

# CHESAPEAKE BAY JOURNAL

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**A SHrimp**  
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*Captain Bob's*  
**FRESH CAUGHT**  
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Large white shrimp, like this one caught off Virginia Beach, are becoming more common in the Chesapeake Bay and the ocean coast of Virginia. (Dave Harp)

## More shrimp moving into southern Bay waters

### Warmer temperatures create a new shrimp fishery off VA's ocean coast

By Whitney Pipkin

**L**arge white shrimp — the kind that might star in a white-wine scampi — have been riding warmer waters into the Chesapeake Bay in growing numbers. Their increased presence could be the first culinary boon of climate change in the region (invasive blue catfish notwithstanding).

Though this larger shrimp species, commonly known as white shrimp or Gulf white shrimp, has historically been in the region, waters off the mouth of the Chesapeake Bay were until recently not warm enough to host large numbers of them, according to the National Oceanic and Atmospheric Administration's Fisheries Service. Warmer ocean temperatures over the last decade have been pushing the species more often associated with North Carolina fisheries farther north. Those numbers are now large enough to sustain a nascent commercial fishery off Virginia's coast.

In 2017, the Virginia Marine Resources Commission issued its first experimental permits to fishermen interested in trying their hand at shrimping in coastal state waters near Virginia Beach. The agency has issued a handful of additional permits each of the past few years and is also testing the waters with a few experimental permits for fishermen plying ocean waters near the Eastern Shore.

"I saw 'em when I was a kid, but it seems like there are more and more," said Bob Crisher who, with his partner Dave Portlock, was the first to get an experimental permit to trawl for shrimp in Virginia waters. The pair have been spending their winters bringing them in ever since.

This year, Crisher is one of a dozen fishermen hauling in boatloads of shrimp — which they call "green-tails" — to be sold fresh off their boats at Virginia Beach docks from Oct. 1 to Jan. 31. Though restrictions on trawling don't allow such commercial harvesting inside the Bay, the shrimp are likely spending much of their life in Chesapeake waters before heading to the ocean in the late fall and early winter.

The Virginia Institute of Marine Science has been tracking the increased presence of Penaeid shrimp (a category that includes white, brown and pink shrimp) in the Chesapeake through surveys since 1991. White shrimp are by far the most abundant in the Bay. And, starting in 2016, the trawl surveys began to bring in "orders of magnitude" more shrimp — from about 41 shrimp in 1991 to 5,809 shrimp in 2016, according to a 2021 paper on the subject. High numbers of shrimp were picked up not only near the mouth of the Bay but also in Virginia's James, York and

Rappahannock rivers.

"When you see changes like that, it's indicative of climate change," Troy Tuckey, a senior research scientist with VIMS, said of the shrimp numbers. Warmer waters have in the past meant, "we get manatees and things like that, odds and ends. But this is the first one that's taken hold and has some benefits in terms of food and employment."

The Elizabeth River Project and Chesapeake Bay Foundation also have been trawling in the Lafayette and Elizabeth rivers near the mouth of the Bay at least twice a year for about a decade to survey species.

"We started picking up shrimp pretty consistently five or six years ago, more and more of these larger shrimp," said Joe Rieger, deputy director of restoration for the Elizabeth River Project. "Every year there's been significantly more."

This past year, Rieger said a 7-minute trawl in Wayne Creek, a tributary to the Lafayette River, brought in about 50 shrimp. The landscape surrounding that creek is a densely populated suburban swath of Norfolk, so Rieger was surprised to be pulling in such "huge, gigantic shrimp."

White shrimp (*Penaeus setiferus*) are considerably larger than and easily distinguished from the small, nearly transparent

common grass shrimp that have long been found in the Chesapeake.

Chris Moore, senior regional ecosystem scientist with the Chesapeake Bay Foundation, said educators running boat tours for the foundation also have reported seeing the larger shrimp throughout the Bay and into its rivers, including the Lynnhaven, Nansemond and James, and as far up the Rappahannock River as Urbanna.

The shrimp are becoming a mainstay of such excursions near the mouth of the Bay.

Residents on the Elizabeth and Lafayette rivers who are handy with a cast net (and licensed to use it) might be able to pull some in right off their docks in the fall before they migrate back out to the ocean. Sterling Rollings, who recently installed a living shoreline on his Elizabeth River property in Portsmouth, said he was pulling in a couple dozen jumbo shrimp each evening for a few weeks in October.

"We had them 15 minutes from the water to the steamer," said Rollings, who freezes most of the shrimp for later. "With butter and garlic, they were some kinda good."

A license is required for the recreational use of a cast net to bring in shrimp. The VMRC in August approved for the first time a recreational limit for shrimp caught in the Bay: a daily limit of 20 quarts of shrimp with heads on or 15 quarts of shrimp with heads off. Even so, the Virginia Department of Health advises against eating more than two meals a month of many species of fish caught in the Elizabeth River and its branches because of the potential accumulation of toxics in their tissue.



