



25 April 2013

# Positive developments?



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**Precariousness?**

**Potential for improvement?**



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**Promising directions?**



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## **Research challenges**

### **Water quality at the GW – SW Interface**

- » Appropriate measurement challenges
- » Multi-level samplers to catchment scale
- » Processes – adequate resolution of temporal dynamics
- » Translating research into practitioner / regulatory practice



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**Scientific Research**



**independent of political thoughts and  
public opinion**



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## » Human activities = stress factors

- » Industry

- » Agronomy

- » (Household activity)

groundwater ↔ surface water quality

## » Remediation techniques

- » “Classic”

- » Good old digging

- » Dilution = solution

- » P&T

- » “Innovative” techniques:

- » Cf. session 8



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- » Human demands = optimal and sustainable use of the subsurface
  - Urban groundwater systems
    - » Drinking water supply ↔ regional contamination
    - » Heat content
  
- » Regulatory challenges
  - » Dealing with licences – pragmatism
  - » Impact of human activities – ecological systems
  - » Risk management regulation – concentration / mass flux
  - » Public opinion
  - » .....



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- » What current societal activities (perhaps motivated by sustainability) have potential long-term, detrimental groundwater impacts. (a case of “unknown” unknowns)
- » How can we better leverage our resources in cooperative efforts?
- » How can we convince funding and/or managing agencies about the need for long term data that may not have driven short term benefits?