



Groundwater Model Development

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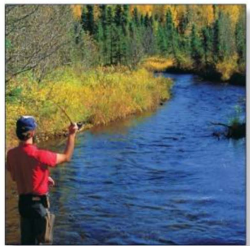
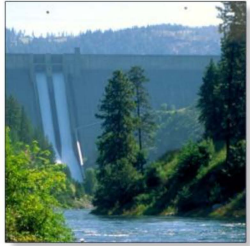
Outline

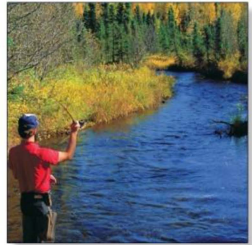
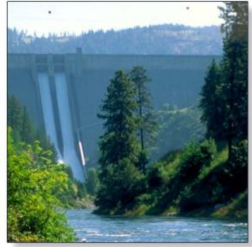


- Model Purpose
- Select Computer Code
- Discretize
 - Time
 - Space
- Water Budget
 - Inflows
 - Outflows
- Populate Model
 - Water Budget
 - Physical Properties
- Test-Change-Test-Change...

Ground Water Model Purpose

- Contaminant transport
- Water supply
- Surface water – groundwater interaction
- Scientific investigation



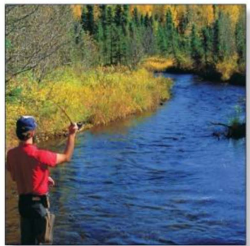
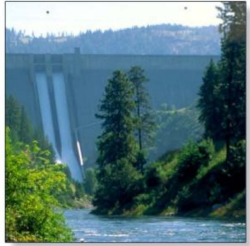


Ground Water Model Purpose

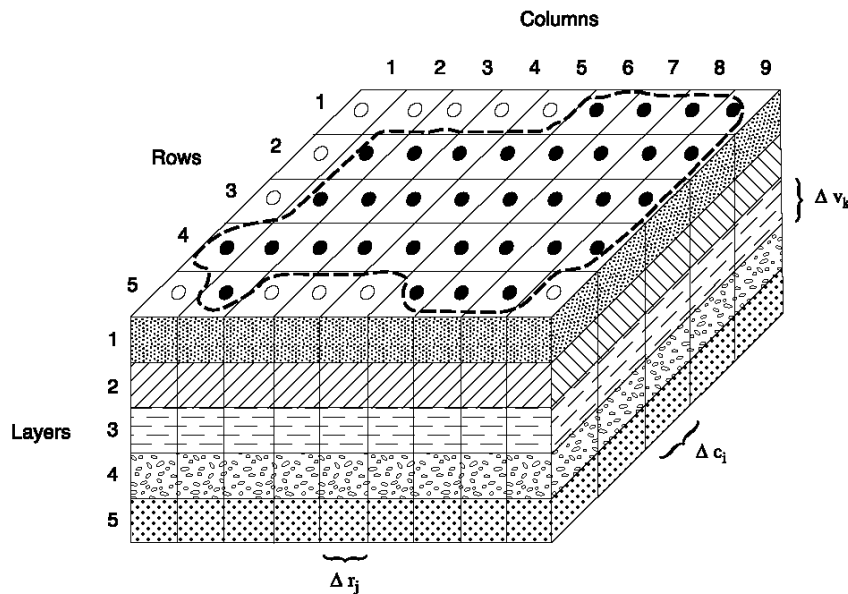
- Contaminant transport
- Water supply
- Surface water – groundwater interaction
- Scientific investigation

