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1. Coordinators Corner:

Welcome to the 2010 issue of EuroSITES news. This year has seen much progress in the observatory capabilities and science missions. More variables are being monitored from the open ocean observatories than ever before and users of the datasets are growing as data delivery to the OceanSITES ftp, MyOcean and WMO-GTS keeps growing. 2010 saw the successful completion of the 18 month periodic report and the second payment for the network. 2010 was also a time to focus on the future. Considerable effort has been put in by all partners into building a future vision for the network. We hope you enjoy the latest updates. For news and to view data in near real-time visit the project website:

<http://www.eurosites.info>

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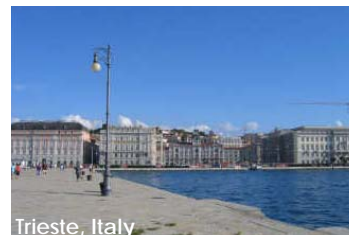
13 Partner institutes:

1. NERC (NOC) (coordinator);
2. UiB; 3. HCMR; 4. OGS; 5. CNR-ISSIA; 6. IFM-GEOMAR; 7. UNIABN;
8. CNRS; 9. IFREMER; SOPAB-Océanopolis; 11. ICCM; 12. INDP;
13. ULPGC.

8 countries (7 EU and 1 ICPC)

EuroSITES 2nd Annual meeting: Trieste

EuroSITES held its second Annual meeting on 20-22 April 2010 in Trieste, Italy hosted by EuroSITES partner OGS. But as final preparations were being made, it seemed that the Icelandic volcano Eyjafjallajökull had other ideas. Many EuroSITES partners and Oversight Committee members braved the travel chaos to arrive in Trieste. This included the EuroSITES management team who arrived from after 24 hours driving across Europe in a Ford KA! Others connected via telephone or Skype to ensure the meeting was a success. Logistics were expertly handled by local representatives Margherita Persi and Vanessa Cardin and thanks also go to the OGS President Prof. Marson. The **Final EuroSITES Annual meeting** will be in Crete between 21-25 March 2011, hosted by partner institute HCMR.

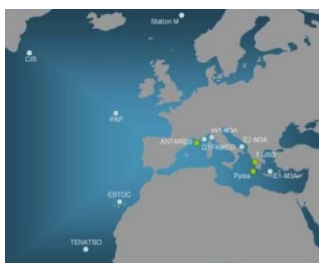


Trieste, Italy



OGS president Prof. Marson greets the EuroSITES Coordinator Richard Lampitt

Ocean Observation: A key European challenge and priority



2010 has been an important year for promoting EuroSITES and highlighting the importance of *in situ* ocean observation. On 1-2 June 2010 the **European Environment Agency** hosted a meeting titled '*In situ* data requirements for the **GMES Marine Core Service**'. This forms part of the **GISC** (GMES *in situ* coordination) project which is coordinated by the EEA and financed by the EU's 7th Framework Programme. Kate Larkin (EuroSITES project manager) presented a EuroSITES position paper alongside other key *in situ* ocean data providers including EuroARGO, FerryBox, Gliders, SAHFOS (Continuous Plankton Recorder) and the Surface Marine observation programme (E-SURFMAR). The aim was to discuss **priorities for the global and regional in-situ observing system** required by the marine component of the European Initiative **GMES** (Global Monitoring for Environment and Security). The GISC project is ongoing (January 2010 - December 2012) and in December 2010 the EEA launched a consultation process of GMES *in situ* data requirements and priorities. This will produce a comprehensive catalogue of stakeholders.

In September and October 2010 the European marine and maritime community stated **Ocean Observing** as a **key European challenge and priority** at 2 European meetings on marine science and policy. On **16 September**, EuroSITES colleagues from across the network represented the project at the **2nd ESF Marine Board** meeting in Brussels with the title **Towards a European Network of Marine Observatories for Monitoring and Research**. On **12-13 October**, the **EuroOCEAN 2010** meeting in Ostend brought together the European marine science community to consider, discuss and respond to new policy developments in the sector and highlight challenges and opportunities for their research over the next decade. As a result, a **European Ocean Observing System** was listed as a **key priority** in the **Ostend declaration**, a key policy document used by the European Commission. EuroSITES partners from across the network also met with Commissioners, Oversight Committee members and **EMSO** and **ESONET** colleagues to discuss the longer-term funding opportunities for fixed-point open ocean observatories.



