

ARTWEI KICK-OFF MEETING, WARNEMÜNDE 26-27, APRIL 2010

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PRESENTS:

SZCZECIN LAGOON

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LOCATION

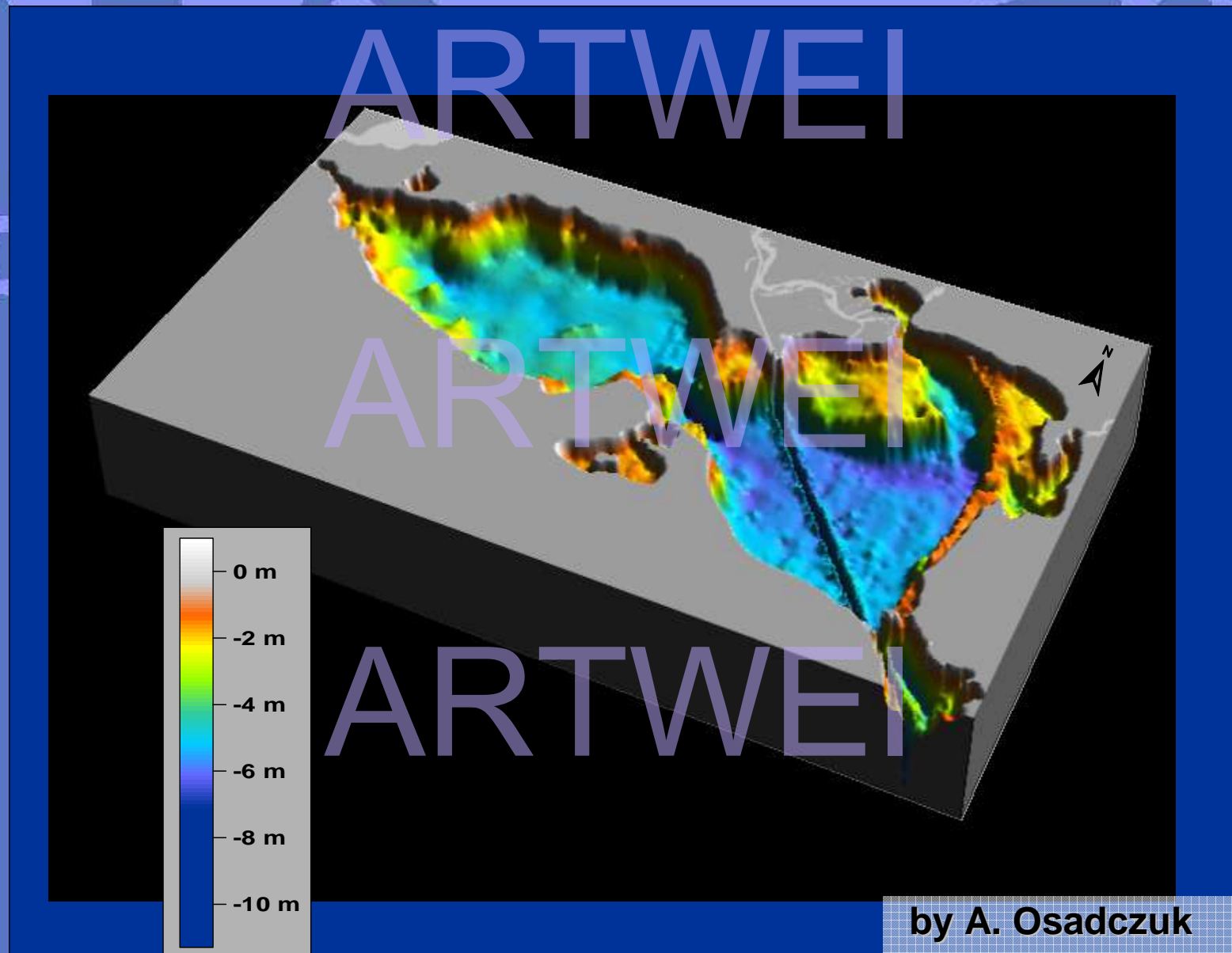


BASIC INFORMATION

- Area: 687 km²;
- The Great Lagoon (the Polish part of the reservoir) covers the area of 410 km².
- Depth: average: 3,8 m; max: 10,5 m;
- Salinity: 0,5–2,0‰;
- Volume of the waters of the is 2.58 km³
- The area of catchment covers 129 591 km², 91.5% of which is the Oder basin
- The waterway connecting two main ports in the region – Szczecin and Świnoujście runs through the Lagoon.

The **sculpture of the Earth's surface** of the Szczecinski Lagoon surroundings is quite diverse. It is surrounded by **sandy, mud and peat plains** in the south-west, south and south-east. The north-eastern surroundings of the Szczecinski Lagoon is a **flat or rolling upland of a ground moraine**. In the north the area of the Lagoon is surrounded by the **island Wolin** which is elevated to the height of more than 100 m above the sea level.

