



ECOSUPPORT:

WP4 meeting in Sopot, 6-7 September 2010

Joanna Piwowarczyk, Jan Marcin Węsławski

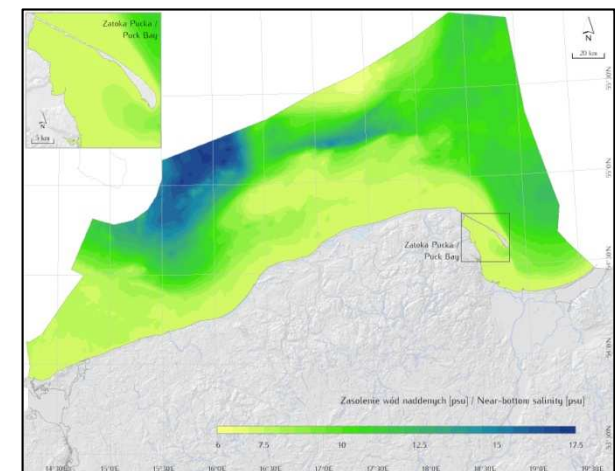
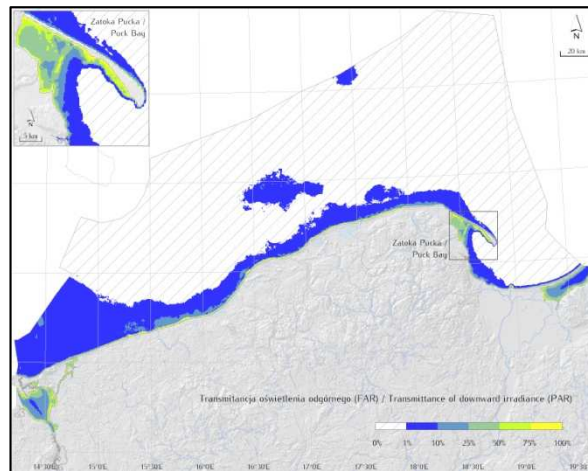
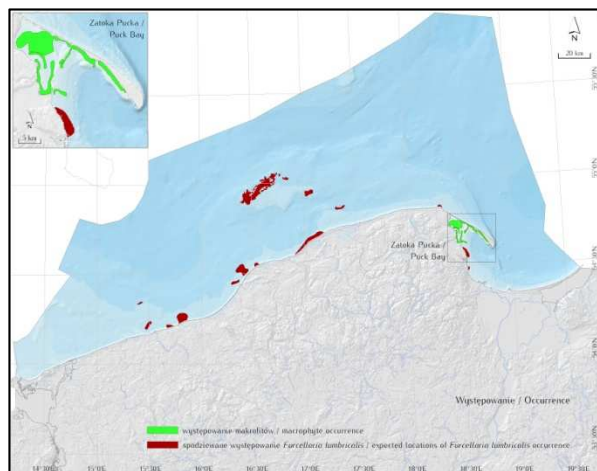
Institute of Oceanology, Sopot, Poland

Work completed – Task 4.3

Impact on the Polish Exclusive Economic Zone

Basic environmental data for the coastal waters: bathymetry, temperature, salinity, light regime, sediment class

