

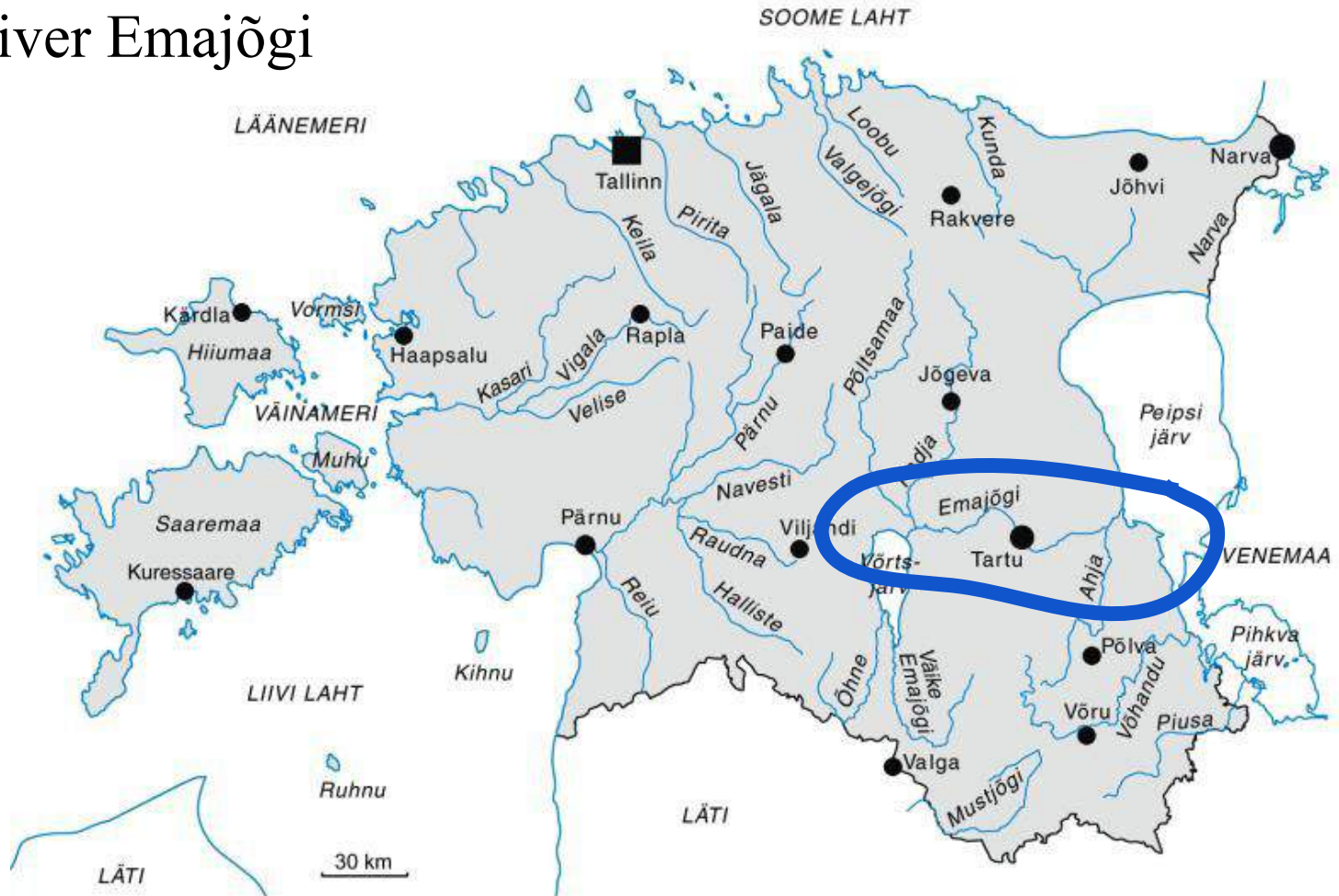
The effect of urban environment on the River Emajõgi

