



Institute of Oceanography, University of Gdańsk, POLAND

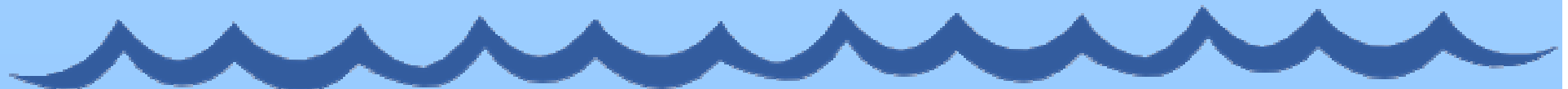


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Institute of Oceanography University of Gdańsk

Contribution to European Marine Research Area

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POLAND






 **Maritime Affairs**

European Commission > Maritime Affairs > Links > Overview > Member state level: Poland > Research and education


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- What's new
- Documentation Center
- Maritime Policy actions
- Sectoral policies
- Events
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- Calls for proposals and tenders
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Links to the maritime world

Member State level



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Poland
Research and education

[Aquarium Gdynia](#) | **Akwarium Gdynskie**

[Gdynia Maritime University](#) | **Akademia Morska w Gdyni**

[Hel Maritime Station and Sealarium](#) | **Fokarium na Helu**

[Institute of Oceanology for the Polish Academy of Science; Marine Biology & Ecology Section](#) | **Instytut Oceanologii Polskiej Akademii Nauki**

