



# October Calibration Run

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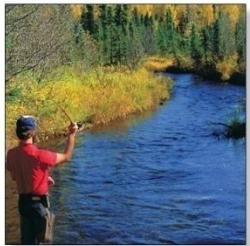
Presented by Allan Wylie, IDWR

October 1, 2015



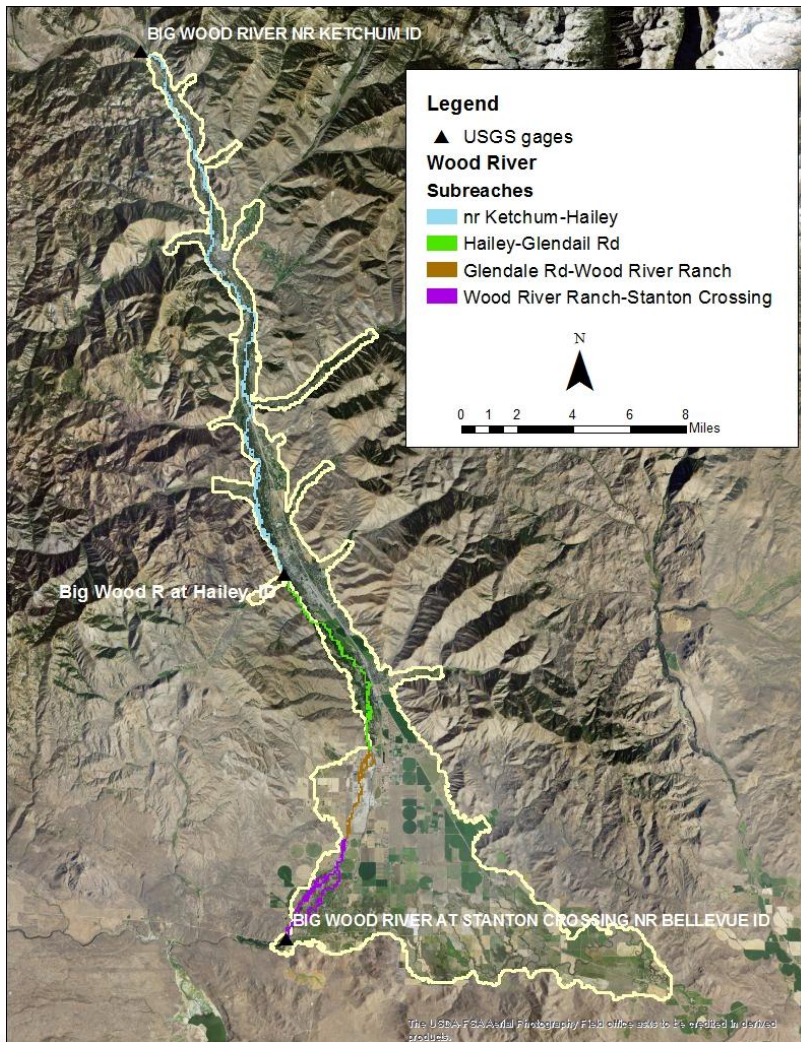
# Important Changes

- Added drains with elevations set to land surface in Cove Cr and Greenhorn Gulch
  - target discharge set to 0.0
- Set maximum tributary underflow to 20% of average annual precipitation within the basin
- Set kriging limit for Sy to between 0.10 to 0.30
- Adjustments to river stage in Wood River Ranch to Stanton Crossing reach



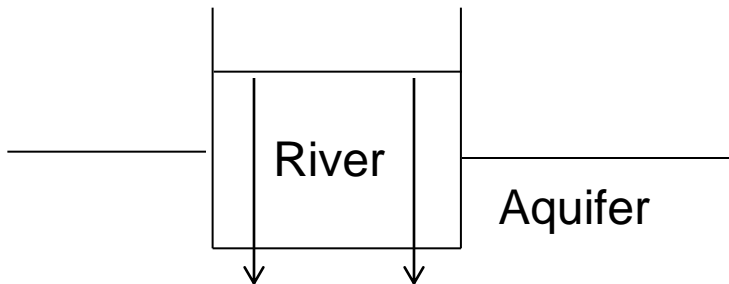
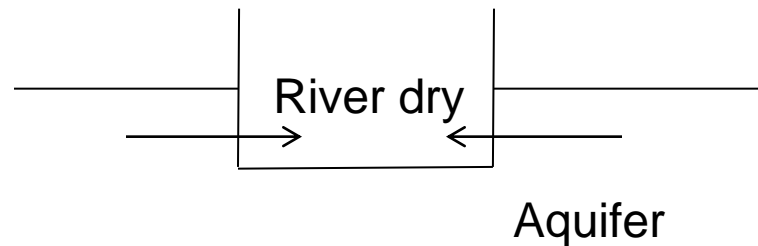
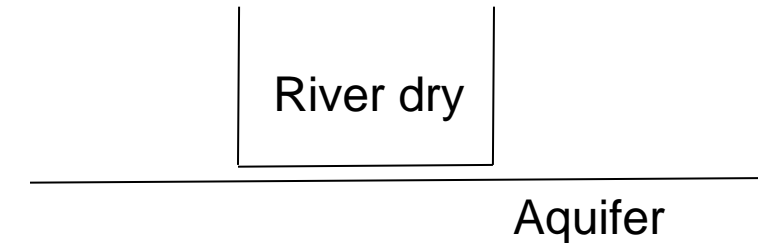


# OLD Wood River Stage



- Nr Ketchum to Hailey
  - Interpolate change between Nr Ketchum and At Hailey
- Hailey to Glendale Rd
  - Use change from At Hailey
- Glendale Rd to Wood River Ranch
  - Use steady state stage when dry bed is not dry
  - Stage = river bottom when dry bed is dry
- Wood River Ranch to At Stanton Crossing
  - Use At Stanton Crossing change

