



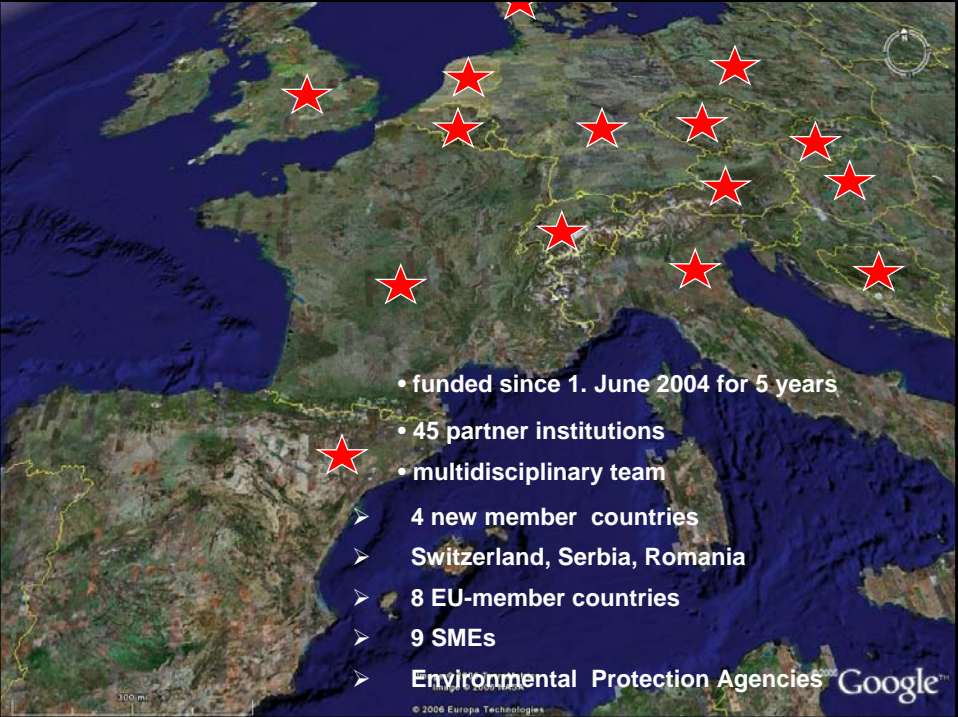
## NEWS OF PERSISTENT AND EMERGING POLLUTANTS IN THE AQUATERRA PROJECT AND RELATED WORK

[J.A.C.Barth<sup>1</sup>](#), [E. Wild<sup>2</sup>](#), [T. Gocht<sup>1</sup>](#), [D. Steidle<sup>1</sup>](#), [B. Ligouis<sup>3</sup>](#), [M. Peschka<sup>4</sup>](#), [T. Knepper<sup>4</sup>](#), [A. Navarro<sup>5</sup>](#), [P. Hsu<sup>6</sup>](#), [W. Ahlf<sup>6</sup>](#), [B. Morasch<sup>7</sup>](#), [D. Hunkeler<sup>7</sup>](#), [J. Barber<sup>2</sup>](#), [K.C. Jones<sup>2</sup>](#), [S. Meijer<sup>7</sup>](#), [P. Grathwohl<sup>1</sup>](#), [D. Barceló<sup>5</sup>](#)

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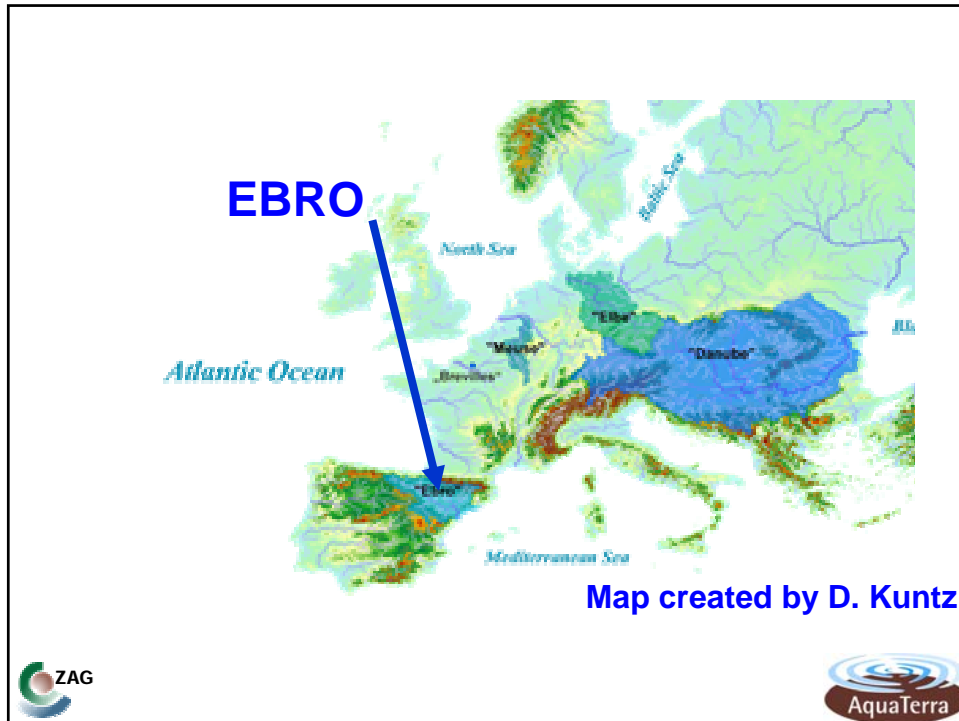
**NORMAN Workshop Menorca 27 & 28 November 2006**

- funded since 1. June 2004 for 5 years
- 45 partner institutions
- multidisciplinary team
- 4 new member countries
- Switzerland, Serbia, Romania
- 8 EU-member countries
- 9 SMEs
- Environmental Protection Agencies™

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## Study site

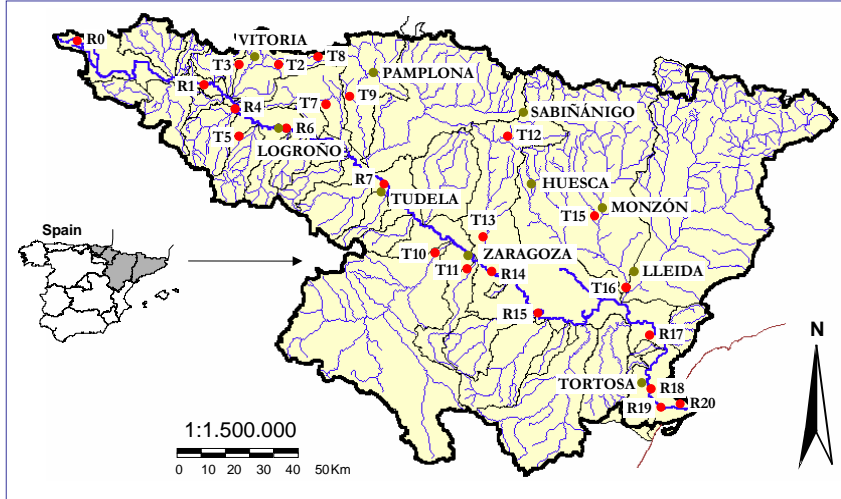
- Ebro River basin (NE Spain)
- Drains an area of 85,000 km<sup>2</sup>, discharges into Mediterranean Sea and originates a delta of more than 30,000 hectares.
- The region is basically agricultural.
- Industrial activities involve automobile, chemical, textile, food and wood industry.