[Maritime Institute in Gdańsk](#) | **Instytut Morski w Gdańsku**

[Polish Naval Academy](#) | **Akademia Marynarki Wojennej**

[Sea Academy in Świnoujście](#) | **Zespół Szkół Morskich w Świnoujściu**

[Sea Fisheries Institut in Gdynia](#) | **Morski Instytut Rybacki w Gdyni**

[Sea Fisheries Museum](#) | **Muzeum Rybołówstwa Morskiego w Świnoujściu**

[Ship Design and Research Centre](#) | **Centrum Techniki Okrętowej S.A.**

[Technical university Gdańsk](#) | **Politechnika Gdańska**



University of Gdańsk



11 Faculties

33 000 students

1 700 academic staff

The marine focus of the University of Gdańsk

Oceanography – unique field of study in Poland

Protection of Marine Environment

Marine Transport and Marine Economy

Maritime Law

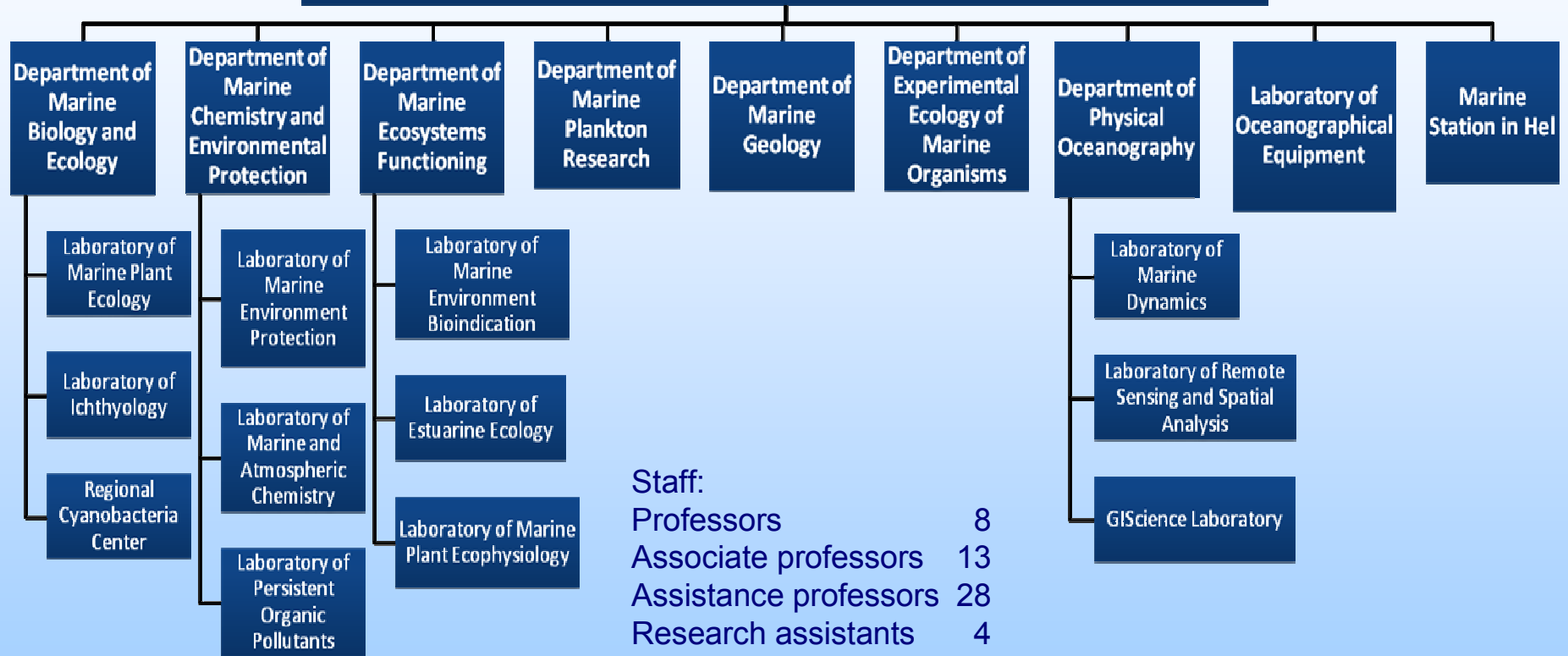
Laws and System of Pomeranian Towns

Maritime Criminology



IO UG

INSTITUTE OF OCEANOGRAPHY



Staff:

Professors	8
Associate professors	13
Assistance professors	28
Research assistants	4
Technical staff	30
Crew	8

PhD students 47

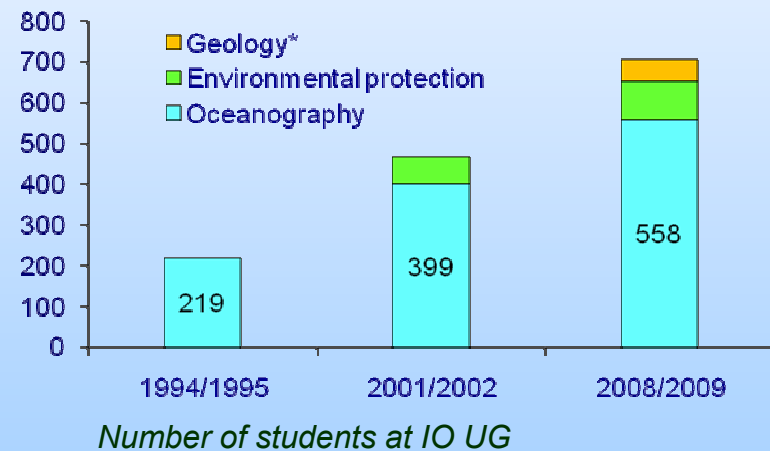


Research



Education

- Bologna system (3 + 2 +4)
- International exchange of students ERASMUS and Leonardo da Vinci





National Cooperation and Infrastructure

- **Polish Network of Marine Research Institutes **MAREI**** 16 institutions
Coordinator: Institute of Oceanography University of Gdańsk, 2002-2005
- **Marine Microbiology Network **MIMO**** 10 institutions
Coordinator: Institute of Oceanography University of Gdańsk
- **Satellite Observation of Marine Environment** 3 institutions
Coordinator: Institute of Oceanology Polish Academy of Sciences, Sopot
- **FerryBox Experiment Gdynia-Karlskrona (RDT)** 3 institutions
Coordinator: Institute of Meteorology and Water Management, Gdynia



Seat of IO UG



R/V Oceanograf 2



Satellite data receiving station



International Cooperation

**BALTDER - Centre of Excellence for Baltic Development, Education and Research
at Institute of Oceanography EVK3-CT-2002-80005 (5 FP)**



BIOCOMBE - The impact of BIOdiversity changes in COastal Marine Benthic Ecosystems (**5 FP**)

COSA - Coastal Sands as Biocatalytical Filters (**5 FP**)

HIPOCAS - Hindcast of dynamic processes of the ocean and coastal areas of Europe (**5 FP**)

COST IMPACT Costing the impact of demersal fishing on marine ecosystem processes and biodiversity (**5 FP**)

ECOOP - European Coastal-shelf sea Operational observing and forecasting system (**6 FP**)

MarBEF - Marine Biodiversity and Ecosystem Functioning (**6 FP**)

SPICOSA - Science and policy integration for coastal systems assessment (**6 FP**)

BONUS - 43 HYPER - Hypoxia mitigation for Baltic Sea ecosystem restoration (**6 FP**)

ClicOPEN - Impact of Climate induced glacial melting on marine and terrestrial COastal communities on gradient along the Western Antarctic Peninsula (**6 FP**)

GAME - Global Approach by Modular Experiments (**IFM-GEOMAR**)