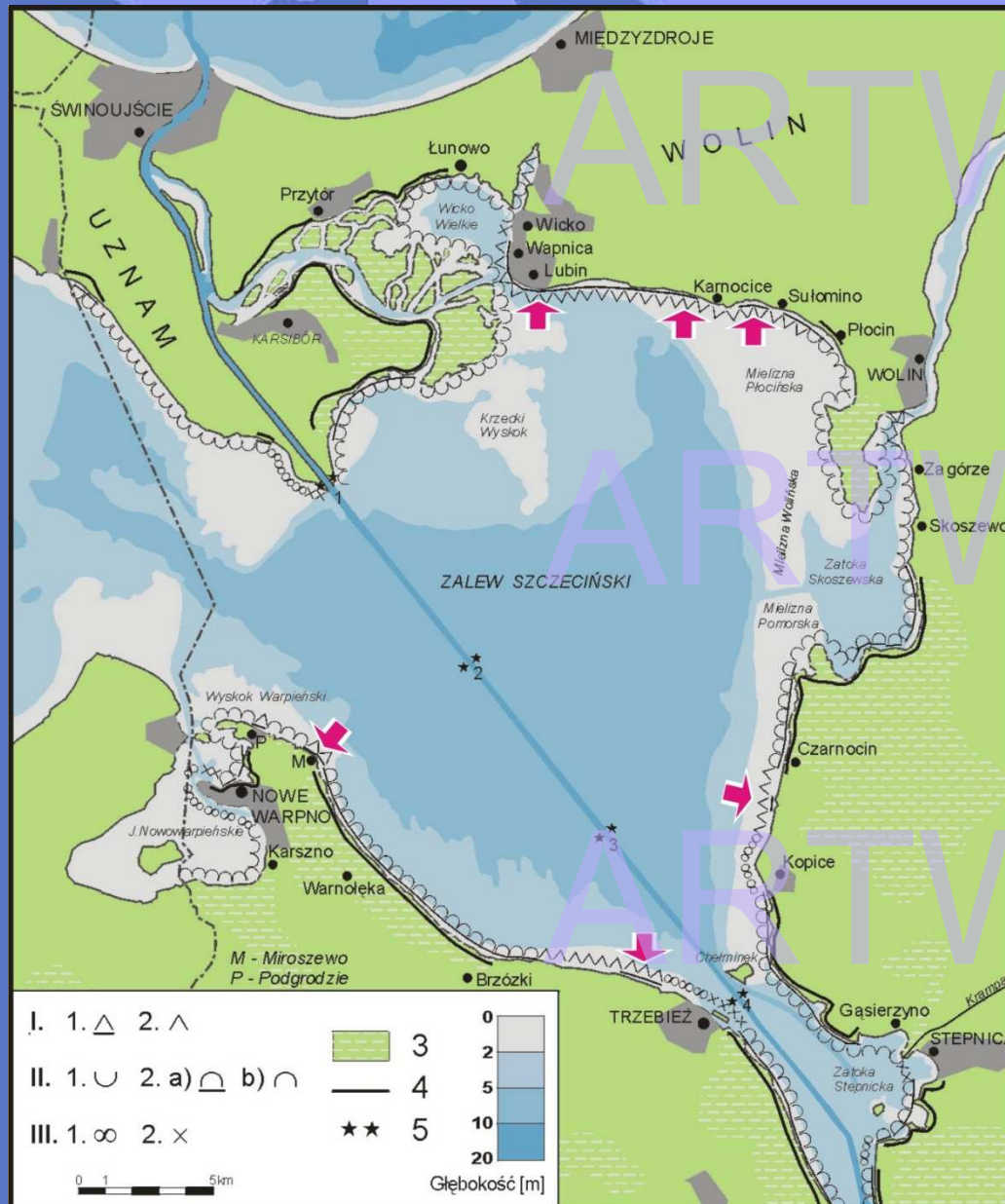
SCULPTURE OF THE BOTTOM



COASTS OF THE LAGOON



COASTS OF THE LAGOON



TYPES OF COASTS AT THE SZCZECIN LAGOON

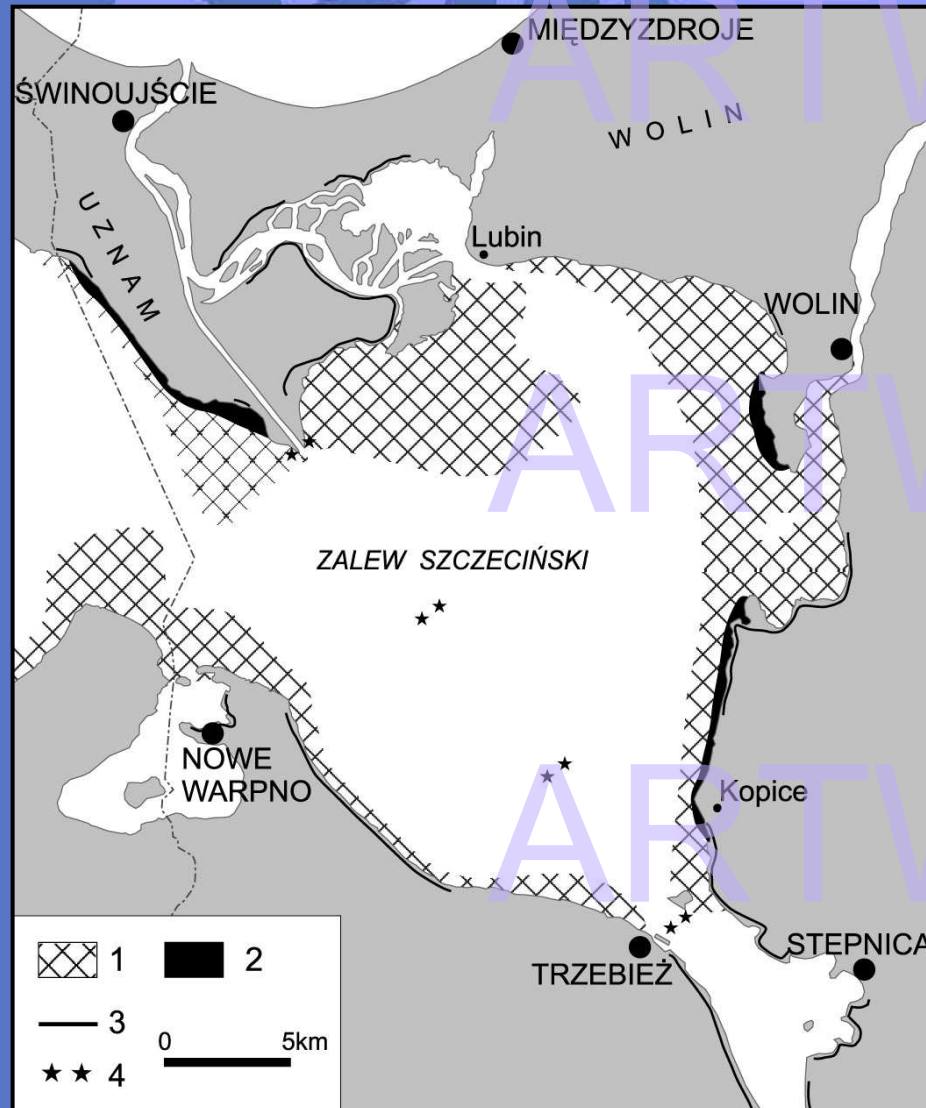
(source: S. Musielak, Wochna S., 2005):

- I.1. - CLIFF [KW],
- I.2. - CLIFF TERRACE PEAT-SWAMP AT THE FOOT OF
- II.1. - LOW FLAT, GENTLY SLOPING
- II.2. - LOW MARSHY INCLUDING:
 - a) WITH THE FLOOD EMBANKMENT
 - b) WITHOUT THE FLOOD EMBANKMENT
- III.1. - ANTHROPOGENIC COASTS (SILT MATERIAL)
- III.2. - TECHNICAL COASTS (HARBOUR BUILDINGS)
- 3 - WETLANDS, 4 - LEVEES, 5 - THE DOOR TRACK

LOCATION CLIFF SECTIONS OF THE SZCZECIN LAGOON

- 1 - LUBIN, 2 - KARNOCICE, 3 - SUŁOMINO,
- 4 - CZARNOCIN - KOPICE, 5 - TRZEBIEŻ - BRZÓZKI, 6 - MIEROSZEWO (PŁW. NOWOWARPIEŃSKI)

