

# ConSoil 2010

## Soil, groundwater and sediment management

### Conference Themes & Keywords

#### Themes:

1. **Restoration concepts and technologies**
2. **New functions of the subsurface**
3. **Sustainable management of land use and the subsurface: concepts and policy**
4. **Management of contamination at the regional scale**

Subthemes and keywords per theme

#### 1 Restoration concepts and technologies

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##### **1.A Environmental footprint**

- Green remediation
- Reduction of environmental footprint of remediation activities
- Natural soil quality regulation in wetlands
- Cradle to cradle
- Soil and sediments as recourses
- Decision support tools for choosing sustainable solutions (e.g. LCA)

##### **1.B Site investigation: Monitoring & Screening**

- Strategies & Technologies
- On sites and on larger spatial scale
- Heterogeneity and "hot spots"
- Physical and chemical measurements and analytics
- Sampling methods and pre-treatment
- Geotechnical and geohydrological investigations
- Techniques for forensic soil investigation (age and origin of contaminant)
- Monitoring and risk assessment

##### **1.C Remediation Concepts & Technologies**

- Isolation: physical, geohydrological
- Stabilization/solidification/immobilization
- In situ treatment: e.g. thermal, soil vapour, extraction, flushing, chemical, bioremediation, phytoremediation, etc.
- Groundwater treatment: physical, chemical, biological, etc.
- Permeable reactive barrier
- Natural attenuation
- Ecological engineering
- Management of excavated soil
- Costs, communication and acceptance
- Combination of methods ('treatment trains')

##### **1.D Complete cases of restoration of sites**

- (Former) mining area
- Harbours

- Brownfields
- Landfills
- (Former) gasworks
- Complex (former) industrial sites
- (Former) military sites
- Combination of methods
- Other

### **1.E Sediment management and remediation (aquatic environment)**

- Sediment remediation in surface water systems
- Sediment management in rivers and lakes
- Impact of sediment quality on soil and water quality
- Technologies, concepts and policy
- Risk-based solutions
- Large scale application of sediment remediation methods
- Cases

## **2 New functions of the subsurface**

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- Cold/heat storage
- Geothermal energy
- CO<sub>2</sub>-storage
- Subsurface waste storage
- Carbon sinks
- Water storage
- Combined and new functions

## **3 Sustainable management of the subsurface: concepts and policy**

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### **3.A Policies on soil-water systems**

- Governmental and industrial policies
- EU strategy/policy and related directives; international dimension
- Science-policy interfacing; bridging the gap between science and policy/management
- Prevention
- Soil quality objectives, target values and policy goals
- Policy evaluation
- Social and economic aspects of soil quality, assessment and remediation
- Stakeholder participation
- Integration/harmonisation of policies

### **3.B Functions & Values of soil-water systems**

- Multi-functional use of the subsurface
- Soil requirements for increased number of functions in the subsurface
- Impact of subsurface functions on soil and groundwater
- Geo-ecology, geo-diversity, biodiversity
- Ecological status and functioning
- Water cycle
- Filter-, buffer- and transformation capacities
- Groundwater management
- The valuation and appreciation of the subsurface
- Changes in land use, soil use and climate change
- Soil-water-systems and the food chain
- Sustainable land use
- Ecosystem services

### **3.C Fate, Risks & Impacts of contaminants**

- Ecological Risk Assessment (ERA)
- Exposure modelling and pathways
- Transport and fate of contaminants
- Speciation, bioavailability, leaching
- Delayed effects, chemical time bombs
- Biodegradation products/metabolites
- Target and trigger values
- Quality assurance and standards
- Groundwater quality with respect to land use
- Bioassays, target organisms
- Uncertainties assessment
- Modelling

## **4 Management of contamination at the regional scale**

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- Concepts for regional integrated soil and water management
- Regional groundwater quality issues
- Policies: national, EU, other regions
- Industrial case studies
- Regional soil and water quality in urban areas