



What is FerryMon?

- FerryMon stands for “Ferry Monitoring” program. We use the ferry transportation system to monitor and keep a “watch” on water quality.
- Some ferries are set up to collect surface water at different times during the ferry’s journey. The ferry stores the water until it can be taken back to the lab to be studied.
- The ferry also has a set of sensors that measure salinity, temperature, chlorophyll *a*, and other parameters. This information is sent from the ferry to the lab by cell phone line. The information is then converted to graphs that are sent to the Department of Environment and Natural Resources, the US Environmental Protection Agency, the National Oceanographic and Atmospheric Administration, local water quality and fisheries agencies, researchers and schools for teaching purposes.

Why is FerryMon important?

- Scientists, water quality managers and the public (through the website) are kept informed of water quality conditions in the Neuse River Estuary and Pamlico Sound by simple measurements, such as salinity, temperature, oxygen, and chlorophyll *a*.
- By using the ferry system to take measurements, the scientists and managers spend less time collecting samples, and devote more time to using the information to inform the agencies, researchers and public of up to date water quality and fisheries habitat conditions. FerryMon generates a clear, useful day-to-day picture of the environmental conditions of the Neuse River Estuary and Pamlico Sound.

What is chlorophyll *a*?

- Chlorophyll *a* is a common pigment found in plants and algae. This pigment is what plants and algae use to trap the energy from the sun so they can grow.
- Chlorophyll *a* is measured in micrograms per liter ($\mu\text{g/l}$) units. Micrograms per liter is micrograms of chlorophyll *a* per liter of water.

In estuaries, chlorophyll *a* measurements can range from 1 µg/L to higher than 20 µg/L.

- Scientists measure chlorophyll *a* in the lab by separating the chlorophyll *a* from the algae in the water.

Why is chlorophyll *a* important?

- Chlorophyll *a* tells us how much algae is in the water. Algae are small plant-like organisms that float in the water and use the sunlight to grow.
- Too much algae can cause problems. As algae die, bacteria eat them. This can lower the oxygen in the water since bacteria need oxygen to grow. If there is no oxygen, some of the animals and plants in the water can die!
- Some algae are poisonous to fish, shellfish, and even humans.

What is salinity?

- Salinity is a measure of how much salt is in the water.
- Salinity is usually measured in parts per thousand (ppt) units. Parts per thousand is how many grams of salt are dissolved per liter of water.

Why is salinity important?

- All plants, animals, bacteria, and algae need a certain salinity range in order to survive. Changes in salinity can kill an organism.
- The salinity in the Neuse River and Pamlico Sound can range from 0ppt to 35ppt.

Why is temperature important?

- All plants, animals, bacteria, and algae have a temperature that they prefer, and most grow quicker in warmer waters.
- Warm water holds less oxygen than cold water, and this makes the summer months more likely to have dangerously low levels of oxygen. If there is no oxygen, some of the animals in the water can die!
- The temperatures in the Neuse River and Pamlico Sound usually range from about 6°C to 30°C (43°F to 86°F).

Find out more at:

www.ferrymon.org