



MODELKEY Newsletter No. 1

31 July 2005



SIXTH FRAMEWORK
PROGRAMME

MODELKEY Integrated Project on the Impact of Environmental Pollutants on Aquatic Ecosystems has started

MODELKEY (Models for Assessing and Forecasting the Impact of Environmental Key Pollutants on Marine and Freshwater Ecosystems and Biodiversity) has started as a new Integrated Project of the 6th Framework Programme. Incited by the Water Framework Directives' good ecological status by 2015 its work is to explain the link between contamination and ecosystem health. 25 partner institutes in 13 European countries combine their effort, organized in 7 subprojects and the river basins of the Elbe in the Czech Republic and Germany, the Scheldt in Belgium, the Netherlands and France and the Llobregat in Spain.

The final products offer environmental researchers and managers:

- ♣ identification of effect-based key toxicants in

freshwater and marine ecosystems (subproject KEYTOX)

- ♣ a central database for monitoring data (subproject BASIN)
- ♣ assessment and prediction of exposure on a river basin scale (subproject EXPO)
- ♣ diagnostic, predictive and mechanistic tools for effect prediction on population, communities and ecosystems (subproject EFFECT)
- ♣ thorough analysis of exposure and effects in biofilms, invertebrate and fish communities (subproject SITE)
- ♣ risk indexes and a decision support system to assist authorities and policy makers in making effective and efficient decisions improving the ecological quality (subproject DECIS).

For more information please check out the recently published brochure, which can be downloaded off the website www.modelkey.org or ordered at the project secretariat.

Enthusiastic MODELKEY Kick-off meeting

More than 60 scientists met in a wintry Palma de Mallorca at an inspiring kick-off meeting. In plenary and small groups the participants fruitfully discussed details in sampling strategies and schedules, selected sites and toxicants of interest, and decided on basin scale data requirements for modelling and strategies of data compiling. This very well organized meeting was the opening to a 5 year long, Europe wide cooperation of MODELKEY partners. Proceedings and photos of the meeting can be found at the website.



MODELKEY Project Office established

The beating heart of the project is the one heading the project office, Dr. Michaela Hein. She was specially assigned to the 5 year project to keep track of all the interim reports, deliverable deadlines, schedules, assisting Werner Brack and

Mechthild Schmitt-Jansen. Michaela is the person to contact if you are having questions on matters of MODELKEY organisation. E-mail: michaela.hein@ufz.de.

An important milestone of the project office was the MODELKEY Kick-Off meeting at Mallorca.

Presentation of MODELKEY at the environmental trade fair TERRATEC

MODELKEY was presented to a broad professional audience at the trade fair for environmental technology and services TERRATEC in Leipzig in March this year.

Environmental managers and policy makers invited to take part in the MODELKEY End-user communication board

MODELKEY warmly invites environmental managers and policy makers who are involved in river basin management and the implementation of the Water Framework Directive (WFD) to join the end-user communication board of MODELKEY. The board provides a platform for end-users to address their particular policy problems, to exchange know-how, data and research needs with



MODELKEY scientists and other end-users. This is planned to be realized by end-user group meetings at the national level and an end-user intranet discussion forum at the MODELKEY web page. Several key players for the implementation of the WFD in the basins of Elbe, Scheldt and Llobregat already joined the end-user communication board (www.modelkey.org)

Reference materials for inter-calibration sampled

On Tuesday, April 25th 2005, sediment was sampled for preliminary bioassay experiments and reference material. The site was located at Prelouč, 10 km downstream of Pardubice, in the river Elbe. Here, a lock channel has been permanently closed. Sedimentation created a thick layer of clay-rich sediments, contaminated by the wastes of the chemical factory 'Synthesia' and the former electronics company 'Tesla'.



Labe/Elbe at Prelouč. Sampling of reference and bioassays sediment (left boat, UFZ, RIKZ) and undisturbed cores (right platform, UoS).



Schelde at the chemical industry site of Antwerp harbour/

Preliminary chemical analyses show high concentrations of PAHs (particularly Anthracene) and light PCB congeners. Bioassay results are not yet known.

Two days later, Thursday April 27th 2005, the sediments of the Scheldt basin were collected in the harbour of Antwerp near the petrochemical industry site. This site is more brackish (~ 5 psu) than the Elbe site, which is upstream fresh-water.

The muddy sediments will be spiked with even more chemicals. After 8 weeks of equilibration, the dry matter and water will be stored separately and serve as reference material. This will be used by the scientists to compare and improve their performance.

The MODELKEY meta-database

From the MODELKEY homepage, a new meta-database will be soon available for the project partners and also for public that compiles the available monitoring and research data for the the three river basins Elbe, Scheldt and Llobregat. It consists of data on hydrological conditions, physico-chemical parameters, concentrations of

Training course on passive sampling

Exchange of knowledge is one of the purposes of MODELKEY. By organizing courses and work shops at first students and scientists of the respective partners will be trained. In a later stage the results of MODELKEY are getting more relevant to organize courses for end-users.

