



A cross discipline and cross border integrated project on coastal eutrophication offering information, education and science to stakeholders and the public at large in the Interreg 2 Seas Zone (Belgium, England, France and the Netherlands).



ISECA is being exported !

New communication tools for the project

These last months, Nausicaá, in charge of communication in the ISECA project, has developed different communication tools, to be used by any partners and info multipliers during any type of event. Banners and leaflets have been created; they present the ISECA project and the eutrophication phenomenon to the general public. These materials are available in three languages: French, English and Dutch.

In addition, a new survey has been launched; its purpose is to determine the public's perception of water quality and its effects on public use. It also aims at better defining the people's willingness to contribute to improvements. To participate, please visit www.iseca.eu!

Annual Interreg 2 Seas event

This annual event was held on Thursday 14th and Friday 15th of March 2013 in Rotterdam (Netherlands). It attracted more than 420 participants who came to listen to 65 speakers and to discover the 72 Interreg stands! Among them, an ISECA stand gave information on the project to partners involved in other Interreg projects.

It was also an opportunity for participants to discuss issues related to environment and sea and to attend conferences on the subject. These two days have been successful and constitute a great platform for the networking of all partners.

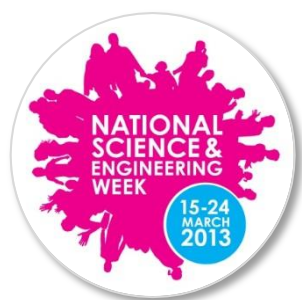


The UK National Science and Engineering Week

From Friday 15th to Sunday 24th of March 2013, PML scientists participated in the National Science and Engineering Week (NSEW) at Plymouth City Museum & Art Gallery (UK). The event promoted learning and aimed at encouraging and stimulating the people's interest in science, nature and technology through events and activities across the UK.

PML teamed up with colleagues at the Sir Alister Hardy Foundation for Ocean Science (SAHFOS), Plymouth City Museum and Plymouth University to present an interactive science event entitled 'Nature's Inventions'. This workshop aims at demonstrating how the natural world has inspired human-made technology. It consists of a series of activities for Key Stage 2 pupils (target age group 7-11) covering a range of topics from remote sensing of ocean colour to the mechanics of insect flight.

ISECA scientists also designed an activity to explain to children the causes of the change in coastal water colour by the combination of coloured dissolved organic matter and suspended sediments. They also built up a model of satellite (photos below) to explain how nature has inspired the sensors in satellites that help monitoring changes in ocean colour which are potentially related to eutrophication.



The PML stand focusing on the components of coastal water colour



A model of ESA-Sentinel 3 satellite, with ISECA banners in Plymouth City Museum (UK)



Science

In situ measurements in ISECA

In the first newsletter, we showed that water colour observation from space is a key measurement tool in eutrophication monitoring. Satellite images aim at obtaining information about the constituents present in coastal waters, especially chlorophyll pigments. This information can be used to inform politicians and society about the 'health' of the coastal ecosystems, in particular regarding dense algal blooms that can be a problem in coastal waters (so called eutrophication). **However, in order to be able to use the satellite images for coastal monitoring we need to assess how good the images from the satellite are.** There are several causes for the uncertainty of satellite derived phytoplankton estimations:

- One is that the same water colour can be produced by the mixture of different substances (e.g. dissolved organic matter, suspended minerals) coming from rivers or bottom re-suspension. To address this, in-situ sampling of the optical properties and the concentrations of coloured matter have to be done from a research vessel. These activities are supported around the world by space agencies NASA and ESA in a common effort to improve ocean colour estimates near the coast.
- Another cause of uncertainty is that the proximity of the land affects the way the satellite "sees" the colour of the coastal water (the so called "adjacency effect"). This problem is being tackled by the development of mathematical equations, which need in-situ data to test their results.



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During ISECA, scientists are collecting water samples and measuring the water colour is done from an oceanographic vessel to test the measurements from the satellite. Weekly **water samples are collected off Plymouth by our partner PML (Plymouth Marine Laboratory)** and brought back to the laboratory for analysis of the algae content, suspended particulate matter and dissolved coloured organic matter. Simultaneously to water samples, high precision electronic equipment is deployed to measure the optical properties (like absorption and scattering of light) of substances directly in the water column. Finally, sensors mounted on the bow of the vessel provide continuous data of the water colour.

In order to compare the measurements obtained in the UK with others from France and Belgium, a dataset is being compiled from existing data from different institutions across the region. **The expectation is to produce a dataset that will allow not only the assessment of the quality of the satellite images, but also the development of new mathematical tools to improve the current knowledge of the causes of water colour in our coastal seas.**

Zoom

Plymouth Marine Laboratory (PML)

PML is an independent and impartial collaborative centre of the Natural Environment Research Council (NERC). Its core research programme contributes to the issues of climate change, marine pollution and sustainability, with particular strengths in Earth Observation (EO) and numerical modelling.



Agenda

ISECA Info Days in Belgium: the dates are changing

In the previous newsletter, we announced you two Info Days in Oostende in spring 2013. In order to optimize the content, our Belgian partners VLIZ and VITO, decided to move these events to the following dates:

- **Day dedicated to the information multipliers (guides, teachers, educators ...)(in Flemish) Thursday 12th, 19th and 26th of September 2013 in Ostend**
- **Half a day dedicated to scientists and authorities (in English) - Friday 11th of October in Ostend**



World Ocean Day in Nausicaá, Saturday 8th of June 2013 – Boulogne-sur-mer, France

World Ocean Day is a real celebration of the sea aiming to raise public awareness of the marine environment. The World Ocean Network, of which Nausicaa is a founder member, coordinates the day and draws up a full programme of activities, workshops and meetings to celebrate the day. During the day, you will be able to discover the workshop "When the sea foams", created under the ISECA project.



With the participation of:

