

THE CONTRIBUTION OF ENVIRONMENTAL INDICES IN MEETING THE OBJECTIVES AND PRINCIPLES OF MSFD

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Introduction



The overall scientific objectives of PERSEUS are to identify the interacting patterns of natural and human-derived pressures on the Mediterranean and Black Seas, assess their impact on marine ecosystems and, using the objectives and principles of the **Marine Strategy Framework Directive (MSFD)** as a vehicle, to design an effective and innovative research governance framework based on sound scientific knowledge.

Well-coordinated scientific research and socio-economic analysis is applied at a wide-ranging scale, from basin to coastal. The new knowledge will advance our understanding on the selection and application of the appropriate descriptors and indicators of the MSFD.

New tools will be developed in order to evaluate the current environmental status, by way of combining monitoring and modelling capabilities and existing observational systems will be upgraded and extended.

WP8: Objectives



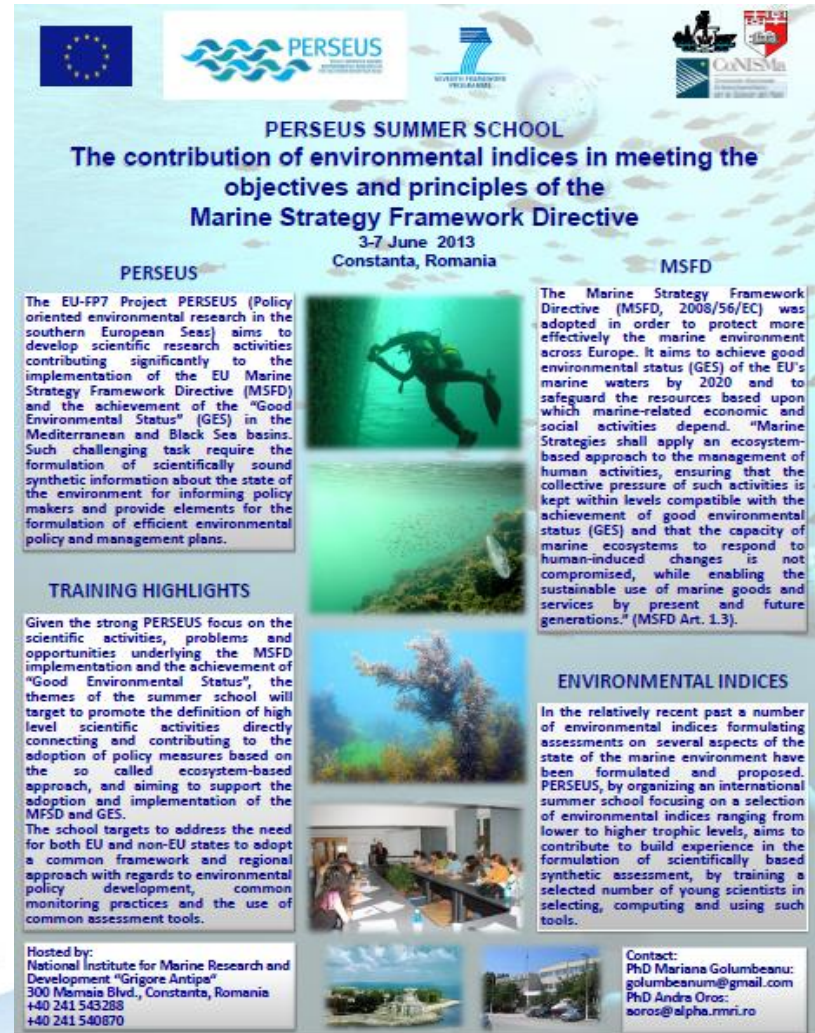
Objectives:

- To create training opportunities which will strengthen the existing RTD network in the Mediterranean and Black Seas in principles such as ecosystem modelling, monitoring and environmental assessment.
- To train scientists and technicians through the transfer of knowledge and skills in order to allow them to best apply the MSFD principles.
- To increase capacity building of scientific personnel using a “*training visits*” scheme among partners.

The Summer School on “**The contribution of environmental indices in meeting the objectives and principles of the Marine Strategy Framework Directive**” was organized in Constanta, Romania, within the framework of Work Package 8 (WP8) of the PERSEUS project.

