

# MARINE NOTES

Swinging the bow of his workboat into a southerly Chesapeake breeze, Gladston Tyler, Jr. searches in the predawn light for his first line of crabpots. As he usually does “of a mornin’,” Tyler put out of Smith Island, Maryland in the dark, joining a ghostly cavalcade of workboats darting through the shallow channels, heading for their hunting grounds. At the helms of those boats are other well known Smith Island captains, like Dwight Marshall, Elmer Evans, Ed Evans and his sons Eddie and Glenn.

Their routine is entrenched, familiar, almost hypnotic. They know these shallow waters the way a trapper knows a marsh. Though hidden from view, the bottom holds all the landmarks of a well-known landscape. The deep lead that comes in off the open Bay. The shallow bars. The nearby fishing reef. The ledge that drops off to the sharp valley of the ship channel.

On this October morning, there is one unaccustomed change. A half dozen of these workboats are carrying unusual passengers — fisheries scientists and other experts who have come to learn firsthand about crabbing from Smith Island’s seasoned watermen. Their presence here is part of a long-term project sponsored by the Bi-State Blue Crab Advisory Committee, with help from Maryland Sea Grant, to better integrate the voices of watermen into the management of the Chesapeake’s important blue crab fishery. The watermen have helped to set up this exchange, and have invited each of the experts to join them for a day of crabbing and, after that, for several hours of frank conversation.

As the boats navigate toward their crab pot buoys, those aboard can see few reference points — the dim lights of Smith Island dropping behind to the east, the vague outline of a wrecked ship, used for target practice by the military, to the north. This is the widest part of the Chesapeake Bay, with the yawning mouth of the Potomac River to the west and the long arms of the estuary stretching out of sight to north and south.

“I hope it’ll be cam for ya,” Tyler says, smiling. “Cam,” the local pronunciation of “calm,” means that the wind will not rise and kick up the steep chop for which the Bay is well known. Tyler’s smile is broad and clean, and like his tan skin bespeaks a life spent out of doors, a hard working life, but one full of simple pleasures. “Look a’ that,” he sings out when a pot comes aboard with an especially large crab. “Do we got ourselves a winner?” he asks his mate, Jerry. A



## SPOTLIGHT ON MANAGEMENT

# Bridging the Gap Watermen and Scientists on Crabs

BY JACK GREER



*Fisheries scientist Tom Miller, who has played a key role in the effort to set new targets for Bay blue crab harvests, traveled to Smith Island to talk with commercial crabbers. Miller, of the University of Maryland Center for Environmental Science, was joined by other biologists, ecologists, economists, anthropologists and policy makers in this effort to exchange ideas and experiences with working watermen.*

winner this season means a crab over nine and a quarter inches, the biggest crab caught so far during this fall run. Jerry tosses the big crab into a special basket near the stern for later measuring. During the morning, other large males (or Jimmies) will join him, until the bushel basket is full of large crabs — forty-two to be exact. Crabs so large that only forty-two of them will fill a bushel basket, though at around eight inches or so, no record breakers.

Most of the other crabs are mature females (or sooks) and smaller. This is the fall sook run, when female crabs from throughout the northern and central reaches of the Chesapeake respond to an ancient call to head south toward the estuary's mouth. They will be followed by far fewer Jimmie crabs, many of which will never make it very far south, bedding down wherever the cold weather finds them. Then another Chesapeake crab season will end, except for a winter dredge fishery in the lower Virginia portion of the Bay.

Today the crabbing has been good. Every dripping pot comes up with crabs, about a dozen or so on average, mostly sooks, for which there is no size limit. "Sooks are small and uneven," Tyler says, and he would oppose putting a size limit on them. The five-inch limit on Jimmies, or even a slightly larger size limit, doesn't bother him, he says.

"We're not out here to get rich," Tyler says. "We just want to make a decent living. We just want to work."

