Report on EMECS10 -MEDCOAST 2013 Joint Conference

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ABSTRACT

The tenth EMECS conference (EMECS 10) was organized jointly with the eleventh MEDCOAST conference in Marmaris (Turkey) during 30 October – 03 November 2013, using the name "Global Congress on Integrated Coastal Management: Lessons Learned to Address New Challenges". This major ICM congress brought together over 300 participants, including politicians, scientists, administrators, NGO members and sector representatives from 40 countries. The event was the second time that the EMECS and MEDCOAST conferences were being held as a joint conference. The first one was EMECS 4 – MEDCOAST 99 joint conference that was held in Antalya (Turkey) in November 1999.

The technical program of the joint conference comprised of a poster session that was held throughout the event, three parallel oral presentation sessions and the Student – School Partnership (SSP) program. Four of the oral presentation sessions were held in the form of Special Sessions organized in collaboration with International EMECS Center (**Satoumi** Session), ECSA-Springer (**Estuaries of the World**), the EU FP7 PEGASO Project (**ICM in the Mediterranean and the Black Sea**) and the EU FP/ Project MARLISCO (**Marine Litter**). The themes and subjects of other oral presentation sessions were; ***ICM and Country Experiences, Coastal Management Tools and Development Issues, Education and Awareness, Legal and International Issues, Participation in ICM, Chesapeake Bay, Coastal and Marine Ecosystems, Coastal and Marine Protected Areas, Coastal Landscapes, Coastal and Marine Pollution Management, Wetlands and Estuaries, Water Quality, Coastal and Marine Modelling, Shoreline Management, Climate Change Issues, Remote Sensing, Coastal and Marine Databases and Coastal Engineering and Geology.***

SSP program included and oral presentation session, poster presentations in the regular poster session and several technical and social trips to interesting spots in the neighbourhood of the Town of Marmaris.

Full manuscripts of 135 papers presented at the Joint Conference were published in the 2-volume, hard-cover proceedings (totalling 1392 pages) and extended abstracts of another 51 papers were published in the Book of Extended Abstracts. Both publications were given to the participants at the registration desk as a part of the registration package. A Special Committee decided towards the end of the event to work for publishing special issues of two leading journals by using a group of papers selected from those presented in the Joint Conference. This work is in progress.

In the closing Session, the Marmaris Declaration and the SSP Declaration, that reflected the spirit and major messages of the Joint Conference were read and unanimously accepted. These documents were later circulated by e-mail to over 6 000 addresses all around the world.

In short, EMECS 10 – MEDCOAST 2013 Joint Conference was scientifically and professionally valuable event, held at a pleasant hotel and in a friendly environment. It followed the successful traditions of both conference series. The half day cultural tour to the old town of Marmaris and the full day boat trip around the Gokova Bay Specially Protected Area and the antique Sedir Island added memorable moments in the memories of the participants for the Joint Conference.

Eastern Gulf of Finland: concept, legislation and tools for management

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The development of human activities was associated with marine and ocean coastal zone for all time. This zone is one of the most exploited and attractive investment areas in the world economy with a huge pressure on the environment. Currently, in many countries of the world the concepts of integrated coastal zone management (ICZM) and the marine spatial planning (MSP) as a basic tool of ICZM are used. At the present time in Russia it is begun to develop the maritime spatial planning, but this tool has not received by regulatory consolidation and legislation, that is complicated the process of its using in practice.

Depending on principles of country territorial division it is possible to outline two types of vertical structure of coastal zones management:

- The three-level structure of management consolidating strategic level of management, tactical level of management and local level of management;
- The two-level structure of management consolidating strategic level of management and tactical level of management.

For the two-level system of ICZM it is possible to use following logic schemes for process of coastal zone management:

- On hierarchy of the coastal zone management: state – regional – local;
- On hierarchy of decided problems: strategic – tactical – local.

One of the practical tool for ICZM and MSP concepts realization is the State Cadastre of the marine coastal zone of the Russian Federation (RF SCMCZ), which is created to ordering of information about resources and capabilities of the coastal zone as a set of data, including qualitative and quantitative inventory of the objects or phenomena and their economic evaluation. RF SCMCZ is complex structure document that includes a multistage information on administrative, economic, legal, environmental and socio-economic characteristics of a single (coherent) area above and below the modern sea level.

The Cadastre on the Federal Level is realized mainly on the principle of the comprehensive indicator system, and the marine economy potential as a parameter of comprehensive estimations of socio-economic, political, environment and military profits (damages) from MSP decisions.

The model of RF SCMCZ as an Information System on Cadastre Regional Level and Cadastre Local Level is realized on the Russian sector of the Baltic Sea which consist the Eastern Gulf of Finland and the Kaliningrad area including their coastal zone (10 km inland) at 1:500 000 scale.

Also on Cadastre Local Level it’s possible to use the estimation of the human impact assessment for coastal local municipalities which allows the estimation of the nature-ecological state of the coastal local municipality, gives the opportunity to show hierarchy of the municipalities and assess their human impact and vulnerability and the opportunities for further development. Example of the method application is considered for coastal local municipalities of the Eastern Gulf of Finland.