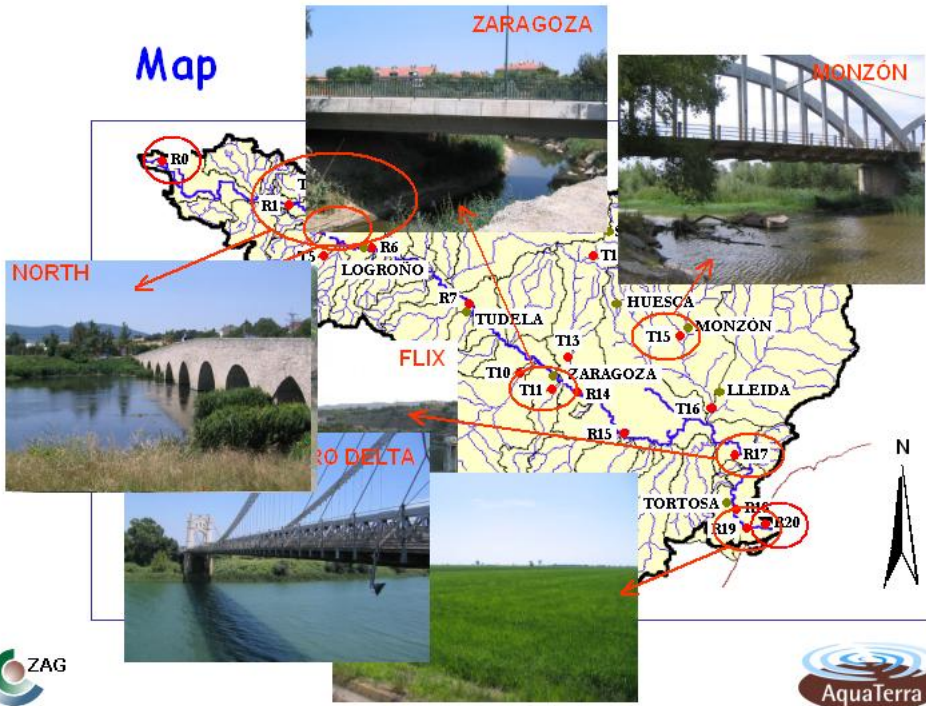
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# Map



# Map



## Compounds analyzed

### For Analyte National Priority Reporting

#### 23 chlorinated pesticides:

- DDTs (6 compounds)
- HCH (4 isomers)
- HCB, PCB
- Heptachlor
- Aldrin, Isodrin, Dieldrin and Endrin
- Endrin Aldehyde
- Alpha and Beta-endosulfan
- Endosulfan-sulfate
- Heptachlor-endo-epoxide
- Heptachlor-exo-epoxide

#### 27 polar pesticides:

- Triazines (6 comp.)
- Organophosphorus (15 compounds)
- Molinate
- Tributylphosphate
- Trifluralin
- Propanil
- Alachlor
- Metolachlor

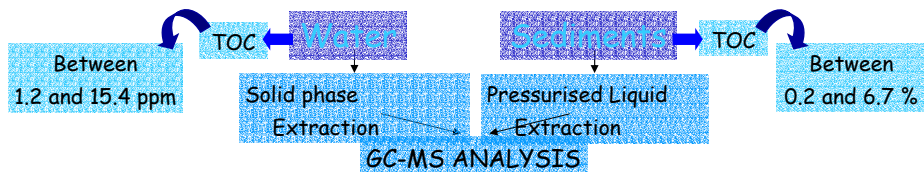
#### 16 PAHs (EPA)

### Conductives

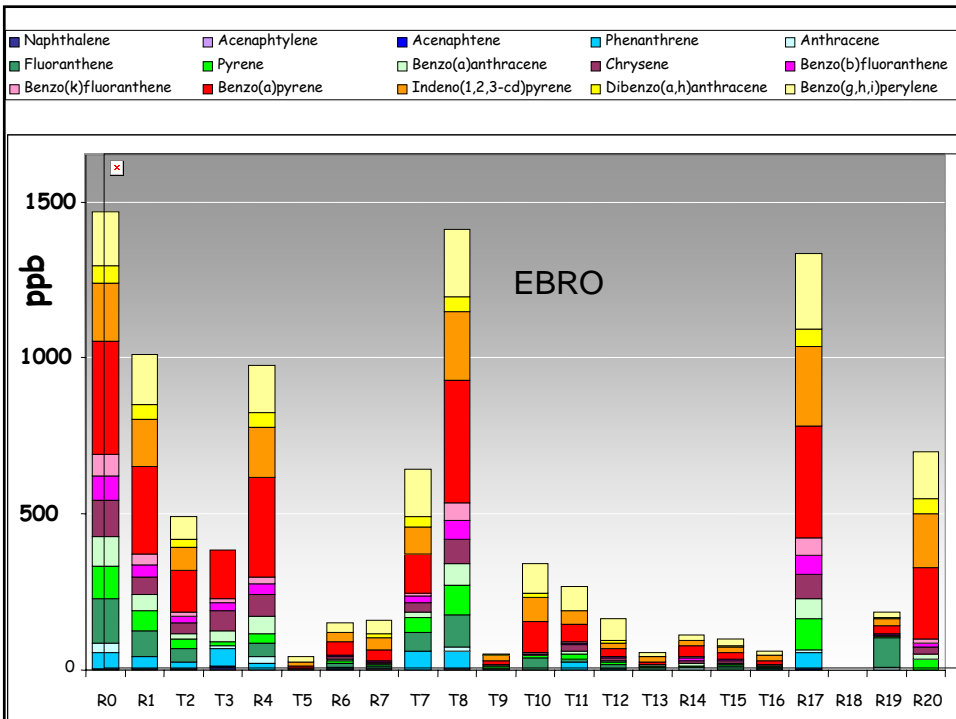
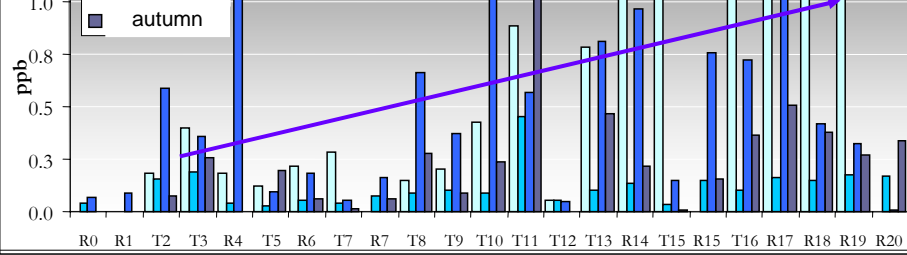
- Octylphenol
- Nonylphenol
- Bisphenol A

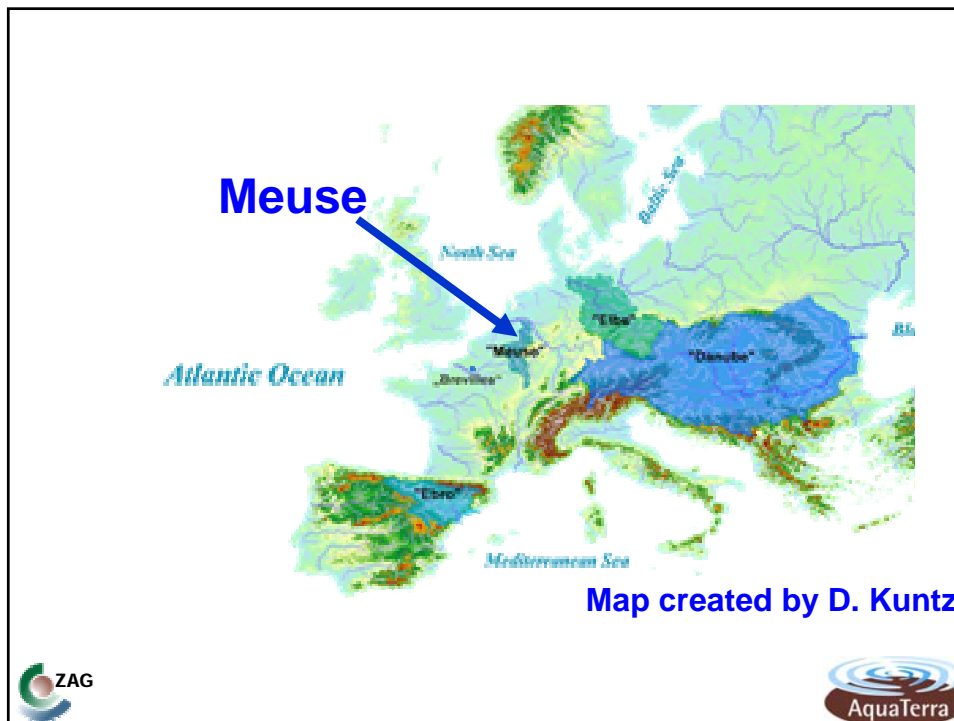
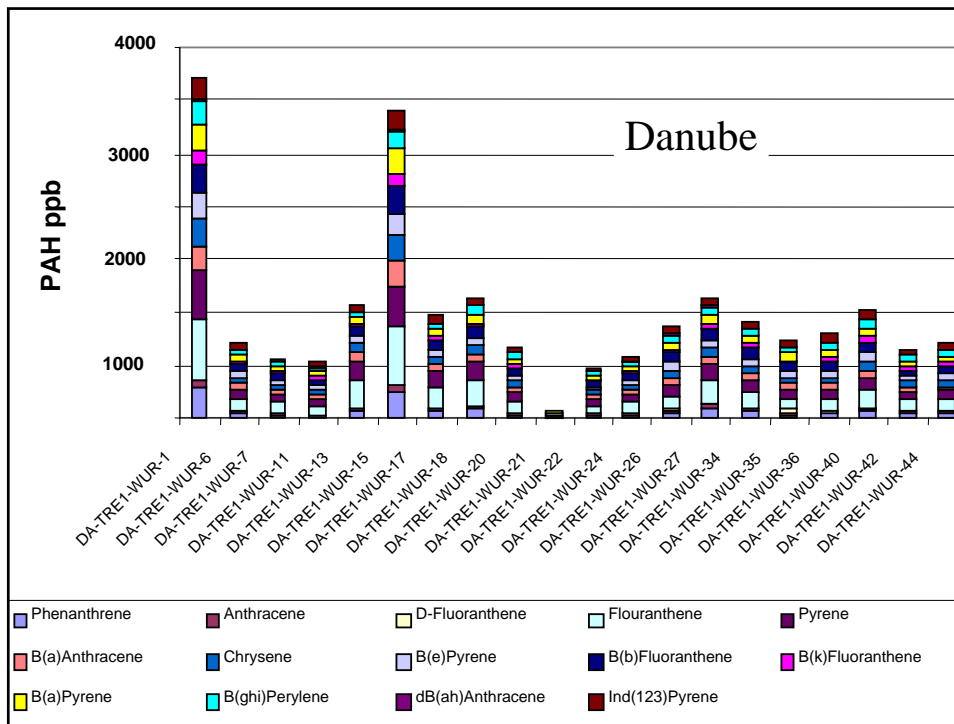