This refrain runs through his comments on the crab, the weather, the season. Even the eight-hour workday imposed by the state hasn't concerned him much. He's able to work his pots, some 400 or so, though he and other watermen worry that time limits might narrow their options and force them to make difficult choices — about whether to pass up a day's wages or to risk dangerous winds and waves on bad weather days.

Without time restrictions the watermen could wait and go out later in the day, after a storm has passed, for example. As it is now, they must stop crabbing seven and half hours after sunrise, no matter when they go out. This year, as October ends, the crabbing season will also end, due to a last-minute state decision to close the month of November — the result of bitter wrangling between state officials and some watermen over proposed regulations, including the eight-hour workday.

### **The Great Divide**

For many years decisions about fisheries regulation and management have led to bitter disputes between the state and those who work the Chesapeake's rich fishing grounds. Watermen often argue that the state is trying to cut them off from making an honest living, threatening a way of life that has come to characterize the Bay for generations. Those in government argue that the Bay belongs to all the state's citizens, and elected officials and resource managers not only have the right but the duty to enforce effective conservation measures.

That divide has grown wide during the past several years, when first

independent scientific indices and then commercial crab harvests began to trend ominously downward. Though it is well known that crab populations swing in dramatic cycles, many worry that the current downturn has dropped too far and stayed too long — a warning that the crab stock may be facing a precarious future.

To help define the precise nature of the uncertainties surrounding blue crab stocks, the Bi-State Blue Crab Advisory Committee formed an independent Technical Workgroup, comprised of more than two dozen scientists and fisheries experts. This workgroup examined all facets of the issue and concluded that current fishing pressure must drop to preserve the crab's spawning stock. In an effort to set a sustainable target for the fishery's long-term health, the jurisdictions of Maryland, Virginia and the Potomac River Fisheries Commission all adopted plans to reduce fishing effort by about fifteen percent (based on averages from the late 1990s). That fifteen percent cut has hit hard at full-time watermen who depend on crabs for the majority of their income.

While watermen's groups participated in the consensus-building process, including the need for some further control of the harvest, when time came to make those cuts, some watermen rebelled.

"Everybody knows it's not going to do a thing," says one watermen over Tyler's constantly crackling VHF radio. "They'd better wake up."

### **Reaching Across the Chasm**

Both sides have their piece of the truth in this bitter debate. Watermen argue not only that they have the right to make a living from the Bay but also that they have many years of experience and observation that help them to understand whether or not the crab is in trouble. On the other hand, scientists and other technical experts point to years of data collection and analysis that indicate rising and falling trends, and for the past decade, those trends — smaller crabs, fewer females — have pointed downward.

## The Crab Harvest in Maryland



As the 2001 commercial crabbing season nears its end, preliminary figures indicate that in Maryland watermen caught an estimated 15.5 million pounds of crabs (both hard and soft) — well below the seven-year September average of about 24.6 million pounds. Last year (2000) Maryland crabbers landed about 20 million pounds for the entire season, far below the long-term average of some 33 million pounds.

In the Potomac River, where there is a much smaller hard crab fishery, watermen brought in about 42,900 bushels through September, slightly better than last year's 38,500 bushels. These harvests are still far below a 15-year average of 109,400 bushels for Potomac hard crabs.

For peelers, the Potomac saw a decline this year, from 77,967 pounds in 2000 to 52,350 in 2001. Unlike hard crabs, however, these figures are not far off the 15-year average of 64,000 pounds for peelers in the Potomac. Soft crabs, a small fishery in the river, came in at about 3000 pounds in both 2000 and 2001.

Beyond this, there are vast cultural differences between the two groups, differences in the communities they come from and in the ways they gather the knowledge they need, even in the way they communicate that knowledge.

On this bright fall morning, with the sun just coming up over the Eastern Shore, this group of scientists, watermen and others are working hard to try to close that gap a little.