MARS Network - The European Network of Marine Research Institutes and Stations

ASCOBANS - The Agreement on the Conservation of Small Cetaceans of the Baltic and North Seas

InterMareC - BEAD - Baltic Environment for Aquaculture Development

IO UG Summer School - study on various aspects of the functioning of marine and coastal environments



Marine Station in Hel

Main topics:

- Biology and ecology of Baltic mammals
- Protection of rare species and biotopes in the Baltic
- Important centre of marine education
- Sealarium – visited by over 450.000 a year



Expression of Interest for 7 FP

- Endangered species of Baltic mammals – threats, investigations and conservation measures





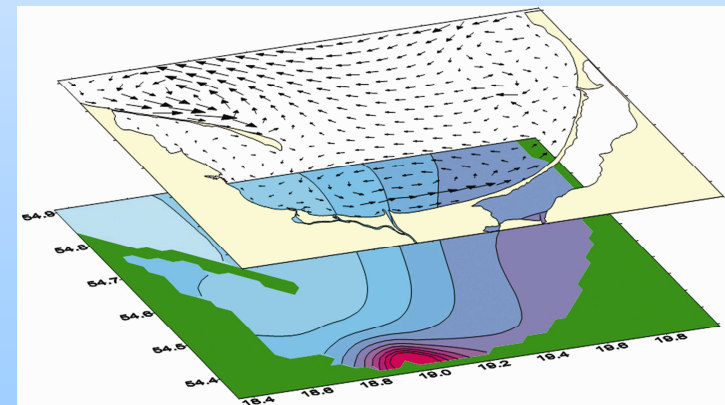
Department of Physical Oceanography

Main topics:

- Marine dynamics, operational oceanography
- Hydrology and hydrodynamics of the river mouths and coastal lakes
- Geoinformatics in coastal zone management
- Acoustic remote sensing – useful tool in studies on distribution and biomass of marine organisms, characterisation of benthic habitat
- Satellite remote sensing – determination of physical factors of Baltic ecosystem

Expression of Interest for 7 FP

- Analysis and modelling of physical processes
- Application of satellite technique in studies of physical, chemical and biological processes in the sea



Ecohydrodynamic model - 60-hour forecast



Department of Marine Geology

Main topics:

- Coastal zone geodynamics
- Balance and transport of sediments
- Coastal protection against abrasion
- Contemporary marine geological processes:
 - lithology of bottom sediments
 - sedimentation rate
 - early diagenesis
 - ground water/salt water relationships
- Effects of anthropogenic pressure in sediments of coastal zone
- Reconstruction of paleoenvironmental conditions based on diatom records

Expression of Interest for 7 FP

- Geoindicators of the global climate changes in marine environment





Department of Marine Chemistry and Environmental Protection

Main topics:

- Eutrophication of the Baltic Sea
- Atmospheric pollution (Hg) - sources, transboundary transport, bioaccumulation and biomagnification
- Fluxes of suspended matter and transformation of its components
- Persistent Organic Pollutants (POPS) in different compartments of sea

Expression of interest for 7 FP

- Evaluation of anthropogenic pressure on marine ecosystem based on water and sediment chemistry





Department of Marine Ecosystem Functioning

Main topics:

- Ecophysiology of marine plants
- Genetic structure and physiological variations of marine invertebrates
- Assessment of environmental health based on biological methods
- Structure and transfer of pollutants in trophic web



Expression of Interest for 7 FP

- Contemporary changes in estuarine and coastal ecosystems; Impact of anthropogenic factors
- New System Based Multimetric Tools for Sustainable Coastal Ecosystem Management





Department of Experimental Ecology of Marine Organisms

Main topics:

- Ecophysiology of marine invertebrates
- Non-indigenous species in the Gulf of Gdańsk
- Biochemical composition and energetic value of marine organisms
- Bioindicators and biomarkers as a tool to estimate marine environment quality
- Assessment of socio-economic importance of marine ecosystems
- Baltic invertebrates for aquaculture development
- Marine products for industry



Expression of Interest for 7 FP

- Marine and fresh-water biotechnology (e.g. aquaculture development, marine products – collagen, chitin, biomedical products, biofuels)
- Socio-economic valuation of marine ecosystem goods and services, economic valuation of marine biodiversity, development of decision support systems
- Ecoenergy
- Knowledge transfer, professional training, networking, cluster initiatives