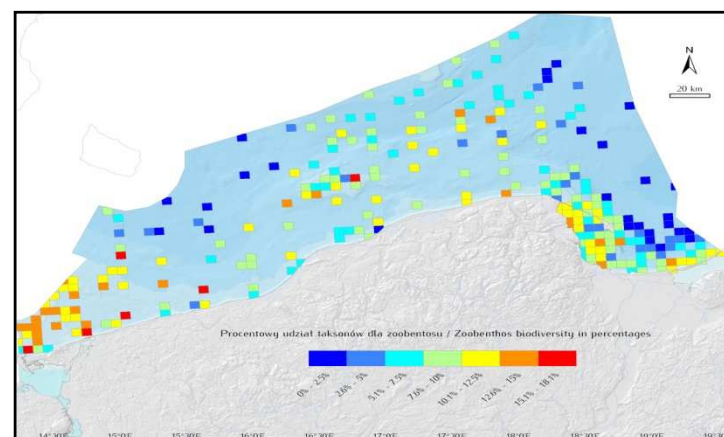
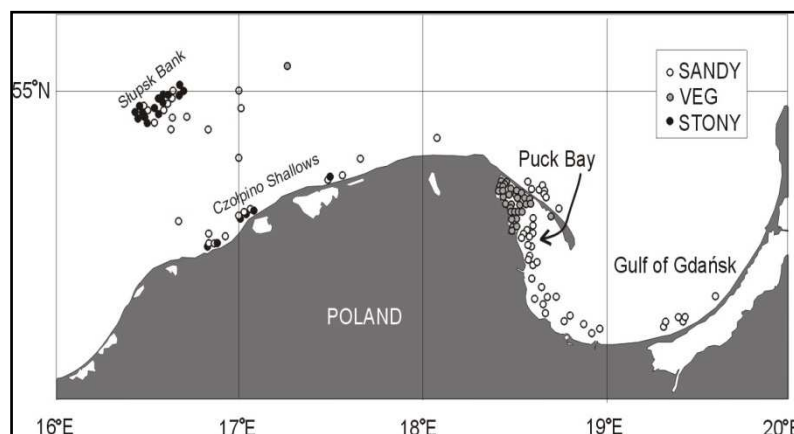
GIS maps (shapefiles) based on new data and literature/archive survey