Chesapeake Bay Foundation scientist Chris Moore, left, and educator Yancey Powell collect shrimp off Virginia Beach. (Dave Harp)



Capt. Bob Crisher, in orange, and Capt. Dave Portlock process their shrimp catch at a dock in Virginia Beach. (Dave Harp)

### Unlikely river

Unlike freshwater rivers that flow to the Chesapeake from farther inland, the Elizabeth River and its tributaries are so close to the ocean that they have high levels of salinity and therefore many saltwater species. But the river's not-so-distant past still makes it hard to believe people can net shrimp for supper from their shorelines.

In 1983, the U.S. Environmental Protection Agency singled out the Elizabeth River as one of the most highly polluted bodies of water in the Bay watershed, and the river remains on the agency's impaired waters list today. As home to one of the busiest military and commercial ports in the world, the Elizabeth River has been subject to 400 years of filling, deepening and paving to accommodate industry and growth in the cities of Norfolk, Portsmouth, Chesapeake and Virginia Beach — to say nothing of the chemical pollution from industry, military installations and shipyards.

But, according to the Elizabeth River Project's regular reports, the river is now also among the Bay's most improved. Costly cleanups over the years have removed legacy toxics from the river's bottom.

The impacts of sea level rise and increasingly common flooding in the region also are causing more residents to consider their impact on water quality. An estimated 6,000 residents are enrolled in the Elizabeth River Project's River Star Homes program, which encourages them to install living shorelines, rain barrels and rain



Capt. Bob Crisher, in orange, and Capt. Dave Portlock process their shrimp catch at a dock in Virginia Beach. (Dave Harp)

gardens, and to reduce fertilizer use, among other measures to benefit the river.

The Elizabeth River's most recent report card grade of C "is only remarkable," the report states, "if you realize that when the first group of scientists gathered ... to review the river's health in 1994, professors vied for whose slides showed the most deformed fish."

Some Elizabeth River tributaries are doing better than others. The Lafayette River was removed from Virginia's list of bacteria-impaired waterways in 2016, opening it to recreational use. In 2018, the Lafayette was deemed the first river in the state to reach its oyster restoration goal, with nonprofits and hundreds of thousands of dollars helping to protect and create a total of 80 acres of oyster reefs.

The reefs, Rieger said at the time, would create more habitat for fish and other species. That list now includes shrimp.

### Shrimp cycle

White shrimp are born on the ocean's continental shelf before migrating into estuaries to eat and grow throughout the spring and summer. With some help from wind and rains, the shrimp swim back into ocean waters in late fall and through the early winter months.

Many aquatic animals feed on shrimp, including turtles and fin fish — red drum, for instance.

"Hopefully, one benefit of [more shrimp] in the Chesapeake Bay is that we have more forage species," Moore said. "There are long-documented concerns about other

species like menhaden in the Bay. This hopefully may serve as another option."

One of the reasons the VMRC has proceeded cautiously with opening a shrimp fishery is to prevent depleting their supply before scientists fully understand local population dynamics. That could help the region avoid some of the pitfalls associated with "derby style" fisheries that end up being shut down as quickly as they opened because of overfishing, Moore said.

"People are very excited about the prospect of another fishery for the commonwealth, and it's a high-value fishery for

our watermen," he said. By slowly expanding a new shrimp fishery, Moore said, "I think VMRC is trying to make sure we avoid some of the issues that are plaguing other states when it comes to trawl fisheries in their estuarine waters."

To reduce bycatch, fishermen like Bob Crisher are using "beam trawls" with fish excluders to net shrimp near the seafloor. The Virginia permit allows them to use such gear in the 3-mile strip of waters off the state's coast.

The shrimp they bring in are 4–8 inches long including the head, but not the antennae, which are often longer than the shrimp itself. They sell for \$5 a pound. For comparison to what might be found frozen at the grocery store, Crisher said, the large shrimp are about 15 count to the pound and medium come in around 21–26 count per pound.

Crisher and Portlock use social media to let customers know when they are bringing shrimp to the docks near Winston Salem Avenue at Virginia Beach's Rudee Inlet. Signs are posted there, too.

Shrimp is the most popular seafood in the United States. But almost 90% of what's eaten here is imported and, according to the advocacy group Oceana, much of it is farmed in ways considered harmful to the environment.

Before the shrimp fishery, Crisher usually sustained his business by selling Atlantic spiny dogfish for about 19 cents a pound in the winter months. "But shrimp pays a whole lot better when you can catch them," he said. And "customers love them." ■



A sign leads the way to freshly caught shrimp in Virginia Beach. (Dave Harp)