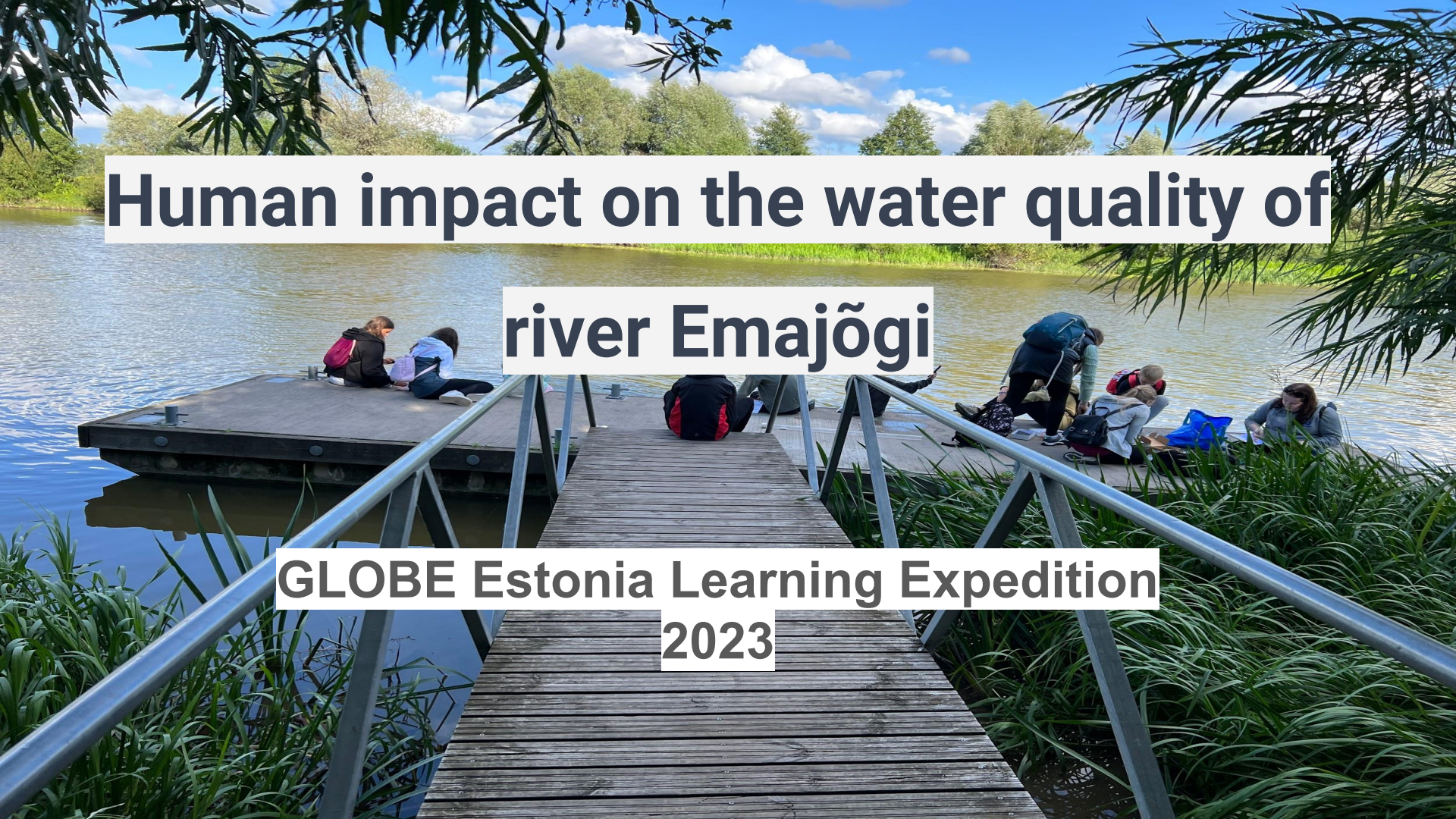

Human impact on the water quality of river Emajõgi

GLOBE Estonia Learning Expedition 2023

Our group

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Research question and hypothesis

