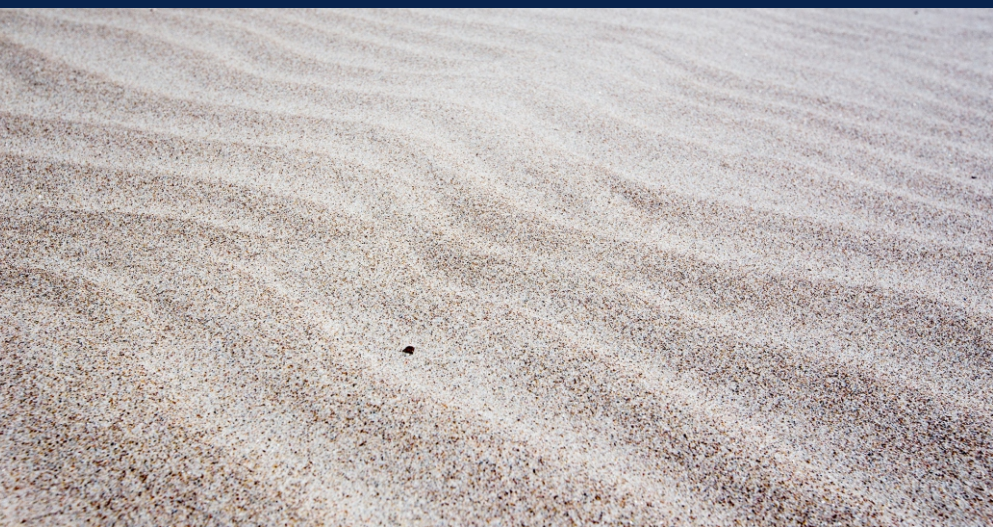


ECODUMP develops effective decision support tools for proper management of the offshore dumping sites



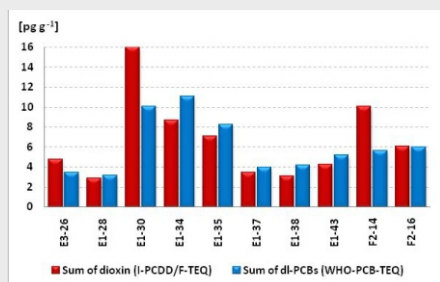
ECODUMP at the final stage of implementation

After almost three years since the official start in 2011 December the ECODUMP project has approached its final stage of implementation. Current issue of the newsletter highlights main achievements of the ECODUMP during the last months of fruitful cooperation.

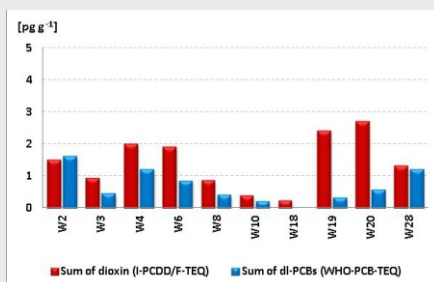
First regional assessment of Gdansk basin sediments contamination with dioxins

As a result of ECODUMP prolongation additional analyses of toxic dioxin in bottom sediments from the existing dumping sites and adjacent areas were completed. Following the requirements of HELCOM Baltic Sea Action Plan, European Union Water Framework Directive and the Stockholm Convention marine areas in Lithuania and Poland were examined for dioxin content and distribution in a profiles from the shore to the deeps of the Gdansk basin. Study area in Polish part has covered port of Gdynia, Gdynia dumping site and Vistula River profile, stretching in the Gulf of Gdansk. Field survey in Lithuania was completed in the whole exclusive economic zone at different depths.

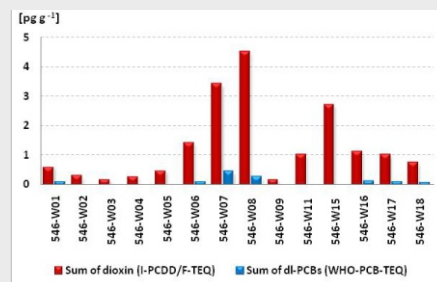
The highest concentrations of PCDD/F and dl-PCBs were indicated in sediments from former shipyard area and Basin VI in Gdynia Port. The content of PCDD/F in sediments from the Gdynia Dumping Site and Gulf of Gdansk was five time lower than in Gdynia Port. The results are typical for port sediments and do not deviate from the literature data of dioxins content in the sediments of the Baltic Sea.