The main focus was to create training opportunities which will strengthen the existing RTD network in the Mediterranean and Black Seas in principles such as ecosystem modeling, monitoring and environmental assessment.

The school targeted the need that both EU and non-EU states should adopt a common framework and regional approach with regards to environmental policy development, common monitoring practices and the use of common assessment tools.



PERSEUS SUMMER SCHOOL
The contribution of environmental indices in meeting the objectives and principles of the Marine Strategy Framework Directive
3-7 June 2013
Constanta, Romania

PERSEUS
The EU-FP7 Project PERSEUS (Policy oriented environmental research in the southern European Seas) aims to develop scientific research activities contributing significantly to the implementation of the EU Marine Strategy Framework Directive (MSFD) and the achievement of the “Good Environmental Status” (GES) in the Mediterranean and Black Sea basins. Such challenging task require the formulation of scientifically sound synthetic information about the state of the environment for informing policy makers and provide elements for the formulation of efficient environmental policy and management plans.

MSFD
The Marine Strategy Framework Directive (MSFD, 2008/56/EC) was adopted in order to protect more effectively the marine environment across Europe. It aims to achieve good environmental status (GES) of the EU’s marine waters by 2020 and to safeguard the resources based upon which marine-related economic and social activities depend. “Marine Strategies shall apply an ecosystem-based approach to the management of human activities, ensuring that the collective pressure of such activities is kept within levels compatible with the achievement of good environmental status (GES) and that the capacity of marine ecosystems to respond to human-induced changes is not compromised, while enabling the sustainable use of marine goods and services by present and future generations.” (MSFD Art. 1.3).

TRAINING HIGHLIGHTS
Given the strong PERSEUS focus on the scientific activities, problems and opportunities underlying the MSFD implementation and the achievement of “Good Environmental Status”, the themes of the summer school will target to promote the definition of high level scientific activities directly connecting and contributing to the adoption of policy measures based on the so called ecosystem-based approach, and aiming to support the adoption and implementation of the MSFD and GES. The school targets to address the need for both EU and non-EU states to adopt a common framework and regional approach with regards to environmental policy development, common monitoring practices and the use of common assessment tools.

ENVIRONMENTAL INDICES
In the relatively recent past a number of environmental indices formulating assessments on several aspects of the state of the marine environment have been formulated and proposed. PERSEUS, by organizing an international summer school focusing on a selection of environmental indices ranging from lower to higher trophic levels, aims to contribute to build experience in the formulation of scientifically based synthetic assessment, by training a selected number of young scientists in selecting, computing and using such tools.

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Between the **3th** and the **7th** of June of **2013**, the **PERSEUS Summer School** was organized, hosted by the National Institute for Marine Research and Development “Grigore Antipa” (NIMRD) Constanta, Romania.

The planning of the school was done jointly with **Consorzio Nazionale Interuniversitario per le Scienze del Mare (CoNISMa)** and the **University of Malta (UoM)**.



Objectives:



The main objectives of the **PERSEUS Summer School** on the contribution of environmental indices in meeting the objectives and principles of the Marine Strategy Framework Directive were:

- (i) to expose participants to aspects of the theoretical and practical background on the assessment of the benthic ecological status using the index M-AMBI (multivariate AMBI - AZTI's Marine Biotic Index) and MSFD assessment issues;**
- (ii) to provide participants with the most important concepts related to the fishery related indices;**
- (iii) to get participants acquainted with the main applications of ocean color based index/eutrophication-related core set indicators CSI023 (chlorophyll-a);**
- (iv) to present theoretical and practical aspects of characterization of the ecological state of marine and coastal waters using Trophic index (TRIX);**
- (v) to establish links between different researchers involved in the field of environmental indicators related with MSFD.**

Targeted participants

The school appealed to a broad range of participants, young researchers and PhD students, from both PERSEUS partner and non-partner institutions, with a scientific background in biological, physical and/or chemical oceanography, willing to expand their field of interest and to disseminate the experience gained from the school to others.

School participants were chosen on the basis of their potential, with the most promising and qualified candidates being generally favoured. Selected school participants were young scientists who had some degree of experience and involvement in the field of environmental indices.

Participants hailing a number of countries: from Bulgaria, Croatia, Italy, Spain, Romania, Russia, Turkey and Ukraine.