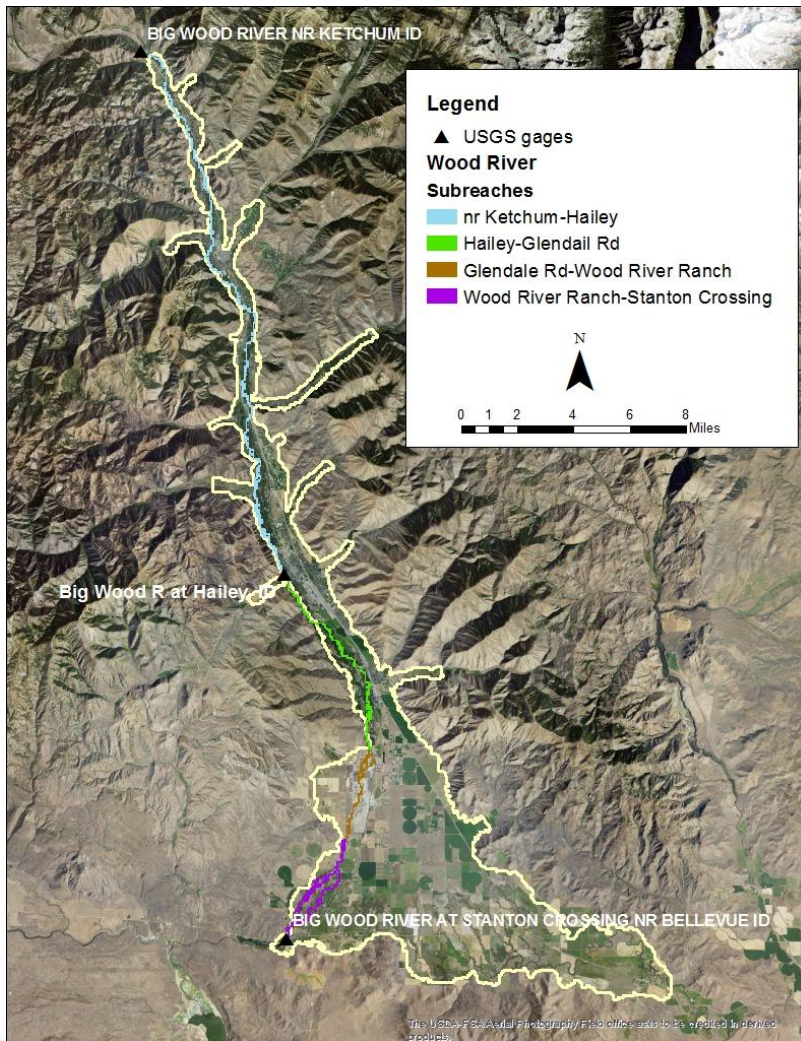
# MODFLOW River Package



- River stage = river bottom
  - River dry perched above aquifer
  - No aquifer river interaction
- River stage = river bottom
  - River intersects aquifer
  - River gains
- River stage above aquifer head
  - River loses water to aquifer

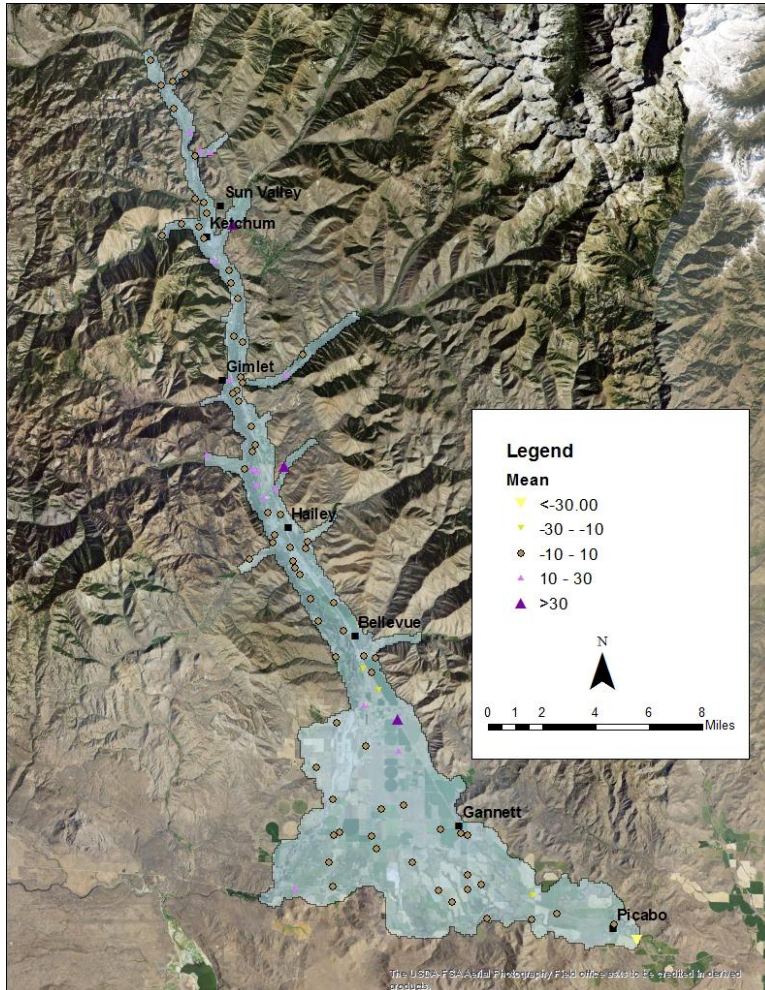


# NEW Wood River Stage



- Nr Ketchum to Hailey
  - Interpolate change between Nr Ketchum and At Hailey
- Hailey to Glendale Rd
  - Use change from At Hailey
- Glendale Rd to Wood River Ranch
  - Use steady state stage when dry bed is not dry
  - Stage = river bottom when dry bed is dry
- Wood River Ranch to At Stanton Crossing
  - Stage = river bottom
    - when first goes dry until October
  - Use change from At Stanton Crossing rest of the year