Work completed – Task 4.3

Impact on the Polish Exclusive Economic Zone

Data on pelagic and benthic biota, habitats and key species



SANDY: 66 stations, 186 samples

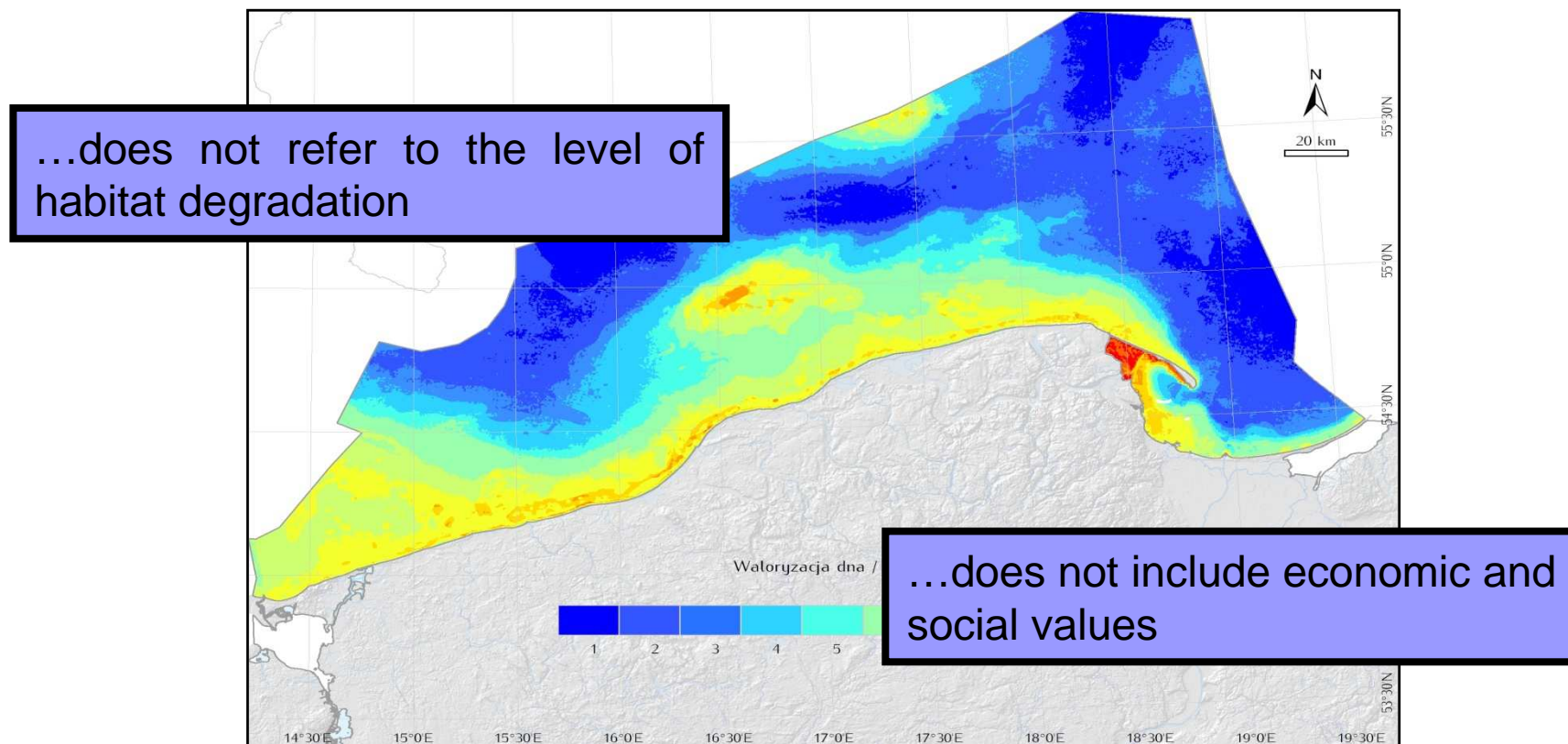
VEG: 111 stations, 264 samples

STONY: 9 stations, 150 samples

Work completed – Task 4.3

Impact on the Polish Exclusive Economic Zone

Biological valorization based on the methodology published by Weslawski et al. 2009





Work completed – Task 4.3

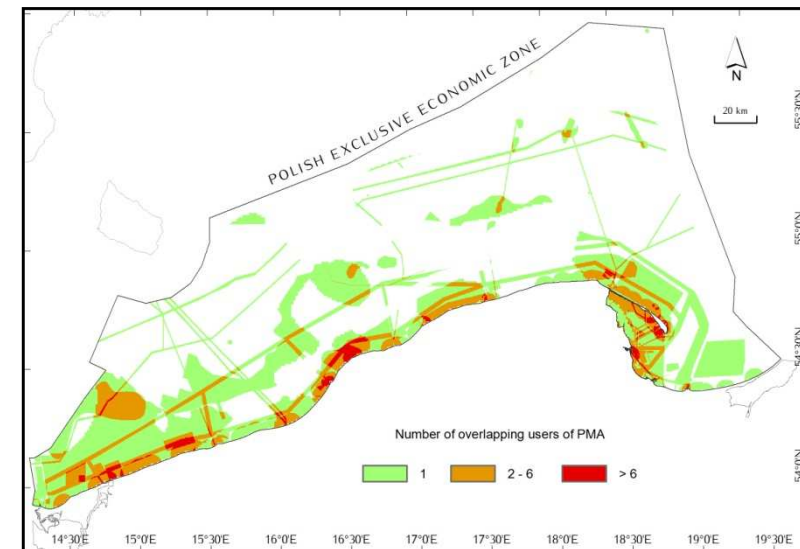
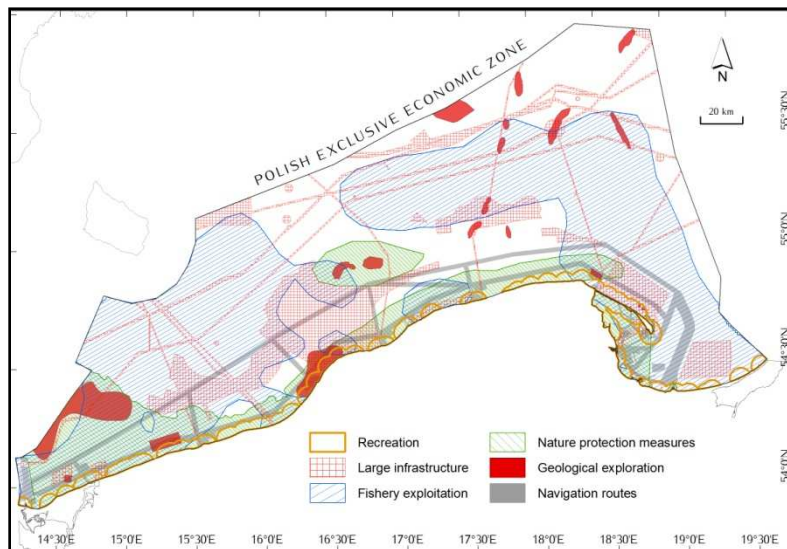
Impact on the Polish Exclusive Economic Zone