Course outcome

The summer school format was a highly interactive one and lecturers continuously prodded participants into conveying their own professional environmental indices-related experience in order to provide further insight to the other participants and into asking thought-provoking questions.

Participants were generally receptive to the synergistic approach assumed by lecturers and actively contributed towards making the course a success.

As a result of the conduction of the summer school, a number of Mediterranean and Black Sea young researchers were trained in the basics of MSFD environmental indices, which they can utilise in their respective institutes for the better management of marine resources, thus contributing to build experience in the formulation of scientifically based synthetic assessment of the state of the marine environment, aligned with the objectives of the PERSEUS project.

The theme for the PERSEUS Summer School was targeted to give participants detailed insight into the most relevant environmental indices ranging from lower to higher trophic levels, thus contributing to build experience in the formulation of scientifically based synthetic assessment of the state of the marine environment.

The lectures on theoretical aspects were supplemented with dedicated practical applications in selecting, computing and using such tools.



Approach

A highly flexible didactic approach was adopted throughout the course, with interactive lectures generally being delivered to participants in the mornings and practical applications on using MSFD related indicators in the afternoons.

During the course, open discussion sessions were held where participants were given the opportunity to challenge and question concepts delivered during the lectures and to express their own views.

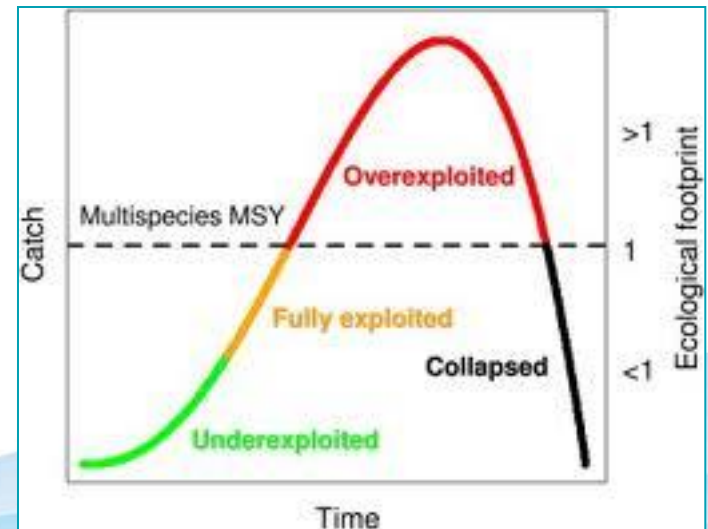
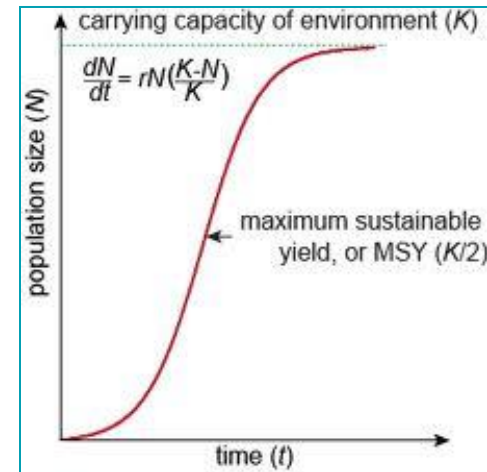
Different types of applications of environmental indicators were explored, ranging from lower to higher trophic levels. All lecturers at the summer school provided participants with extensive bodies of valuable literature related to environmental indices applied for the assessments of several aspects of the state of the marine environment and familiarised them with the most recent developments in such a field.

Course Content

Course 1: Fishery related indices

Defining the fishery maximum sustainable yield

The opening session of the course gave participants a broad overview of fishery related indices. In particular, this session briefed students about criteria and indicators related to **Descriptor 3 of MSFD**. Such a session also gave an insight about the size based indicators and F_{msy} framework - worldwide experience. Also practical applications for Indicators' calculations - choice, examples and exercises were included, together with region specific applicability and future proposals.