Waving from one workboat, driven by Captain Ed Evans, is Ann Swanson, the Executive Director of the Chesapeake Bay Commission. On Captain Dwight Marshall's boat is Anson "Tuck" Hines, a marine biologist and ecologist from the Smithsonian Environmental Research Center who has studied crabs for more than two decades. On yet another boat is Doug Lipton, an experienced marine economist and head of the Maryland Sea Grant Extension Program. A total of six experts of various kinds have come as representatives of the Bi-State Blue Crab Advisory Committee's technical workgroup to see firsthand how crabbing is going in this part of the Bay and, more importantly, to get to know the watermen who work these waters and to hear their observations, their suggestions, their theories.

"During the past several years the Chesapeake Bay Commission has

worked hard to bring scientists together to share information about the blue crab," says Ann Swanson, who chairs the bi-state technical workgroup. "Now we really need to reach out to the watermen, to make certain that we benefit from their knowledge, and to help make them more of a part of the whole process of managing the blue crab."

"It's good you all came down," says Glad Tyler, as he fishes his pots. "It's a good thing you're here."

Narrowing the gap between watermen and technical experts will not be easy, but on this day on Smith Island there is a willing spirit.

And a helping hand. Biologist Tuck Hines culls crabs for Dwight Marshall, who has lost his mate for the day. Lipton culls crabs as well, and others in the group pitch in to help on their boats. In a sense, today everyone is working the water.

### Searching for Common Ground

That night, sitting around a collection of tables pulled together in the center of Smith Island's Bayside restaurant, all the watermen and technical workgroup members who spent the day crabbing together compare notes and views. They are joined by Tom Miller of the University of Maryland Center for Environmental Science and Yonathan Zohar of the Uni-

***Unlike many public hearings, where accusations fly, this conversation aims at understanding, at explaining.***

versity of Maryland Center of Marine Biotechnology, who have made the long trip down to Smith Island to participate in this roundtable dialogue.

Unlike many public hearings, where accusations fly, and the atmosphere is tense, this conversation aims at understanding, at explaining. For example, some watermen tell of how they have seen razor clams become a kind of super bait that can draw crabs into pots for days at a time. "They can wipe out a whole area," Ed Evans says, speaking of watermen who have turned to using razor clams instead of the traditional menhaden, or "bunker" as it is known here.

"The way we fish we feed the crabs," Elmer Evans says, noting that Smith Island crabbers tend to rebait their pots with menhaden every day, throwing the day-old bait overboard, where, they believe, it settles to the bottom and helps fatten the crabs. "You've seen how we do it," he says, and all those who have spent the day crabbing nod.

The watermen make it clear that they feel that they are taking care of the resource, in fact improve it, by feeding crabs and by avoiding techniques they see as harmful.

The watermen have stories to tell. Of how crabs migrate up and down the Bay in their chosen season. Of how they saw an oyster dredge pull up a "buster" in the dead of winter, when no one would expect to see a crab shedding its shell. The scientists also tell their stories. Of putting tiny radio transmitters on crabs so they can track their movements, not only in the rivers but up and down the estuary.

***“Such attempts [at building bridges between watermen and scientists] signal that fisheries management must no longer simply be a matter of ‘counting crabs.’”***

“According to some preliminary experiments,” says Hines, “crabs seem to crawl along the bottom when they migrate, rather than swim.” This observation runs counter to both Hines’s original hypothesis and to the watermen’s general belief, that crabs heading south will largely swim rather than crawl. Radio transmitters attached to crabs and closely tracked by Hines and his colleagues have so far suggested that crabs crawl more than swim — perhaps good news to watermen with pots lying on the bottom.

There is more research on these behaviors to be done by scientists, and more observation to be carried out by watermen, but at the moment, sitting around the table at the Bayside restaurant, they are sharing their interest and wonder at the mysteries of the blue crab, which no one at this table claims to understand.

