Capitol Hill (see "Bay's Labor Lost," below).

While workers travel to Bay country to shuck oysters and pick crabs, those oysters and crabs often come from somewhere else as well. Many of the oysters now shucked at the Harris oyster plant come from the Gulf of Mexico, especially Louisiana. They also come from Delaware, New Jersey, and Connecticut.

The same goes for crabs. During the winter, when crabbing shuts down in the Bay except for a small dredge fishery in Virginia, the Harris Crab House gets over 90 percent of its crabs from the Gulf. And even during the summer, with Bay harvests down and watermen scrambling to find decent-sized crabs, the restaurant still gets the vast majority of its crabs from



***Seafood abounds** in the Chesapeake region, but much of it comes from offshore. The value of seafood arriving at the ports of Norfolk and Hampton Roads, Virginia and Baltimore, Maryland (top graph) has virtually doubled since the early 1990s to some $600 million. The value of all Bay seafood (bottom graph), including menhaden (not a food fish) and scallops (caught offshore), does not top $200 million at dockside.*
SOURCES: TOP GRAPH, U.S. CENSUS BUREAU, FOREIGN TRADE DIVISION, IN 2005 DOLLARS; BOTTOM GRAPH, NOAA NATIONAL MARINE FISHERIES SERVICE, IN UNADJUSTED DOLLARS.

Bay's Labor Lost

Seafood processors now look to foreign seasonal workers to help fill the shrinking ranks of local oyster shuckers and crab pickers.

For workers from places like Mexico, where pay scales are low, traveling to the U.S. for part of the year to work in the seafood business is not a bad deal. They can make better money and then bring that money home.

A win-win situation — except that the guest worker program has run into the controversy that surrounds U.S immigration policy.

The U.S. guest worker program falls under what's called the H-2B Work Visa. The U.S. Immigration Service created that visa mainly for non-agricultural jobs, in which U.S. workers are in short supply. It allows workers to come to the United States temporarily — and legally. One drawback: the program caps H-2B Visas at 66,000 nationwide each year.

While oyster plants can apply for workers at the beginning of the federal fiscal year, crab pickers are not so lucky. By the time the crab industry gets going in late spring and summer, other businesses have already scooped up most of the visas.

Crab processors like Jack Brooks, of J.M. Clayton Seafood in Cambridge, Maryland and Kevin Wade of J&W Seafood in Deltaville, Virginia took the issue to Congress. They found a sympathetic ear in Maryland Senator Barbara Mikulski and Virginia Senator John Warner. With their backing, Congress passed


Skip Brown

new rules that stagger the application allotment. Now one begins October 1 and the second April 1, so all the visas won't vanish at the start.

That helped, but the seafood processors still struggle, since applications quickly reach caps for both allotments.

Brooks and his colleagues went back to Congress. They argued that returning guest workers in good standing should be exempted from the cap. With the support of Senators Mikulski and Warner they won that argument, and language attached to a defense bill granted the exemption.

This meant that workers who'd mastered crab picking and oyster shucking — and who had proven themselves reliable — could return. It was a breakthrough for the processors and allowed them to build a workforce they could begin to depend on.

But this year that annual exemption failed to pass in the U.S. House of Representatives, and now processors once again find themselves facing the national cap.

The loss of the exemption came as a shock. According to Brooks, all of this year's visas for both the October 1 and April 1 start dates were taken well before the deadlines. Many processors, he says, including those in North Carolina and Virginia, got few guest workers — or none at all.

Why did the policy change? According to Brooks and Wade, the guest worker program has gotten tangled with the larger debate over immigration. Until the issue over illegal immigrants is settled, they say, political pressure hampers any expansion of the guest worker program.

This strikes Wade as unfair. "This isn't an immigration" issue," he says. "They [the guest workers] don't want to stay here."

Resource economist Doug Lipton at the University of Maryland agrees that the guest worker issue is a major one for the industry. He says that most of Maryland's crabmeat, worth some $20-35 million a year, is picked in traditional plants. Nearly 80 percent of Maryland's 15 to 20 crab plants rely on seasonal workers to pick that crabmeat, he says.

Lipton has also reached a remarkable conclusion. "We've calculated that for every seasonal worker in the seafood industry, 2.5 jobs are created in the state of Maryland," he says. According to Lipton, these guest workers are not taking American jobs. They are creating them.

— J.G.

The Phillips Story

It's hard to talk about imported crabmeat without talking about the Phillips family. Especially Steve Phillips. Born on Hoopers Island before there was a bridge to the rest of the Eastern Shore, Phillips and his family had to wait for low tide to drive to the nearest town. He grew up in, on, and around the Chesapeake. His family lived off fish, oysters, and crabs. In 1954, when he was 14, they moved to Ocean City, where they opened a small seafood stand. Their two picnic tables soon grew to ten, and then into a full-blown restaurant. The rest is part of Maryland's seafood history. In 1980, the Phillips family opened a second restaurant in Baltimore, then one in Washington, and others in Annapolis, Myrtle Beach, Atlantic City. Now there are Phillips restaurants in airports.

As the business grew, so did the demand for crabs. Customers wanted more crabs than the family could get, and they wanted them year-round. Steve Phillips set out on a mission that would take him far from the Eastern Shore.

His search turned up stories of an abundant crab in the Philippines — the blue swimming crab. With considerable gumption, he hopped a plane to Manila to check it out. There were, he learned, rich crab grounds farther south in the province of Negros, but the Philippine authorities warned that an outsider could run into trouble there.

Phillips persevered. He caught a small plane south and began hanging around the shore, asking questions, watching. Then an odd thing happened: the fishermen started talking crabs. Though far from home, Phillips was a crabber through and through, and he thinks the fishermen picked up on this. They talked about different gear. What kind of bait they used. What kind of luck they were having. He built pots from chicken wire and showed them how watermen do it in the Chesapeake. Before long, he made good friends. And he tapped a large supply of the blue swimming crab, a crab very like the Chesapeake blue crab. It would soon be served in "Maryland-style" crab cakes back home.

