Project Overview:

Coastal pollution assessment is a pressing matter as the anthropogenic pressure continues to increase worldwide. A leading approach to assess coastal pollution is using bioindicators. Our goal was to find the meiobenthic composition in each pollution level.

Data overview:

Access to safe drinking-water is essential to health, a basic human right and a component of effective policy for health protection. This is important as a health and development issue at a national, regional and local level. In some regions, it has been shown that investments in water supply and sanitation can yield a net economic benefit, since the reductions in adverse health effects and health care costs outweigh the costs of undertaking the interventions.

Data source: Water Potability Dataset

Data Preparation:

The data was cleaned and transformed in Python notebook.

before being imported into Power BI. The steps taken to

prepare the data included removing null values, filtering out.

unnecessary columns, treating outliers and some other preprocessing concepts.

Questions we are trying to answer:

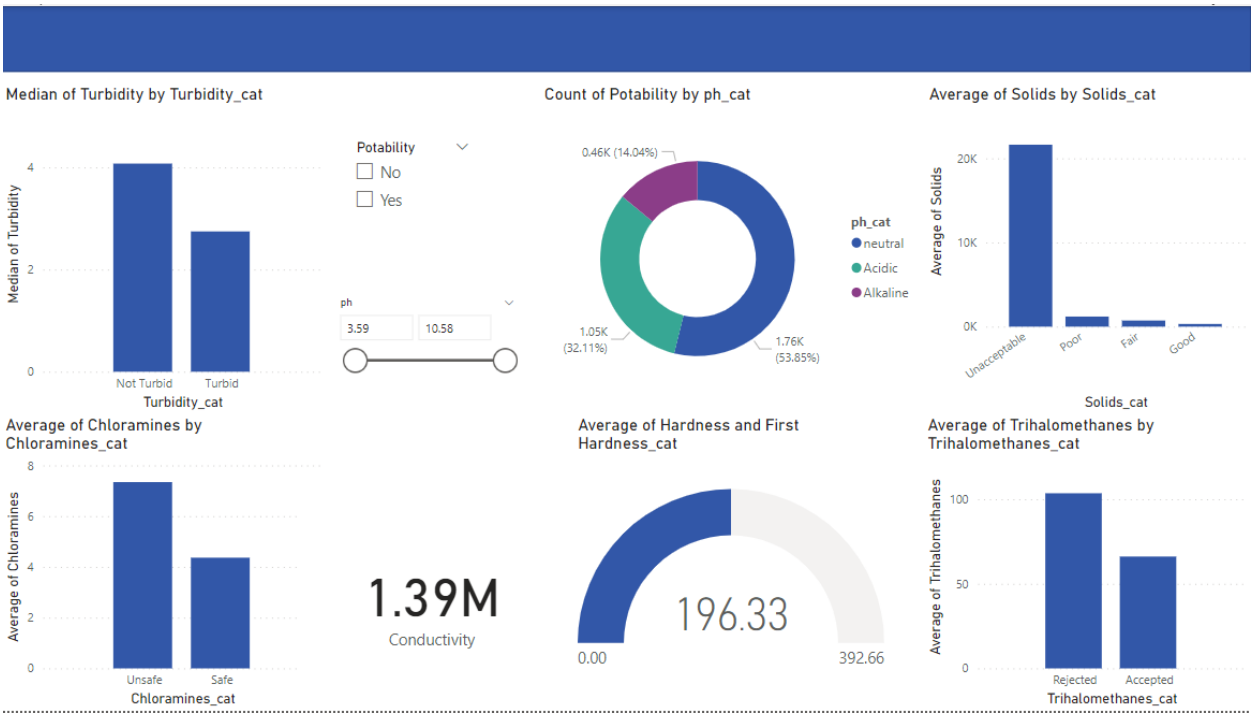
- How turbidity affects potability
- Does conductivity have a direct relation with water pollution?
- What is the use of conductivity in water?
- What is water hardness and how to determine it?
- How sulfates affect water?
- How can PH values affect the safety/potability of water?
- Can sulfates change the pH? How?
- How do the solids affect water clarity?
- What can we conclude from the correlation from our features?

Conclusion and insights we've gained from our analysis:

- more than 60% of water samples are not potable.
- Most aquatic creatures prefer a pH range of 6.5-9.0
- You can determine your water's hardness based on these concentrations of calcium carbonate:
    - below 75 mg/L - is generally considered soft.
    - 76 to 150 mg/L - moderately hard.
    - 151 to 300 mg/L – hard.
    - more than 300 mg/ - very hard.
- At very high concentrations sulfates are toxic .
- Significant changes in conductivity could then be an indicator that a discharge or some other source of pollution has entered the aquatic resource.
- PH had an average of 7, this means that water is almost neither acidic or basic.

- Solids helps increasing the turbidity.
- 92% of the samples had high hardness.
- Only 1.8% of the water samples were safe in terms of Sulfate levels.
- Total solids also affect water clarity.
- Solids reduce water clarity by creating an opaque, hazy, or muddy appearance which decrease the movement of light through water and increase the turbidity measurement.
- When sulfate reacts with other metals, it forms strong acids which changes the pH which can harm other creatures in the environment.
- Most of the features are not correlated with the target, more over the correlation between features were very low.

Visualizations



For more visualizations have a look at the notebook: [Water Potability Notebook]

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