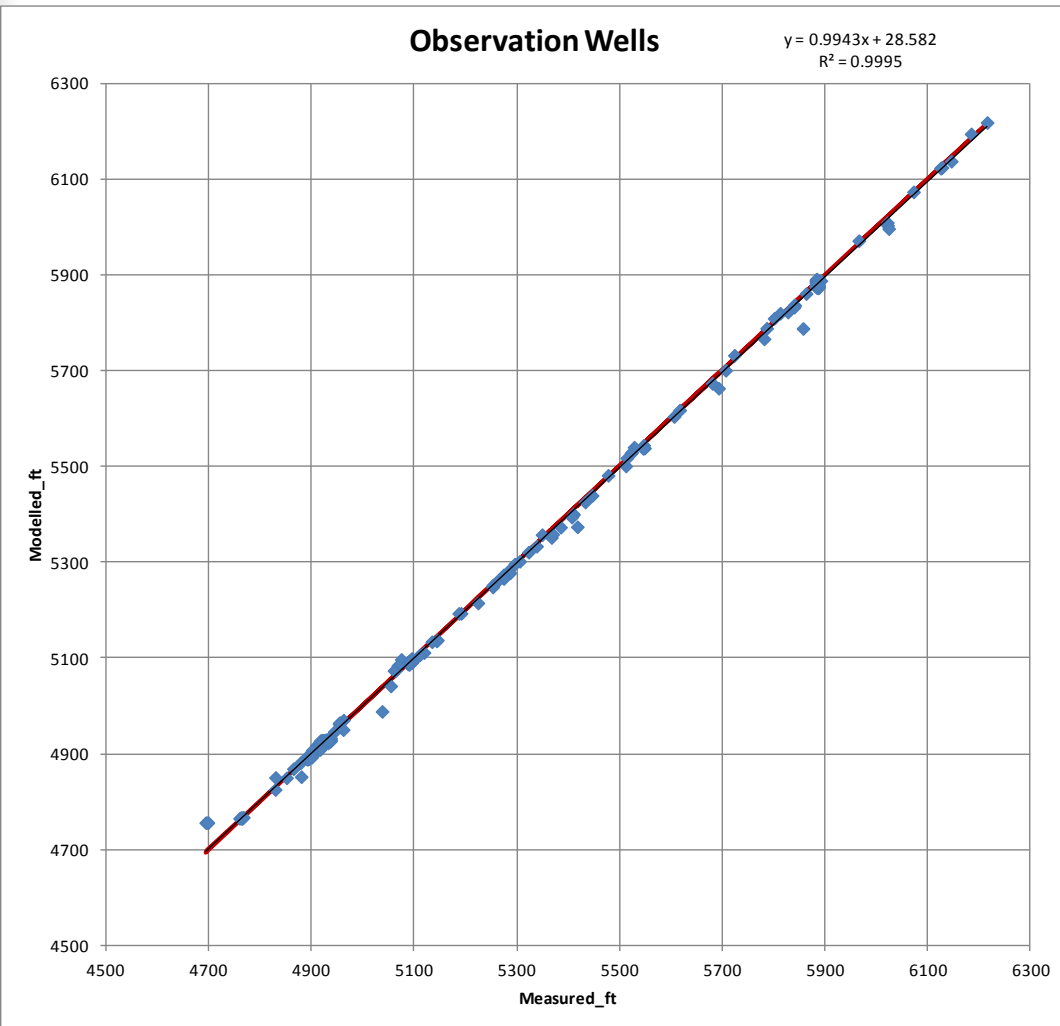
# Observation Wells



- Wells with GPS or surveyed location
- Measured by a trained technician
- Total head change from north to south is about 1,500 ft
  - 30 ft mismatch = 2%



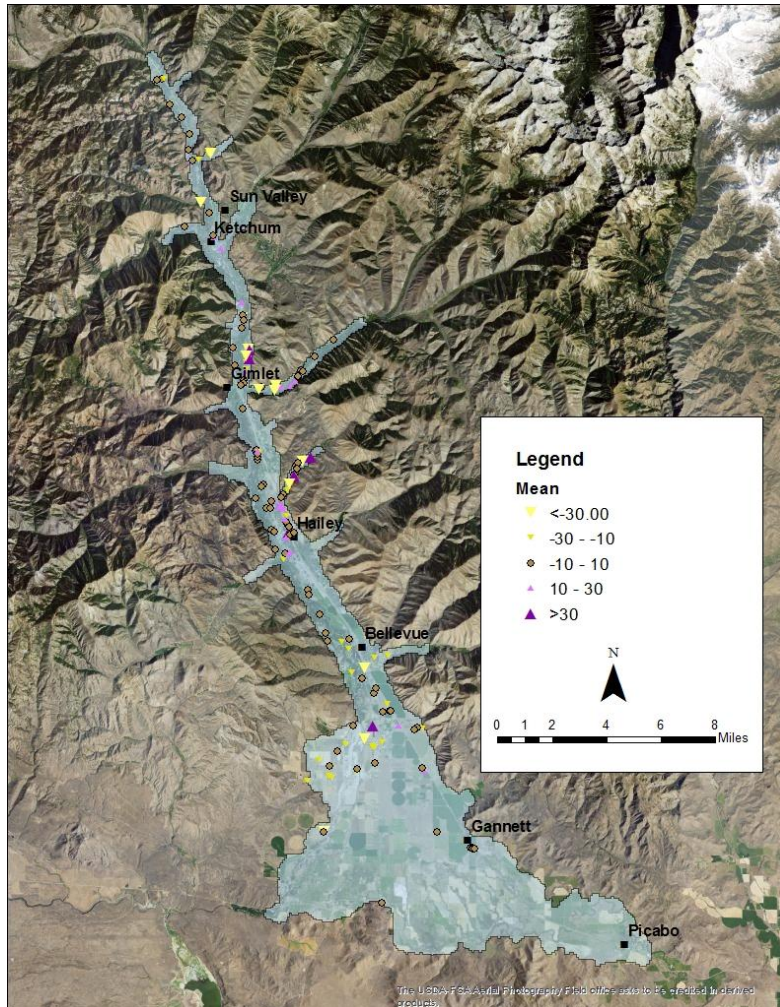
# Observation Wells



- Wells with GPS or surveyed location
- Measured by a trained technician
- If fit was perfect
  - Intercept = 0
  - Slope = 1
  - $R^2 = 1$
  - All points on the red line