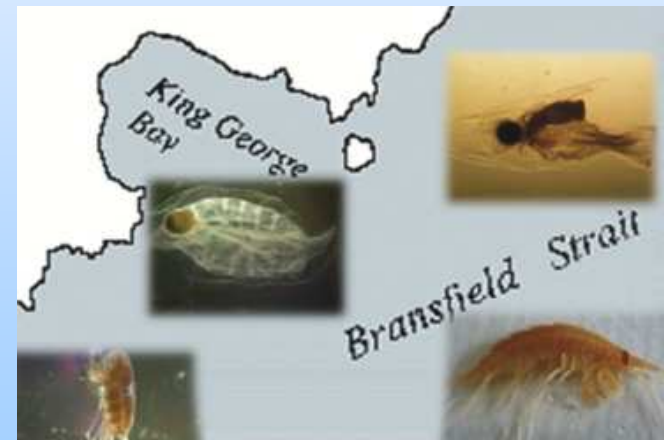
Department of Marine Plankton Research

Main topics:

- Long and short term changes in zooplankton structure, life strategy and behaviour
- Anthropopression and impact of natural environmental conditions on pelagic fauna
- Genetic, morphological and morphometric studies of zooplankton species

Expression of Interest for 7 FP

- Biology and ecology of marine zooplankton in boreal and polar waters





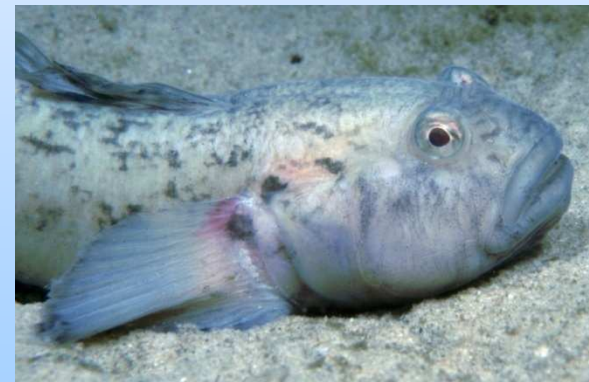
Department of Marine Biology and Ecology

Main topics:

- Biology and ecology of phytoplankton and bacteria, including cyanobacteria
- Taxonomic revision of cyanobacteria and algae – polyphasic approach
- Ecology and physiology of coastal ichthiofauna, including alien species
- Zoology of coastal areas

Expression of Interest for 7 FP

- Harmful algal blooms – ecological and socio-economic consequences
- Influence of temperature on fish reproduction



Round goby – invader in the Baltic



Regional Centre of Cyanobacteria

Infrastructure

- Culture collection of cyanobacteria and other bacteria
- Variety of biological and biochemical tests
- Chromatographic systems for analysis and separation of marine bioactive compound
- Mass spectrometry systems for identification and quantitative studies of biologically active compounds:
 - QTOF LC-MS/MS
 - QTRAP LC-MS/MS

7 FP: Partner in submitted proposal

Exploring marine resources for bioactive compounds: from discovery to sustainable production and industrial application

Coordinated by University of Helsinki, prof. Heikki Vuorela





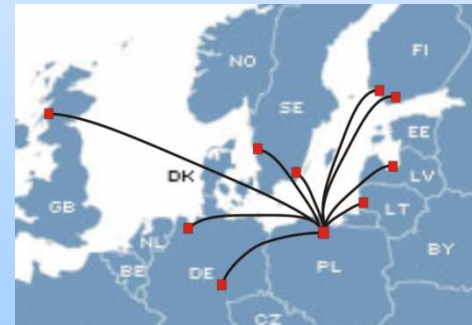
Regional Centre of Cyanobacteria

Main topics:

- Dynamics of cyanobacterial blooms and their impact on ecosystem
- Structure, biological activity, bioaccumulation and biotransformation of algal toxins
- Role of cyanobacteria in functioning of microbial loop
- Proteomics in studies of cell response to environmental factors

Expression of Interest for 7 FP

- Biologically active compounds produced by marine organisms
- Role of microorganisms in functioning of marine environment



International and national co-operation

Training of young researchers from foreign and Polish institutions

Courses for environmental officers and sanitary people

Projects supported by Marshal Office of the Pomeranian Voivodeship



IO UG

Expression of Interest

- Baltic Research Centre - new initiative
- Impact of global climate changes on carbon biogeochemical cycle and marine life
 - Role of plankton (zooplankton, phytoplankton and bacteria)
- Biologically active compounds of natural and anthropogenic origin in the marine environment
 - Hazardous compounds – effects on ecosystem and human health (e.g. pharmaceutical pollution, biotoxins)
 - Bioactive compounds for medicine, industry and agriculture
- Modelling and predicting ecological processes in the sea

*If you can not combat the blooms,
you should try to make use of them*





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**Thank you
for your attention**

