



CHESAPEAKE BAY FOUNDATION
Saving a National Treasure

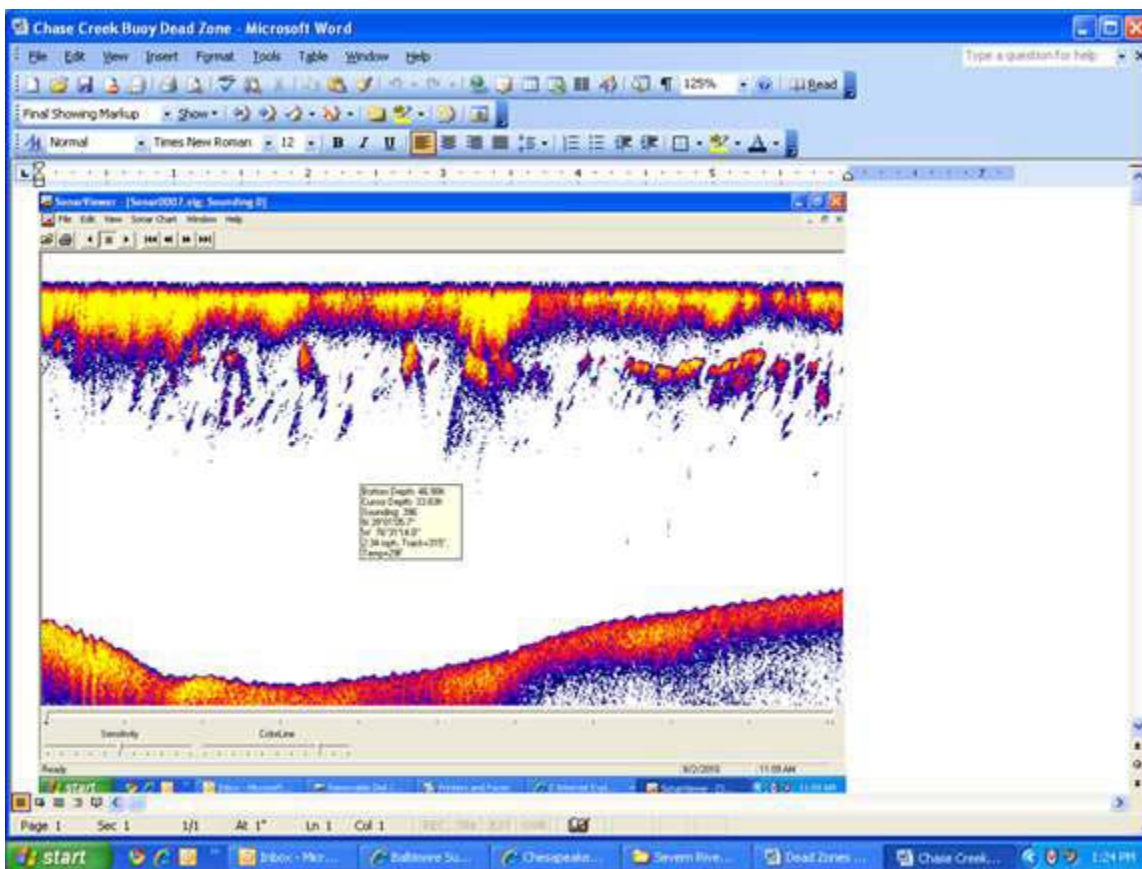
Anglers for
Clean Water

Chesapeake Anglers' Notebook

How to Fish “Bad Water,” & What Anglers Can Do About It

By Capt. John Page Williams, Senior Naturalist, Chesapeake Bay Foundation

Ever see an image like this on your fishfinder?



Here is what is going on:

This image shows dense schools of baitfish (mostly menhaden) and some larger fish (probably rockfish) suspended high in the water column over 40' of water in the Severn River about a mile above the Route 50 Bridge on August 1, 2010. The fish are swimming at depths between 10' and 18', where they have water as cool as possible (around 81 degrees instead of 83 degrees at the surface) and enough dissolved oxygen to “breathe.” The dissolved oxygen level in the zone where the fish are holding is 2-5 mg/l, low enough to cause stress to the menhaden and rockfish but not enough to kill them. Below 18', the dissolved oxygen tails off to lethal levels of 1.7 mg/l at 20' and 0.9 at 35'

How to Fish Bad Water and What Anglers Can Do About It

In the Chesapeake at this time of year, the water at the surface is generally warmer than the bottom, because it is closer to the sun, and fresher, because it has flowed into the Bay or a river from rainfall. The bottom water, on the other hand, is denser because it is cooler, and saltier because some of it has flowed up the Bay from the Atlantic Ocean. If the weather is stable, without heavy rainfall and strong winds, the lighter surface water sits like a lid on the bottom water.