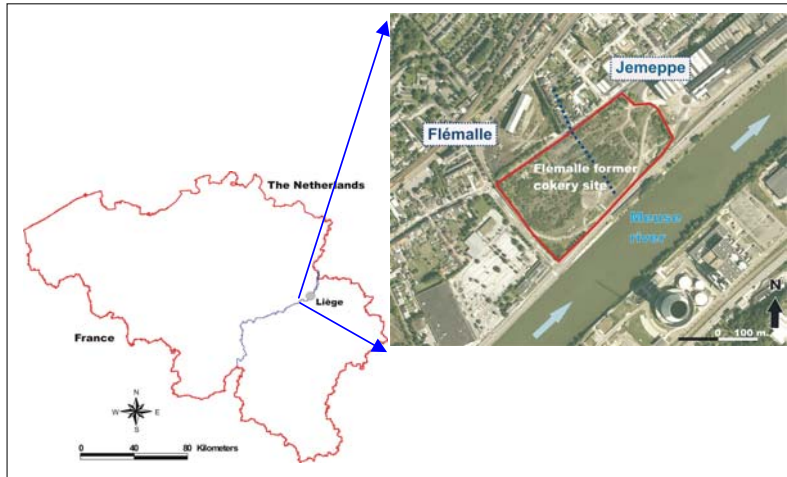
## Methodology



## Results: water-polar pesticides



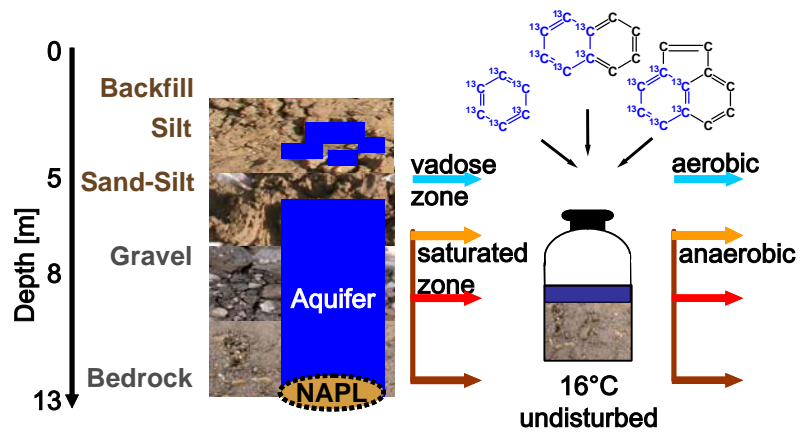




Jordi Batlle Aguilar, Serge Brouyère



## Degradation of PAH (Unine)

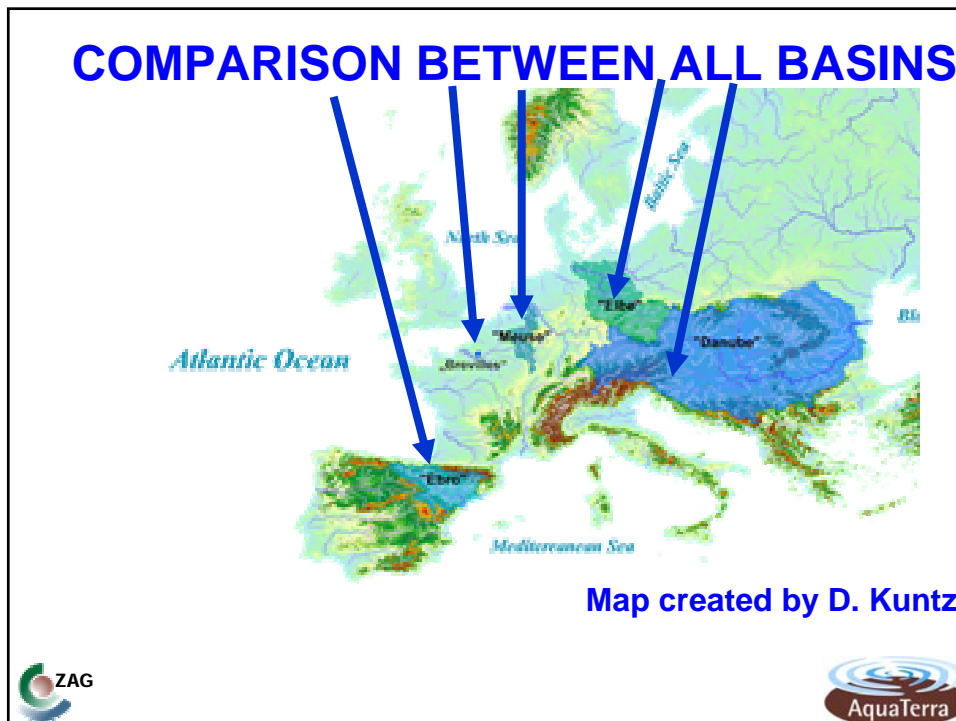
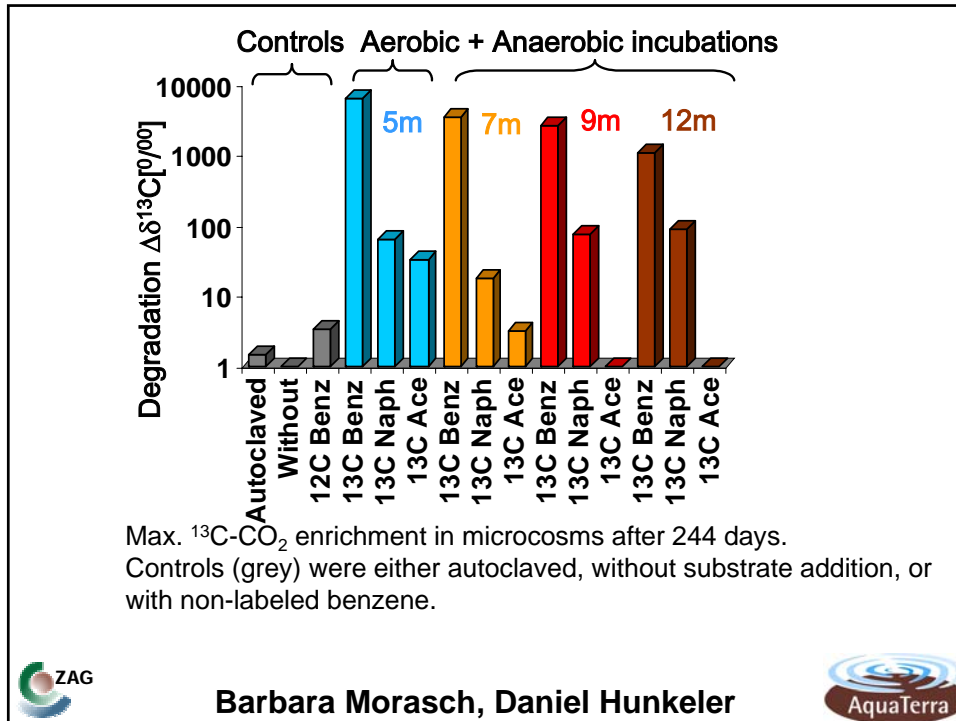