Team Johannesburg
2023



Location of river Emajõgi

Figure 2. The map of Estonia



Map of the locations

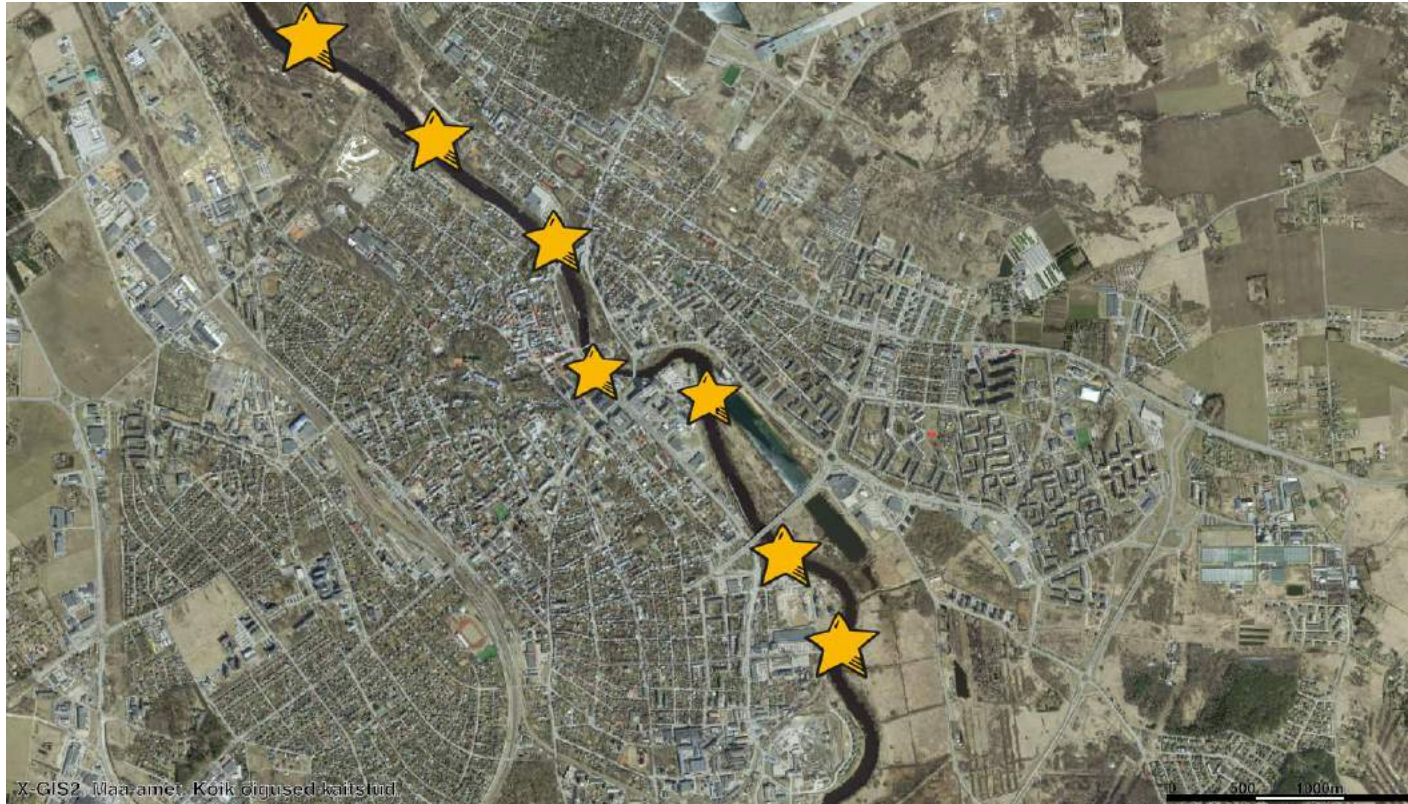


Figure 3. Testing locations of both hydrology groups.

Research questions and hypotheses

We asked...

- 1) How does the urban environment affect the water quality?
- 2) Do the hydrochemical and hydrophysical parameters change along the river?

We thought that...

- 1) The urban environment affects the water quality negatively.
- 2) The oxygen level decreases along the river.
- 3) Transparency decreases along the river because of the impact of the city.

Research sites

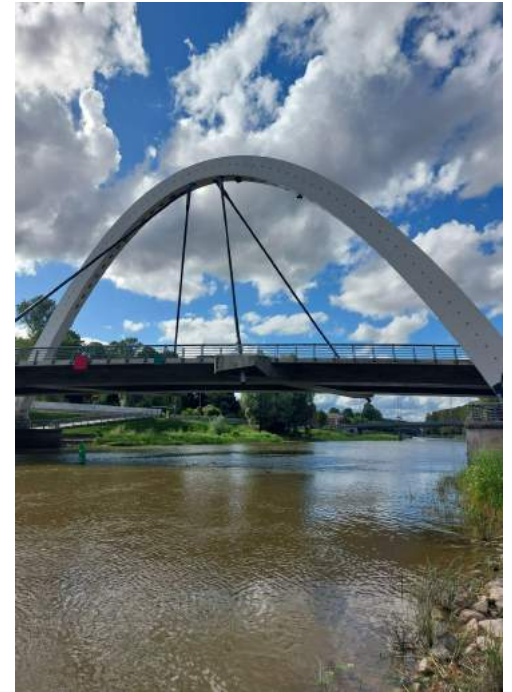
Location 1: Beach of Supilinn



Location 2: Pier



Location 3: Vabadussild



Equipment and protocols

Equipment: Vernier thermometer, conductivity probe, pH probe, a bucket with a rope, transparency tube, chemical kits (Visocolor): oxygen, nitrate, alkalinity.