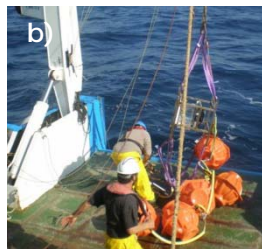
Field Work and Science Missions in 2010

All 9 core EuroSITES observatories and 3 associated sites conducted field work in 2010. These ranged from maintenance of observatory infrastructure to complete enhancements, redesigns, mooring and telemetry trials and deployments of emerging sensor technology.

Boost for Biogeochemistry: 2010 has seen yet more enhancements to the biogeochemical capabilities of the EuroSITES observatory network particularly for variables pCO_2 , O_2 , chl-a and nitrate. These datasets are vital for monitoring the status and health of open ocean ecosystems. **Success for science missions:** EuroSITES supports the research and development of novel *in situ* ocean observation and emerging technologies. In 2010, field work continued for the pH sensor (designed by partner ULPGC) which was deployed for the first time at the ESTOC open ocean observatory. A commercially available Zooplankton sampler (McLane) was deployed at the PAP site to develop the observatory capability for assessing meso-zooplankton abundance. The sampler will be deployed at the DYFAMED observatory as a collaboration between NOC and CNRS (OOV and LMGEM labs) on 12 December 2010. The CNRS (LMGEM, Marseille) led **Oxygen Consumption** task has also made significant progress. After deployments at PAP in 2009, the IODA₆₀₀₀ device was deployed at the DYFAMED site at 2000m in July 2010. The EuroSITES observatory **FluSO** completed its field work measuring **fluid flow and slope stability** in the seismically active regions of Patras, Northwestern Greece. The FluSO infrastructure has now been deployed in the Arctic (offshore Spitsbergen) as part of the ESONET demonstration mission.



Zooplankton sampler deployment at PAP, 1st June 2010



IODA6000 deployment at DYFAMED in July 2010

ESONET and EuroSITES join forces for a demonstration mission at the PAP observatory, Northeast Atlantic



BOBO lander deployment at PAP, May 2010

In May 2010 the ESONET demonstration mission MODOO (Modular Deep Ocean Observatory) carried out field work at the EuroSITES PAP Observatory. Led by IFM-GEOMAR, Kiel, a lander system (BOBO; NIOZ) was deployed with a suite of sensors on the seafloor. Data transmission was demonstrated from 4800m depth using **acoustic telemetry** technology. But technical problems straight after deployment meant the seafloor time-series were not collected.

<http://www.modoo.info>

Data management

OceanSITES GDAC's are synchronised:

EuroSITES is the European component of the international OceanSITES network (www.oceansites.org). The EuroSITES data management team have contributed to the restructuring of the OceanSITES directories and since November 2010 datasets are being synchronised daily from the 2 OceanSITES GDACs hosted by CORIOLIS (Ifremer, France) and NOAA's National Data Buoy Center. The OceanSITES-EuroSITES data management teams are working towards making the data and metadata available via an OpenDAP server online. The EuroSITES website www.eurosites.info continues to grow as a central hub for viewing open ocean observatory data in near real-time. The EuroSITES data files are freely available as OceanSITES NetCDF files through the OceanSITES GDACs: <ftp://ftp.ifremer.fr/ifremer/oceansites/DATA> <ftp://data.ndbc.noaa.gov/data/oceansites/DATA>

EuroSITES Data delivery to the GTS: The EuroSITES data management team have also been working to increase the delivery of EuroSITES data to the **World Meteorological Organization Global Tele-communication System (WMO/GTS)**. Currently ocean temperature and salinity datasets from at least three EuroSITES observatories are distributed to the **WMO/GTS** in near real-time as SHIP, TESAC or BUFR bulletins. Meteorological data from the sites are already delivered as SHIP bulletins. This makes EuroSITES ocean and atmospheric datasets available to a wide audience of potential users as part of the **World Weather Watch framework**.

EuroSITES: A key *in situ* data provider to the marine component of GMES through MyOcean

EuroSITES *in situ* open ocean datasets are delivered daily to the MyOcean project. MyOcean is the implementation project of the **GMES Marine Core Service**, aiming at deploying the first concerted and integrated pan-European capacity for **Ocean Monitoring and Forecasting**.