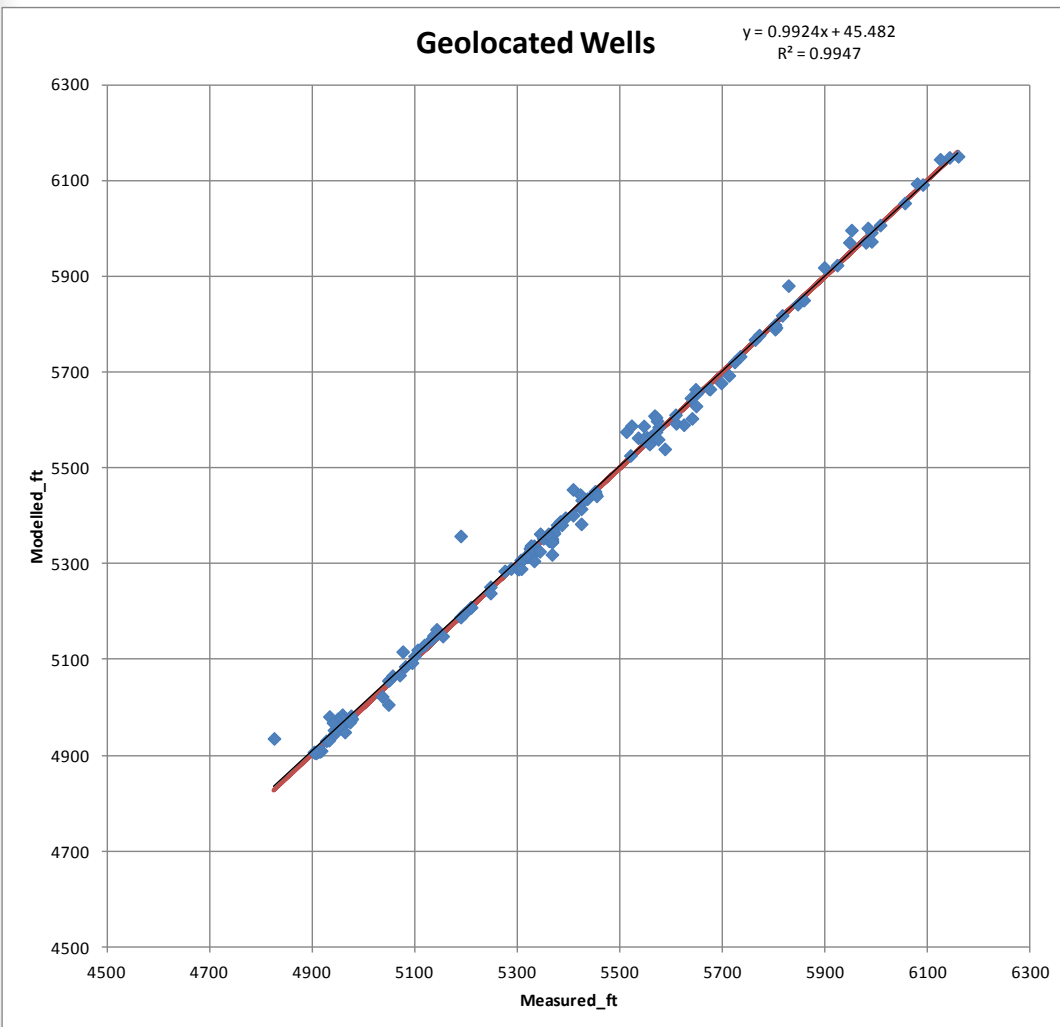
# Geo-located Wells

- Wells located by address
- Measured by driller





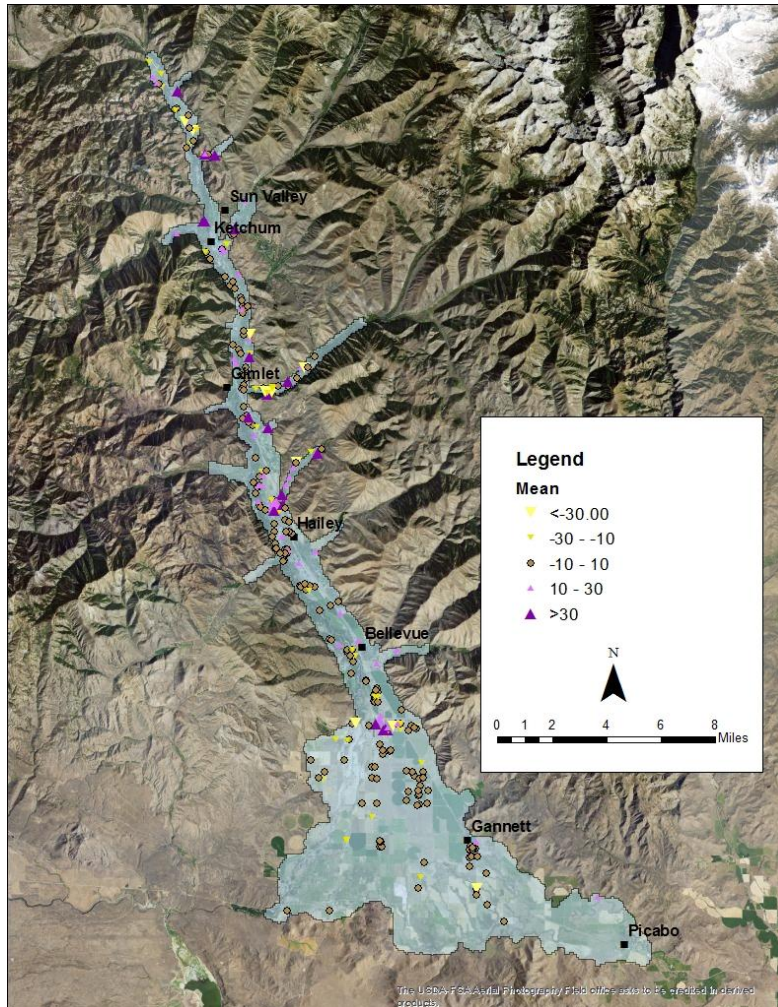
# Geo-located Wells



- Wells located by address
- Measured by driller
- If fit was perfect
  - Intercept = 0
  - Slope = 1
  - $R^2 = 1$
  - All points on the red line

