SPICOSA

Science and Policy Integration for COastal System Assesment

SSA No. 02 GULF OF GDAŃSK, POLAND


CLIFF IN GDYNIA-ORŁOWO


PUCK LAGOON 'RYBITWIA MIELIZNA'

LOCATION OF SSA

SSA Gulf of Gdańsk is located on the SE part of the Baltic Sea and comprise of the Gulf of Gdansk marine area and coastal zone of the Baltic Sea in Gdańsk Region. The surface area of the gulf is approximately 1.3% of the surface area of the entire Baltic Sea.

SSA IN FIGURES

Surface Area: 4 940 km^2
Catchment area: 323 200 km^2
Major ports: Gdańsk, Gdynia, Kaliningrad, Hel, Puck (ca. 2 millions inhabitants)
Human activities: tourism, agriculture, fishing and shipping
Cultural heritage: Kashubian's tradition

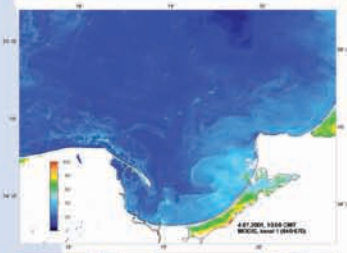
POLICY ISSUES

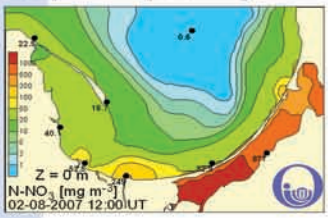
SEDIMENT TRANSPORT & SHORE PROTECTION


VISTULA RIVER MOUTH


JASTRZĘBIA GÓRA

EUTROPHICATION

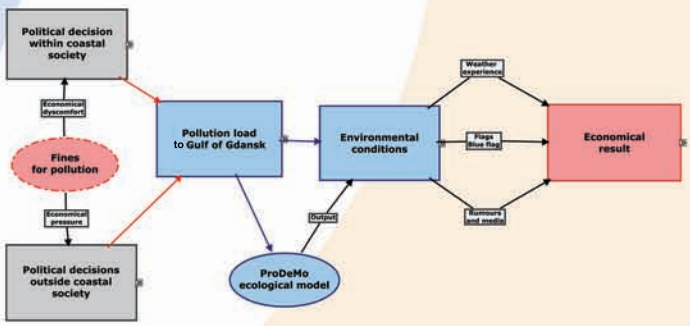




TOURISM CAPACITY


GDYNIA-ORŁOWO

OVERALL CONCEPTUAL MODEL



STAKEHOLDER PARTNERS

Pomorskie Region Authorities
Office of the Marshal of the Pomorskie Voivodeship
Maritime Office in Gdynia
Regional Department of Water Management
Regional Directorate of State Forests in Gdańsk
Fishermen Association
Union of Coastal Cities
Żegluga Gdańska S.A.
Pomeranian Regional Tourist Organisation
Poviat Starosty in Puck
Puck City Hall
Gmina Office in Kosakowo
Gmina Office in Stegna
Słowiński National Park
Landscape Park 'Mierzeja Wiślana'


FIRST STAKEHOLDERS MEETING, STEGNA, 12 NOVEMBER 2007

ECONOMIC DIMENSION OF THE CZ SYSTEM

Eutrophication
Goods & services:
Food provision, Gas and climate regulation, Bioremediation of waste
Nutrient cycling
Beneficiaries: Fisherman, Fish Producers, Society, GOV, Scientists
Tourism capacity
Goods & services:
Raw materials
Cultural heritage and identity
Leisure and recreation
Beneficiaries:
Coastal Cities, GOV, Society, Tourist Organisation, Transport, Sport's Clubs

ECONOMIC COMPONENT AND INTERACTIONS OF THE CZ SYSTEM

Commercial activities
- Tourism
- Industry (e.g. shipyards, harbours)
- Fisheries
- Agriculture
- Leisure and recreation
- Urbanization and housing
- Shipping
- Waste effluent discharge

Value of ecosystem goods & services
- Living marine resources

Cultural marine heritage

ECOSYSTEM COMPONENT AND INTERACTIONS

Watershed loading
  Delivery of mass and energy into system
Coastal upwelling
  Transport of mass and heat
Point sources
  Delivery of mass and energy into system
Diffuse sources
  Delivery of mass and energy into system
Atmospheric deposition
  Delivery of mass and energy into system
Advection
  Transport of mass and heat
Turbulent mixing
  Transport of mass and heat
Circulation
  Transport of mass and heat
Primary production & Algae blooms
  Converting of inorganic matter and energy into organic matter and oxygen

Input data:
- T, S – initial temperature and salinity distributions
- N, P – inflows from Baltic rivers
- dw, vw – fields of wind stress on the sea surface
- Pa, Ta, e, c – fields of meteorological parameters necessary for calculation of heat flux across water surface

Data for assimilation into model:
- SST, Chl a, SPM, SD, c, CDOM, PAR – based on satellite data
- T, S – Reference Buoy

Monitoring data:
- Chl a, PTOT, P-PO4, N-NO3, N-NH4, Si-SiO4, DO
- NDETR, PDETR, SiDETR, NSED, PSED, SiSED

Krężel A., Łądkowska H., Szaniawska A., Zarzycki T.,
Institute of Oceanography, University of Gdańsk,
Al. Marszałka Piłsudskiego 46, 81-378 Gdynia, Poland,
E-mail: ocehl@univ.gda.pl

Gajewski J.,
Maritime Institute in Gdańsk,
Długi Targ 41/42, 80-830 Gdańsk, Poland,
E-mail: julgaj@im.gda.pl

An integrated project under the EU's 6th Framework Programme for Research (FP6) of the European Commission