Model Code

- USGS MODFLOW
 - Free from USGS
 - Used since 1988
 - Widely accepted

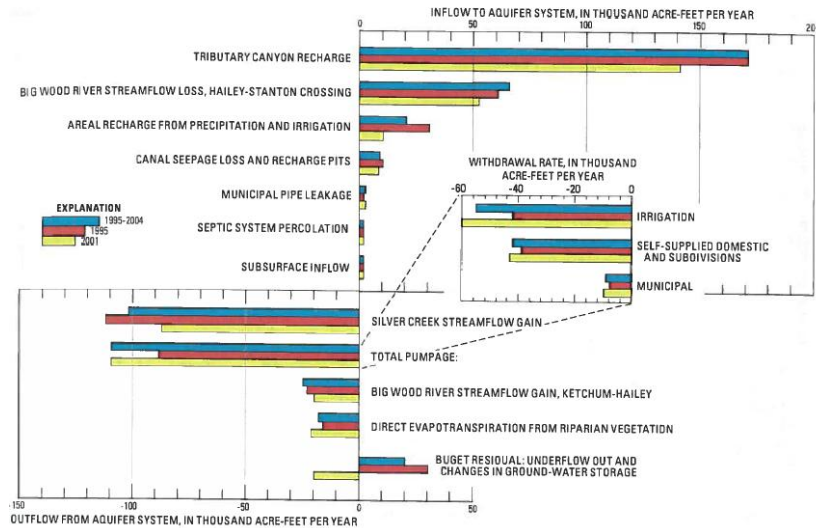


Discretize



- Time
 - Annual
 - 6 month
 - 3 month
 - 1 month
 - Daily
- Space
 - 1 mile x 1 mile
 - ½ mile x ½ mile
 - ¼ mile x ¼ mile

