Historic observation targets

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Context
The modeling process

- Define problem
  - Literature review
  - Preliminary analyses
  - Data collection

- Develop conceptual model
  - Processes/budget
  - Boundary conditions
  - Hydrogeologic framework
  - Data collection

- Develop mathematical model
  - Choose model code
  - Choose how to represent processes and boundary conditions
  - Construct the model

- Calibration
  - History matching
  - Sensitivity analysis
  - Data collection

- Assessment of problem using model

- Project completion
  - and objectives based on simulation results

After Reilly (2001) TWRI 3,B8
Why?
‘Reality Check’

Observation data:
- *Not* for defining model structure
- *Not* for defining boundary conditions
- History-matching (calibration)
Hydraulic heads
Hydraulic heads
Temporal head differences
Temporal differences in heads

Head, in feet

Temporal differences in heads
Temporal differences in heads
Vertical head differences
Vertical head difference

Head, in feet


2616  2618  2620  2622  2624
Vertical differences in heads

Number of well pairs vs. Number of water level differences
Vertical differences in heads

![Graph showing total number of vertical head differences vs. well pair number. The graph starts near the origin and shows a curve that increases as the well pair number increases, approaching a maximum value.]
Vertical differences in heads
Vertical differences in heads

Number of well pairs

gap

1-2 | 1-3 | 1-4 | 1-5 | 1-6 | 2-3 | 2-4 | 2-5 | 2-6 | 3-4 | 3-5 | 3-6 | 4-5 | 4-6 | 5-6
Vertical differences in heads
Vertical differences in heads
Drain Flux
Drain discharge

USGS 13210824 N MIDDLETON DRAIN (MILL SLOUGH) AT MIDDLETON ID

DAILY Discharge, cubic feet per second

- Daily mean discharge
- Period of approved data
- Estimated daily mean discharge
- Period of provisional data

May 2019 to Nov 2020

science for a changing world
Lake Lowell Flux
Lake Lowell water budgets from Boise Project BOC

ET and seepage were lumped – ET calculated from water area and met data
- Seepage
Others?
Others??

Calibration is iterative process

May add others if needed

River fluxes

Temporal differencing flux observations

Spatial differencing flux observations

Longer term trends
Thanks for listening!