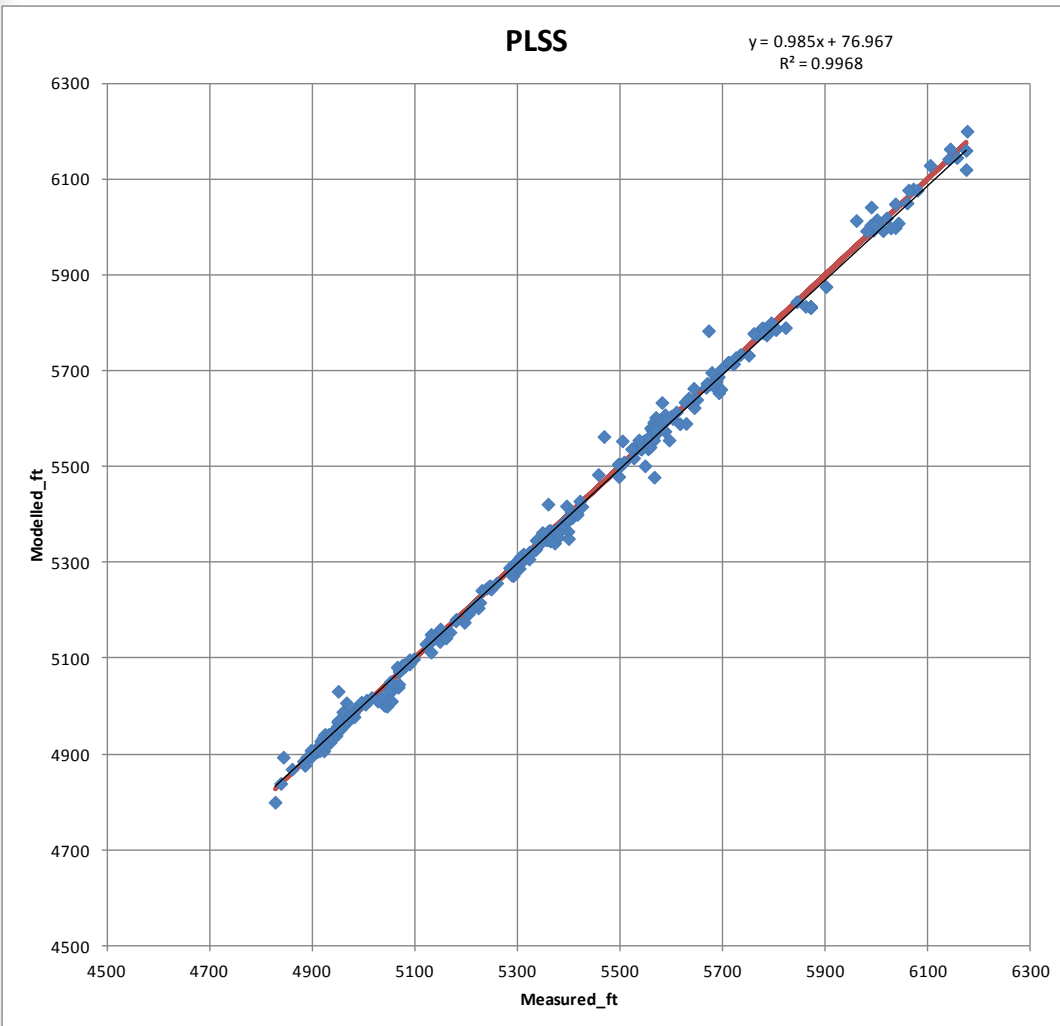
# Driller Wells

- Wells located by PLS
- Measured by driller



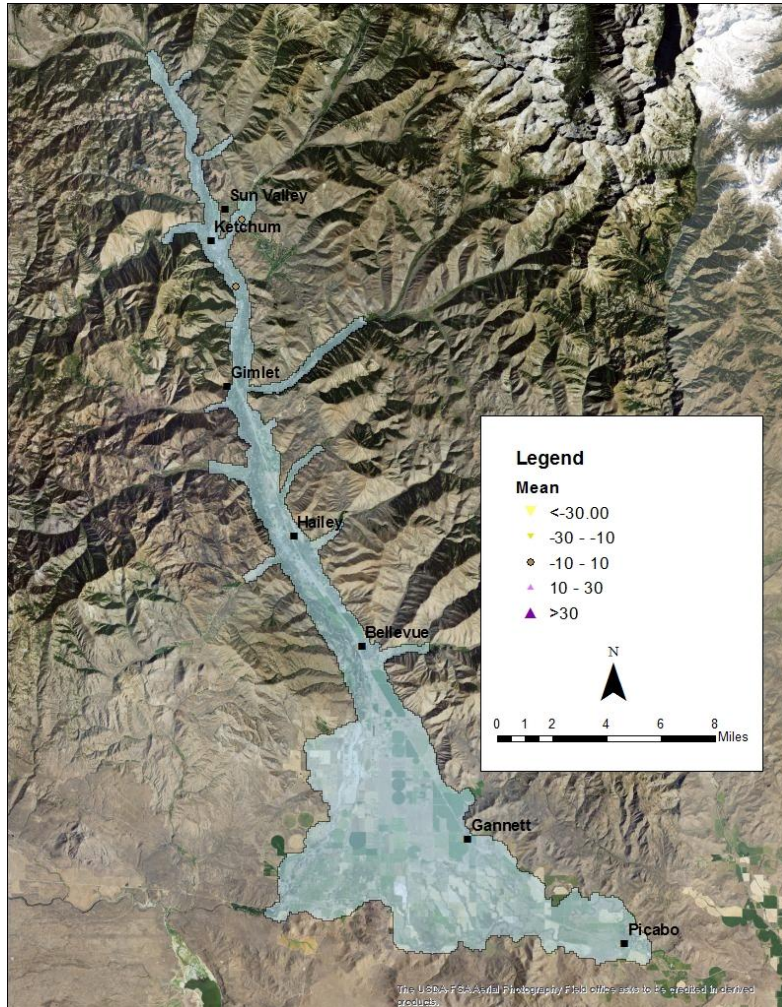


# Driller Wells



- Wells located by PLSS
- Measured by driller
- If fit was perfect
  - Intercept = 0
  - Slope = 1
  - $R^2 = 1$
  - All points on the red line

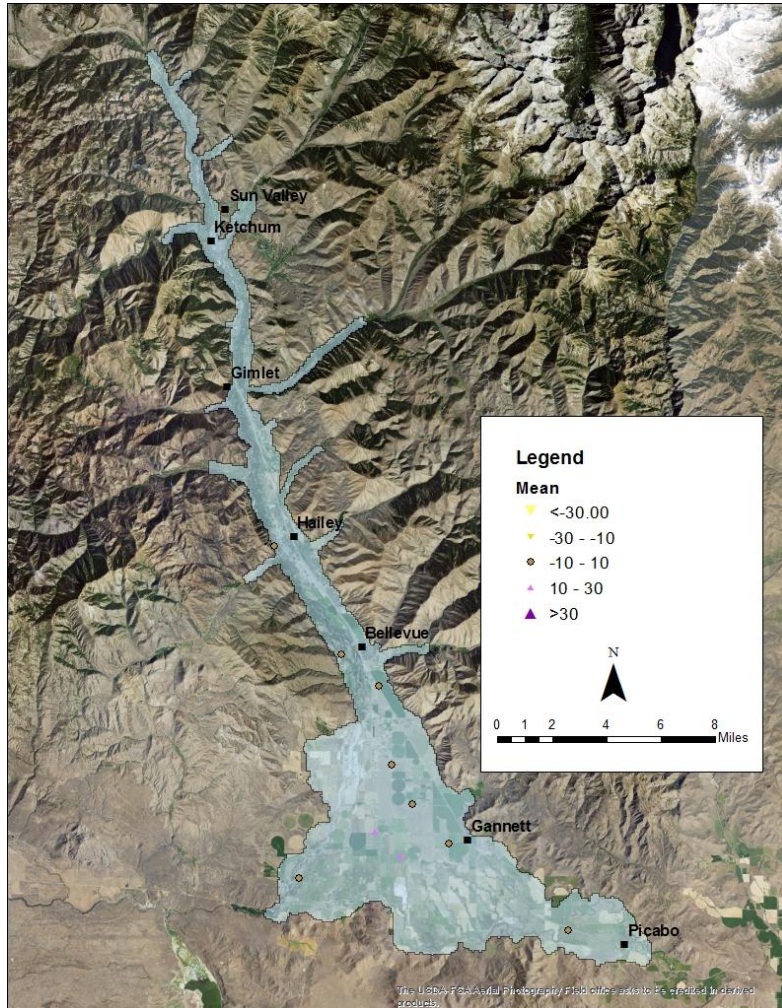
# Sun Valley Wells



- Municipal production wells
- 2 well fields
- Measured by municipal employee
- One well from each field