- Recently a course on Passive Sampling (by Solid Phase Extraction) was organized by RIKZ (Foppe Smedes and Sander van Vliet) in the framework of ICES working

chemicals, toxicity data, and data on aquatic communities and will be continuously updated throughout the project. It aims at supporting modelling approaches on exposure, effects, and risks at a river basin scale as well as river basin management and decision making by scientists and policy makers.

group of marine sediments. This course will be offered to the MODELKEY partners too. The “hands-on” contents are specially suitable for those involved in research of chemicals and *in-vitro* bioassays. People (researchers, students, technicians) that are interested are asked to mail to Sander van Vliet (L.vVliet@rikz.rws.minvenw.nl).

- Sovan Lek (CNRS) is planning a course on modelling techniques using artificial neural networks in MODELKEY due in 2006. More details in a following Newsletter.

Messages to policy makers

Comparability of assessment EU wide

The WFD bonds member states as joint managers of river-basins in comparing the status of European river-basins. Similarity of assessment is crucial in this framework, which can only be done on the basis of comparable data. The first step in the MODELKEY project is to check comparability of both assessment and analysis using so-called Bioassay Internal Reference Material. The toxicological and chemical properties of this material are determined by the consortium partners taking part in the sub-project KEYTOX. Hence the tools of the toolbox are developed and inter-calibrated to identify the key-toxicants, chemicals that really harm the Good Status of river basins.

End-user communication: forum exchange of policy concepts?

The Water Framework Directive demands a policy network at the level of river basins to discuss and develop proper policies to achieve the Good

Status by 2015.

MODELKEY covers three river basins as case studies, which constitute also perfect case studies to exchange policy concepts between member states. This could be done in the End-user Communication Board of MODELKEY, wherein participants are rooted in national policy-making bodies. MODELKEY offers the opportunity to informally exchange views incited by the discussion on deliverables. At present the organisation of the End-user Communication Board and its rooting in national groups is discussed with MODELKEY partners.

ARGE ELBE (Elbe Water Quality Monitoring Agency, partner 14) in relation to the Elbe river basin.

RIKZ (partner 15) in relation to the Scheldt river basin and Directorate General of Water Affairs (Ministry of Transport, Public Works and Water Management) as policy-making body.

ACA (Agencia Catalana de l'Aigua, partner 22) in relation to the Llobregat river basin.

MODELKEY Agenda	Topic	Information
1 September 2005	Dutch KEYTOX workshop (at RIZA, Lelystad) on upcoming KEYTOX deliverables under the responsibility RIKZ, RIVO and IVM. Target group: Dutch KEYTOX partners	Hans Klamer (J.C.Klamer@rikz.rws.minvenw.nl) Gerard Stroomberg (G.Stroomberg@riza.rws.minvenw.nl)
14-15 September 2005	KEYTOX workshop (at CEFAS, Burnham on Crouch) on progress, collaboration matters and other relevant issues. Target group: all KEYTOX partners	Kevin Thomas (kevin.thomas@niva.no)
28-30 September 2005	SETAC GLB meeting (in Basel, Switzerland). Target group: Austrian/German/Swiss ecotoxicologists interested in process understanding and risk assessment	Katja Knauer (katja.knauer@unibas.ch)
September/October 2005	Dutch SITE2 workshop (at RIZA, Lelystad) on the organisation of work between partners. Target group: Dutch SITE2 partners	Bert van Hattum (bert.van.hattum@ivm.vu.nl)
October/November 2005	DECIS workshop (at UA, Antwerp, or CVR, Venice) on DSS conceptual framework. Target group: all DECIS partners	Antonio Marcomini (marcom@unive.it)
November 2005	SITE workshop (at UFZ, Leipzig) on progress, procedures, sampling coordination etc. Target group: all SITE partners	Mechthild Schmitt-Jansen (mechthild.schmitt@ufz.de)
10 November 2005	Meeting on "Environment related national and international research in the river Elbe basin" (at UFZ Centre for Environmental Research, Leipzig). Target group: all projects working in the Elbe (AquaTerra, ELLA, FLOWS, GLOWA etc.)	Kathleen Kirschner (kathleen.kirschner@ufz.de)
1 December 2005	Symposium on "New challenges and frontiers in Environmental Chemistry and Toxicology" (at Institute for Environmental Studies, Vrije Universiteit Amsterdam). Target group: Toxicologists and environmental chemists	Juliette Legler (Juliette.Legler@ivm.vu.nl) http://www.toxicologie.nl/index1.html
3-5 May 2006	General MODELKEY meeting (at DELFT Hydraulics, Delft). Target group: all MODELKEY partners	Michaela Hein (michaela.hein@ufz.de)
May/June 2006	DECIS workshop (at RIVM, Bilthoven, or CEFAS, Burnham) on WoE procedures for BASIN and Site-specific IRI Target group: all BASIN, SITE, DECIS partners	Antonio Marcomini (marcom@unive.it)

MODELKEY Project information

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MODELKEY

Models for Assessing and Forecasting the Impact of Environmental Key Pollutants on Marine and Freshwater Ecosystems and Biodiversity

Integrated Project in "Sustainable Development, Global Change and Ecosystems"

Start date of project: 1st February 2005

Duration: 5 years