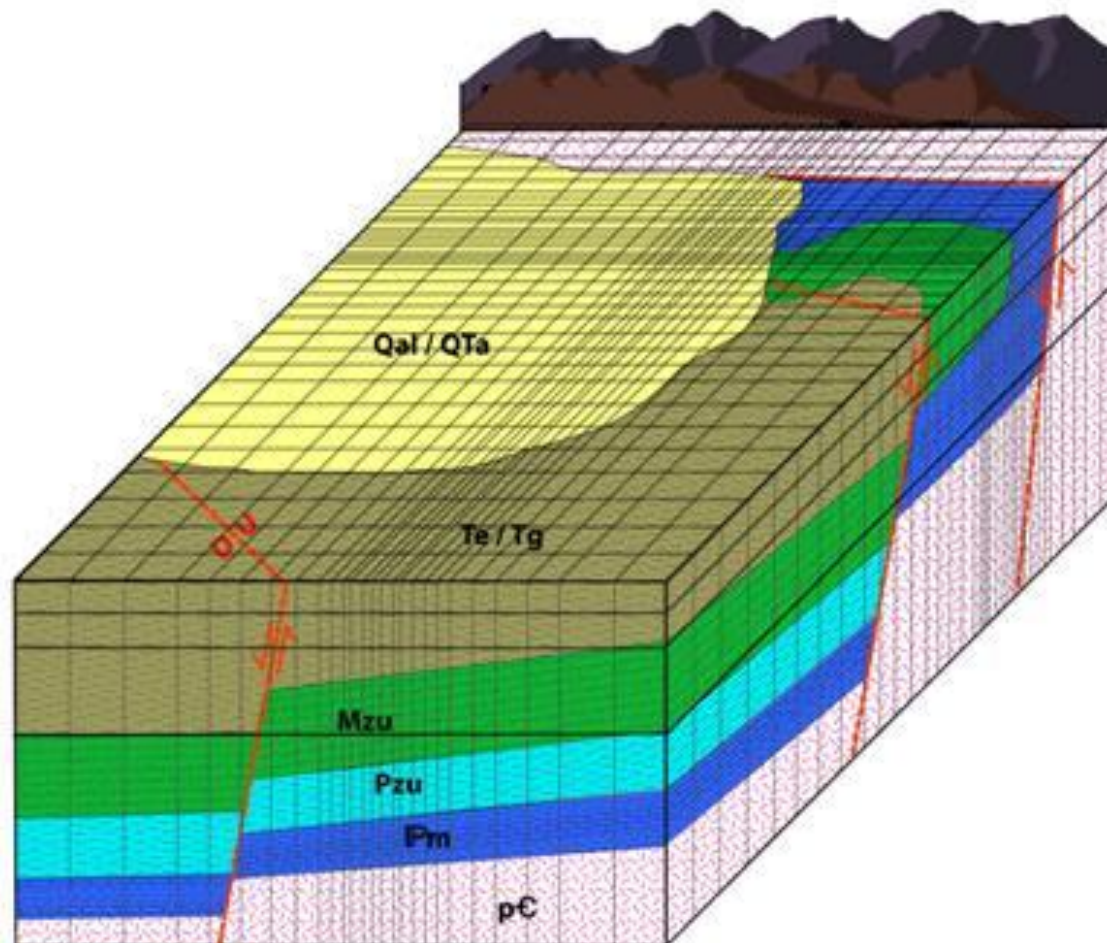
Water Budget



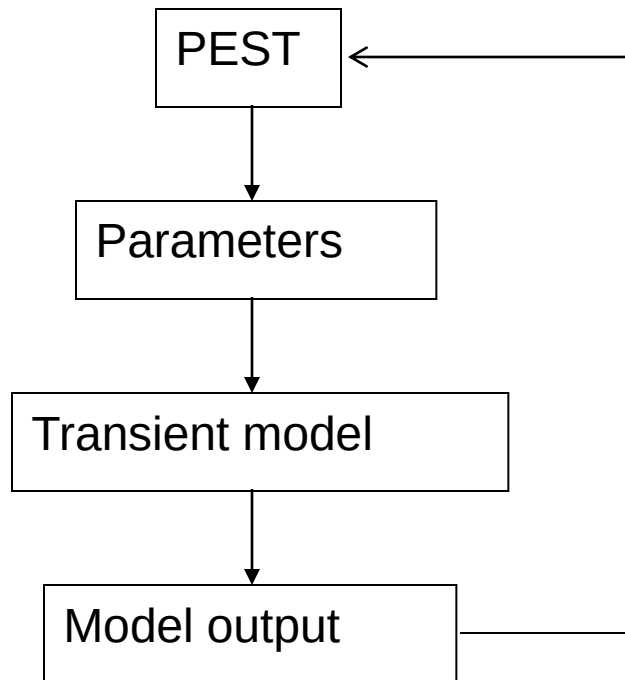
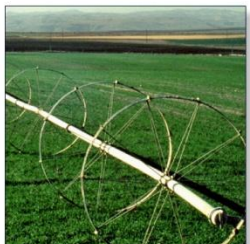
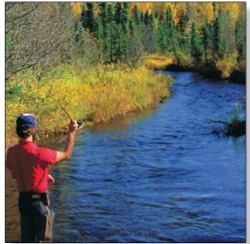
From Bartolino (2009)

- Catalog all aquifer inflow and outflow
 - Agricultural
 - Municipal
 - Industrial
 - Natural
 - Tributary basin
 - Precipitation
 - Wood River outflow
 - Silver Creek outflow

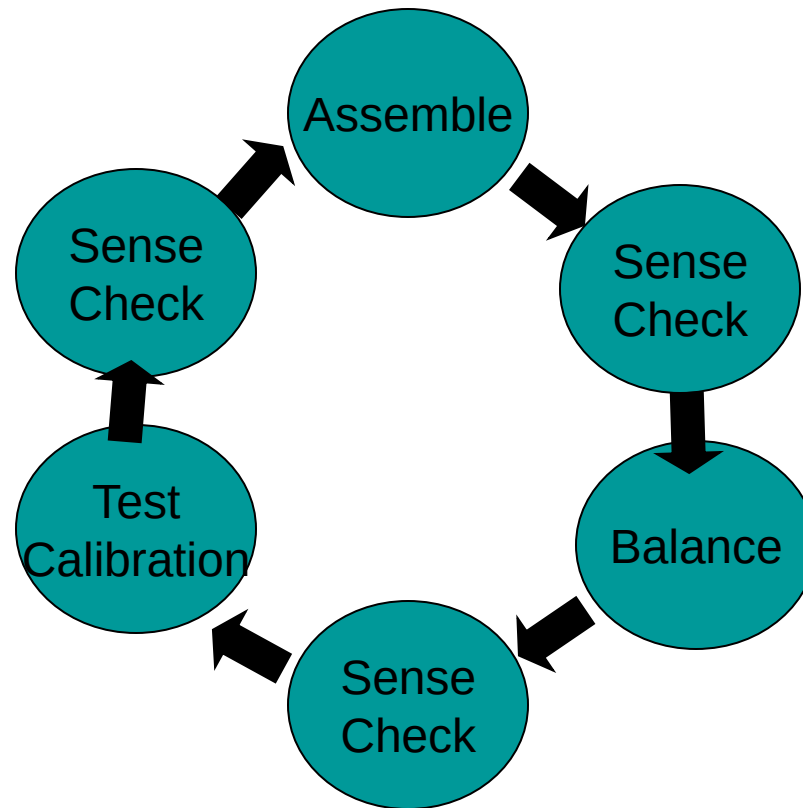
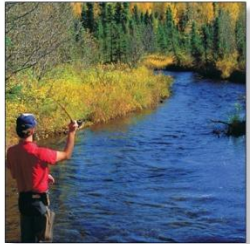
Populate Model

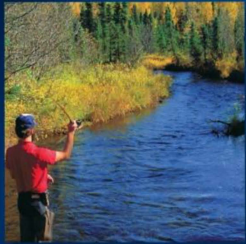


Automated Parameter Estimation



Assemble & Test Budget





End