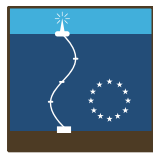


EuroSITES partner **Ifremer (CORIOLIS)** coordinate the *in-situ* Thematic Assembly Centre (TAC) for MyOcean which makes the link between EuroSITES datasets and European operational modelling centres.

EuroSITES data on ESONET portal: A step towards interoperability:

During 2010 EuroSITES data managers Maureen Pagnani and Thierry Carval have worked together with **ESONET** (Robert Huber) to make time-series datasets from EuroSITES observatories Poseidon-Pylos and PAP directly accessible from the ESONET data portal. This is a proving phase which will be further developed for all EuroSITES observatories in the future.





EuroSITES OUTREACH

EuroSITES outreach is coordinated by SOPAB-Océanopolis in Brest, France. During 2010 the team led by Sylvain Ghiron have continued to develop the **outreach website** and support EuroSITES field work with cruise diaries and information on research sites for the general public.

Observing Europe's open ocean, seafloor and hotspots

The global Ocean plays an important role as a regulator and mitigator of climate change. In order to monitor, understand and predict changes in marine systems we need to make established interdisciplinary observations. This is vital to understand natural variation, longer term climate trends to predict early warning of natural disasters and assess man's impact on the Oceans. The European Commission supports marine projects that are developing state-of-the-art tools for in-situ ocean observation and research and contributing to the Group on Earth Observation through the marine component of the Global Monitoring for Environment and Security (GMES).

HERMIONE focuses on five "hotspot" ecosystems: High-latitude coastal seas, deep-sea hydrothermal vents, deep-sea cold-seeps, deep-sea hydrothermal vents, and deep-sea hydrothermal vents.

EuroSITES integrates and enhances Europe's existing open ocean fixed-point observations.

EMSO Preparatory Phase (PP) is developing a European research infrastructure for fixed-point ocean observations from surface to sub-seafloor.

Scientific themes and main aims of these projects include:

- Regional monitoring of open ocean sea-ice exchange, ice cover trends in the carbon cycle
- Physical ocean circulation, heat fluxes, temperature and salinity
- Deep-sea ecology, biodiversity and deep-sea ecosystem functioning, biological capabilities and specific biological processes, responses to climate change, human impact, large-scale species events
- Deep-sea early warning capability (e.g. for earthquakes, tsunamis, gas hydrate stability)
- Ocean and climate models: Predicting climate trends in order to provide means for predicting future scenarios
- Informing stakeholders and policy makers with the scientific knowledge to support deep-sea governance aimed at the sustainable management of Europe's offshore resources and development of ecosystems

www.eurosites.info www.esonet-emoso.org www.eu-hermione.org

Our global Ocean is of increasing importance for understanding of climate change.

Click on the EuroSITES logo to see a list of the sites and to find out more about the network.

Pourquoi observer les océans?

La Terre est un système complexe et dynamique. Les océans jouent un rôle crucial dans le cycle du carbone, le climat, la biodiversité et les ressources naturelles. Observer les océans permet de mieux comprendre ces processus et de prévoir les impacts du changement climatique.

Les EuroSITES observatoires sont une infrastructure scientifique européenne qui permet de collecter des données précises et continues sur l'état de l'océan.

Les données collectées sont utilisées pour améliorer nos modèles climatiques et océanographiques, et pour mieux comprendre les interactions entre l'océan et l'atmosphère.

Les EuroSITES observatoires sont une infrastructure scientifique européenne qui permet de collecter des données précises et continues sur l'état de l'océan.

During 2010 EuroSITES outreach and management teams coordinated a **joint exhibition** with EU projects ESONET, EMSO and HERMIONE called 'Observing Europe's open ocean, seafloor and hotspots'. The film, poster and fact sheets produced were launched at the **GEO Summit in Beijing** (2-5 November 2010). This follows the EuroSITES network film 'EuroSITES: Monitoring Europe's open ocean' produced in 2009. The outreach team also continue to develop an **online comparison tool** to promote the educational use of EuroSITES datasets and the **project Fact Sheet** is now available in English and French. **Partners and interested groups are invited to contact the outreach team for assistance in further translations.** In September 2010 we said goodbye to outreach assistant Lise Cronne and hello to Cécile Walter joined the outreach team working with Sylvain Ghiron. For more details please visit the outreach website or contact the team.