Jessica Smits

An empire was born.

The Phillips company now has processing plants in the Philippines, Indonesia, Vietnam, Cambodia, Malaysia, India, and elsewhere. In addition to crabs they also process lobsters, scallops, and tuna. They employ some 18,000 workers and have aggressive plans for more expansion. The family from Hooper's Island has done well.

They have also outsourced both the catching and processing of their product — the very essence of globalization.

— J.G.

the Gulf — despite its location right on the Chesapeake.

Jerry Harris, who does most of the buying for the business, says he can get a more consistent supply of big crabs from Louisiana than he can from the Bay, for essentially the same price. He also wants to keep his Gulf coast suppliers happy, so he can depend on them year-round.

Harris buys whole crabs for their restaurant and plans to keep his sources inside the country. But when it comes to picked crabmeat, shipments headed for the Bay region may arrive from anywhere in the world. Venezuela. Thailand. Cambodia. Indonesia. The Philippines. Those in the Bay area who buy and distribute crabmeat, shrimp, and other seafood have turned to foreign sources in increasing numbers. According to University of Maryland economist Doug Lipton, who heads up the Maryland Sea Grant Extension Program, the annual value of seafood imports arriving on foreign ships at the ports of Baltimore and Norfolk doubled between 1995 and 2005, from less than $300 million to almost $600 million (see graph, page 9).

Seafood is pouring into the region from overseas, and some local dealers are doing very well — perhaps none better than Steve Phillips. Phillips, a local boy from Maryland's Eastern Shore, traveled to Asia to tap the large crab stocks there, and helped to turn a family business into the international giant that Phillips Seafood is today (see above). In this model, the workers, the product, and even the processing plants are all overseas. The only thing that makes it to the Bay is the crabmeat.

"That's a fine model if it works for him," says Karen Oertel. "That's not what we do." The Harris-Oertel family considered opening another restaurant and expanding, but so far they've decided not to. "If the next generation wants to do that, that will be their decision," she says. For now, even if their crabs come from the Gulf, they're still domestic, and she says they want to keep it that way.

Those who want to keep their seafood local face a serious shortage of supply. Except for striped bass, almost every major Bay species is struggling.

In an effort to grow more product locally, some traditional seafood businesses are also turning to aquaculture. Their techniques are less high-tech than Marvesta's closed-system shrimp farm, though some are trying new methods. Cherrystone Aqua-Farms has a clam hatchery in Cheriton on Virginia's Eastern Shore and is profitably growing clams in the open environment of Cherrystone Creek. The Bevins com-

pany, a longtime Virginia processor, is growing sterile oysters that grow fast enough to reach harvest size before diseases like MSX can kill them. In Maryland, the Marinetics company is growing oysters they call Choptank Sweets in floats — some 3,000 of them — near Cambridge.

Such enterprises are promising. But for traditional processors focused on volume, the output is small. The Marinetics operation, for example, is aiming to produce some 5 million oysters a year. Last year, Harris Seafood alone shucked about ten times that amount, almost 50 million oysters, according to Jason Ruth, who now runs the shucking operation. Aquaculture operations at the current scale, he says, could not take the place of his out-of-state suppliers.

Branding the Bay

In the end, both the traditional Bay seafood industry and cutting-edge aquaculture like Marvesta and Marinetics face the same challenge. Neither can meet the demands of large-scale global markets. Gone are the days of oyster shells piled as high as a house. Both Bay seafood grown in culture and what comes out of the Bay itself need to find high-value markets and high-end outlets like fine restaurants. They need to brand Chesapeake seafood as a local delicacy to regional buyers and as something very special to everyone else. They may need to sell it over the Internet (see "Blue Crabs Online," page 17).

The key for these businesses is to aim for the top of the market, not the bottom. That's the only way to go, says Jane Stoors, a marketing expert at the Maryland Department of Agriculture (MDA). She's spent years marketing Maryland agricultural products to a wider world and says what's true for meat and vegetables is probably true for seafood as well. "You need to find out what consumers want," she says, "and then give it to them." It's not enough to bring your product to market and then see if anybody wants it, she says. "That puts you at the end of the line," she says, "a place you don't want to be."

Her colleague, Noreen Eberly, who heads up seafood marketing for MDA, agrees. She's trying to ride the "buy local" wave that's caught on in many parts of the country. Eberly works with smaller companies, and says that the Bay just doesn't produce enough seafood to move through large distribution centers like Jessup, Maryland, or through large restaurant chains like Applebee's.

Eberly and others in the seafood industry are focusing on quality — for example, through a Crabmeat Quality Assurance program. This program, administered by Maryland Sea Grant Extension specialist Tom Rippen, focuses on quality control throughout processing and tests for problematic microbes. Participating processors gain the right to use special labels that denote genuine Maryland crabmeat, both in fresh cups and pasteurized cans.

They're banking on the Bay's reputation as a producer of high quality crab, and branding the superiority of Maryland crabmeat in particular.

"The Bay is still the blue crab capital of the country," says economist Doug Lipton. "Maybe of the world."

Lipton's a big supporter of the Maryland crab campaign and of the effort to buy local. But he says that even with crabs and crabmeat coming from other places, the Bay will continue to draw crab lovers because of its history, its sense of place. People come from all over to eat crabs by the Bay, he says, and apparently it doesn't matter to them that much of that crab comes from somewhere else. Most restaurant-goers probably don't even realize it.

Economists like Lipton and longtime processors like Karen Oertel would likely agree that the biggest asset the Bay seafood business has for now is the Bay itself. The Bay is still trading on a reputation it's built over several centuries. A long habit of serving seafood.

There is, however, a darker side. If the Bay's reputation becomes one of polluted water body, with badly overfished stocks and seafood advisories that warn against contaminants like PCBs and mercury, the celebrated image of iconic watermen and bountiful seafood could shift. Degraded water quality and declining stocks could not only reduce the Bay's seafood supply, it could also damage its most prized possession — its reputation, its sense of place. Its place in the market.