ICE COVER



LOCATION HEAPS OF ICE IN THE SZCZECIN LAGOON

LAGOON

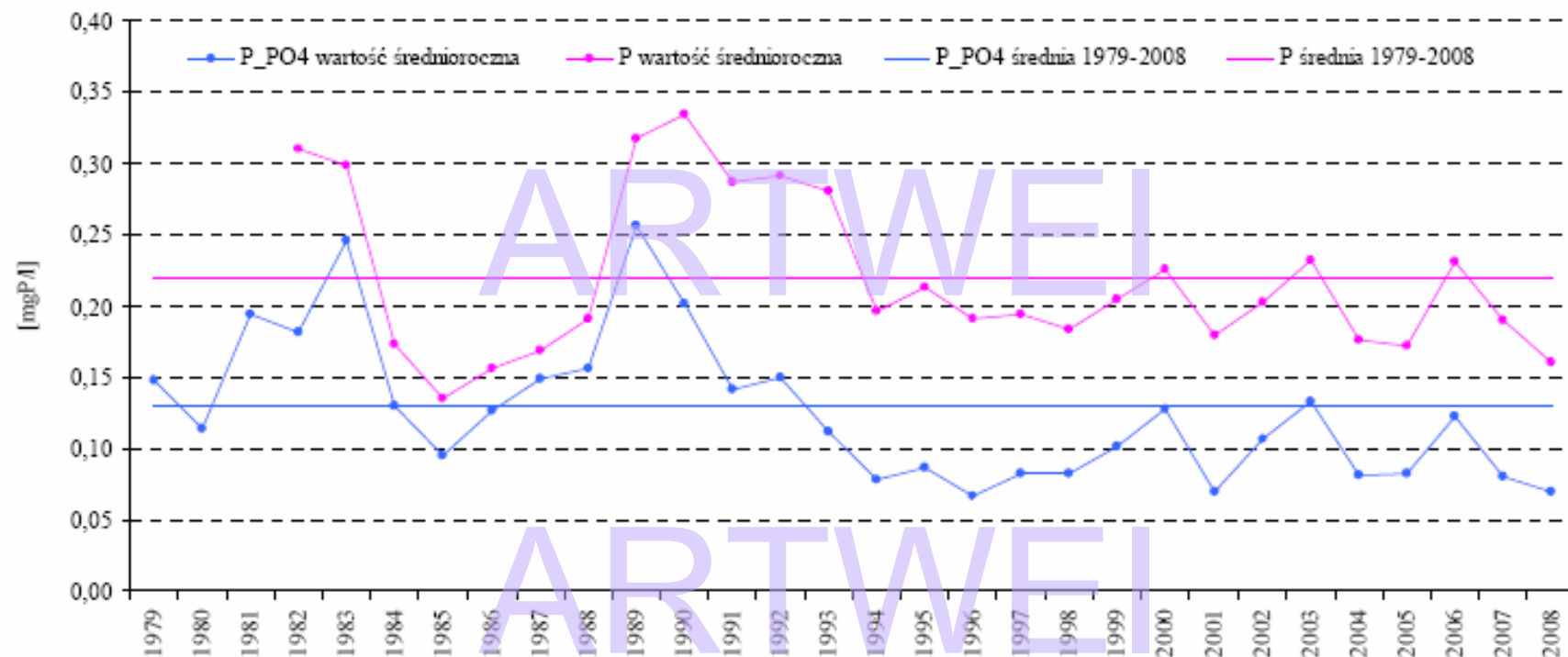
(by J. Girjatowicz):