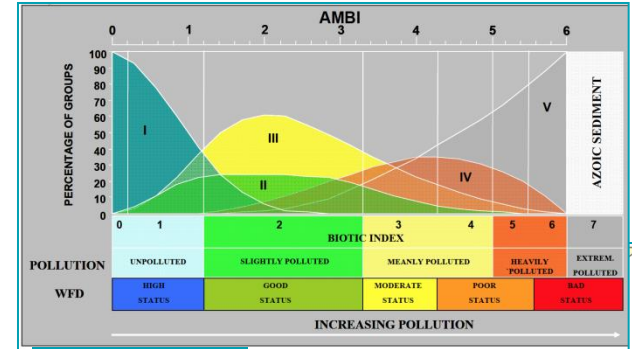
Course Content

Course 2: AMBI, M-AMBI indices and MSFD assessment issues

AZTI's Marine Biotic Index (AMBI) and its multivariate extension, the M-AMBI.

The main scope of the course was presenting the concept of the Integrative Ecological Status Assessment in Implementing the European Water Framework Directive and the Marine Strategy Framework Directive.

Ecological indices based on macrobenthos: the case of AMBI and M-AMBI in assessing seafloor integrity status were explained to the participants, followed by practical applications of using AMBI and M-AMBI: computation, application and exercises.



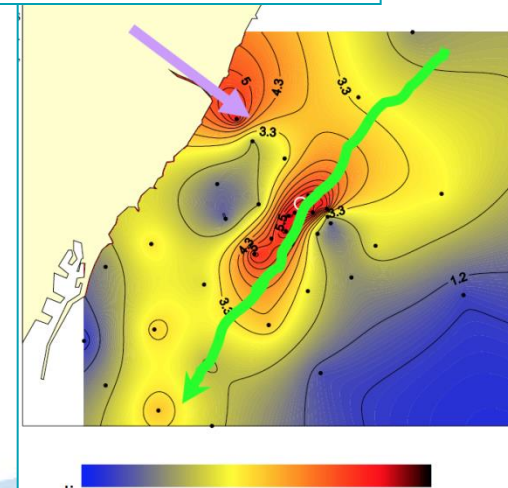
Group I
Sensitive

Group II
Indifferent

Group III
Tolerant

Group IV
Opportunistic

Group V
Opportunistic



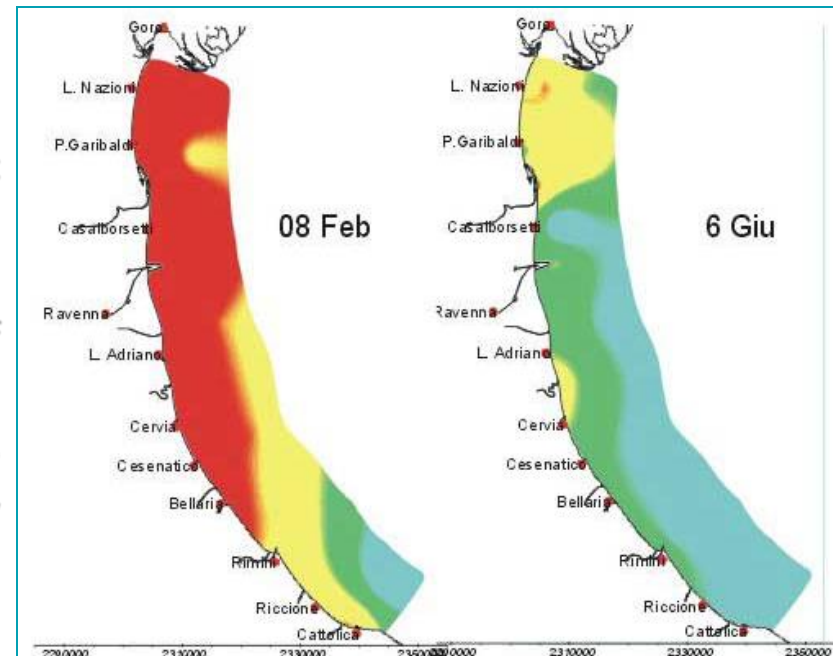
Course Content

Course 3: Characterization of the ecological state of marine and coastal waters using the Trophic Index (TRIX)

Within this session, participants were briefed on definition of environmental indices and their use in MSFD, coastal eutrophication and socio-economic aspects related with eutrophication management.