It's a short walk for Karen Oertel from the restaurant to the shucking plant next-door. She's scheduled to give a tour of the plant and a Chesapeake Bay pep talk to several dozen first-graders just arriving in a bright yellow Queen Anne's County school bus. Teachers are already lining them up by twos out front. She's going to let them touch squishy oysters and mushy soft crabs and she'll teach them "not to trash the Bay."

She has the future in mind. What will these youngsters know of the Bay's famed seafood industry when they grow up? What will they understand about the healthy waters that have sustained her family for more than three generations? Will all the fish, crabs, and oysters these children eat come packaged in plastic from somewhere far away?

"Do you want to lose all that history?" she asks, as she heads toward the kids waiting for her at the plant.

"We're heading in that direction," she says. "Wake up."

— *email the author, greer@mdsg.umd.edu*

For More Information

Maryland Seafood & Aquaculture
www.marylandseafood.org
Maryland Crabmeat Quality Assurance Program
www.marylandseafood.org/crabmeat
Virginia Seafood
www.virginiaseafood.org
Seafood Technology
www.mdsg.umd.edu/programs/seafood
Marine Stewardship Council
www.msc.org

Video on local fishing communities

Maryland Sea Grant's Video Journal
www.mdsg.umd.edu/videos
Wild Caught: The Unheard Voices Project
www.unheardvoicesproject.org

A Good Catch
Serving up Sustainable Seafood

By Jessica Smits

Woodberry Kitchen won't open its doors for another two hours, but for Chef Spike Gjerde the pressure is on. There are vegetables to prep, the day's menu to finalize, and his forty pounds of Alaskan sockeye salmon is still on its way.

Cast iron machinery perched along towering walls of exposed brick alludes to the restaurant's former industrial identity as the old Clipper Mill, a foundry on the outskirts of Baltimore's Hampden neighborhood. Now the airy space marks the newest venture for Chef Gjerde, a fixture in the Baltimore restaurant scene for over a decade. Gjerde, his wife Amy, and sommelier Nelson Carey opened Woodberry Kitchen in October 2007 with more on the agenda than just fine dining.

The restaurant specializes in cuisine made from local and sustainable ingredients. "We made a decision that these are things that matter to us," Gjerde says.

From the wine list to the house-made cheese to, especially, the seafood, the local and sustainable mantra informs all aspects of the business, he says. "The Chesapeake Bay is the most glaring reason to pursue business in this way." Disease and overharvesting have decimated wild oyster populations. Pollution threatens the health of the water and species like blue crabs and striped bass. "If you are at all aware of what's happening, you have to start thinking about your impact."

But the forthcoming sockeye salmon isn't exactly local. It hails from the pristine waters of Bristol Bay, Alaska — a long way from the Chesapeake. Sourcing only local sustainable seafood would be difficult, Gjerde says, and he wouldn't want to put that much pressure on an already struggling Bay. It's a balancing act — the less local the product, the more sustainable it has to be, he explains. "The Alaska fisheries are one of the great models of sustainability in the world." For Gjerde, this fact trumps the more than 3,500-mile distance.

Gjerde relies on his primary seafood supplier, Gaylord Clark, owner of Two Oceans Seafoods, for information on sustainability. The two met through the Chesapeake Sustainable Business Alliance, an organization that encourages businesses to reduce their environmental impact and support the local economy. "I can't tell you how frustrating it is to talk to old-line seafood guys who can't give me a straight answer on where the fish comes from," let alone its environmental impact, Gjerde says. Gaylord Clark embodies a newer trend.

A self-proclaimed talker and a commercial fisherman himself, Clark is well versed in the nuances of sustainable seafood. He delivers not only fish to local chefs, but also information. He discusses things like harvesting methods, management structures, and stock assessments — probably more than the chefs ever wanted to know, he jokes. Most chefs circulate among their clientele during the evening, he says. By educating the chef, Clark equips the chef to, in turn, educate the customers. The customers may then tell friends or go to a seafood market and ask specifically for sustainable seafood. Public interest is key, he says, because that is what ultimately moves politicians to action.

And local customers, he says, are becoming more interested in the source of their food. It's broader than the niche market it used to be, Clark says. "People are paying more attention to where their food is coming from — partly because of cost, partly because of education, and partly because of palate."

Baltimore was a steak and potatoes kind of town, Clark says, when he was growing up in the 1960s and 1970s in its Roland Park neighborhood. Sustainability, agriculture methods, and the sourcing of food, weren't yet part of the demand equation. After fishing for six years out of Cape May, New Jersey, and a stint on a freezer trawler out of New Bedford, Massachusetts, Clark moved to the West Coast where he spent the next 20 years shuttling freight to Russia and fishing for species from sole to salmon. Given the opportunity to return to his native Maryland and live in a remodeled barn on his family's Carriage House

Flown in overnight *from Bristol Bay, Alaska, sockeye salmon (opposite page) will soon take its place alongside local vegetables and meats on tonight's menu board (above). Chef Spike Gjerde (right) unloads the salmon before it's whisked away for preparation.* PHOTOGRAPHS BY JESSICA SMITS.

Farm in Baltimore County, Clark, his wife, and daughters were excited to make the move.

Upon his return, Clark and his family, including his parents who also live on the 82-acre farm, decided to capitalize on the increasing attention paid to local agricultural products. They raise free-range chickens and turkeys and sell the farm-fresh eggs and meat to local individuals and restaurants.

Clark's seafood sourcing business, Two Oceans Seafoods, reflects his other identity as a commercial fisherman — an identity he reclaims each summer when he returns to Alaska to fish for salmon aboard his boat the *Jack of Hearts*.

Clark started his business when he saw the scarcity of West Coast seafood in East Coast markets. His company's name is a nod to Clark's sourcing from both the Atlantic and Pacific oceans. Its focus on only sustainable seafood just makes sense, he says. "It's a self-defeating proposition to fish the last fish in the sea." And for his business to survive he must count on seafood's availability in the future. "If I lose my product because it's not sustainable, then I'm going to lose my customers."

