

Checking on the health of our waters one ferry trip at a time

George Olsen

NEW BERN, NC (2007-02-15) INTRO - The state's ferry system takes you where the road doesn't go to Ocracoke Island, perhaps, or from there to Cape Hatteras. The state ferry system is also the primary vehicle to provide scientists with information about the same waters the ferries ply. George Olsen has more.

After a series of hurricanes in 1999 and 2000, information about their effects on coastal waters was in demand and scarce.

00:58 I had all sorts of phone calls from Raleigh asking what was going on in Pamlico Sound. People were seeing satellite pictures of the sound full of mud and the answer was very simple we just don't know.

Dr. Hans Paerl, a Professor of Marine and Environmental Sciences at UNC-Chapel Hill's Institute of Marine Sciences in Morehead City. How to monitor the Pamlico Sound was a question he'd been exploring since the early 90's with the Duke Marine Lab's Joe Ramus. They already had the idea Dr. Paerl had seen a water quality monitoring system utilizing ferries during a trip to Finland that decade and with the sudden cry for information, FerryMon short for Ferry Monitoring was born.

03:54 One is a flow-through chamber that is inside the ferry in which there are a series of sensors and they collect very basic water quality data such as temperature, dissolved oxygen, turbidity which determines how clear the sound water is, chlorophyll which is an indicator of how much algae is in the system, salinity and PH, and those are really the key indicators of the health of the system if you're going to do water quality monitoring.

Using the ferry system to monitor the Pamlico Sound as well as the Neuse Estuary via its Cherry Branch-to-Minnesott Run offers many advantages one is cost. The ferries were already there, so the fact boats and the manpower to operate them weren't needed meant FerryMon could operate on a roughly \$300,000 annual budget a budget Dr. Paerl estimates would be 3-to-4 times that cost if they were supplying the boats. Another advantage the amount of data that can be collected given the ferry schedules.

03:54 The nice thing is that the sensors are out there all the time so when the ferries are running the sensors are collecting data basically non-stop from around 5 in the morning til about midnight when the ferries are in the harbor. The data is then downloaded at night by cell phone to the computers at our laboratory and the data is plotted by our data analysts and shared with the State Department of Environment and Natural Resources and other agencies to basically give a picture of what the water quality situation is like out there in Pamlico Sound.

The constant monitoring has allowed FerryMon to pick off events along ferry routes. The most recent was following Tropical Storm Ernesto in 2006 where FerryMon started to

report increased amounts of chlorophyll in the Neuse Estuary. FerryMon can also collect water samples for laboratory testing, and when testing was done a toxic algae was found.

21:15 There were some minor fish kills in some of the marinas along the edge of the Neuse at the same time so we were able to piece together why these fish kills occurred because of a toxic algal bloom that was pinpointed essentially by FerryMon. The toxic bloom only lasted about a week or so, not very long. If we had not picked this off with the ferries, we probably would have missed it altogether and we would have had one more mysterious fish kill on the Neuse.

The website for FerryMon makes the statement that the Sound is the largest estuary in the U-S about which there is the least known. After six years of collecting information, Dr. Paerl says it's still too soon to tell whether the health of Pamlico Sound is improving or not he says long term changes can take decades. But the numbers from FerryMon show reason for encouragement along the Neuse Estuary.

27:02 One of those is the exceedences of the 40 microgram per liter chlorophyll standard. We have found using the ferries that we exceed that standard within the tolerable level that the state has set, and that is that you can't exceed it more than 10% of the time that any measurements are being made. Well, the ferries are telling us we're getting pretty close to that.

The public can also keep track of the health of the Pamlico Sound and Neuse Estuary through the FerryMon website at ferrymon.org. Dr. Hans Paerl is a Professor of Marine and Environmental Sciences at UNC-Chapel Hill's Institute of Marine Sciences in Morehead City. I'm George Olsen.

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