At one point Elmer and Ed Evans are talking about how they watch the crabs move up the Bay each spring as the weather turns and another crab season begins. Hines joins in the conversation and suggests that perhaps instead of watching individual crabs make their way up the Bay, the watermen may be seeing the effects of a temperature change moving up the estuary, as waters grow warmer, from south to north. In other words, rather than moving up the Bay, many crabs are simply coming out of the mud, as the warm water moves north.



### **For More Information**

For more information about the blue crab visit the following web sites:

Maryland Sea Grant  
[www.mdsg.umd.edu/crabs](http://www.mdsg.umd.edu/crabs)

Chesapeake Bay Program  
[www.chesapeakebay.net/blue\\_crab.htm](http://www.chesapeakebay.net/blue_crab.htm)

Maryland Department of Natural Resources  
[www.dnr.state.md.us/bay/science/savecraab.html](http://www.dnr.state.md.us/bay/science/savecraab.html)

Virginia Institute of Marine Science  
[www.vims.edu/adv/ed/crab/general.html](http://www.vims.edu/adv/ed/crab/general.html)

National Aquarium in Baltimore  
[www.aqua.org/animals/species/bluecrab.html](http://www.aqua.org/animals/species/bluecrab.html)

Chesapeake Bay Commission  
[www.chesbay.state.va.us/crabs.htm](http://www.chesbay.state.va.us/crabs.htm)

Chesapeake Bay Foundation  
[www.cbf.org/notebook/cn\\_2000\\_12\\_05.htm](http://www.cbf.org/notebook/cn_2000_12_05.htm)

“We wondered about that,” Elmer Evans says, nodding. “You may be right about that.”

Among those seated at the table are the local pastor, Rick Edmund, and an anthropologist, Michael Paolisso. Though they have just met today, both these men have come to understand the deeply spiritual connection that many, perhaps most, watermen feel with the Chesapeake Bay.

“There is a strong element of trust in God among watermen,” says Paolisso. “They believe that whatever science may say, the Bay will provide for them and for their families, as it

has done for generations.”

Paolisso, on the faculty of the University of Maryland’s Anthropology Department, has been observing and interviewing commercial crabbers for a full year and more. He and his colleagues have even rented a small house in Deal Island, just north of Smith Island, where they have spent many days with watermen, going out on their boats, culling crabs, or just chatting with them down at the local Arby’s restaurant.

“Watermen have told me that numbers cannot explain the behavior of the blue crab,” he says. Instead,

he notes, watermen depend on years of personal observation to describe and explain blue crab behavior.

Ann Swanson notes, "Scientists have spent years trying to understand the nature of the blue crab population, and watermen have spent years watching and observing the blue crab. The truth is that both these kinds of knowledge are valid — scientists and watermen just have different ways of measuring the truth."

By all accounts, dialogues like the one held on Smith Island (and another, similar dialogue held in September on Virginia's Tangier Island) need to happen more often.

As the Bi-State Blue Crab Advisory Committee moves to continue building bridges between scientists, managers and watermen, they will benefit from the work of anthropologists and others who study different cultures and varying ways of knowing.

Paolisso, whose work has been supported by the National Science Foundation and others, will receive a \$60,000 award from the Maryland Sea Grant College in 2002 to study the underlying cultural models that inform the beliefs and opinions of watermen and their communities.

Says the Bay Commission's Ann Swanson, "This dialogue between watermen and scientists on Smith Island — and one we have carried out on Virginia's Tangier Island — are serving as pilots, as experiments. We want to work with Michael Paolisso and others to continue to build these bridges, and to deepen our understanding."

Such attempts by the Bi-State Blue Crab Advisory Committee, and funding from the National Science Foundation, Sea Grant and others, signal that fisheries management must no longer simply be a matter of "counting crabs."

"We want to find a way to validate the information that watermen have to bring to the table," said Paolisso at the Bayside restaurant, and Ann Swanson agreed. "We need to find a better way to bring that information into the process," she said. "And that's what we're trying to do." ✓



**Maryland Marine Notes available online:**

**<http://www.mdsg.umd.edu/MarineNotes>**