Squeezed among shelves of flour and vegetables, and refrigerators full of milk and meats, Spike Gjerde sits at his computer fine-tuning a description of Roasted Beet Borscht for tonight's menu. Gaylord Clark appears in the doorway holding the delivery Gjerde's been wait-

Jessica Smits

Delivery in tow, *Gaylord Clark of Two Oceans Seafoods heads straight to the kitchen to meet Chef Gjerde. There's a place and face for everything served at the restaurant, says Gjerde. Clark is the face of sustainable seafood.*

ing for. Dressed in a knit cap and a cabled wool fisherman's sweater, Clark plops the box on the floor and extends a hearty handshake and greeting to the shaggy-haired blonde chef.

Without delay, Clark rips open the box to display a mound of individually packaged bright pink salmon fillets. The sockeye were caught the previous summer and then frozen and packaged by Peter Pan Seafoods near Bristol Bay. There's no need to lecture on this fishery — Gjerde's heard it all before and knows that it's considered one of the most sustainable in the world. He looks it over discerningly — almost as if he might not approve — but then says enthusiastically, "Right-o, when can I get more?"

"Next week is the earliest," Clark replies, as Gjerde quickly unloads the salmon into plastic bins, which kitchen workers whisk off without any direction or discussion. With perishable fish on the line, Clark's not willing to risk the common mishaps associated with an overnight delivery from Alaska on the weekend. "But I can get you red drum out of Texas. It's farmed raised."

"Farmed? What's the environmental impact of that?" Gjerde asks.

Clark says the farm looks good — it uses natural seagrass habitat, and feeds the fish vegetable matter, rather than fishmeal (the use of wild fish to feed farmed fish

Continued on p. 16

Eat This Fish Not
The Evolution of a

A decade ago, when small tent cards started disappearing off the Monterey Bay Aquarium's café tabletops, the staff knew they were on to something. The coveted item: a list of recommendations on environmentally friendly, and not-so friendly seafood developed in response to an exhibit called "Fishing for Solutions." The popularity of the café display sparked the creation of the aquarium's Seafood Watch Program and the formal distribution of seafood pocket guides — the business-card-sized icon of what has become known as the sustainable seafood movement.

The movement planted its roots in the late 1980s when advocacy group Earth Island Institute implored consumers to boycott tuna in response to the common practice of setting nets around dolphins feeding on the fish. Inspiring the dolphin-safe label on canned tuna, the boycott served as the first indication that consumer demand could effect a real sea change. Subsequent campaigns by other environmental groups — including "Give Swordfish a Break" in 1998 and "Take a Pass on Chilean Sea Bass" in 2002 — built on the tuna boycott's famed success and took it one step further.

These campaigns courted chefs to take on their cause. With the majority of seafood in America consumed in restaurants, chefs play the role of "gatekeepers," influencing what is, and isn't, available to eat. Hundreds of chefs from restaurants across the nation pledged to remove the "unsustainable" species from their menus. Many environmental groups single out the swordfish campaign as especially effective, claiming that the boycott spurred stronger laws and closures of swordfish nursery areas which helped to rebuild stocks back to a sustainable level.

Armed with their pocket guides, the Seafood Watch Program also began working with chefs as well as individual consumers to suggest not only species to avoid buying, but also those *to* buy — species they considered "Best Choices," green on the guide's stoplight sustainability scale. The idea, says Seafood Watch program manager Jennifer Dianto, is that "if we can get a significant demand for sustainable seafood, then we give fishermen and fish farmers a financial incentive to shift towards more environmentally responsible practices." Several other organizations, most notably nonprofits Blue Ocean Institute and Environmental Defense, issue similar fish guides with nearly identical recommendations. In 2007 both Seafood Watch and Blue Ocean Institute expanded the digital reach of their lists, Seafood Watch making them available via mobile phone internet connections and Blue Ocean Institute through text messaging.

Having captured the attention of concerned chefs and discerning diners, Dianto says the movement is now reaching an even broader audience through its work with large-scale seafood buyers. The boycott campaigns and seafood guides have softened the market she says, and now the food service industry and major retailers are coming on board and shifting buying practices.

A recent article in *Seafood Business*, a seafood trade journal, details just how involved the industry has become. The article, entitled "Tipping Point," reports that since March 2006, Compass Group, the largest contract food-service company in the United States, has switched over 550,000 pounds of seafood from threatened fisheries to sustainable ones using the Seafood Watch list as a guide. Darden Restaurants, owner of several establishments including Red Lobster and Olive Garden, has stopped purchasing several "problem species." And northeast powerhouse Wegmans Food Markets has announced it will purchase only farmed shrimp that has met standards developed by the Consortium on Shrimp Farming and the Environment, a group which includes the United Nations' Food and Agriculture Organization (FAO), the World Bank, and the World Wildlife Fund.

But the announcement that has garnered the most buzz is Wal-Mart's promise to source all its wild seafood from fisheries certified as sustainable by the Marine Stewardship Council (MSC) by 2011. If a fishery successfully completes MSC's voluntary, but rigorous, certification process, it earns the right to display an MSC eco-label on its products in the marketplace. Founded in 1997, MSC compares wild-capture fisheries to a set of criteria based on the FAO's Code of Conduct for Responsible Fisheries.

Over two dozen fisheries from around the world have been certified by MSC with dozens more currently under assessment, including Maryland striped bass. Harley Speir, a fisheries biologist with the Maryland Department of Natural Resources (MDNR) says the interest of big buyers like Wal-Mart in MSC-certified seafood is one reason MDNR is pursuing striped bass certification. He expects the multi-step process to be complete by the end of 2008, and if successful, MSC-labeled striped bass should hit the market in 2009. Speir says the label could heighten demand for striped bass and increase what local watermen get

That Fish *Movement*

Jessica Smits

paid for the fish, a potential economic boost to Maryland. In addition to Wal-Mart, the last several years have seen a proliferation of retail outlets offering MSC-labeled products, including Whole Foods Market, Safeway, Costco, and Target.

From boycotts, to lists, to labels, what's the force of the sustainable seafood wave in the Chesapeake region? The consensus seems to be: moderate, but growing.

