Contouring dataset

• Water Levels in 242 wells
  • Screened in model layers 1 and/or 2

• Additional Hydrologic Information
  • Boise River
    • 22 points from Lucky Peak to Parma picked from DEM
  • Drain gages
    • Datum from USGS

• Wells with no trend in well data per Mann-Kendall test for trend
Trendless Water Levels

![Graph showing trendless water levels with seasonal and fall trends marked.](image-url)
Drought and aquifer level state

- Low
  - Spring 2005
- Normal
  - Fall 2001
- High
  - Spring 2012
Empirical Bayesian Kriging

- Automated selection of variogram parameters (range, nugget, sill)
- Accounts for uncertainty of variogram selection (error typically underestimated in other methods)
- Corrects for trends in data
- Multiple variograms estimated based on subsets of data.
- Predictions use variograms simulated from all subsets to which neighboring points belong
- K-Bessel Detrended variogram model with empirical data transform used
Low: Spring 2005
Mid: Fall 2001
High: Spring 2012
Spring 2017
Middle vs Low
Middle vs High
Observations

• Flow is towards the Boise River north of the New York Canal and towards the Snake south of the New York Canal/Lake Lowell Area
• Water table fluctuations are generally minimal with exception of SW and SE Boise or Payette/Boise divide.
• Standard Error maps provide a sense of uncertainty in the prediction
On the optimal selection of interpolation methods for groundwater contouring: An example of propagation of uncertainty regarding inter-aquifer exchange

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