

# Group 4

Temperate Agricultural Regions  
(Data rich)

# General Discussion

- Definitions of data richness/poverty
  - Canada is both
  - Britain good example of data richness
- BFI - HOST
- Agricultural basins
  - Tend to have some information
  - Changed flow regime
  - Hydrologists have to incorporate anthropogenic changes in models (i.e. irrigation)

# Types of models

- Differing types of models at differing space/time scales
  - Process-based small-scale models
    - Bottom-up approach
    - Useful for understanding processes
  - Large-scale, top-down models
- Need both types
- Meta-models can regionalize responses of small-scale process models

# Model development

- Principle of parsimony
  - Start with simplest possible model
  - Only add what is required
  - Objective is to build a minimally-complex model, which describes system

“Perfection is achieved, not when there is nothing left to add, but when there is nothing left to remove.”

-- Antoine de Saint-Exupery

# Agricultural modelling

- Agricultural catchments are disturbed
  - Abstractions, discharges, & storages are part of modified flow regime
- Data on abstractions may be lacking
- Can abstractions be regionalized?
- UK method is to estimate probable uptake as a fraction of maximum allowed

# Data-rich hydrology

- Is precipitation data ever sufficient?
  - Probably not!
  - Required gauge density depends on climate regime
- Water quality data may be lacking
- Not all data collected is readily available
  - 15 minute flows → daily values
- Data management is important
  - Quantity of data can swamp users
  - Issue of ability to QA/QC data

- For a river crossing a border, the degree of data-richness may differ widely across the border
- Data management/accessibility may be limited by commercial and/or political issues