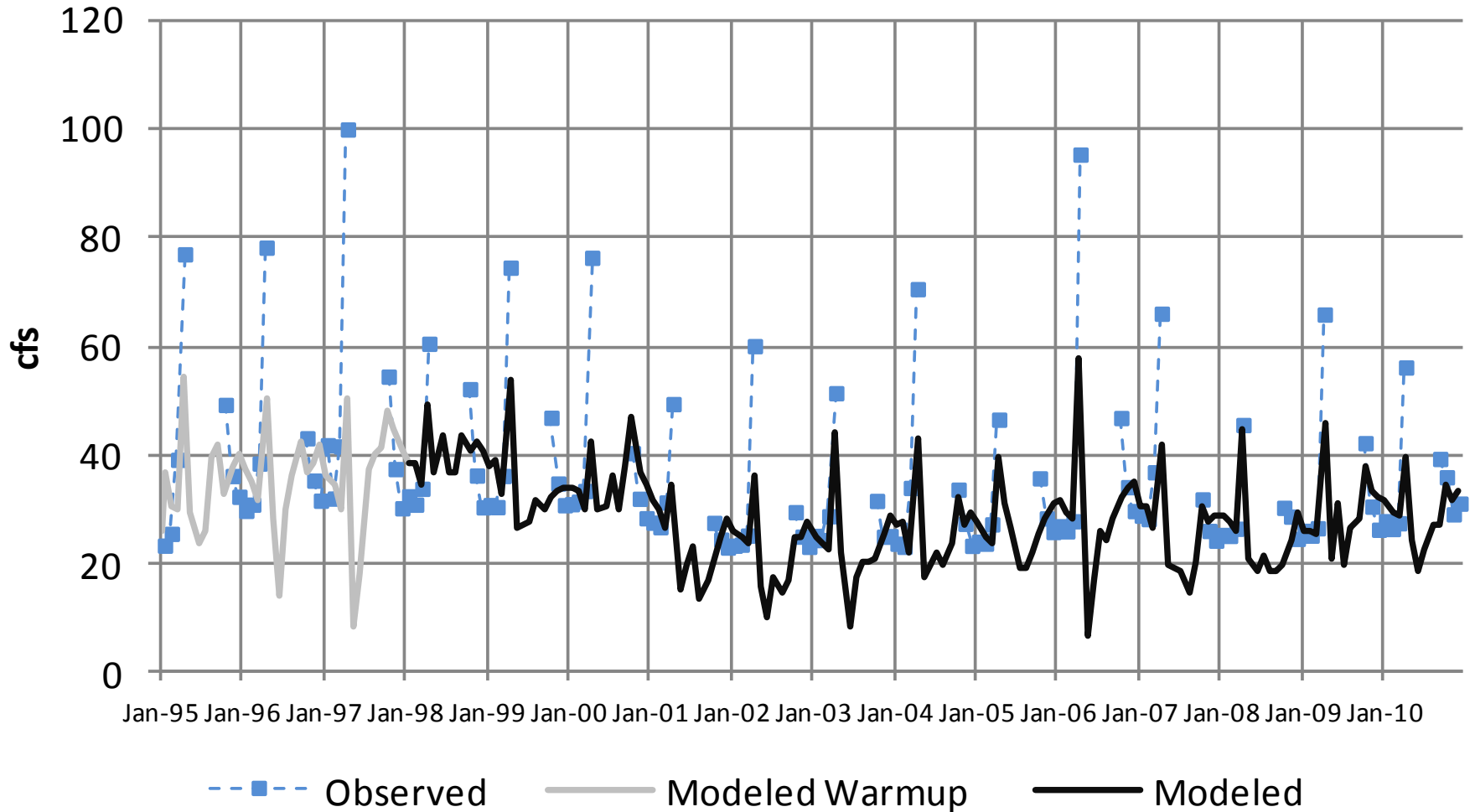


# The Nature Conservancy Wells



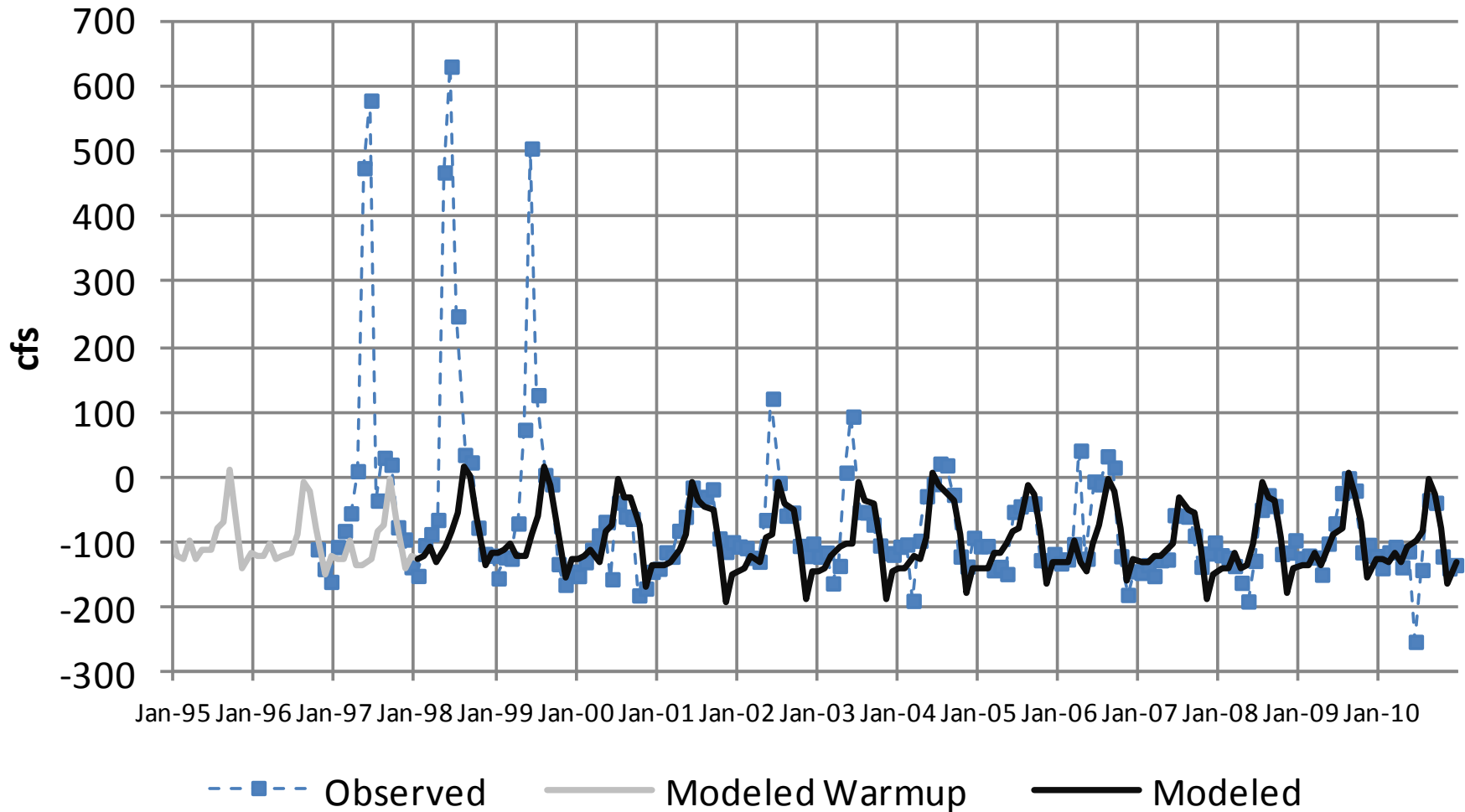
- Graduate student installed transducers
- 12 wells
- 2 are wells we already use
- Not all wells useful for us
- Measurements every 15 min
- Mid 2010 to mid 2011
- Reduced 15 min frequency to one per day
- 5 domestic wells
  - Filtered out pumping events