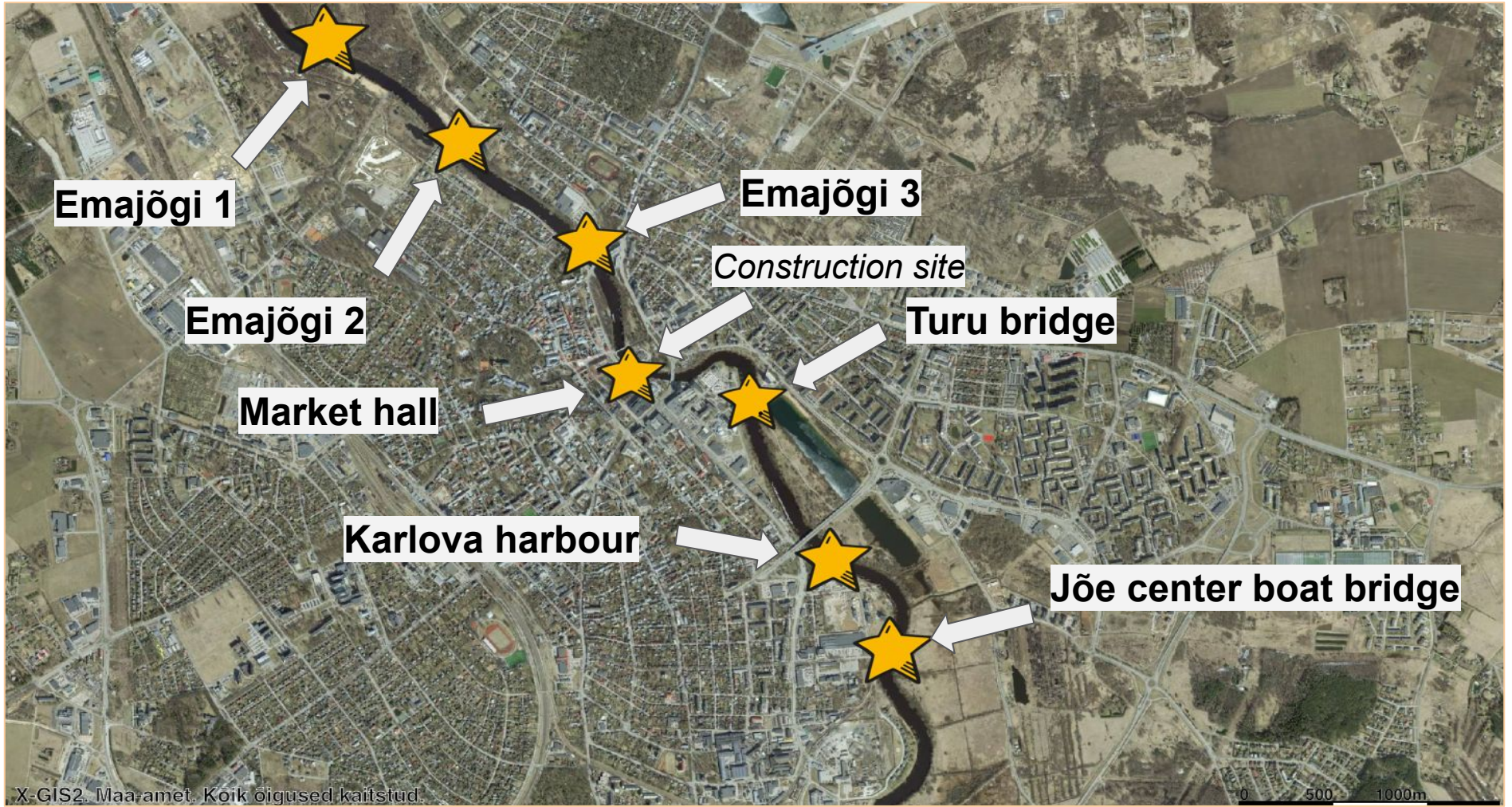
- How does the construction of the promenade in the center of Tartu affect the water quality of Emajõgi?
  - Construction has a negative impact on water quality.

- To what extent does the construction of the promenade affect Emajõgi?
  - The impact of the construction of the promenade on Emajõgi is far-reaching.

Methodology

Following GLOBE Hydrology protocols were used:

- Water temperature
- Conductivity
- pH
- Transparency
- Dissolved Oxygen
- Alkalinity
- Nitrates



Estonian Land Board [09.08.2023]

← Market hall

Turu bridge →

← Karlova harbour

Jõe center boat bridge →

Results

		Emajõgi 1	Emajõgi 2	Emajõgi 3	Market hall	Turu bridge	Karlova harbour	Jõe keskus boat bridge
Temperature	°C	23.0	22.2	22.3	22	22	22	22
Conductivity	µS/cm	373.0	360.0	325.0	258	381	387	379
pH		8.34	8.62	8.50	8.23	7.98	7.8	7.8
Transparency	m	0.26	0.31	0.27	0.32	0.17	0.29	0.21
Dissolved oxygen	mg/L	7.20	6.00	7.50	6.2	6.2	6.5	6.6
Alkalinity	mg/L	221.43	234.85	215.33	195.2	225.7	201.3	195.2
Nitrates	mg/L	0.20	0.20	0.20	<0.2	<0.2	0.2	0.2

Findings

- Compared to measurements taken upstream following characteristics are lower:
  - conductivity
  - pH
  - dissolved oxygen
  - alkalinity
  - nitrates
  - but transparency is a bit higher than previous measurements taken upstream
- Measurements taken downstream show that the characteristics start to go back up.

Conclusions

- Hypothesis 1 - Construction has a negative impact on water quality. Hypothesis was confirmed.

- Hypothesis 2 - The impact of the construction of the promenade on Emajõgi is far-reaching. Hypothesis was partially confirmed.
  - Characteristics start to go back up after short distances and already at Turu bridge.

Thank you!