

Pollution Mapping

Introduction: Much of ORCA's work is focused on identifying areas within the Indian River Lagoon (IRL) with the highest concentrations of pollutants. You can't solve a problem if you don't understand it, and in this case the problem is there is too much pollution entering the IRL. Our Pollution Mapping Citizen Science project is designed to help understand where pollution is coming from so it can be stopped at its source. We use data from this project to prioritize our efforts to develop projects that will have the greatest impact of improving water quality in the IRL.

Among the many pollutants we measure in our project are nutrients – specifically nitrogen and phosphorus. These nutrients are essential to a healthy estuary; the problem comes when they get too high. At that point nutrition pollution can lead to negative impacts on the health of the environment, humans and animals.

About the data: ORCA Pollution Mapping Citizen Scientists measure nitrogen (in the form of nitrate/nitrite and ammonia) and total phosphorus in water column and pore water samples. Pore water is the water that is contained between sediment particles.

Variables:

- Monitoring Season
- Sample location
- Water column phosphate
- Water column nitrate/nitrite
- Water column ammonia
- Pore water phosphate
- Pore water nitrate/nitrite
- Pore water ammonia

References:

[Nutrient Pollution. EPA website.](#)

[What is nutrient pollution. National Ocean Service website.](#)

Examples of questions you could answer creatively with this data set:

Level 1: Which sites had the highest level of each nutrient each season?

How did a specific nutrient change between years across sites?

Level 2: Does the ranking of sample sites based on nutrient pollution change from season to season?

Level 3: Are the seasonal trends in nutrient pollution consistent among sample sites?