The different uses of sea space in Polish Marine Areas: is conflict inevitable?
(paper in press)

uses		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
		FIS-N	FIS-T	REC-B	REC-S	REC-A	REC-D	WM	CBL	MAR	BPR	SMPR	HP	GSE	GE	AE	SR	ME
Fishery - nets	FIS-N	0	4	1	3	4	4	2	2	3	3	4	2	4	4	4	2	2
Fishery - pelagic trawls	FIS-T	4	0	1	3	4	4	4	3	3	2	2	1	4	4	4	4	4
Recreation - bathing, beach	REC-B	1	1	0	1	4	2	2	2	2	3	3	1	4	4	4	4	4
Recreation - boats, surf	REC-S	3	3	1	0	4	2	3	1	0	3	3	1	3	4	4	2	4
Recreation - angling	REC-A	4	4	1	3	0	2	1	1	0	3	3	1	4	4	4	3	4
Recreation - diving	REC-D	4	4	2	2	2	0	1	1	0	1	1	1	3	3	3	4	4
Windmills offshore	WM	2	4	2	3	1	1	0	1	4	3	2	4	4	4	4	3	4
Cables, pipelines	CBL	2	3	2	1	1	1	1	0	1	1	1	3	4	4	4	1	4
Marinas, piers	MAR	3	3	2	0	0	0	4	1	0	2	3	4	4	4	4	0	4
Birds protection	BPR	3	2	3	3	3	1	3	1	2	0	0	0	3	2	3	2	2
Sea mammal protection	SMPR	4	2	3	3	3	1	2	1	3	0	0	0	3	3	4	2	2
Habitat protection	HP	2	1	1	1	1	1	4	3	4	0	0	0	4	4	4	1	1
Gravel, sand extraction	GSE	4	4	4	3	4	3	4	4	4	3	3	4	0	4	4	4	4
Gas exploitation, rigs	GE	4	4	4	4	4	3	4	4	4	2	3	4	4	0	4	4	4
Amber exploitation nearshore	AE	4	4	4	4	4	3	4	4	4	3	4	4	4	4	0	4	4
Shipping routes	SR	2	4	4	2	3	4	3	1	0	2	2	1	4	4	4	0	4
Military areas, exercise	ME	2	4	4	4	4	4	4	4	4	2	2	1	4	4	4	4	0
Interaction	mean	2.8	3.0	2.3	2.4	2.7	2.1	2.7	2.0	2.2	1.9	2.1	1.9	3.5	3.5	3.6	2.6	3.2

Overlapping uses in the Polish Marine Areas

	NPM	FE	GE	R	I	N
Nature protection measures (NPM)	x	62	13	16	12	17
Fishery Exploitation (FE)	20	x	3	5	19	7
Geological Extraction (GE)	70	47	x	9	17	10
Recreation (R)	76	65	8	x	19	12
Large Infrastructure (I)	13	61	3	4	x	7
Navigation routes (N)	51	68	5	7	20	x



Nature protected areas

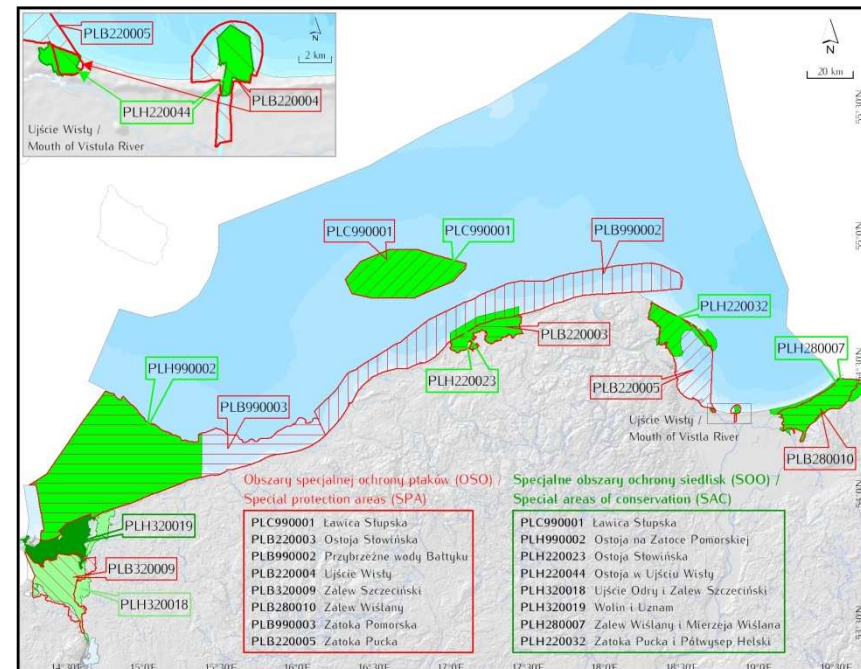
Sandflats not covered by sea water (1 km²)