Representatives from the two main seafood counters at Baltimore's Cross Street Market say customers rarely inquire about the sustainability of the seafood they buy. They primarily ask about three things, says Louis Chagouris, owner of B & A Quality Seafood, a three-generation institution in the Market. "Whether it's fresh, whether it's wild or farmed, and how to cook it." Across the Inner Harbor at upscale chain grocer Whole Foods Market, despite a decidedly food savvy clientele, the fishmonger tells a similar story. Although they do sell MSC-labeled products like Alaskan salmon and Pacific halibut, he says few customers ask specifically for certified seafood.

Noreen Eberly, director of the Maryland Department of Agriculture's Seafood Marketing Program says that aside from special niche markets, the sustainable seafood movement has not yet taken hold in Maryland. "The average consumer going to the grocery store down the street doesn't focus on it."

How to use this guide

The seafood in this guide may occur in more than one column based on how it is caught, where it is from, etc. Please read all columns and be sure to check labels or ask questions when shopping or eating out.

- Where is the seafood from?
- Is it farmed or wild-caught?
- How was it caught?

If you're not sure, choose something else from the green or yellow columns.

This Seafood Guide was last updated in October 2007.

Make Choices for Healthy Oceans

You Have the Power

Your consumer choices make a difference. Buy seafood from the green or yellow columns to support those fisheries and fish farms that are healthier for ocean wildlife and the environment.

Learn more

Visit **www.seafoodwatch.org** for:

+ More detailed information about these recommendations
+ Recommendations for seafood not on this list
+ The latest version of this and other regional guides
+ Information on seafood and your health and much more...

MONTEREY BAY AQUARIUM

MONTEREY BAY AQUARIUM

Seafood WATCH

National Seafood Guide 2008

BEST CHOICES

Arctic Char (farmed)
Barramundi (US farmed)
Catfish (US farmed)
Clams (farmed)
Cod: Pacific (Alaska longline)*
Crab: Dungeness, Stone
Halibut: Pacific*
Herring: Atlantic/Sardines
Lobster: Spiny (US)
Mussels (farmed)
Oysters (farmed)
Pollock (Alaska wild)*
Salmon (Alaska wild)*
Scallops: Bay (farmed)
Striped Bass (farmed or wild*)
Sturgeon, Caviar (farmed)
Tilapia (US farmed)
Trout: Rainbow (farmed)
Tuna: Albacore (US*, British Columbia troll/pole)
Tuna: Skipjack (troll/pole)

GOOD ALTERNATIVES

Basa, Swai (farmed)
Clams (wild)
Cod: Pacific (trawled)
Crab: Blue*, King (US), Snow
Crab: Imitation/Surimi
Flounders, Soles (Pacific)
Lobster: American/Maine
Mahi mahi/Dolphinfish (US)
Oysters (wild)*
Scallops: Sea (Northeast and Canada)
Shrimp (US farmed or wild)
Squid
Swordfish (US longline)*
Tuna: Bigeye, Yellowfin (troll/pole)
Tuna: canned light, canned white/Albacore*

AVOID

Chilean Seabass/Toothfish*
Cod: Atlantic
Crab: King (imported)
Flounders, Soles (Atlantic)
Groupers*
Halibut: Atlantic
Lobster: Spiny (Caribbean imported)
Mahi mahi/Dolphinfish (imported)
Monkfish
Orange Roughy*
Rockfish (Pacific)
Salmon (farmed, including Atlantic)*
Scallops: Sea (Mid-Atlantic)
Sharks*
Shrimp (imported farmed or wild)
Snapper: Red
Sturgeon*, Caviar (imported wild)
Swordfish (imported)*
Tuna: Albacore, Bigeye, Yellowfin (longline)*
Tuna: Bluefin*

Support Ocean-Friendly Seafood

Best Choices are abundant, well-managed and caught or farmed in environmentally friendly ways.

Good Alternatives are an option, but there are concerns with how they're caught or farmed – or with the health of their habitat due to other human impacts.

Avoid for now as these items are caught or farmed in ways that harm other marine life or the environment.

Key

Northeast = Connecticut to Maine
Mid-Atlantic = North Carolina to New York
* Limit consumption due to concerns about mercury or other contaminants.
Visit www.oceansalive.org/eat.cfm
+ Some or all of this fishery is certified as sustainable to the Marine Stewardship Council standard. Visit www.msc.org

Seafood may appear in more than one column.

Courtesy of the Seafood Watch Program

Species on display at one Baltimore seafood market *(top right) run the gamut on the Seafood Watch Program's National Seafood Guide sustainability scale (bottom). The guide's verdict: monkfish and orange roughy – red (avoid); swordfish – yellow (good alternative); rockfish (striped bass) and tilapia – green (best choice). The guide also addresses seafood contaminants. For information on how Bay species stack up on the contaminant question, see* Chesapeake Quarterly Online, *www.mdsg.umd.edu/CQ/seafood. Maryland's striped bass fishery is undergoing assessment by the Marine Stewardship Council. If certified, striped bass may bear the MSC logo (top left, courtesy of the Marine Stewardship Council) in the marketplace, an indication to consumers that the fishery is sustainable.*

But those involved in the movement say even the small percentage of sustainability-conscious consumers has affected the market for seafood. Carl Safina, president of Blue Ocean Institute, notes, "It's not an election." There doesn't need to be a majority to make a difference, he says. And as several new area restaurants vow to serve only sustainable seafood (Hook and BlackSalt in Washington, D.C., Woodberry Kitchen and The Dogwood in Baltimore), and as retail outlets from Wal-Mart to Wegmans increasingly recognize that promoting sustainable fisheries makes not only environmental, but business sense, the burden could shift away from consumers. There could come a day when seafood pocket guides become obsolete — if it's available, it's sustainable. We're not there yet.

— Jessica Smits

is an oft-cited argument against certain aquaculture operations, particularly farmed Atlantic salmon).