Microcosm experiment with  $^{13}\text{C}$ -naphthalene as substrate and sediment from 5, 7, 9, and 12m depth.



Barbara Morasch, Daniel Hunkeler



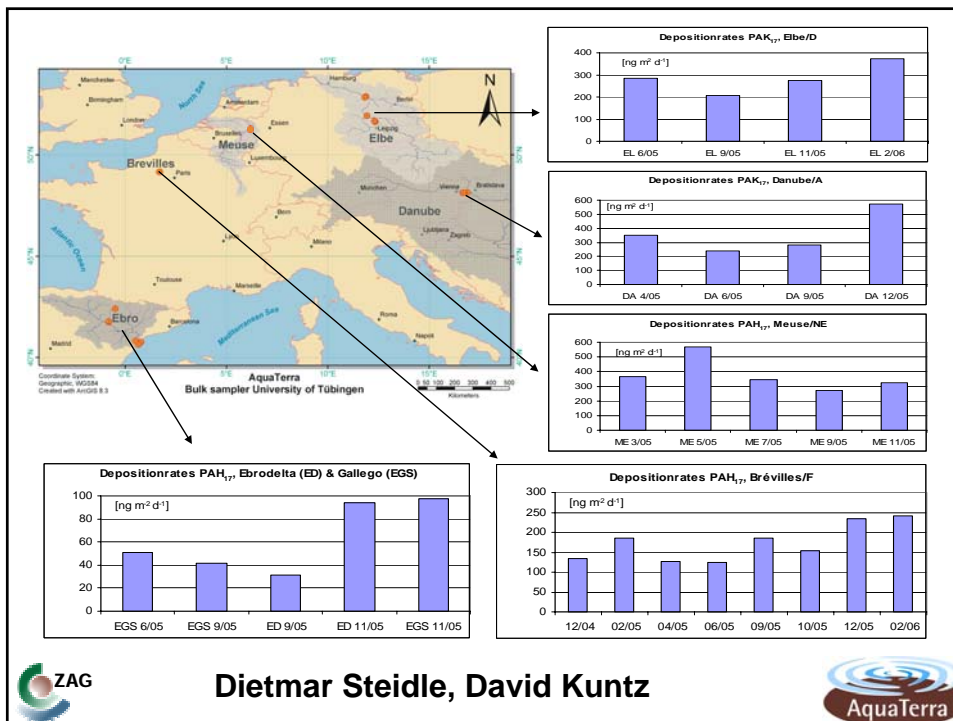




# Deposition Sampler

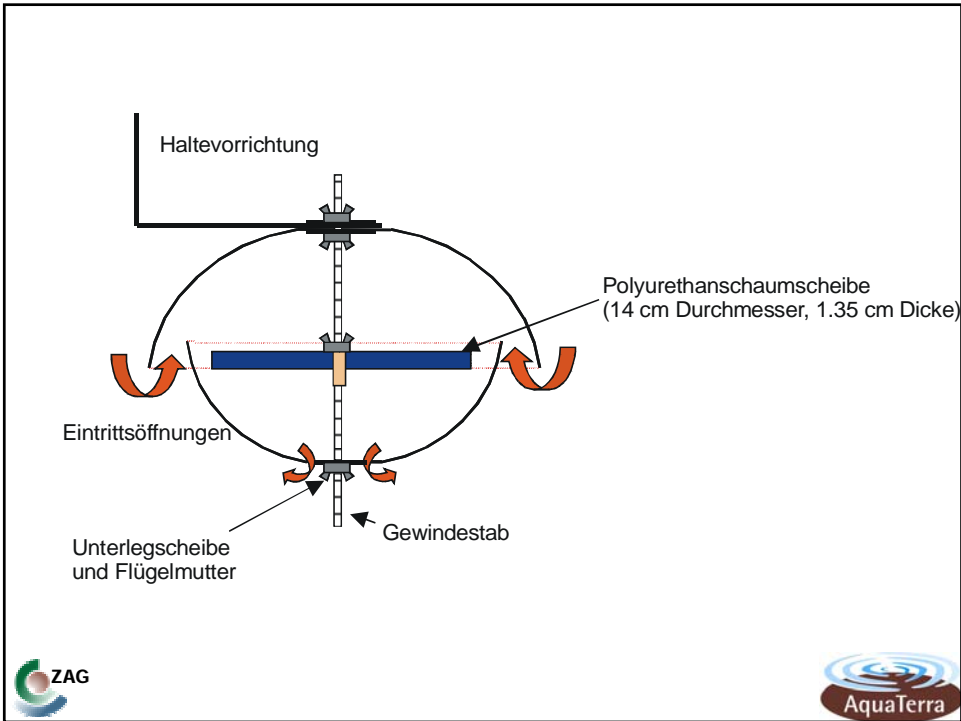
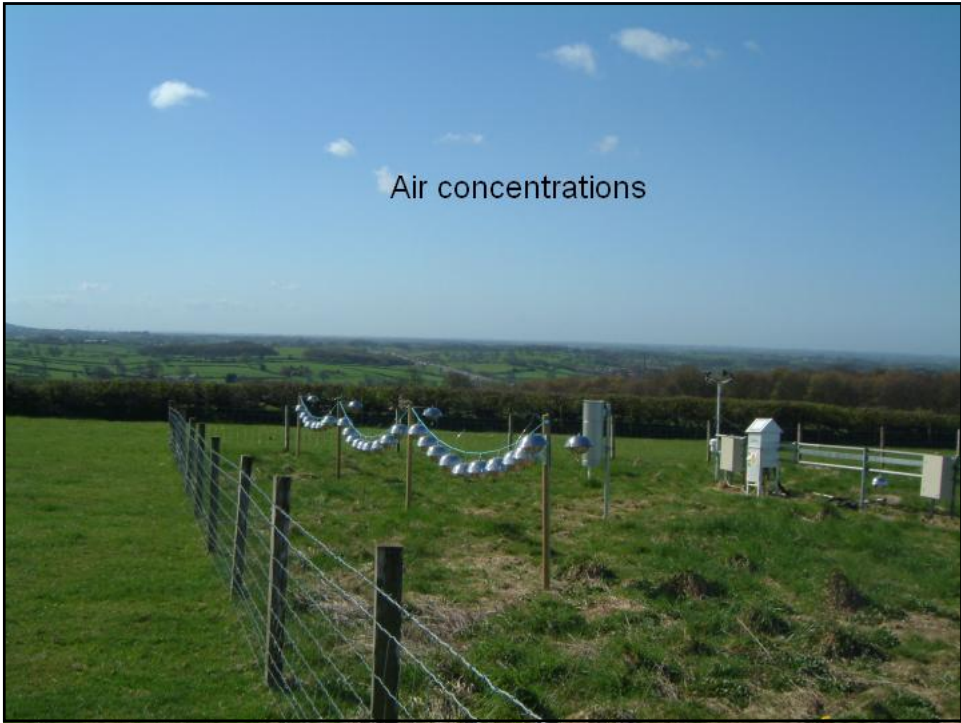