- 1 - THE AREA COVERED BY TIPPING THE ICE
- 2 - THE AREA COVERED BY INTENSE TIPPING,
- 3 - LEVEES,
- 4 - DOOR TRACK

POLLUTION

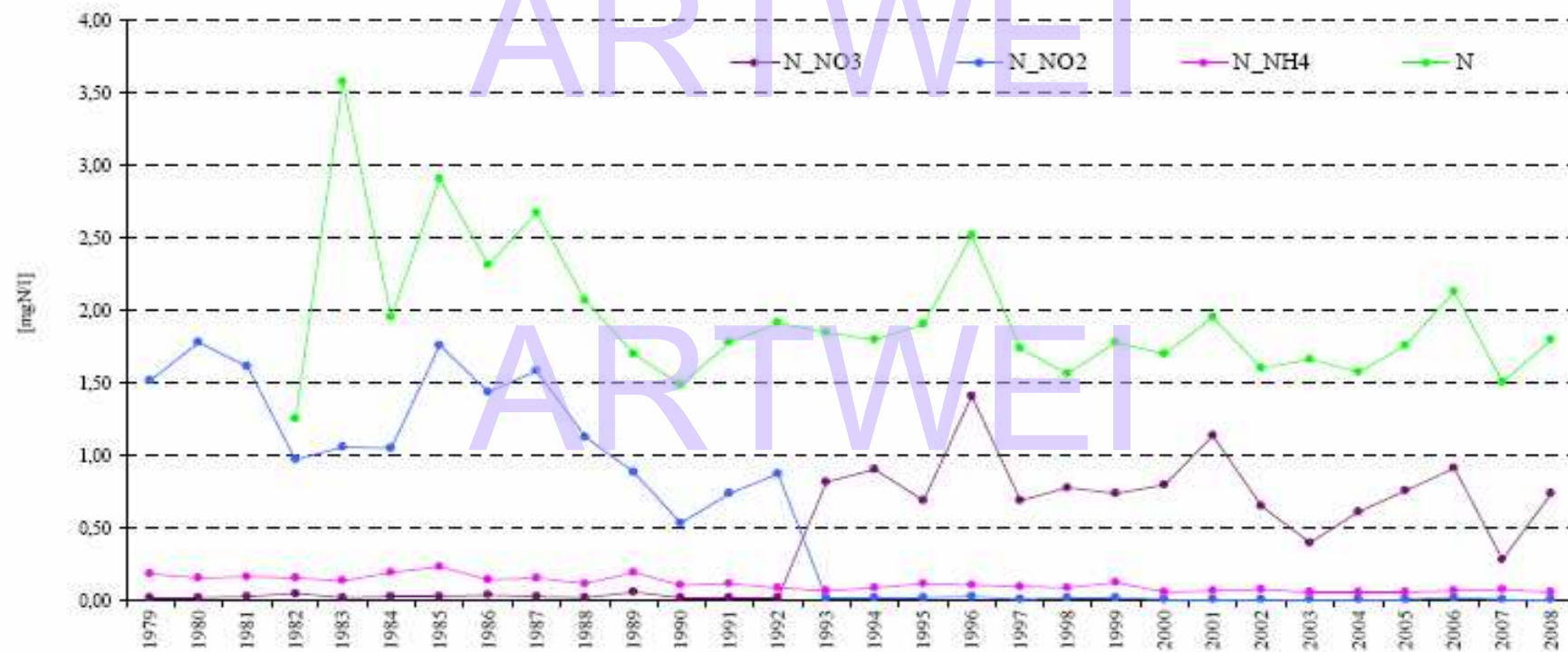
- The **Oder River** is discharging significant amount of pollution loads to the Baltic Sea - contributes about **9% of the total load into the Baltic Sea**.
- Before entering the Baltic Sea, the **Odra River** passes the large and shallow Szczecinski Lagoon and **releases its load**.
- The lagoon is highly eutrophied, with a **low water transparency**, often below 1 m, and **heavy and occasional cyano-bacteria blooms** in summer.
- As a result of a significant reduction in the load of pollutants introduced to the Oder River and its tributaries, we observe a gradual, however slow, **improvement in the cleanliness of water**.
- Water in the Szczecinski Lagoon and Pomeranian Bay shows significant eutrophication.
- The condition of water remains also under a significant **influence of pollutant deposits** found in bottom sediments.

The research confirmed a long-term trend in improving quality. The assessment of trends in 1979-2008 showed a continued reduction of organic pollutants, phosphorous and nitrogen compounds, as well as improved sanitary conditions



