

# NMBGMR hydrogeology studies in Southwest New Mexico: Mimbres Basin and future work

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#### 2017 Regional Water Plan

- By 2030 demand >= supply
- Surface water is ~ 40% of total supply, remainder is groundwater
- Surface water, and shallow streamconnected groundwater, are vulnerable to drought
- Groundwater is vulnerable to depletion if pumping > recharge
- Hydrogeological investigation is one of proposed strategies to address these issues





- 2019 2020 New water-level measurements and investigation of water-level trends over the past 40 years - OFR 616.
- First basin-wide water-level measurements since 2012







Water-level changes since 1980

- Blue water-level rise, max of 71 feet
- Brown water-level decline, max of 80 feet
- Pink no data
- Rises abandonment of irrigation, infiltration at Whitewater, springflow at Faywood, infiltration of the Mimbres River
- Declines irrigation pumping





Aquifer characterization study; began February 2024

- Water samples from springs, public and private wells
- Groundwater flow directions, groundwater quality, age
- Location, timing, and quantity of groundwater recharge
- Carbon-14 and tritium (red) results to date:
  - Modern (post-1950) water in Santa Clara and Bayard wells
  - Dominantly fossil (pre-1950) water elsewhere



#### Southwest New Mexico - the next 3 – 5 years

- Aquifer characterization in basins of SW NM to understand groundwater quality, quantity, and recharge
- Broader water sampling campaign using existing wells (we need regional participation!)
- Airborne geophysical measurements SkyTEM
- Drilling of 1-2 exploratory-monitoring wells in key areas
- Working with OSE and USGS to develop longterm groundwater level monitoring in wells