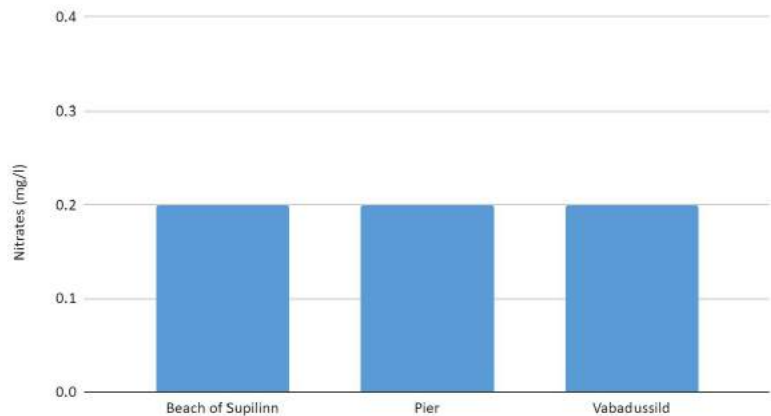
Figure 4. Our equipment

GLOBE protocols:

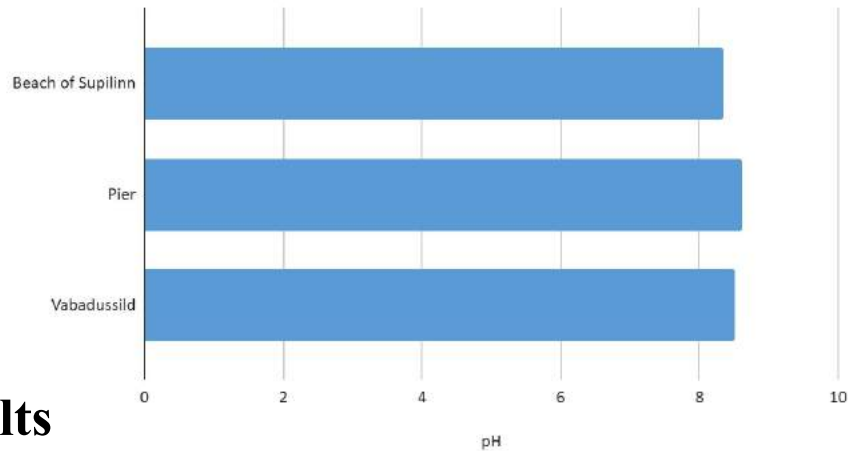
- Temperature
- Conductivity
- pH
- Transparency
- Dissolved oxygen
- Alkalinity
- Nitrates
- Clouds

All of the data is uploaded to the GLOBE Data Entry.

Nitrates

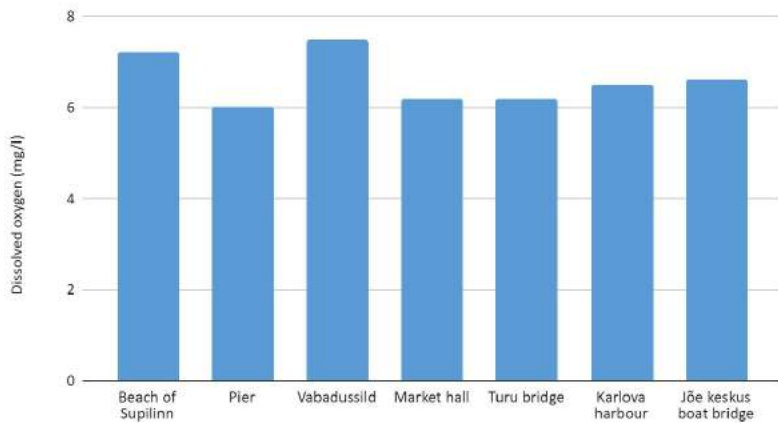


pH

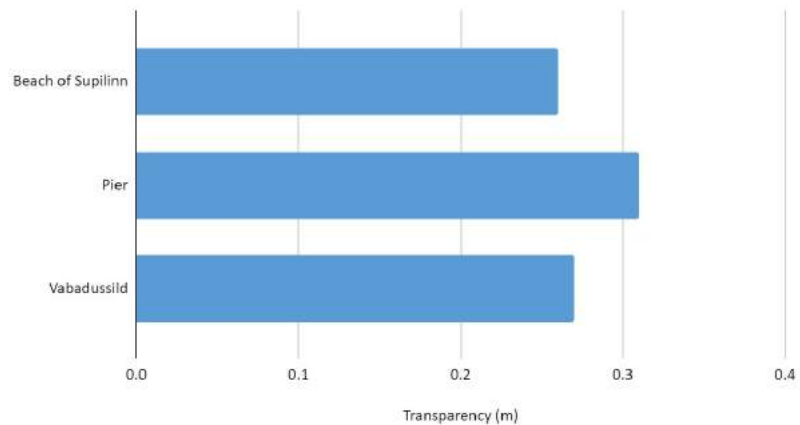


Results

Dissolved oxygen



Transparency



Summary

The hydrochemical and hydrophysical parameters don't vary much as our test results show. Parameters are very similar to the other results from literature. This also indicates that urban environment did not affect water quality so much at our sampling points. The water quality was good along our transect. This is what we think:

- 1) The urban environment affects the water quality negatively. Partially true.
The parameters indicate the conditions are good, but there was a lot of human impact on the shores.
- 2) The oxygen level decreases along the river. Not true.
It increases if you look at the results taken after the rain. It should be investigated furthermore.
- 3) Transparency decreases along the river because of the impact of the city. Partially true.
The river comes from lake Vörtsjärvi and its water transparency is already poor, in addition to the active boat traffic in the city.

Our team

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Figure 5. Research team “Johannesburg”



Thanks for listening!

Any questions?