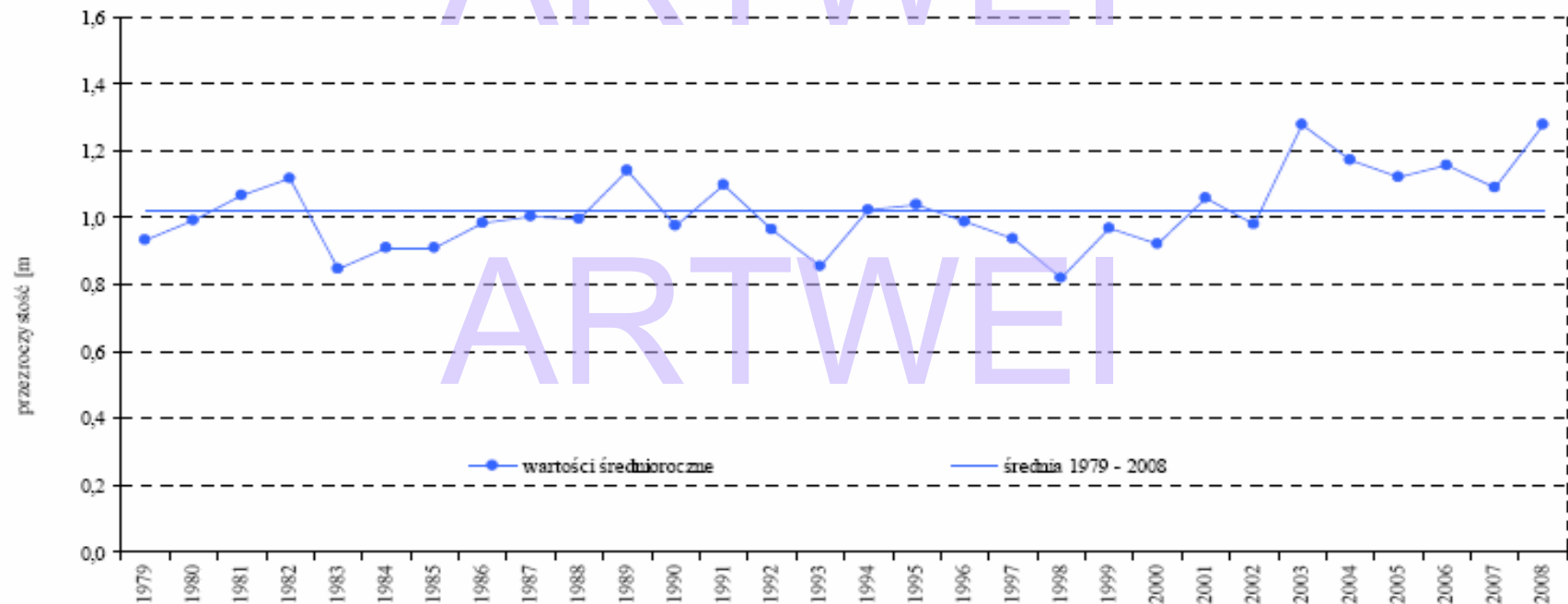
PHOSPHATES CONCENTRATION IN THE SZCZECIN LAGOON IN THE YEARS 1979 - 2008

BY: ANNUAL REPORT OF THE VOIVODSHIP INSPECTORATE OF ENVIRONMENTAL PROTECTION IN SZCZECIN



TRENDS CHANGE THE CONTENT OF NITROGEN COMPOUNDS IN THE WATERS OF THE SZCZECIN LAGOON IN THE YEARS 1979-2008

BY: ANNUAL REPORT OF THE VOIVODSHIP INSPECTORATE OF ENVIRONMENTAL PROTECTION IN SZCZECIN



TRENDS CHANGE TRANSPARENT WATERS OF THE SZCZECIN LAGOON IN THE PERIOD 1979-2008 (VALUES AVERAGE FOR THE SURFACE LAYER)