Meanwhile, trillions of algae cells at the surface die every day and sink into that sealed-off bottom water, where aerobic (oxygen-consuming) bacteria decay them. This process sucks the life out of the deep water, causing what we now call “Bad Water” where fish and crabs get stressed (2-5 mg/l) or “Dead Zones” where they can’t live at all (less than 2 mg/l). The result of this process is a situation like the one you see in the image above.

Sometimes, the boundary line between warmer, fresher, well-oxygenated water and cooler, saltier, poorer water is very sharp:



See the lines going across the screen at 16' and 24'? Most sonar manufacturers call them thermoclines, a term that refers to sharp temperature changes, but in an estuary like the Chesapeake, those breaks can also be caused by abrupt changes in salinity, or a combination of both factors. In this image, taken in the open Bay off the mouth of the Chester River in May, each of the two breaks is caused by changes in both salinity and temperature. Those density changes are sharp enough to bounce sonar echoes! Notice how fish tend to suspend on or just above them.

So what's an angler to do when bad water shows up on the fishfinder?

First, think about what the fish are telling you: they won't—or can't—go any deeper than the levels where you see them. This kind of situation calls for precise depth control. Can you cast out a jig, count it down to just above the level where you see them, and swim it back through them? Can you troll through them? If you're live-lining, can you use a bobber to hang your bait at their level? Think through your options. You may just find that the way bad water concentrates fish actually makes it easier to catch them.

In the short run, that is.

In the long run, though, bad water costs our Bay a huge loss in summertime fish habitat. For one thing, it concentrates fish in thin layers of warm water where diseases like Mycobacteriosis can spread. On a broader level over the past ten summers, more than 80% of the Bay has qualified as Bad Water that does not meet the EPA's water quality standards for dissolved oxygen. Between 10% and 20% of that bad water qualifies as Dead Zones that are completely off limits to fish and crabs each summer. Think of having to give up 20 % of the space in your boat, or in your house, and being stressfully uncomfortable in most of the rest of it! Think how that loss affects the “carrying capacity” of the Chesapeake, its ability to serve as home to the fish species we love! Bad water is costing us the resource we love most in our Bay.

What causes the bad water problem is pollution, especially excess nitrogen. Too much nitrogen (about 600 % too much fertilizes the growth of trillions of algae cells. Over the past twenty-five years, many sewage treatment plants have made good progress reducing nitrogen pollution, and so have some farmers. To really make a difference, though, the Bay needs more farmers to participate fully in reducing nitrogen pollution, more sewer authorities to continue their upgrade progress, and most of all, many states, cities, towns, and private citizens to reduce polluting runoff from roadways, parking lots, and rooftops.

Now there are solutions, and Bay anglers can help big-time.

To help restore and protect fish habitat in the Chesapeake, participate actively in the public debate on how to solve “the big issues” that affect the Chesapeake and its rivers, like wastewater treatment, stormwater runoff management, agricultural conservation practices, and land use. In a democracy, citizens' voices are the driver for public policy and programs. If we anglers won't stand up for clean water and healthy waterways, why should we expect anyone else to do so?

There are many opportunities to make our voices heard, at the local, state, and federal levels. In addition, the Bay states have put together Watershed Implementation Plans (“WIPs”) that lay out specific actions they must follow to improve the Chesapeake's water quality. We anglers can help there by following the WIP development process as it works its way down to local governments, participating in the public hearings about the plans and urging our state and local agencies to put the plans into practice so that they really make a difference in the Bay's health. CBF's Anglers for Clean Water Web Site (www.cbf.org/anglers) will keep you informed of those opportunities to help. The experience of the past ten years shows that when anglers join in the conversations on these big issues and weigh in with thoughtful, positive suggestions, both politicians and public agency staffers listen carefully.

We CAN make a difference. We DO have a voice in promoting clean water. And the reward for participating as an Angler for Clean Water is healthy bays, rivers, and streams, for ourselves and for the young anglers that come after us.