## Nr Ketchum-Hailey

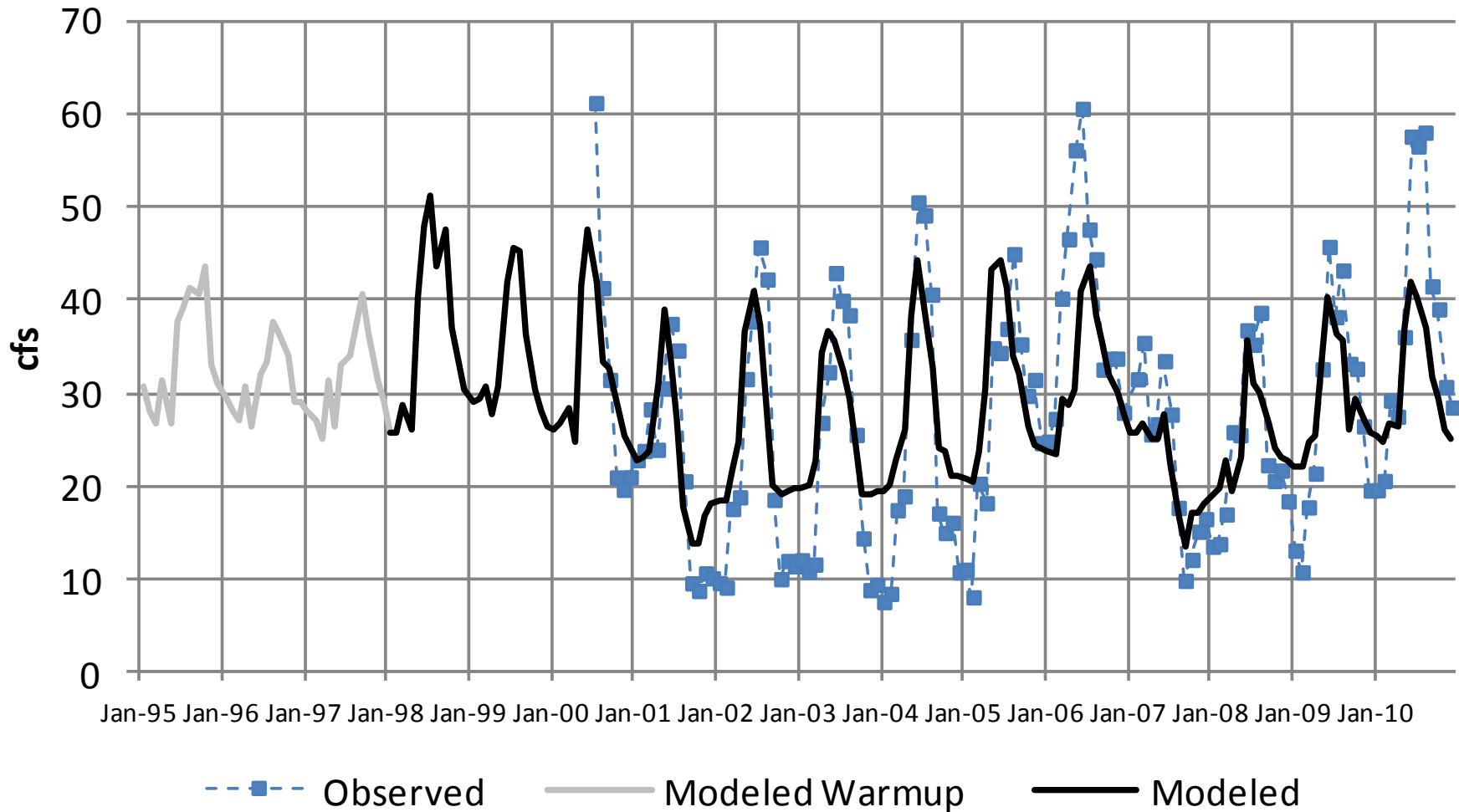




## Hailey-Stanton Crossing

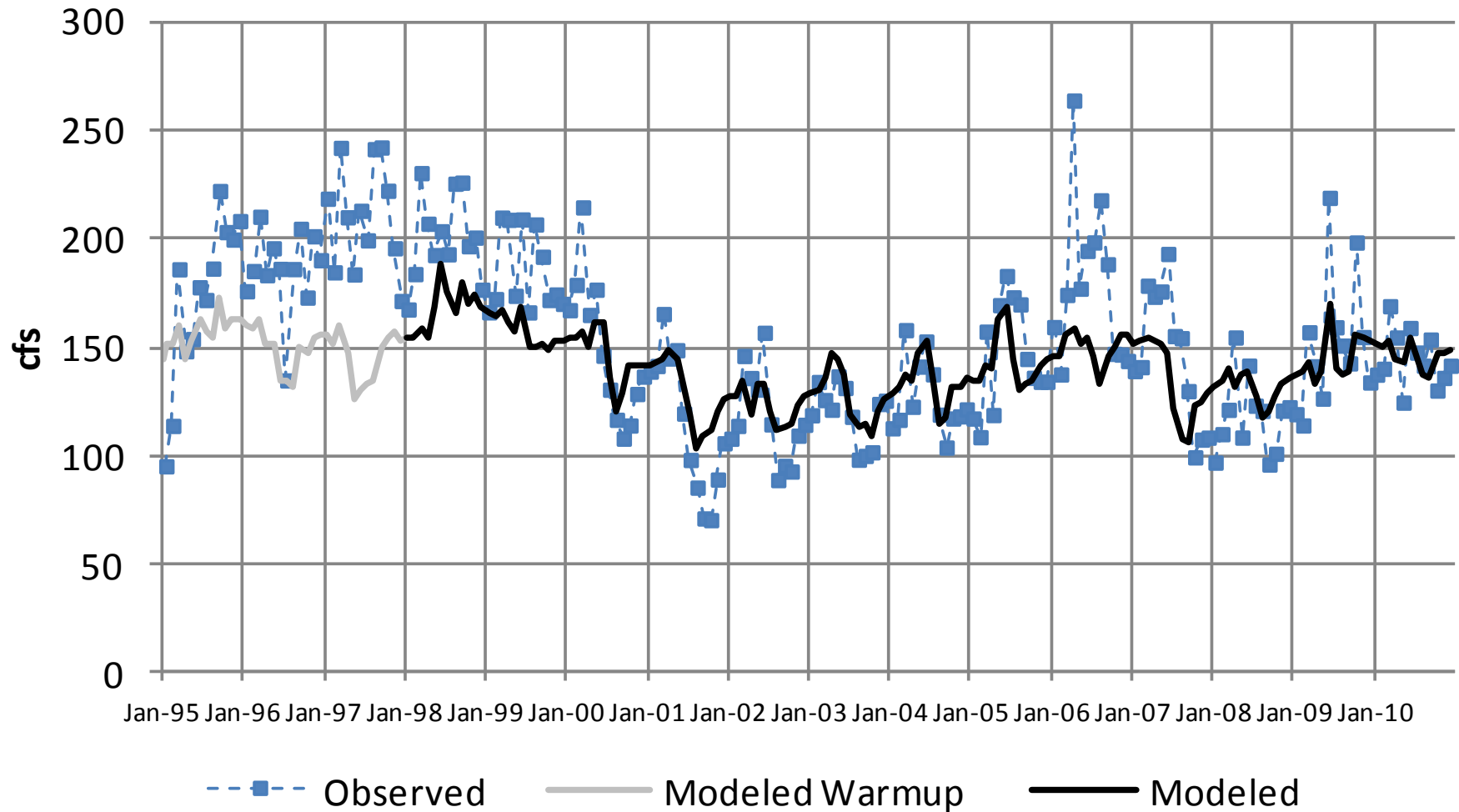


## Willow Creek

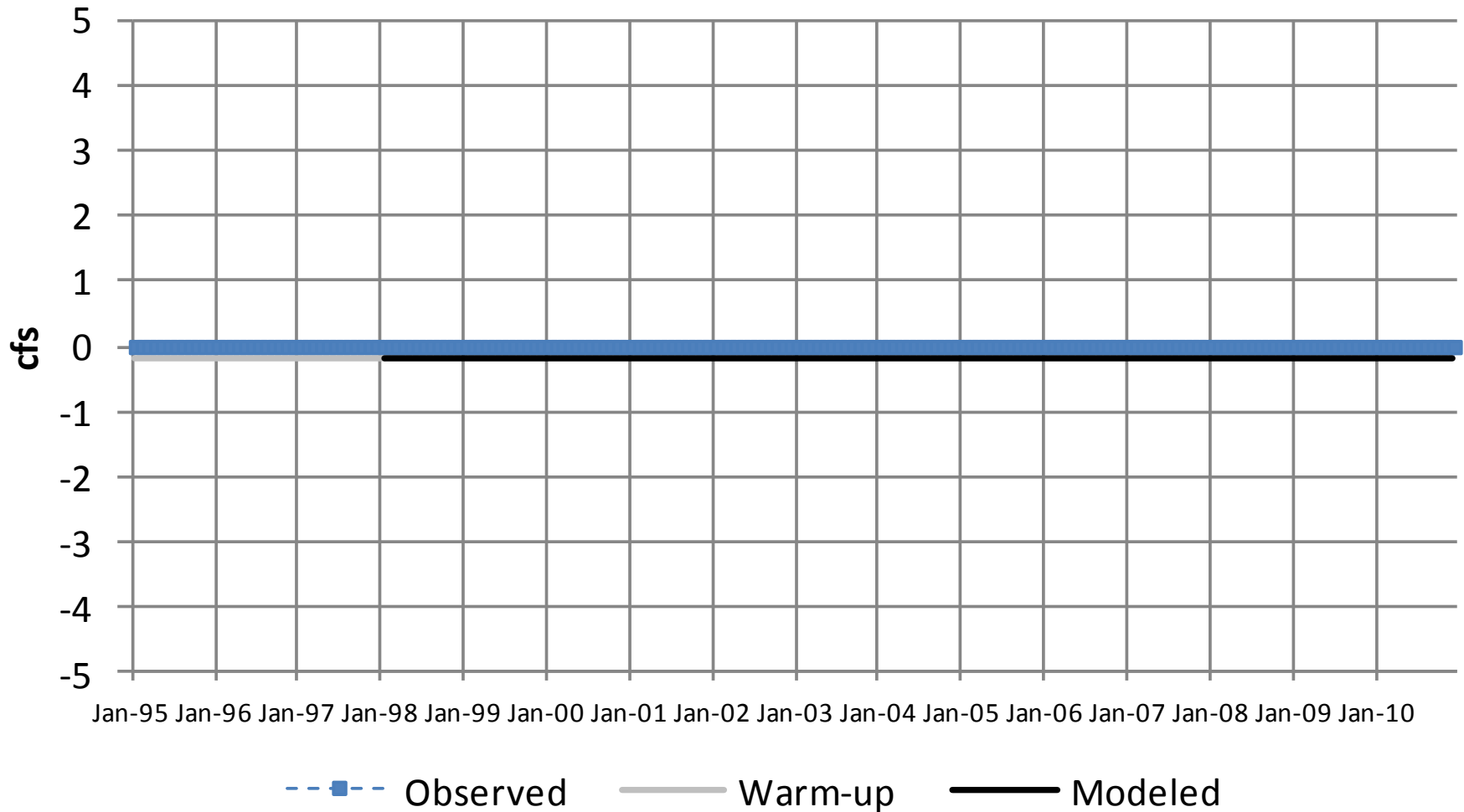




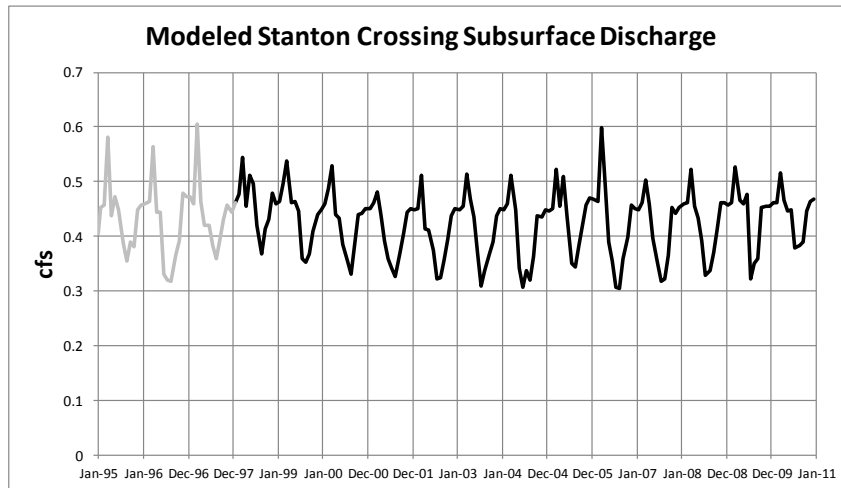
## Silver Abv Sportsman's Access



## Silver Blw Sportsman's Access



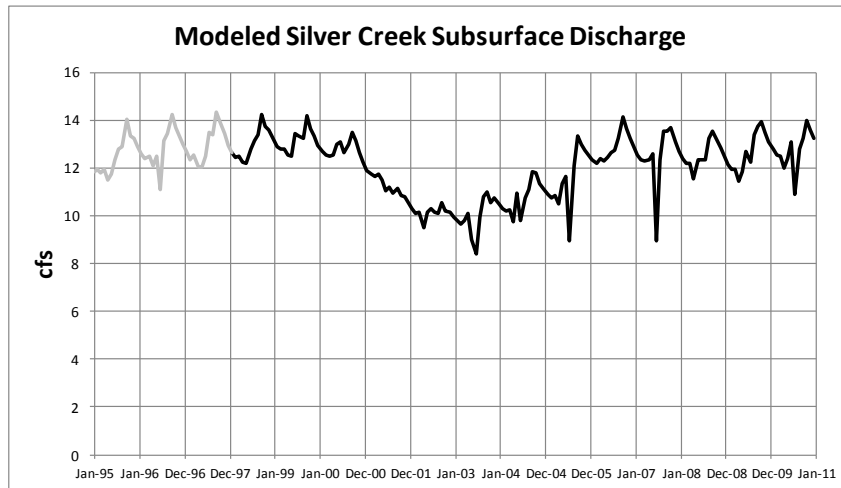
# Subsurface Discharge From Model



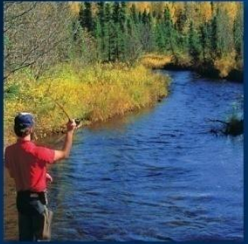
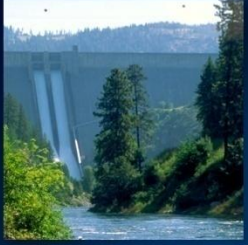
- Weight on these observations is low
- Stanton Crossing
  - Estimated ~ Negligible
  - 300 ac-f/yr
    - 0 - 0.41 cfs
    - Modeled = 0.43 cfs
      - 310 ac-ft



# Subsurface Discharge From Model



- Weight on these observations is very low
- Silver Cr underflow
  - Estimated ~ 4,000 – 53,000 ac-f/yr
    - 5.5 – 73 cfs
    - Modeled = 12.14 cfs
      - 8,795 ac-ft



# End