BY: ANNUAL REPORT OF THE VOIVODSHIP INSPECTORATE OF ENVIRONMENTAL PROTECTION IN SZCZECIN

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TOURISM AND RECREATION

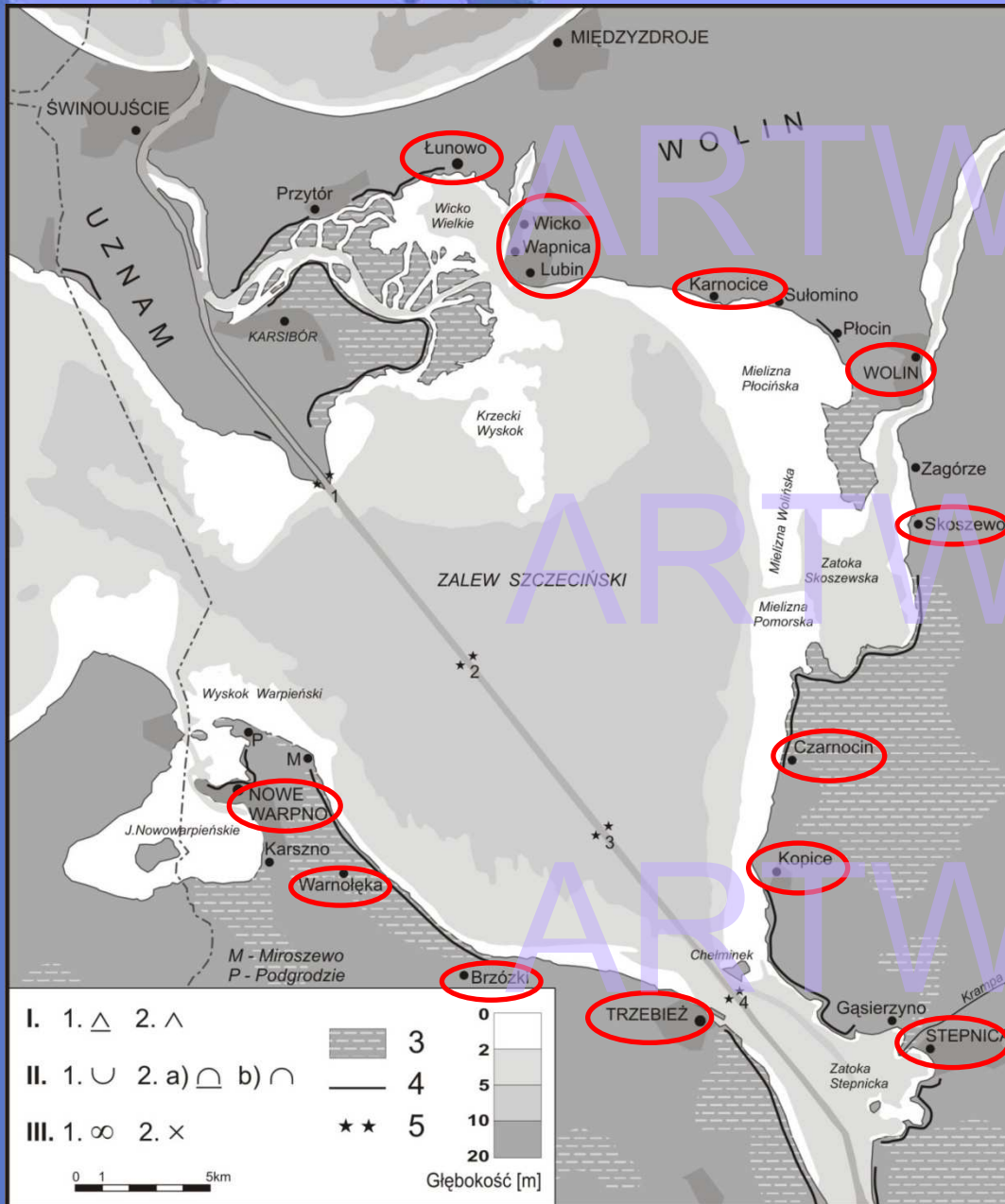


DIFFERENT TYPES OF TRANSPORT



DEVELOPMENT OF SMALL PORTS

INTERNATIONAL EVENTS
TALL SHIP RACES 2007



TOWN ON THE COAST

- **NO WE WARPNO**
- WARNOŁĘKA
- BRZÓZKI
- **TRZEBIEŻ**
- **STEPNICA**
- KOPICE
- CZARNOCIN
- SKOSZEWO
- **WOLIN**
- **KARNOCICE**
- LUBIN
- WAPNICA
- ŁUNOWO

LAND USE, INDUSTRY, ECONOMY

- The main feature of land use in the Szczecin Lagoon area is its relevancy for **agricultural purposes** and **forestry**.
- The **Szczecinski Lagoon** is one of the elements of the Oder estuary
- The waterway connecting two main ports in the region – Szczecin and Swinoujscie runs through it
- **The lower part of the Oder basin** includes the agglomeration of Szczecin with its basic function - maritime economy, chemical industry and energy production.
- The region is an important European natural heritage and ecological corridor that is worth protecting.

IDENTIFICATION OF PRIORITY ISSUES

- Water quality
- Flood management, canal regulation and navigation
- Socio-economic issues
- Integration of policy, planning and institutional

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ONGOING AND COMPLETED PROJECTS