Port of Gdynia

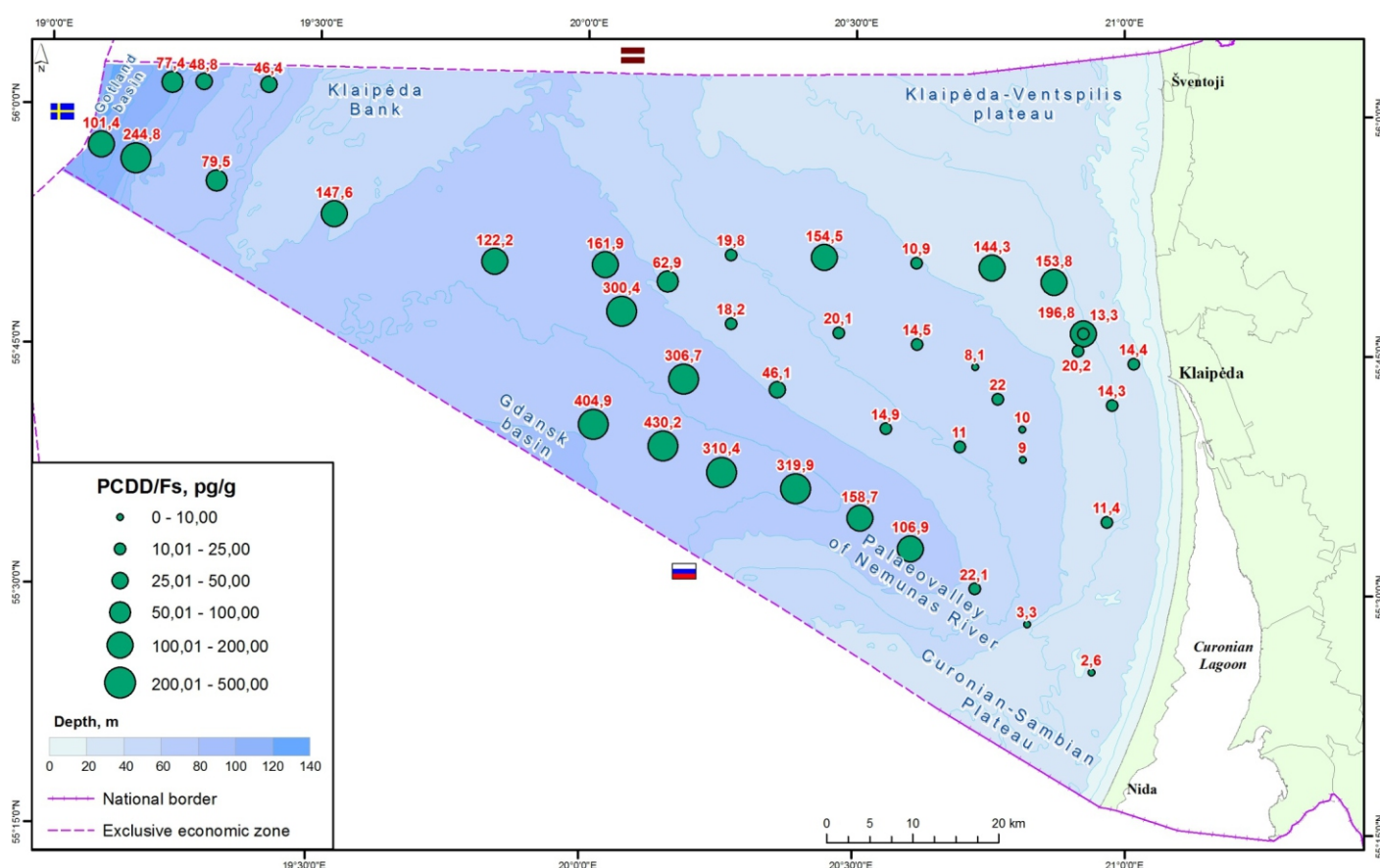


Gdynia dumping site



Gulf of Gdansk

The highest concentrations of dioxins were found in the surface layer of muddy bottom sediments of the Gdansk deep (60-80 m depth). The lowest contents identified in coastal sands of the Curonian-Sambian Plateau (20-40 m depth). Preliminary analysis of separate congeners shows elevated contents of octa-chloro-dibenzodioxins (OCDD) in most of the sediment samples, revealing unlikely impact of man-made sources. The occurrence of PCDFs in bottom sediments from the Lithuanian Baltic Sea points to the effect of atmospheric sources (possibly combustion gases).