Before Clark has even finished explaining, Gjerde is already clicking on the drum farm's listing on Google to see for himself. Clark explains that he's trying to broaden his base by providing fish like the farmed red drum. He's having trouble procuring local sustainable seafood. The striped bass season has been touch and go. For over two weeks bad weather has thwarted his contacts fishing for stripers at Coltons Point near the mouth of the Potomac. The wind has been blowing, scattering the fish and kicking up a heavy chop for the small vessels.

"So you can think about it," Clark tells Gjerde, referring to the red drum. "No rush."

"It's a rush for me, man," Gjerde retorts. He has menus to plan.

Gjerde's not entirely happy with what he's seen on the red drum fish farm's website and he turns down Clark's offer. Their wording is too careful, he says. He thinks there may be more than meets the eye. And going back to his balance scale — if it's not local, it has to be extra sustainable.

Just then, a representative from an aquaculture operation that does meet with Gjerde's approval walks into the cramped office. Scott Fritze from Marvesta looks young enough to be the delivery guy, but he's co-owner of the shrimp-farming business on Maryland's Eastern Shore that has garnered significant attention in the press (see "Bringing It All Back Home," p. 5).

Fritze hands Gjerde a bag filled with shrimp harvested just this morning in his Hurlock, Maryland facility — by tonight they'll be in Gjerde's seafood stew. They've solved a lot of the problems associated with shrimp farming, Gjerde says. Their facility is completely enclosed, no pollution, 90 percent vegetable feed, and non-medicated, he explains. To Gjerde, Marvesta represents the new face of Chesapeake seafood. He's embraced Chesapeake Bay aquaculture in his restaurant. In addition to the farmed shrimp, he offers five types of cultured oysters — Stingrays, Rappahannocks, Snow Hills, and Olde Salts grown by Rappahannock River Oysters, LLC; and Choptank Sweets grown by Marinetics. Putting oysters into the water is a win for the Chesapeake Bay, he says.

Jessica Smits

Keeping the wood fires burning, *Chef Spike Gjerde gets ready for the dinner rush at Woodberry Kitchen. The restaurant aims to balance sustainability with the celebrated traditions and ingredients of the Chesapeake region.*

And it helps his goal of balancing the importance of Chesapeake traditions with "what it means to take things out of the Bay."

"The Bay's hanging in the balance," Gjerde says. "The effort that's going to be required to change things is monumental. It goes way beyond watermen and biologists."

And in the meantime, he sees the effects on the restaurant industry. People read about poor water quality, they hear about things like *Pfiesteria*, he says. "I think most chefs have given up on the idea of Chesapeake Bay seafood because it doesn't connote the level of quality that it once did."

The state of the Chesapeake gives Clark pause as well. He wonders about the status of blue crabs and if he'll decide to offer them this year. If he doesn't, what will replace them in his repertoire? With the Bay "on the ropes," he says, "you can't count on the seafood remaining sustainable." For Clark this means looking beyond the Bay to keep his company afloat.

But despite his close connection to the salmon country of the North Pacific, Clark remembers that it all began for him in the Atlantic, fishing for scallops and flounder out of Cape May. He's committed to providing sustainable seafood from the Chesapeake, he says. "But if the Bay goes down the tubes, where do I look for my next fish?"

Seafood deliveries complete, Gjerde moves to the main dining room where he adds logs to the orange glow of the growing fire in the restaurant's wood-burning oven. Later, he'll cook the salmon in the oven and then serve it with lentils, leek flan, and a miniature green salad. Local greens are hard to come by in the dead of winter, so the salad will be made up of whatever he can get his hands on. Sustainability takes sacrifice, he says. "We're asking a lot from our customers to follow us on this road, but I think it's worth it."

— *email the author, smits@mdsg.umd.edu*

Blue Crabs Online

Offering the Best of the Bay to a Niche Market

By Erica Goldman

Photograph by Erica Goldman

Tom Rippen hurries across the parking lot, ushered along by the winter wind off Tangier Sound that funnels down the main street of Crisfield, Maryland. He's early for his 2:30 pm meeting at The Crab Place, an Internet-direct business that ships jumbo lump crabmeat, crab cakes, and whole blue crabs caught by local watermen to far-flung customers with a taste for Maryland crab. But it's too cold not to rush, so he heads for the entrance, a door guarded by a tower of old wooden crab baskets rising towards a modern sign. The plaque advertises business at www.crabplace.com.

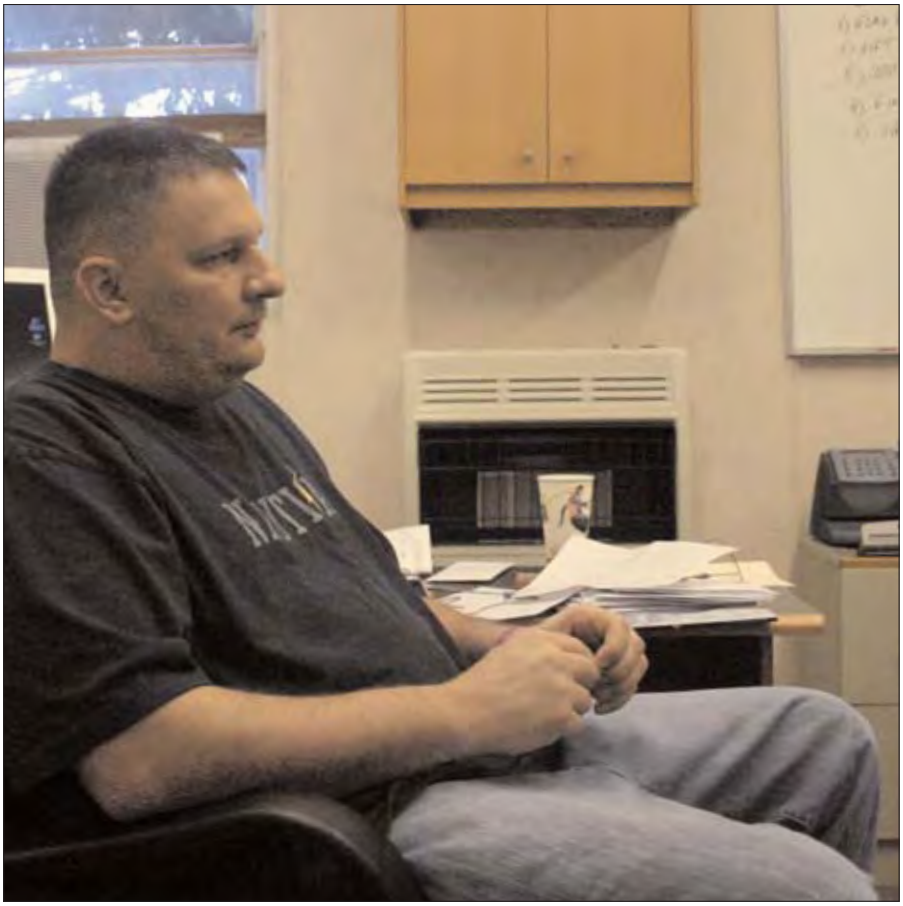
As Rippen enters, a blast of cold outside air mingles with the pungent, faintly sweet aroma of freshly picked crabmeat. He greets workers who are shrink-wrapping foam coolers and stacking boxes marked "RUSH – PERISHABLE."