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Marine geology of the Eastern Gulf of Finland (Baltic Sea) – sedimentation processes, anthropogenic impact, pollution history

The sea-bed surface bottom of the Eastern Gulf of Finland are mostly covered by clastic sediments. Boulders and pebbles form the tops of submarine risings and upper parts of the coastal slopes in the areas of intense submarine erosion. Sands of different grain-size and genesis (from unsorted relict sands of gulf proper to fine-grained very well sorted wave accretion sands of near-shore zone) are the most wide spread type of bottom sediments. Sandy clays and silts are usually connected with areas of non-sedimentation (transition) and weak submarine currents. The clayey mud accumulation takes place within the bottom depressions at the depth from 5-6 m (in the Neva Bay) to 30 m deeper in the western part of studied area. Special type of sediment is represented by Fe-Mn concretions.

During last three centuries ecosystem of the Eastern Gulf of Finland and its coastal zone has been threatened by constantly growing anthropogenic load caused by intense development of industry, agriculture, transport and population. Nowadays at least within coastal zone the technogenic processes are as important for the Gulf of Finland sediment dynamics as natural ones.

The hydrological regime Eastern Gulf of Finland is very changeable because of frequent changes of hydrometeorological parameters, shallow-water condition and influence of strong Neva River current. Water level fluctuations, wind waves and currents are the most important hydrodynamic factors here. Surface water current (up to 10 cm/sec) at the Neva Bay goes to the western direction. Brackish near bottom water current goes along the southern coast of the bay to the east. Neva Bay water has a very low salinity (0.3 – 1.0‰) and just as a result of strong near bottom currents of eastern direction it can grow up to 3‰. Fast extreme rising of the water level (floods - higher than 1.6 meters above the average level) caused by complex combination of several hydrometeorological factors is a specific phenomena in the Neva Bay. During the period since foundation of St.Petersburg in 1703 up to the present more than 300 floods were observed. The maximal catastrophic floods took place at 1777 (3.21 m), 1824 (4.21 m) and 1924 (3.80 m).

The natural features of the Neva Bay bottom relief are characterized by increasing of the sea depth to the east of the Kotlin Island and local risings stretching to the southern and northern coasts of the bay. At present as a result of anthropogenic activity the bottom relief became more sharp. From the date of new Russian capital - St.Petersburg – foundation in 1703 some artificial islands with fortresses and lot of crib-bars were constructed to the south and to the north from Kotlin Island. So conditions water exchange between the Neva Bay and open sea have been essentially changed during last three centuries. St.Petersburg Flood Protective Dam construction which have begun at 1970-s transformed the Neva Bay into a very special “technogenic lagoon”.

Results of VSEGEI investigations (1988-1989 – State Geological mapping, 1992-1995 – geoenvironmental study) and joint work with specialists of Geological Survey of Finland (2004-2005) has permitted to study sedimentation processes and “pollution history” of the Neva Bay sediments. It was established that the modern silty-clay accumulative layer thickness is not more than 44 cm. At the bottom surface in 9 sites of sampling all over the bay oxidized condition were observed. Besides a lot of bottom fauna traces and marks of bioturbation processes were discovered. From the other side different types of visible technogenic pollution (oil and gasoline spots, small technogenic objects etc.) were fixed in the superficial sediment layer. The concentration curves of most of the studied metals show similar concentration trends throughout the sediment profiles. When looking at the temporal trend metals started to accumulate rather rapidly in the first half of the last century. The first metals to have reached the concentrations of strong contamination were zinc, lead and copper, probably an indication of increased base metal industry, while the very strong increase of cadmium a decade or two later indicates an increase in chemical industry. The highest concentrations are to be found in the upper halves of the cores representing probably the time span from the 1950’s almost to the end of the century. The last decade and a half has clearly been a time span of return as the concentrations of all metals have decreased significantly. In the whole cores

from sedimentation basin the sharp pick of Cs-137 activity, caused by Chernobyl accident, can be observed. Due to rather high sediments accumulation rates in the Gulf of Finland (0.3-0.5 mm/year) Cs pollution decreasing during last decades.

The Neva Bay is an “inner bay” of St.Petersburg – second largest city of Russia, an important industrial, transport and cultural centre, located in the coast of the Gulf of Finland. The proper understanding of its environmental state and main natural and anthropogenic processes is a critical for the regional sustainable development.

Abstract

Environment and Health Impact Assessment:
a tool for Environmental and Health Protection
as Stated in Thailand Constitution

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Environmental problems in Thailand started to be noticeable since 1965. This was due to increasing population density in a large city like Bangkok and industrial development. In order to cope with increasing environmental problems, Thailand issued the first legislation on environmental protection in 1975. A part of this legislation stipulated “Environmental Impact Assessment (EIA)” as a tool for environmental protection for the new industrial development projects.

Rapid expansion into heavy industry during 1985-2005 resulted in several problems, not only environment but health risks. Several environmental issues were recorded since 1985, for instance the rising of benzene, 1-3 butadiene, and ethylene oxide in the air, and mercury in seawater. These substances were carcinogenic to humans.

With this regard, the legislature incorporated environmental and health protection in certain sections of the Constitution (2007). With reference to Section 67 paragraph 2 of the Constitution, the Independent Commission on Environment and Health (ICEH) has been established since 2010. The main task of ICEH is to give opinion over the Environmental and Health Impact Assessment (EHIA) report prior to the execution of the project. At present, there are 11 types of project which require EHIA report. The work procedure of ICEH includes the compilation of all information, site visit, meeting with every segment of the society. The opinion is not only limited to giving comments on EHIA report, but also making suggestions on other issues, including the necessity of the project, protection of negative impacts and support of the positive effects of the project, as well as other alternative choices for the project.

ICEH has been functioned for more than three years now. Our goal is to build trust between communities and industries, and eventually better environment and quality of life.