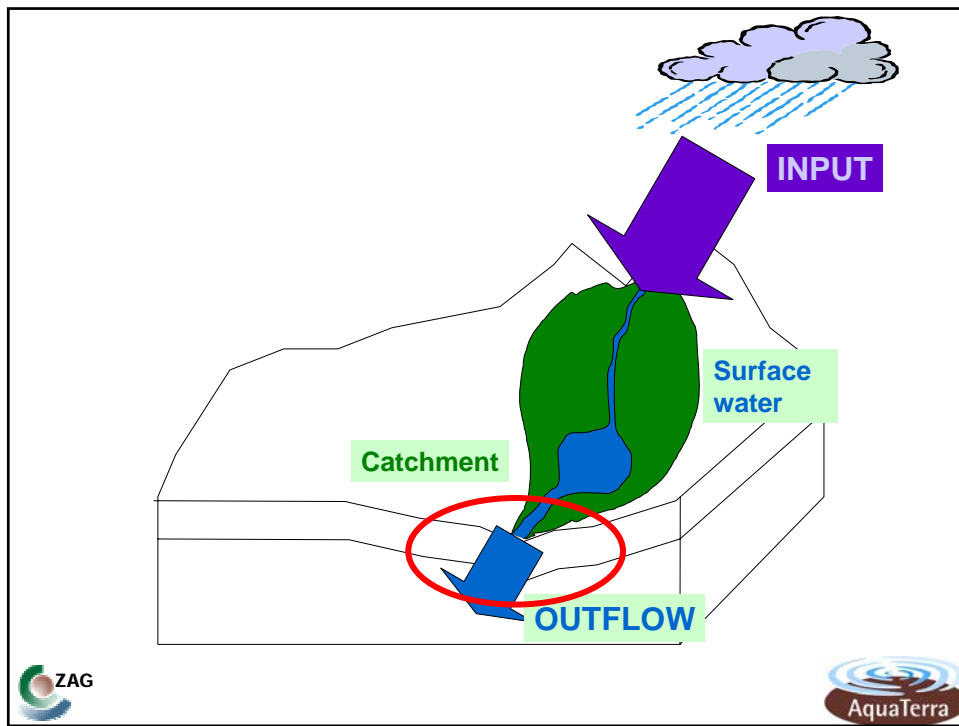
Dietmar Steidle, David Kuntz

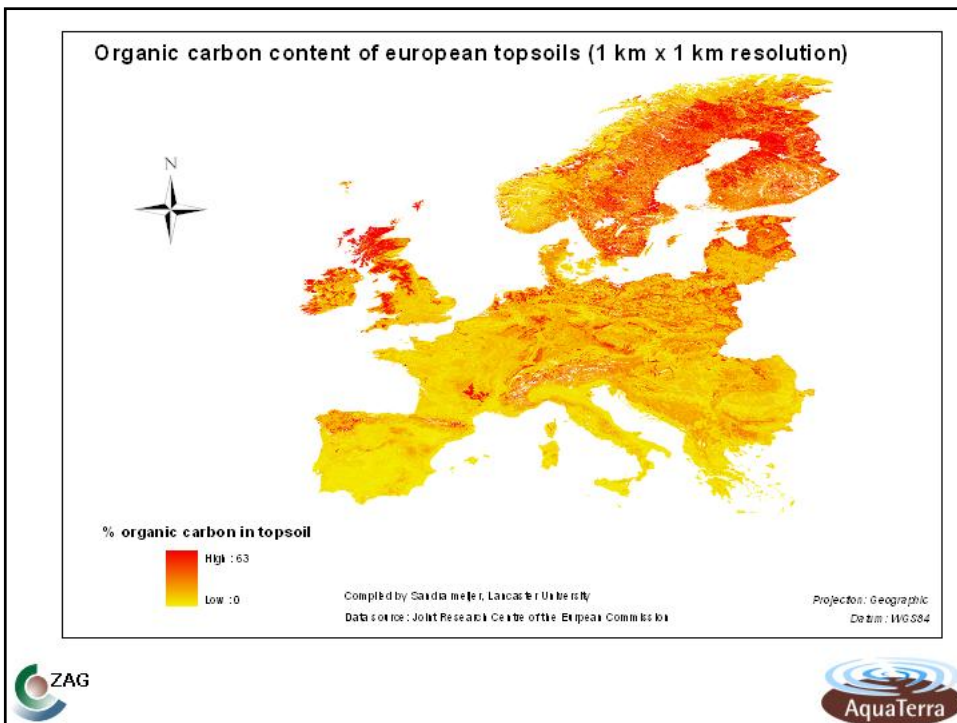


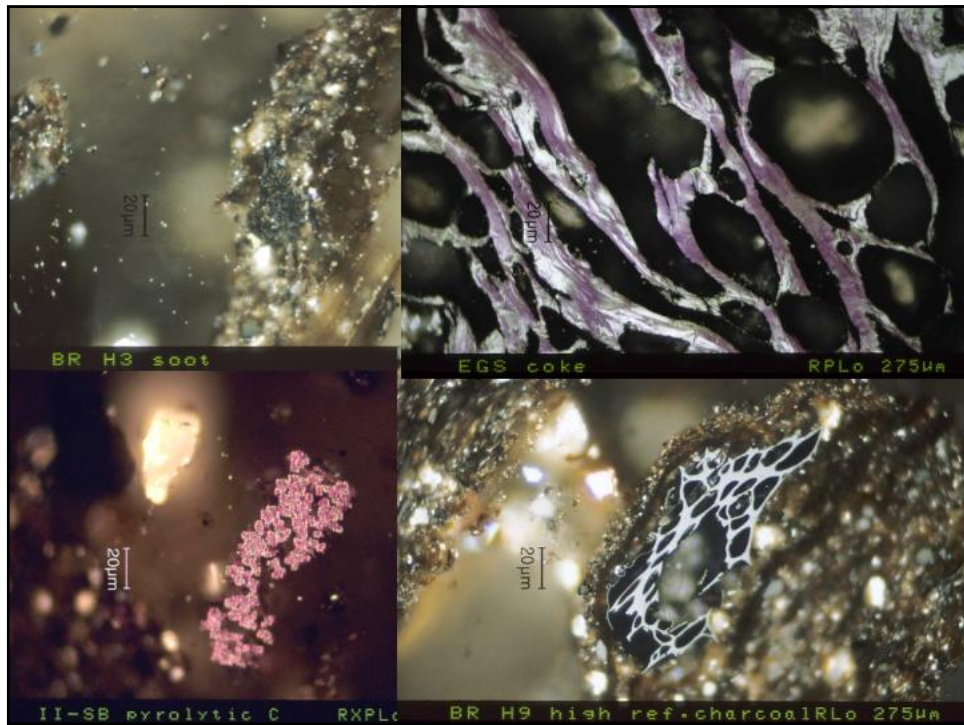
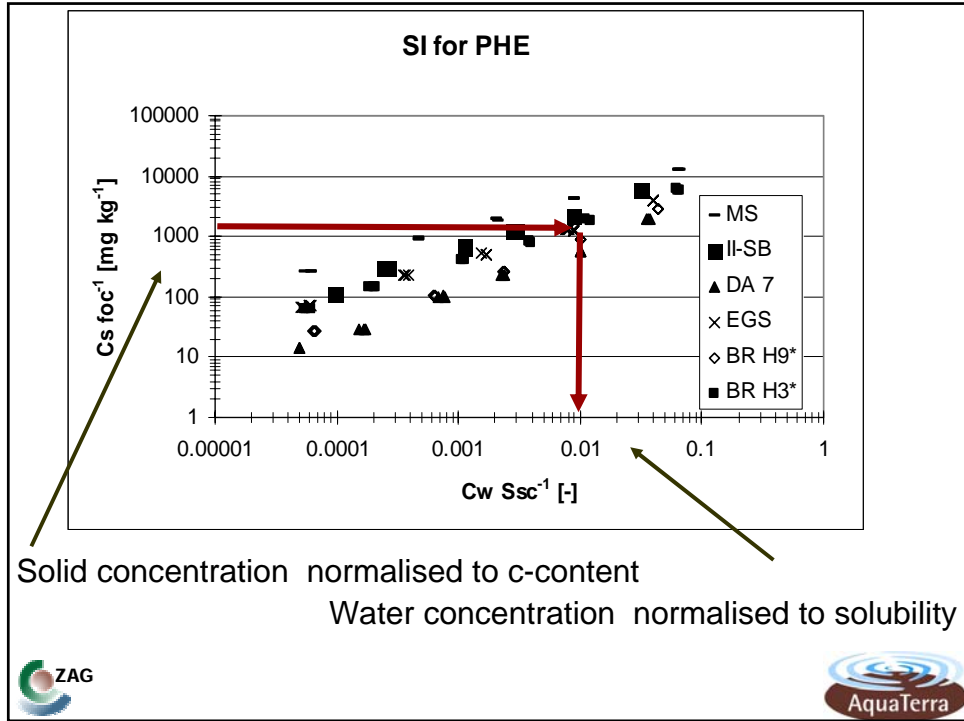
Dietmar Steidle, David Kuntz