Seagrass beds (48 km²)

Large shallows inlets and bays (105 km²)

Sandbanks slightly covered by water
(5 233 km²)

Offshore reefs (689 km²)



Work completed – Task 4.3

Impact on the Polish Exclusive Economic Zone

Questionnaires focused on consequences of climate change

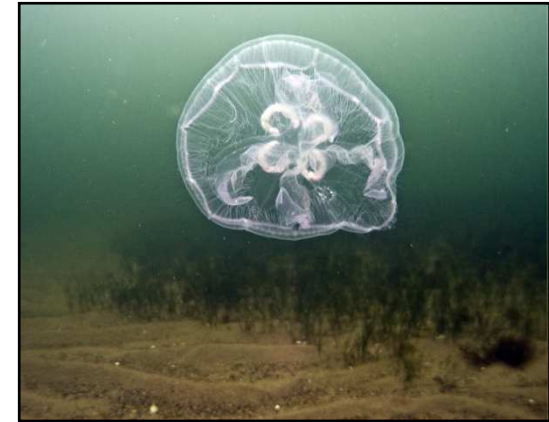
Summer–autumn 2009 (n=60):

- 3 different meetings related to environmental issues (NGOs, local administration, education sector; n=44)
- the general public (n=16)



Results

Knowledge of world-wide, not local, consequences
Lack of confidence in scientists and local authorities
Lack of accessible information



What is the influence of climate change on different sectors?
What are the consequences of climate change?
What is sustainable development?





Ongoing work – Task 4.3

Impact on the Polish Exclusive Economic Zone

	jobs	dependance on env health	dependance on resources
Merchant navy	10 000	no	no
Salvage seaman, coastguard	1 000	no	no
Deep-sea fishery	2 500	high	very high
Inshore fishery	1 000	high	very high
Amber industry	20 000	no	very high
Shipyard worker	15 000	no	no
Coastal tourist services	80 000	very high	moderate
Sea fish processing	10 000	high	high
Coastal protection & inspection	1 000	low	no
Maritime education & research	1 000	low	moderate
Wind farms	???	low	no
Seabed mining	1 000	low	very high
Port services	12 000	low	no
Yachting & other sports services	1 000	high	no
Navy & border defence	5 000	low	no



Goods and services – general classification

Direct use value

Production Services

Food provision

Raw materials

Cultural Services

Cultural heritage and identity

Cognitive values

Leisure and recreation

Non Use value

Bequest & existence

Option use value

Indirect use value

Regulation Services

Gas and climate regulation

Disturbance prevention and alleviation

Bioremediation of waste

Supporting Services

Nutrient cycling

Resilience and resistance

Biologically mediated habitat

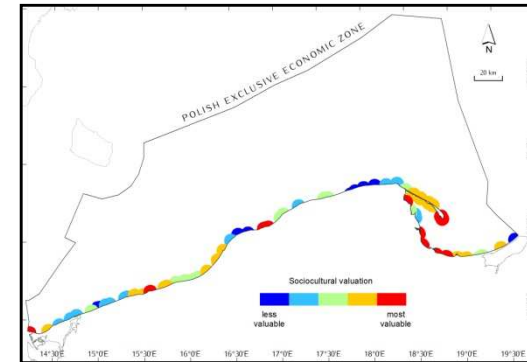


Goods and services – examples of valuation

Mineral resources	Gravel, sand	Limited exploitation (?)
	Oil, gas	Exploited (40 mln euro?)
	Amber	Extensive grey zone. Over 20 mln euro?
Biological resources	Comercial artisanal and sport fishery	Extensively exploited and regulated: 60 mln euro (100?)
Other	Mineral resources	Planned investment 5 bln euro