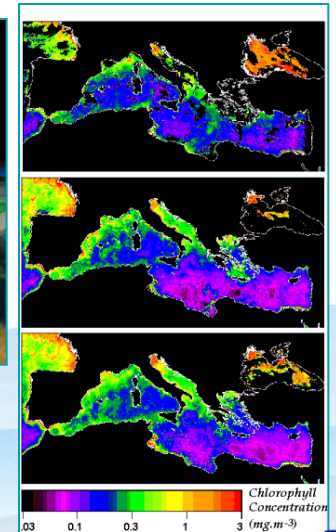
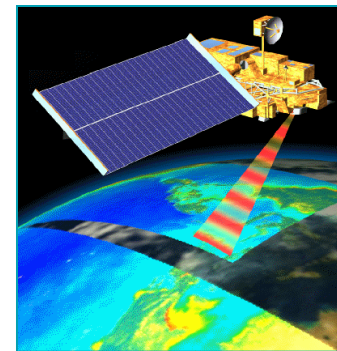
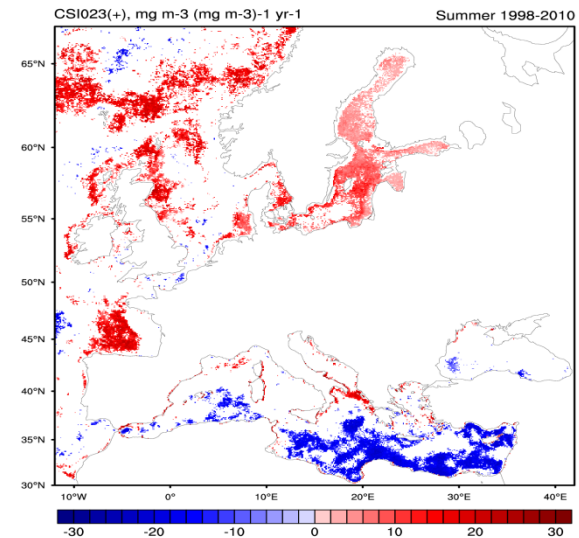
Participants were also given an overview of Northern Adriatic sea system: Emilia-Romagna coastal waters, N/P ratio and the history of the Trophic Index, follow in the afternoon session by practical examples of computation, applications and exercises using Trix.

Operationally used to monitor the trophic State of the Emilia-Romagna (Adriatic Sea) Coastal water



Course 4: Ocean Color Based Index

The scope of this session was the assessment of existing Ocean Color based indicators on Eutrophication. The Ocean Color products: what is available and how to access to the data were overviewed, and a comparison of ocean color and in situ chl-a products, together with a specific case for the Mediterranean Sea were presented. Practical examples related with Ocean Color data access, Chl-a Climatology computation and Ocean Color trend Index.



Apart from increasing their scientific capacity during the lectures, we wanted to provide an opportunity for the young participants to meet, make new friends and exchange ideas.

During their stay we hosted different of social activities that surely facilitated social interaction among students.

The participants went on full day excursion, at the Constanta Maritime Harbours Administration, the Passenger Terminal and the Maritime Station.





The director of the Maritime Harbours Administration, Mr. Lucian Balut, outlining the activity in the Constanta Harbour