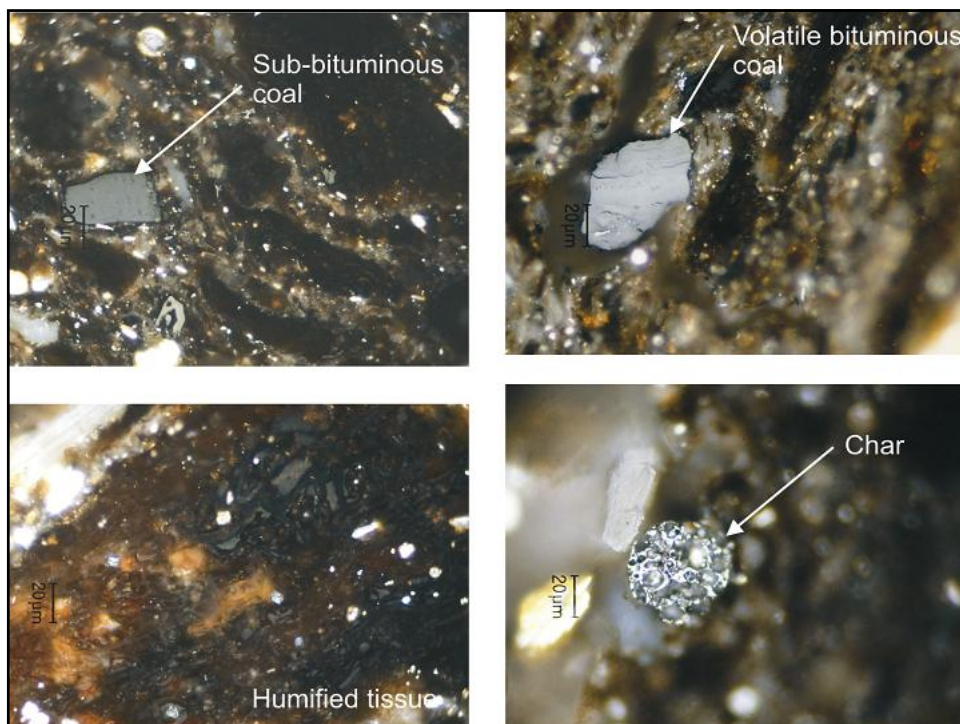










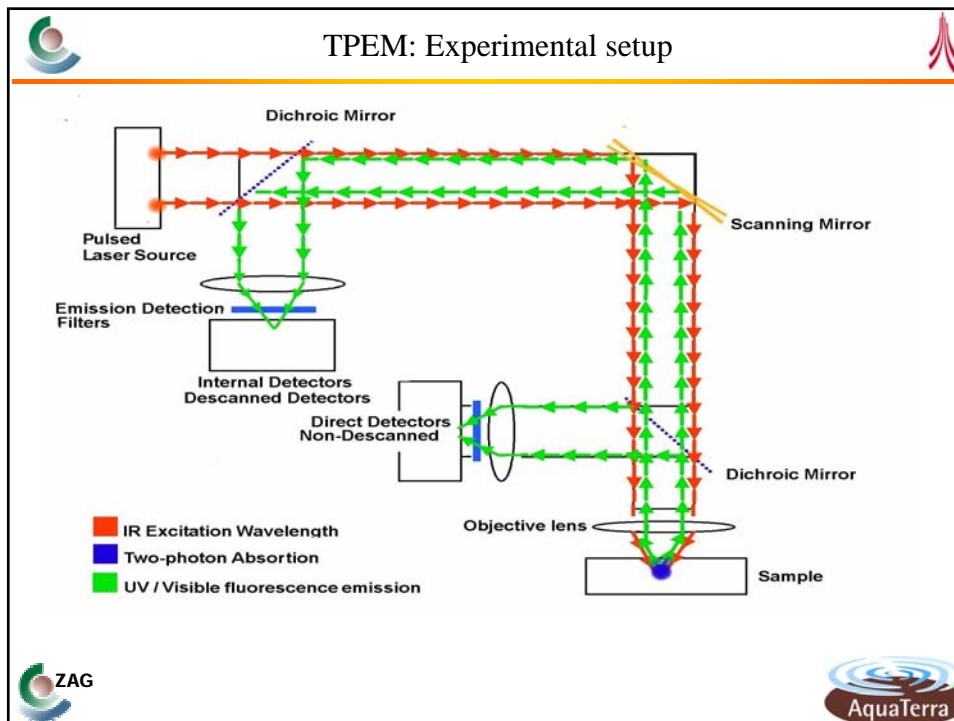
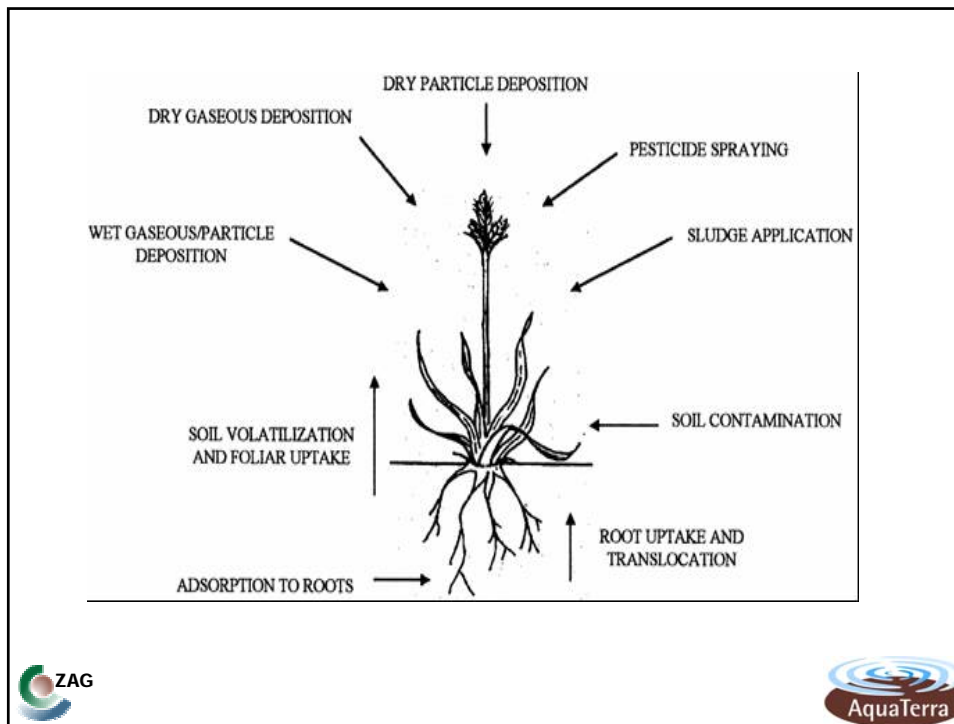