Socio-cultural values of the sea space

Cultural function	Ecosystem services	Assessment features
Community support function	Social relationship Cultural identity	Number of Google hits - how known the place is Ethnic community / local folklore
Aesthetic experiences	Enjoyment of scenery	Trailblazing
Recreation	Landscape, sea space, natural resources and variety in nature for potential recreation use	Tourists density Water sports availability, marinas Water quality (Blue Flag) Hea Wa Re cr
Spiritual.	Cultural heritage,	Nu



Ongoing work – Task 4.3

Impact on the Polish Exclusive Economic Zone

Level of spatial management

Legal act on Polish Marine Areas

and maritime administration

Ministry of Infrastructure

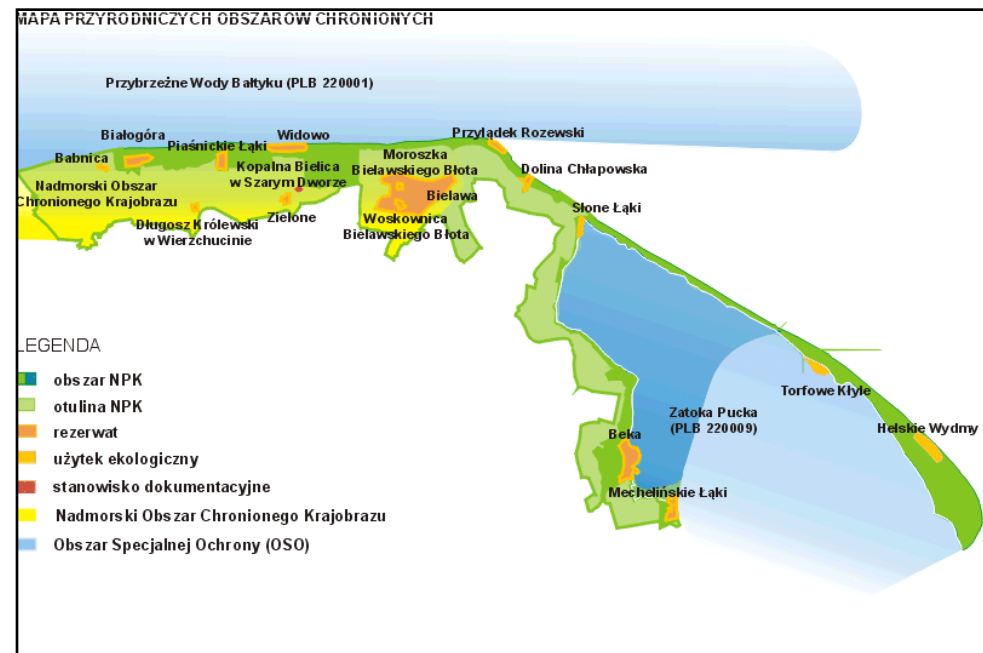
Maritime Offices

National Spatial Arrangement Policy

No legal frames for MPA

Coastal Landscape Park

Environment Impact Assessment



Project PlanCoast – pilot maritime plan in Poland: **western part of Gulf of Gdansk**

Large infrastructure & *Extraction of mineral resources*

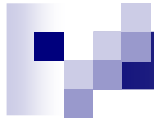
Existing investments:

- SWEPOL (600 megawatts)
- Platforms – Petrobaltic, Baltic Beta, PG-1,

Planned investments:

- Wind power farms (approximately 1500 offshore stands)
- Liquid Natural Gas (LNG) terminal
- New navigation route between the city of Elbląg and the Gulf of Gdańsk
- Proposed gas pipe connecting Norway and Denmark with Poland
- New electric power station in Gdańsk





Ongoing work – Task 4.3

Impact on the Polish Exclusive Economic Zone

Literature review on the local effects of different sea level rise scenarios

List of the functional and structural links between analysed factors and processes

Output needed from other WPs: prediction of

- temperature rise,
- salinity drop – precipitation,
- wind patterns,
- oxygen,
- nutrient loads.