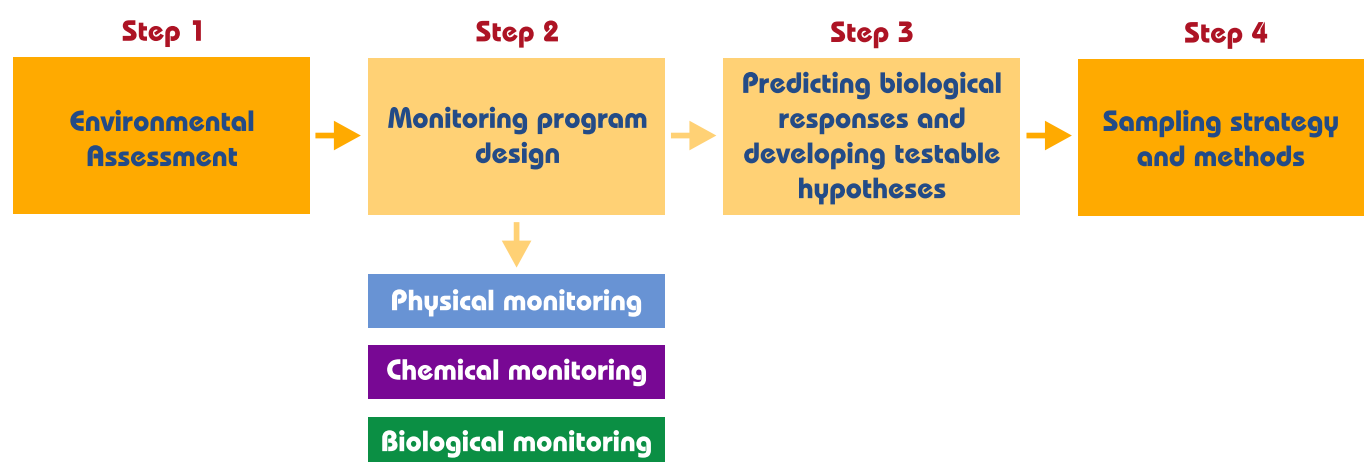
PCDD/Fs concentrations in sediments from the Lithuanian exclusive economic zone



A programme model for the monitoring of the offshore dumping sites devised by the ECODUMP partnership

Within the project frame ECODUMP consortium has proposed systematic approach to design a monitoring programme of the offshore dumping sites. The main objective of such a programme is to determine whether the storage and management of a certain dumping site, including the depositing process and method, should be amended to avoid unreasonable deterioration of the marine environment or risk to human health. Furthermore, the programme can determine the contamination levels particularly in living organisms and assess the effects and consequences for the marine environment. Figure below demonstrates the 4-step monitoring process of an ECODUMP model.

4-step monitoring process of the ECODUMP model



Remarks:

Step 1: An environmental impact assessment delineates the impacts expected to occur as a result of the site use, and identifies nearby sensitive resources. Where appropriate, the monitoring programme should be used to verify the impact predictions and reaffirm the assumptions that justified the site selection.

Step 2: The programme is designed to monitor the physical, chemical and biological impact of disposal activities. The physical monitoring relates to the collection of geological data. This information helps to determine the area of deposition, to delineate the disposal site boundaries, to study the accumulation of dredged material within the area of deposition as well as to document evidence of sediment transport from the disposal site. The chemical monitoring may prove useful to trace the dispersal of the dredged material and assess any minor accumulation of material not detected by bathymetric surveys. It is recommended that the choice of contaminants to be monitored should depend primarily on the ultimate purposes of monitoring. The biological monitoring for impacts to specific resources (eg. clams) or general changes in community structure and function involves as an effect of dredged material disposal. Biological changes will also reflect responses to either physical or chemical alterations.

Step 3: Subsequent action is necessary to predict biological responses and develop testable hypotheses. This step shall deliver quantitative estimates of alteration of each physical/ chemical parameter of concern and the best available information on the levels of response of target resources to these alterations. Furthermore, a threshold need to be developed.