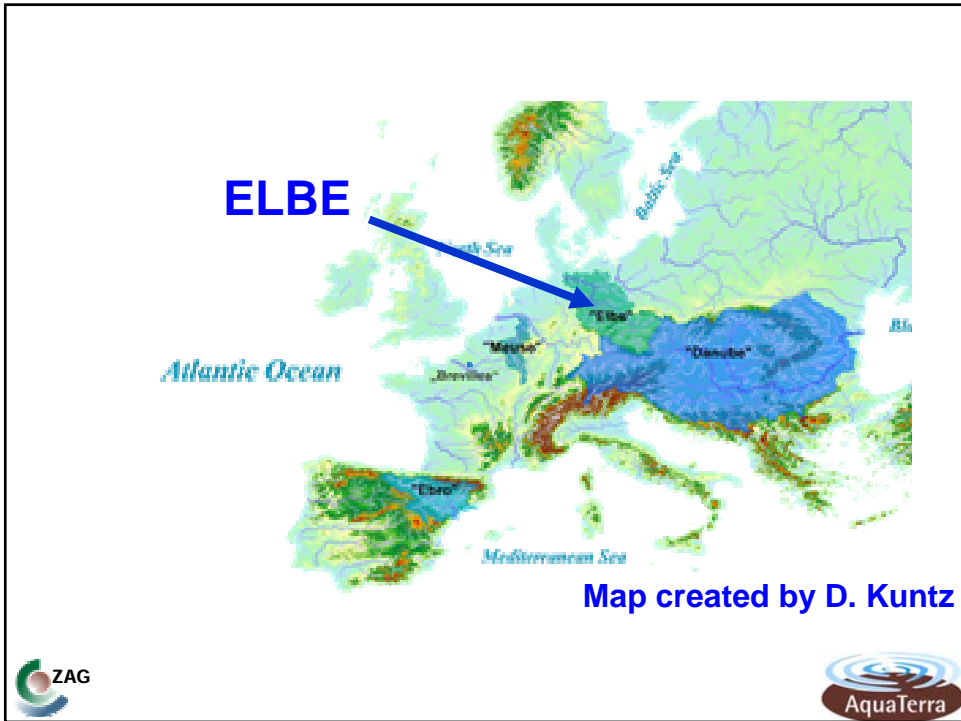
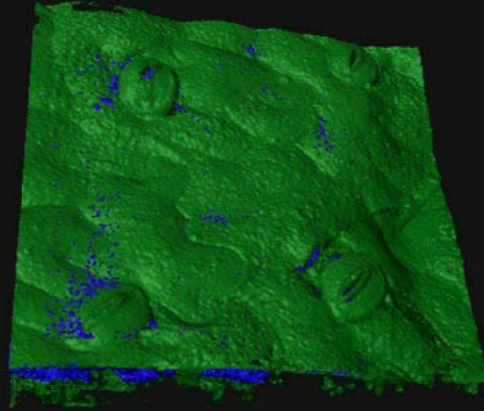
The samples are subject to **microscopic analysis** using a **Leitz DMRX microscope photometer**. Organic matter is identified and characterised using white light and UV illumination (blue-light irradiation) in incident light mode.



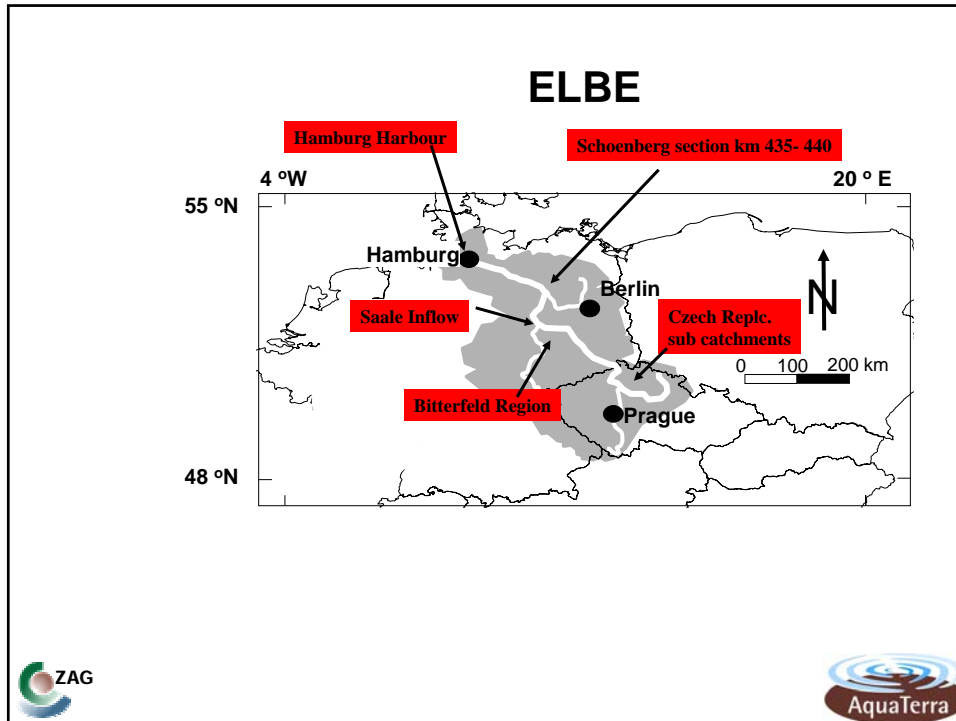
**Quantification** is carried out by a point-counting method similar to that used in coal petrography. The contribution of various constituents is expressed relative to the total volume of organic matter (vol. %).











Introduction    Objectives    Interactions    Results    Conclusions/ Outlook

Sediment traps during the flood in winter/spring 2005

**ZAG**    **Wolf von Tümpöing, Ingo Lobe, Martina Barbarowski**    **AquaTerra**



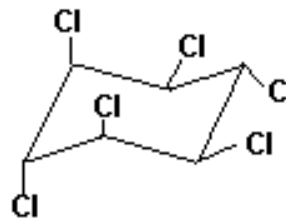
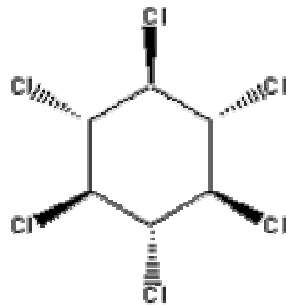
Sediment traps during the flood in winter/spring 2005



Wolf von Tümpling, Ingo Lobe, Martina Barbarowski

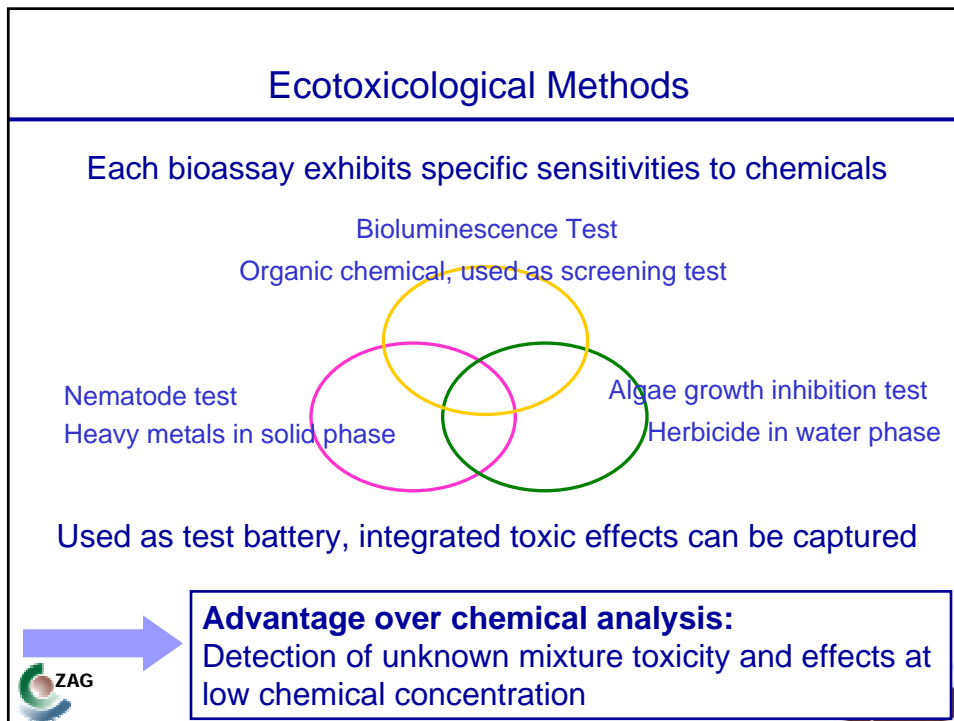
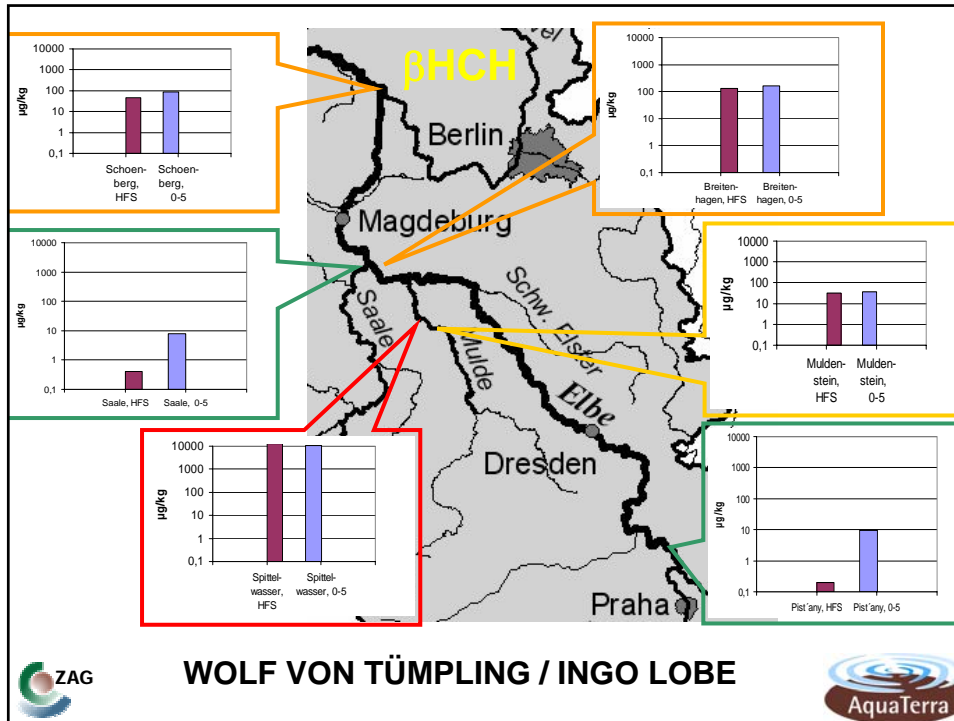