<http://outreach.eurosites.info/>

International links

Poseidon-Pylos registers for OceanSITES status: All The Greek Poseidon-Pylos site, coordinated by HCMR, has been in operation in the Ionian Sea since 2007. During the EuroSITES project the site has grown into a multi-disciplinary time-series site with physical and seafloor monitoring capabilities with near real-time transmission. In 2010 this led to OceanSITES project office inviting the site to become part of the international network of deep water reference stations. It is hoped the Poseidon-Pylos site and other associated observatories will join the 9 core EuroSITES observatories already registered with OceanSITES.

EuroSITES Carbon capability grows: In October 2010 EuroSITES management responded to a call by **The International Ocean Carbon Coordination Project (IOCCP)** with an update on biogeochemical (particularly pCO₂) capability of the EuroSITES network. EuroSITES participant Melchor González-Davilla (ULPGC) is the lead-scientist contact for the IOCCP time-series stations and Alex Kozyr (EuroSITES Oversight Committee member) is the lead contact for the Carbon Dioxide Information Analysis Centre.

EuroSITES at GEO: EuroSITES partners HCMR (Kostas Nittis) presented EuroSITES at the **GEO GEPW-4 meeting** in Athens, 29-30 April 2010. In November 2-5 2010, EuroSITES Coordinator Richard Lampitt presented EuroSITES and fixed-point *in situ* ocean observation at the **GEO Ministerial Summit in Beijing**. This included presentations and promoting the exhibit on the European stand.



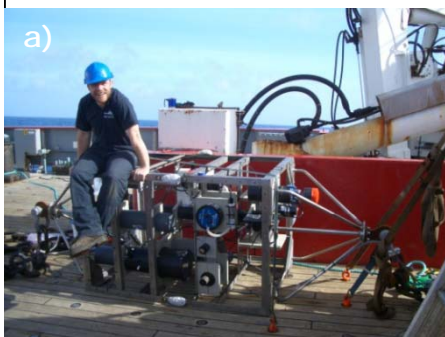
a) Jane Shiel (Scientific Officer, European Commission, DG Research) Richard Lampitt (EuroSITES Coordinator; NOC) and Mike Segal (Head of the U.K. delegation) at the **GEO Ministerial Summit in Beijing, November 2010**. b) Richard Lampitt presenting. On the European Stand.



EuroSITES, ESONET and EMSO plan a joint vision for integrated sustained Eulerian time series observations in the open ocean. At a meeting parallel to the EUR-OCEAN2010 meeting in Ostend (October 2010) EuroSITES, ESONET and EMSO participants met to discuss the future vision and ways forward for fixed-point *in situ* open ocean observation. It was agreed that future work should address in a multidisciplinary way the entire oceanic environment to include the air-sea interface, water column and seafloor.



Observatory and Network Highlights



a) Thanos Gkritzalis (NOC sensors engineer) at the PAP Observatory. **b)** In June 2010 a collaboration between the UK Met Office and NERC led to the deployment of a new mooring at the PAP-SO with an ODAS buoy and full suite of meteorology sensors to complement the existing ocean variables. **c)** The ESTOC buoy after recovery.



d) Ivanice Monteiro at work in the INDP lab on TENATSO Ocean samples

e), f) The W1-M3A observatory, Ligurian Sea. Sara Pensieri (CNR-ISSIA) at work on a W1-M3A observatory maintenance cruise

g) ULPGC participants Melchor Gonzalez-Davilla and Magdalena Santiano-Casiano at the ESTOC site.



h), i). EuroSITES dinner at the Annual meeting, Trieste, April 2010. Meeting participants included Paolo Favali (EMSO project). **j)** Vanessa Cardin (OGS) at the EuroSITES Annual meeting dinner with Christian Tamburini (CNRS-LMGEM) and Laurent Coppola (CNRS-OOV).



k) Laurent Coppola (CNRS-OOV) at the DYFAMED observatory. **l)** Seabed anchor for FluSO being recovered by the RV AEGAIO. **m)** EuroSITES participants Vasilis Lykousis (HCMR), Kate Larkin (NOC) and Richard Lampitt (NOC) at the EUROCEAN2010 meeting.