Leaving on his brown suede coat, Rippen takes a seat in a makeshift room with a few computers located on one side of a now-defunct picking house. This is business owner Greg Cain's office, The Crab Place's base of operation. In the corner a small heater does little to warm the space.

The phone rings. Cain, who got tied up in another meeting, is still ten minutes out. Rippen nods and opens a file folder to review his notes.

When Cain first approached Rippen for advice in 2005, he was struggling with a deceptively tricky problem. He'd devised a method for chilling his crab products for up to 48 hours in transit, but the packages were bulky and required a lot of dry ice and gel packs. With his premium jumbo lump crabmeat priced at $40 per pound, he wanted to figure out how to keep shipping costs down, since they can exceed the cost of the product itself. But Cain also needs to guarantee that his crabs reach his customers in fighting form. The reputation of his company, one that caters to a growing niche market for premium Maryland crab products, depends on the quality of the product after shipping. He can't afford to miscalculate.

Rippen, a seafood technology specialist for Maryland Sea Grant Extension, has been helping him determine the safest and most cost-effective way to ship his wares long distances. For Rippen, helping a small business owner like Cain also helps the traditional Maryland industry maintain a toehold in a globalizing economy, where workforce issues and competition from overseas have put the squeeze on local watermen and processors. He's helped Cain design experiments to measure how fast the pack-



Finely temperature-controlled, *but not too heavy. That's business owner Greg Cain's (top left) goal for shipments of premium crabmeat his customers order online. Maryland Sea Grant Extension specialist Tom Rippen (bottom right, with Cain) works with him to streamline his package design, helping The Crab Place, an entrepreneurial Internet-direct business, serve a growing niche market for Maryland blue crab. A worker (middle left) readies a package for afternoon shipping.* PHOTOGRAPHS BY ERICA GOLDMAN.

ages begin to warm using specialized data loggers. They've tested different foam cooler designs and varying quantities of dry ice. They've discussed whether it is possible for a customer who orders both fresh and frozen crab product to receive both in the same shipment. At Rippen's suggestion, Cain has even sent trial shipments with data loggers all the way to San Diego. At this meeting they'll review the outcome of Cain's trials.

Cain bursts into the office apologetically. He shakes Rippen's hand, his hulking 6-foot plus frame towering over Rippen's medium build.

After exchanging greetings and chatting about some of the new directions that The Crab Place is heading, Rippen asks Cain to report on the outcome of the packaging trials. Cain brings out several examples of different package types — a six-sided foam cooler that requires assembly, what looks like silver bubble wrap, a solid-foam cooler — and begins rattling off some of his results.

His trials with the data loggers showed that the single-mold foam cooler performed the best, keeping his crabs cool over the longest period of time. Adding extra dry ice brings the temperatures lower inside the cooler, but the ice evaporates in the same amount of time. This means that adding more dry ice will increase shipping costs, but not necessarily keep the package colder longer.

Cain realizes that the single-mold styrofoam isn't exactly environmentally friendly packaging, but he points out that of all the package designs it's the one most likely to be reused as a beverage cooler. He plans to increase outreach efforts to encourage his customers to reuse these packages.

Overall, Cain is pleased with the results. He'd balked at moving ahead without data but now feels confident in the big investment he's recently made in packing materials. Just last

week, he placed an order worth close to $100,000.

Rippen is satisfied too. He needs to check back with Cain to review the details of the data downloaded from the data loggers, but the preliminary results look good.

As Rippen leaves The Crab Place, he peers into the abandoned section of Alan Tyler's crab house next door. Its insides are gutted, windows hollowed out, beams exposed. What Crisfield has gained in businesses like The Crab Place and Linton Seafood, another Internet-direct business down the road, stands in stark contrast to what it has lost. Alan Tyler's crab house is just one of dozens shut down in small coastal communities in recent years, the casualty of workforce issues and foreign competition. And when The Crab Place moves its base of operations to a newly built facility in the coming months, the old structure will stand empty.

Rippen can't help but mourn Crisfield's losses personally. He's worked closely with the crab industry in this area since coming to Maryland Sea Grant in 1995. Much of Crisfield's transformation has happened on his watch.

But so have many of the innovative changes that have helped Maryland's crab industry remain viable. And many of these are to his direct credit (see story at right).

Rippen braces against the cold wind and heads for his car. As he heads out of town, he drives past the MeTompkin Bay Oyster Company, the only remaining oyster-shucking and crab-picking house in Crisfield. At the base of a conveyer belt, seagulls pick at a small oyster shell pile. Further down the street, the pavement in front of brand-new condominiums is littered with oyster shells that the gulls have dropped. A cloth sign hanging off a balcony waves, "Sleep here tonight." Rippen shakes his head. He's heard that the condos are on the market for more than $400,000. The "Seafood Capital of the World" is a changed place.

— email the author, goldman@mdsg.umd.edu

Food Scientist Works to Sharpen Crab's Competitive Edge

From his lab in the Food Science and Technology Department at the University of Maryland Eastern Shore in Princess Anne, Tom Rippen works multiple angles of innovation to help the crab industry. Adapting to forces of change is the key to keeping Maryland crabs competitive in today's economic climate, he says. And that adaptation needs to happen on many fronts.

For example, Rippen's led the Maryland Crabmeat Quality Assurance Program for 12 years, which has dramatically decreased the risks of food-borne illnesses from crab products, helping to preserve the high profile of Maryland crabmeat on the global market. He also works on product development and package design, looking for new market niches for the Maryland crab industry.

Rippen never suspected that he'd follow in the footsteps of his father, a faculty member at Michigan State, with an expertise in food science and dairy processing. But he loves what he does. He's a rare individual — one who can describe the smell of his home state's Great Lakes whitefish as "sweet musk melon." For Rippen, commercial seafood proved the perfect way to combine his interest in fish and fisheries with his desire to help the seafood industry.

Planning to debut their products *at the Boston Seafood Show next year, seafood technology specialist Tom Rippen and his technician Loretta Katsriku discuss possible markets for restructured crabmeat. Their product, made from crab picked from the central body cavity, adds market value to a part of the crab that commands a lower price than jumbo lump. Rippen is also working to update the look of pasteurized crabmeat on grocery store shelves. He's developing a sleek vacuum-sealed container (bottom photograph, middle), that he asserts will look more appealing and retain freshness as well, if not better, than cans.* PHOTOGRAPHS BY ERICA GOLDMAN.

Rippen is currently excited about a new product — "restructured" crabmeat. While jumbo lump crabmeat can command $17 or more per pound on the wholesale market, flake or "special," as it is most commonly known, yields only $6. Special crabmeat comes from the central body cavity, where the crab's legs attach. Although the meat tastes just as sweet, says Rippen, the pieces are fine and thready because they're hard to separate from all the shell in that area. Special crabmeat is used most often in crab soup.

The idea: add value to special crabmeat by restructuring it into a piece that resembles jumbo lump, using minced crab as binder. Picture surimi, ground fish that has been reformed into a faux crab stick, but this product is 100 percent pure crabmeat. Rippen and his technician and former graduate student, Loretta Katsriku, have worked on this for two years, and they plan to debut the product with the seafood industry at the Boston Seafood Show, along with a new package design, next year.

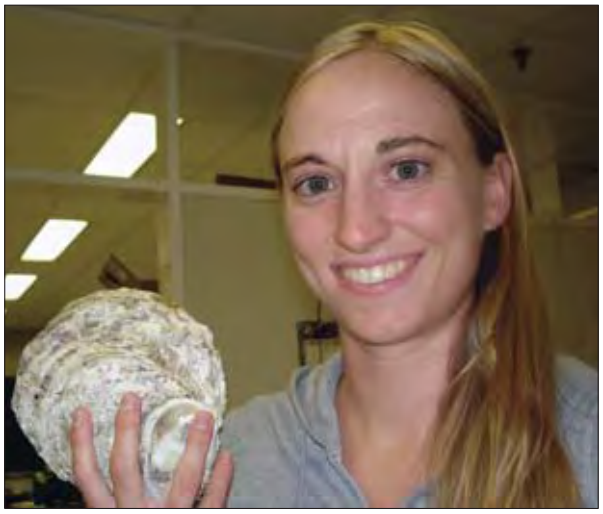
Projects like this one, says Rippen, reflect the fact that we are in a new management age. "Commercial availability of crabs is limited. We need to maximize use of that resource, add value, and support the industry," he says.

The restructured crabmeat has an excellent taste, according to Katsriku, and she thinks this product could literally give jumbo lump a run for the money.

One hiccup: a similar product is now coming down the pipeline from Indonesia. The foreign product uses a hand-lay mold that makes the crab look just like jumbo lump, a very labor-intensive proposition that involves trimming each piece of restructured crabmeat by hand. And since labor costs are much higher here, this is not something that Rippen's approach could emulate. So the team will look for other niches for their product, like prepared appetizers of other shapes, which do not rely as much on the jumbo lump "look."

— E.G.

Knauss Fellow for 2008



The 2008 Maryland recipient of a Knauss Marine Policy Fellowship is Terra Lederhouse, a graduate student in Marine-Estuarine-Environmental Studies (MEES) at the University of Maryland College Park. She will work in the NOAA Fisheries Office of International Affairs. The fellowship, established in 1979, is coordinated by the National Sea Grant Office of the National Oceanic and Atmospheric Administration (NOAA). Named for John A. Knauss, a former NOAA administrator, the program provides graduate students across the country with an opportunity to spend a one-year paid fellowship working with policy and science experts in Washington, D.C.

Lederhouse will work on international fisheries issues, including the International Whaling Commission and the International Commission for the Conservation of Atlantic Tunas. Her main project will focus on the emerging development assistance program which provides aid to countries currently developing their own fisheries monitoring programs.

As a MEES graduate student, Lederhouse has worked with with Dr. Kennedy Paynter, studying how energy moves through restored oyster reefs by measuring the biomass and lipid production of a small fish called the naked goby. She plans to finish her M.S. in 2008. She is also currently working as program manager for the non-profit Oyster Recovery Partnership in Annapolis, where she coordinates all their restoration and outreach programs in the Chesapeake Bay.

Lederhouse received a B.S. in biology and environmental policy in 2003 from Union College, in Schenectady, New York. As an undergraduate, she studied the commercial fishing industries in the U.S., Bermuda, and Newfoundland, Canada; she also conducted research projects on marine snails and on the link between climate change and increasing jellyfish populations.

Knauss Fellowships run from February 1 to January 31 and pay a stipend of $33,000 plus $7000 for health insurance, moving, and travel. They are awarded through Sea Grant programs across the nation. For more information about Knauss fellowships, visit Maryland Sea Grant at www.mdsg.umd.edu/policy/knauss, and the National Sea Grant office at www.seagrant.noaa.gov/knauss.

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