Step 4: The ways in which data are gathered (sampling methods) and analyzed (statistical methods) will determine their usefulness in drawing conclusions about the given study. Considerations of sample size (areal coverage or volume), number of samples and frequency of sampling, while important for statistical reasons, are often subjected to constraints of handling and processing.

The photograph shows a conference room with a woman presenting at a podium. A large screen displays a slide with the following text:

ecodump
 Application of ecosystem principles for the location and management of offshore dumping sites in SE Baltic Region

Wyniki badań projektu ECODUMP

Application of ecosystem principles for the location and management of offshore dumping sites in SE Baltic Region

G. Górecka^{1,2}, D. Szepiet¹, A. Orzechowski¹, W. Lichota¹, D. Górecki¹,
 B. Huz¹, M. Mironow¹, D. Szepiet¹, A. Błaszczak¹, E. Szepiet¹, B. Włoch¹

¹Instytut Oceanologii
 Polskiej Akademii Nauk
²Instytut Oceanologii
 Uniwersytetu Gdańskiego

On the right, a banner for the **Instytut Oceanologii Polskiej Akademii Nauk** (IO PAN) is visible, along with contact information for the Institute of Oceanography, P.O. Box 58, 81-113 Sopot, Poland.

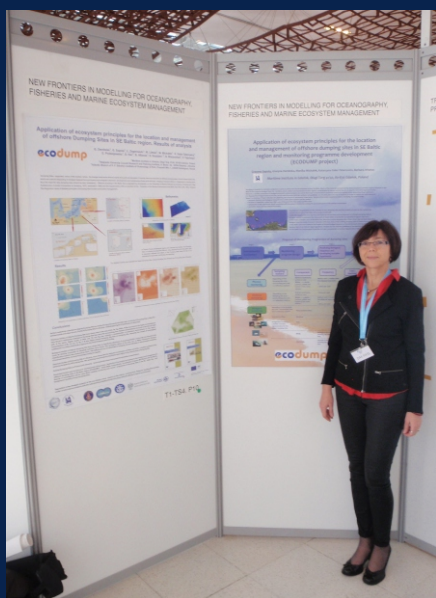
"2nd International Ocean Research Conference. One planet, One Ocean" in Barcelona

ECODUMP project partner from Poland has participated in the "2nd International Ocean Research Conference. One planet, One Ocean" in Barcelona (Spain) on 16-21st of November 2014, which was organized by Intergovernmental Oceanographic Commission of UNESCO (IOC-UNESCO), The Oceanography Society (TOC) and Fundació Navegació Oceànica Barcelona. The conference was attended by over 600 participants from 70 countries from all the continents. The conference had an interdisciplinary focus, encompassing oceanographic, social science and economic perspectives on ocean research.

Results from the ECODUMP initiative were presented during the poster session and had a great interest among the participants.



Plenary session of "2nd International Ocean Research Conference. One planet, One Ocean" in Barcelona





Project manager Nerijus Blažauskas from Klaipeda University opening the event

Final cross-border dissemination event in Lithuania

The 3rd cross-border dissemination event of the ECODUMP project was hosted by project Lead partner (Klaipeda University, KU) in the Conference Hall of „Gabija“ hotel (Vytauto str. 40/S.Dariaus S.Gireno str. 2, Palanga, Lithuania). It was the last planned international meeting of project partners from south-eastern part of the Baltic Sea and organisations involved into the dumping related activities from different perspectives. The event was dedicated to present the main results of the ECODUMP initiative to interested stakeholders and discuss possibilities of future cooperation. The meeting was attended by 40 participants, representing partner organizations, associated organizations, comprising of Lithuanian and Polish port authorities as well as scientific institute from Russia, other practitioners supporting the initiative.



Situation on dumping activities in the south-eastern part of the Baltic Sea highlighted by Grazyna Dembska from Maritime Institute in Gdansk

Political views on the implemented initiative given by Paweł Banas from the Polish Ministry of Infrastructure and Development



Partners

Klaipeda University Coastal Research & Planning Institute (Lead Partner)
Maritime Institute in Gdansk

Associated organizations

Maritime Office in Gdynia
Atlantic Branch of P.P. Shirshov Institute of Oceanology of RAS
SE Klaipeda state seaport authority
Ministry of Infrastructure of Poland
Port of Gdynia Authority S.A.
Szczecin and Swinoujscie Seaports Authority

Further information

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