GOAP

ICARM

ARTWEI

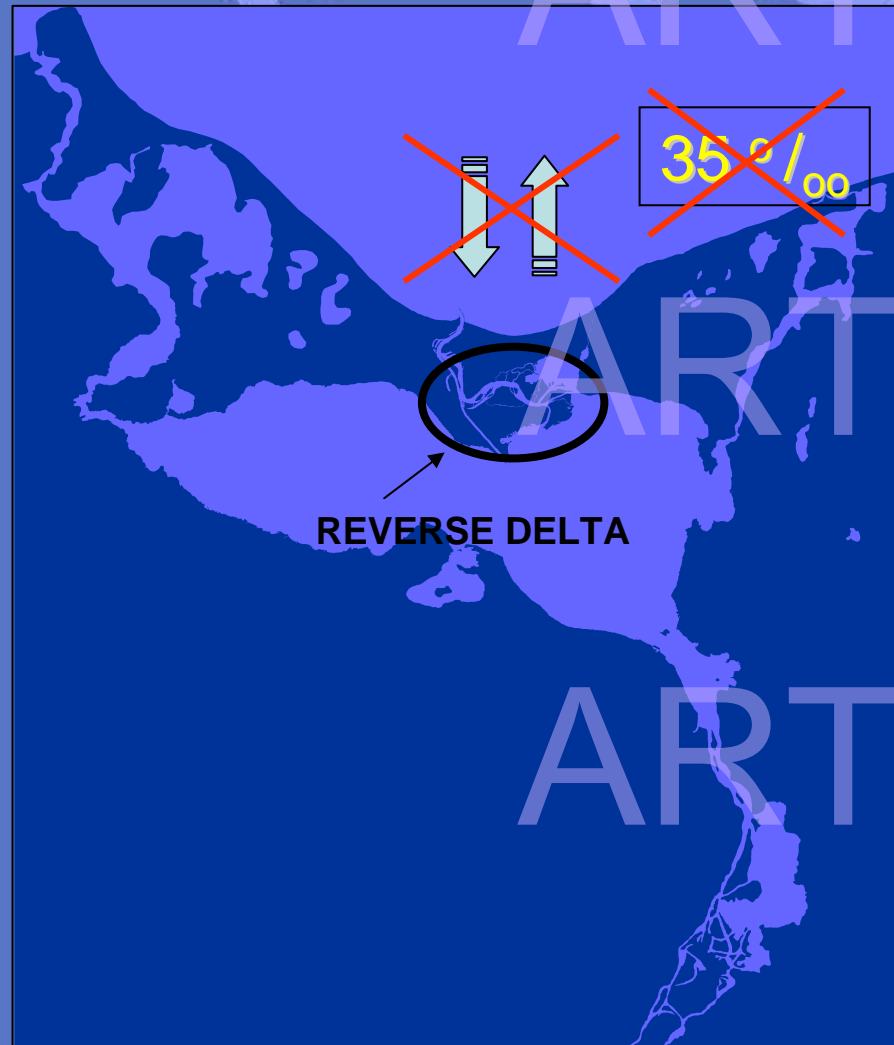
ARTWEI

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PURSUES RESEARCH AT INSTITUTE OF MARINE SCIENCES

- MORPHODYNAMICS OF COASTS AT SZCZECIN LAGOON – *S. Musielak, S. Wochna-Bartnik*
- CHANGES IN WATER LEVEL - *T. Wolski*
- GEOCHEMISTRY OF SEDIMENTS – *A. Osadczuk*
- DIATOMACEOUS FLORA IN THE WATERS OF THE LAGOON AND AT THE COAST – *A. Witkowski, M. Bąk*
- DUNES AT REVERSE DELTA – *K. Osadczuk*
- REMOTE SENSING STUDIES OF LAGOON – *K. Furmańczyk, A Giza*

GEOGRAPHICAL PUZZLE: DELTA OR ESTUARY?



- **NO TIDES**
 - **SALINITY OF BALTIC SEA IS 2-15‰**
 - **LIMITED WATER EXCHANGE ->**
WATERS EXCHANGE BETWEEN THE ODER AND THE BALTIC IS DONE THROUGH THE SZCZECIN LAGOON, AND 3 LONG AND NARROW STRAIT SHADOW STATE
 - **SMALL DEPTH OF THE SZCZECIN LAGOON**
 - **LACK OF DENSITY STRATIFICATION**
 - **SEDIMENTATION RICH IN ORGANIC MATTER, MAINLY GYTTJA**
- ADDITIONALLY:
- **EXISTANCE OF REVERSE DELTA,**
WHICH IS EQUIVALENT TO THE INNER DELTA OF TIDAL LAGOONS IN TIDAL SEAS;

ORGANIZATIONS DEALING WITH THE LAGOON IN POLAND

- UNIVERSITY OF SZCZECIN
- VOIVODSHIP INSPECTORATE OF ENVIRONMENTAL
PROTECTION IN SZCZECIN

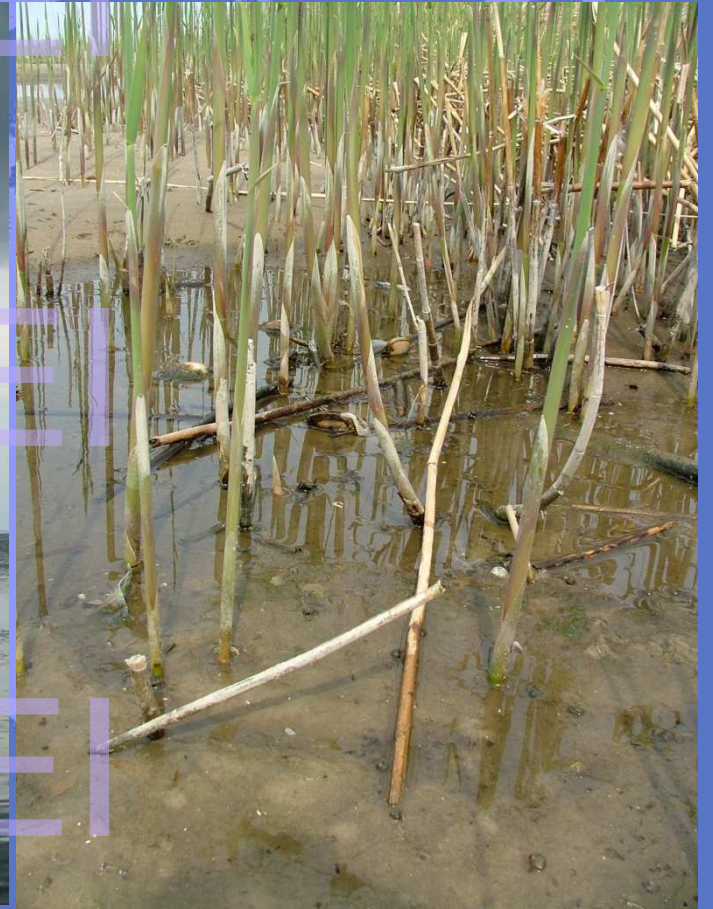
SZCZECIN LAGOON ON PHOTOS



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