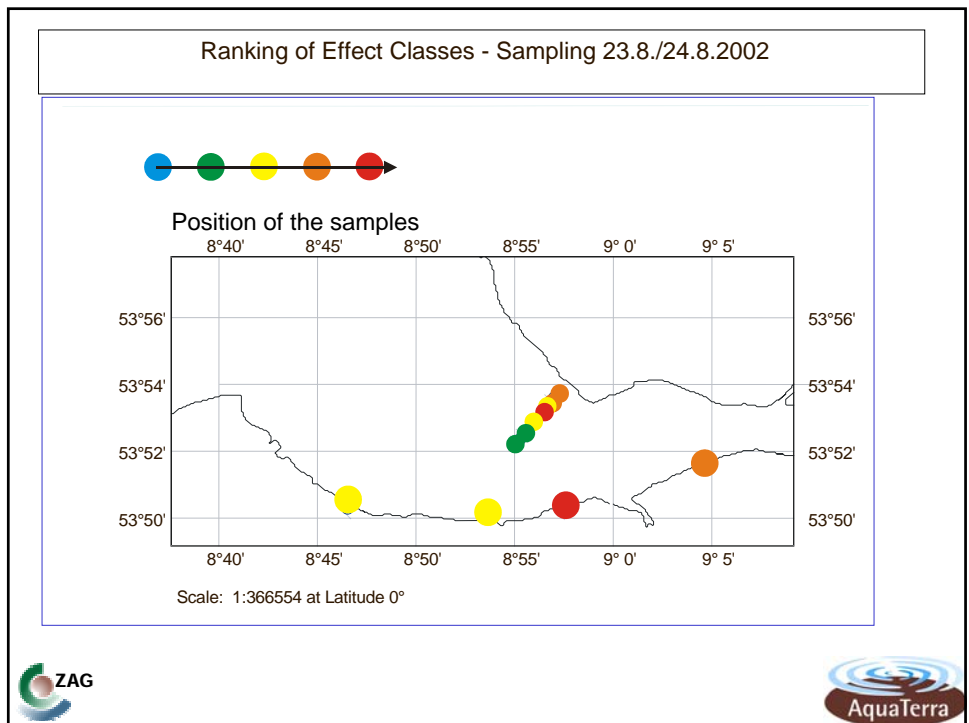
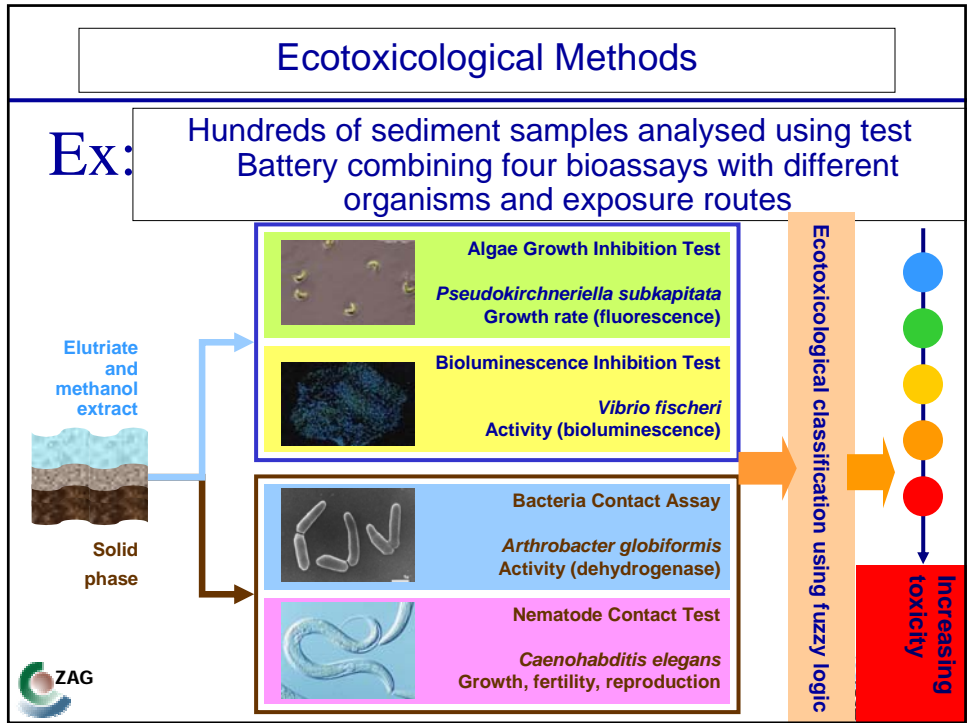
# HCH



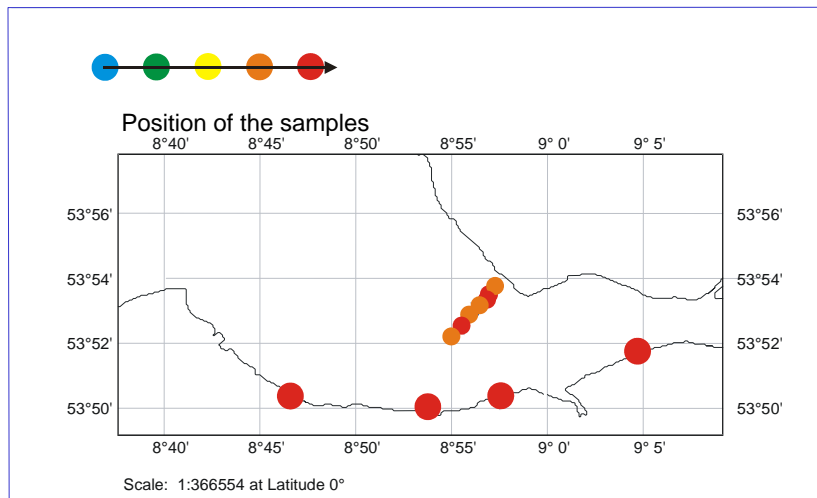
$\gamma$ -Hexachlorocyclohexan







Effect Classes of Sediments, Sampling 30.9./2.10.2002



Interlaboratory Test

Trace Analysis of Polar Pesticides and Metabolites in

Water