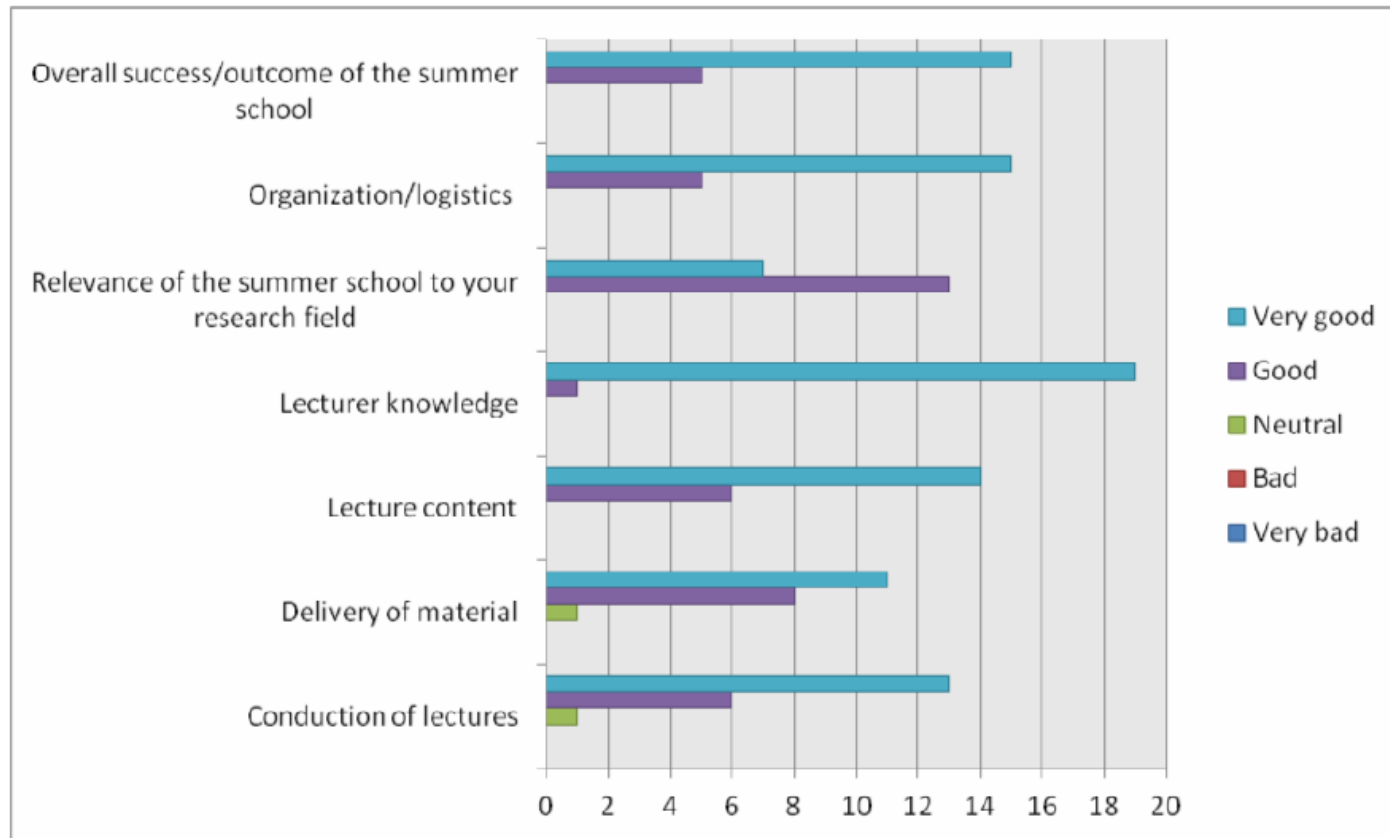
Perseus Summer School Review Questionnaire

Summary of the course participant's feedback

	Very bad	Bad	Neutral	Good	Very good
Conduction of lectures			1	6	13
Delivery of material			1	8	11
Lecture content				6	14
Lecturer knowledge				1	19
Relevance of the summer school to your research field				13	7
Organization/logistics				5	15
Overall success/outcome of the summer school				5	15

Overall feedback by course descriptors

CONSTANTA SUMMER SCHOOL FEEDBACK TOTAL = 20 STUDENTS



Sambata, 08 Iunie 2013
telegrafonline.ro

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Inapoi la Social



Sondaj de opinie I

Sambata, 08 Iunie 2013

Școala de vară la "Grigore Antipa"

Mediul marin, în atenția cercetătorilor din întreaga lume

Elena RADU (elena.radu@telegrafonline.ro)

Vezi galeria de imagini a acestui articol



Tineri cercetători au luat parte în perioada 3 - 7 iunie la școala de vară organizată de Institutul Național de Cercetare - Dezvoltare Marină "Grigore Antipa" (INCDM), din Constanța. Aceasta face parte din proiectul UE-PC7 PERSEUS "Cercetarea mediului privind politicile ambientale în mările din sudul Europei". La cursurile ținute în cadrul activității, participanții, cercetători și studenți doctoranzi, au studiat indicii de mediu care evaluează diverse aspecte ale stării mediului marin, pornind de la nivelurile trofice de bază până la vârful. Ei au luat la cunoștință de instrumente moderne de evaluare a stării

