

Kaliningrad State Technical University

**Investigation of adsorption properties of higher aquatic
vegetation with reference to pollutants of rivers of the
Kaliningrad region**

Prepared by
Student of KSTU
Environmental management and water usage department
Sherman Nikita

The characteristics of the Kaliningrad region

- 4610 water bodies
- 1100 settlements
- More than 1000 don't have treatment facilities

Relevance of the work

Currently, the problem of pollution of the Baltic Sea is being paid attention both abroad and in the Kaliningrad region.

In the Kaliningrad region, most water bodies have low discharge and putting complex treatment facilities on them is inexpedient.

Biological wastewater treatment plant



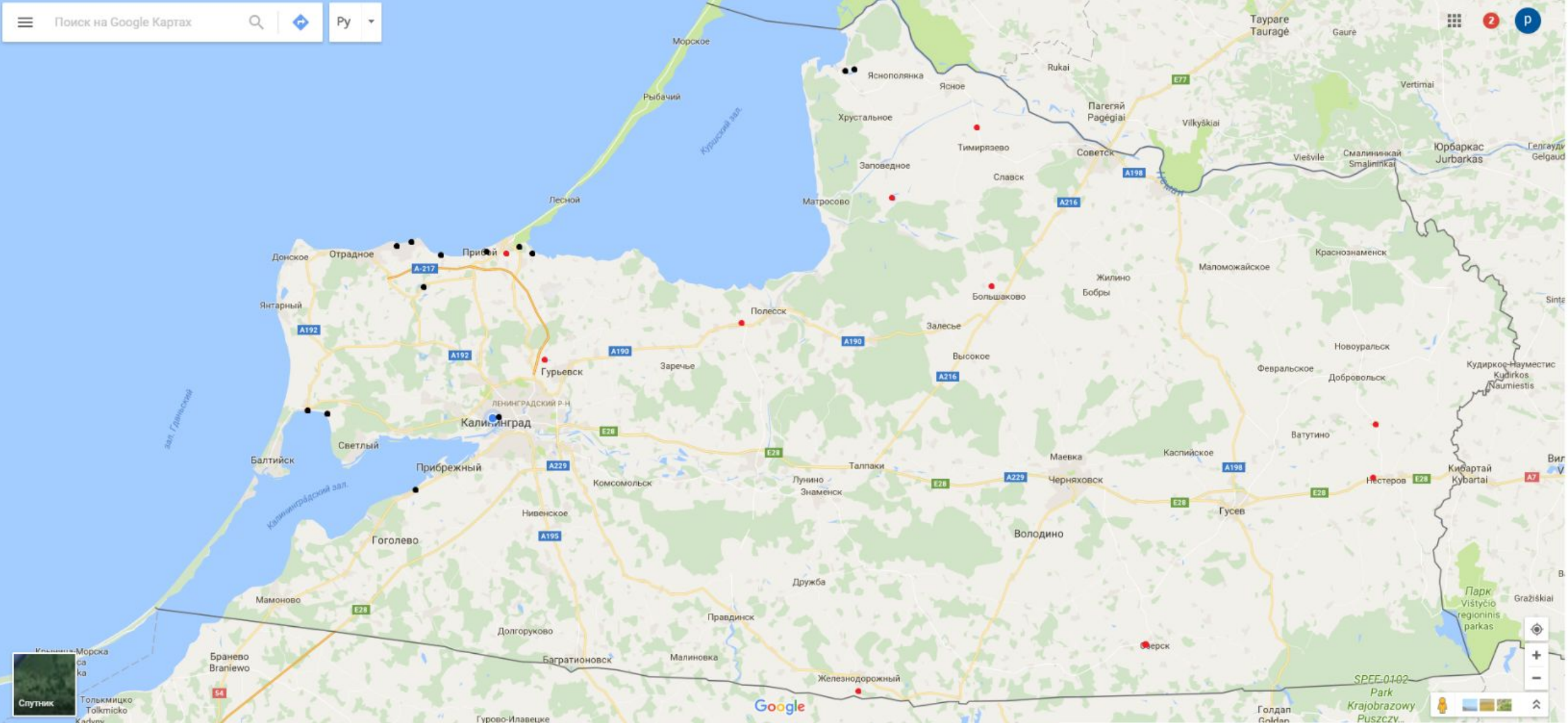
Advantages over other treatment facilities:

- absence of chemical reagents
- no consumption of minerals
- relatively low cost
- improves recreational appeal

Biological wastewater treatment plants in the Kaliningrad region

Biological wastewater treatment plants located in:

- Salem ecovillage
- Ilyushino



- – my researches
- – researches as a part of KSTU expert commission

Photos of water objects I investigated



Picture 1 – Object 1



Picture 2 – Object 2

Data of chemical analysis

Indicators	Object 1, mg/l	Object 2, mg/l
Dissolved oxygen	3,48	5,29
COD	340	145
BOD-5	74,40	7,30
Iron	1,84	5,53
Phosphorus	0,77	0,271
pH	8,2	7,8
Hydrocarbonates	427	366
Ammonium	3,00	0,7
Nitrates	45	1,0
Nitrites	0,5	0,2
Sulfates	123	72
Chlorides	142,4	71,2

Objectives of my research

- Process received data on pollutants and compare with similar data in Germany
- Study the degree of purification of selected pollutants by higher aquatic vegetation
- Study the conditions for the application of treatment facilities of this type on water bodies in Germany

Methods of my research

- Literature studies
- Field observations
- Laboratory research
- Data processing

Aims of my research

Methodological recommendations including:

- Types of vegetation
- Degree of purification
- Conditions of application of method

To draw attention of interested persons.

Thank you for attention!