Sampling of pollutants in the aquatic environment

Learning course
Banja Luka
9-13 September 2013
Aims of the Learning Course

• To understand key aspects current water policy in Europe and how this affects the monitoring of environmental pollutants.

• To understand what are priority and emerging pollutants and their environmental fate.

• To give attendees a sound theoretical knowledge of how to sample a wide range of key environmental pollutants in water, sediments and biota.

• To have a practical knowledge of how to plan and undertake a field monitoring study for key environmental pollutants.

• To have an appreciation of the quality control and quality assurance aspects of environmental sampling.
Monday, 9th September

- Introduction of presenters and participants
- Objectives and programme of the workshop
- Water policy and management in Europe
- Objectives and principles of the Water Framework Directive (WFD)
- Monitoring requirements of the WFD
- Complying with the WFD
Key objectives and topics

Monday, 9th September

- Fate of toxic compounds in the environment
- Environmental quality standards and their derivation
- Priority pollutants and river basin specific pollutants (RBSP)
- Emerging pollutants
- Assessment of ecological and chemical status under WFD
Key objectives and topics

Tuesday, 10th September

- Monitoring tools and methods for priority and RBSP
- Sampling: Traditional methods and new approaches
- Classical methods in monitoring
- Continuous methods
- Portable instruments
- Test kits
Tuesday, 10th September

• Immunochemical analysis
• Sensors
• Chemical monitoring in biota
• Biological early warning systems
• Test kits: bioassays
• Biosensors: integrated systems
Key objectives and topics

Wednesday, 11th September

- Passive sampling
- Principles of passive sampling
- Partition passive sampling
- Adsorption based passive sampling
- Passive sampling of metals
Key objectives and topics

Wednesday, 11th September

• Passive sampling in sediments
• Comparison of passive sampling with monitoring in biota
• Interlaboratory studies to assess sampling method variability
• Example from Bosnia and Herzegovina: monitoring of Bosna river
Key objectives and topics

Thursday, 12th September

• Sediment sampling
• Sediment sampling techniques
• Sample handling and analysis
• Sieving and freeze drying
• Sample for future; Retrospective
• Normalisation
• Data assessment
Key objectives and topics

Thursday, 12th September

Field exercise to demonstrate application of spot sampling and passive water sampling techniques in the river Vrbas
Key objectives and topics

Friday, 13th September

- Introduction to QA/QC in environmental sampling
- Control charts in environmental sampling
- Questionnaire filled in by participants
- Wrap up and closure of the course
Practical arrangements

• Both presenters want an interactive Course – so everyone can learn as much as possible during the week.

• The speed of the Course will be driven by the attendees – it is not vital we cover every topic in full detail as each person will have a complete set of talks on the Learning Course CD to look at afterwards.

• Please ask questions during the session as they occur rather than at the end – you may be helping the whole group to learn more this way!
Practical arrangements

• There will be some ‘questions and answers’ during the Course to allow you to reflect on the knowledge learned in each session.

• There will be a trip to river field site for you to gain practical understanding of monitoring techniques discussed in the classroom.

• Both presenters will be available at the end of each day to discuss topics and further questions you may have.

• Both presenters will be happy to answer further questions after the Learning Course should you have them. This is best undertaken by e-mail.

  Graham Mills: graham.mills@port.ac.uk
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Let us all have a good and fulfilling week together where we can learn together and enjoy each others friendship
Any questions so far?