ecosistemelor marine, și au învățat cum să se folosească datele din cercetările proprii, cum sunt tezele de doctorat. Cursurile au fost susținute de specialiști în domeniu, din țări precum Bulgaria, Italia și Spania, prezentând în fiecare zi câte un indicator, tinerilor cu pregătire științifică în biologie, oceanografie fizică sau chimică. Participanții au venit din mai multe țări cu dechidere la Marea Neagră și Mediterană, și, pe lângă aspectele teoretice au avut și numeroase aplicații practice. Coordonatorul proiectului, cercetător științific, Andra Oros, precizează faptul că "această școală de vară s-a organizat ca să se muleze pe obiectivele proiectului PERSEUS, principalul fiind acela ca toate marile și oceanele să ajungă la o stare ecologică bună. Tematica ei a fost aleasă în așa fel încât să se prezinte o gamă largă de indicatori care sunt folosiți pentru a evalua mediul marin". În urma cursurilor ce tocmai s-au încheiat directorul INCDM, Simion Nicolae, își propune să depășească problemele pe care le-au întâmpinat de-a lungul timpului în evaluarea stării mediului marin, dar și să ajute țările care participă la proiect, prin facilitarea drumului în implementarea lui.

Ați fi de acord ca județul Constanța să devină regiune autonomă?

da
 nu

[Voteaza](#)

[Comenteaza intrebarea și participa la dezbatere](#)

Sondaj de opinie II

Ați fi de acord ca Dobrogea să devină regiune autonomă?

da
 nu

[Voteaza](#)

[Comenteaza intrebarea și participa la dezbatere](#)

INTREBAREA ZILEI

Ați avea curajul să călătoriți perioade lungi de timp cu un iaht?

Liderul de Opinie Ziar de Constanta



Băse pălăvră
far plebea
plătește?!

HOME EVENIMENT SOCIAL ACTUALITATE ADMINISTRATIE POLITICA MAGAZIN

Stiri live Vedete Angajări Bancel zilei Horoscop Targuri si expozitii in Constanta in 2013

În căutare de soluții pentru mediul marin

Data: 6 Iunie 2013
Categorie: Actualitate



Viata lui Iisus

Deveni din viata lui Iisus care are să a se crezi?

[evangeliu](#)



Optiuni >

Tinerii cercetători se instruiesc la Constanța

Pe parcursul săptămânii 3-7 iunie 2013, la sediul Institutului Național de Cercetare-Dezvoltare Marină "Grigore Antipa" (INCDM) Constanța se desfășoară școala de vară focalizată pe indicatorii de mediu - „Contribuția indicatorilor de mediu la respectarea obiectivelor și principiilor Directivei-Cadru Strategia pentru Mediul Marin”. Aceste cursuri au fost organizate în colaborare cu Consorțiul Național Interuniversitar pentru Științele Mării (CoNISMA) din Roma, Italia, și Universitatea din Malta (UoM), în cadrul proiectului UE-PC7 PERSEUS (Cercetarea mediului privind politicile ambientale în mările din sudul Europei). Proiectul PERSEUS își propune dezvoltarea de activități de cercetare care să contribuie semnificativ la implementarea Directivei-Cadru Strategia pentru Mediul Marin a UE și la atingerea Stării Bune a Mediului (GES – Good Environmental Status) în bazele Mării Negre și Mării Mediterane.



REPORTER DDV

PRIMA PAGINA STIRI FLUX REDACTIE SPORT DIVERTISMENT OPINII NEPTUN TV VEDETE NEPTUN

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Școală de vară pentru cercetătorii marini la Constanța

Roxana Glăvan | 13:09, 3 Iunie 2013 | 312 vizite | Social

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TABĂRĂ PENTRU CERCETARE MARINĂ

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TABĂRĂ PENTRU CERCETARE MARINĂ

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CONCLUSIONS

Given the strong PERSEUS focus on the scientific activities, problems and opportunities underlying the **Marine Strategy Framework Directive (MSFD)** implementation and the achievement of “**Good Environmental Status**” (GES), the themes of the summer school were targeted to promote the definition of high level scientific activities directly connecting and contributing to the adoption of policy measures based on the so called ecosystem-based approach, and aiming to support the adoption and implementation of the MSFD and GES.

The courses aimed to address the need for both EU and non-EU states to adopt a common framework and regional approach with regards to environmental policy development, common monitoring practices and the use of common assessment tools.



Thank you!