



Galisteo Basin 50-Year Water Analysis

A definitive 50-year water analysis for the Galisteo Basin is not publicly available, but numerous reports and studies document its fragile water resources, historical and ongoing depletion of groundwater, and increasing stress from climate change and population growth. The basin is considered a major source for the Rio Grande and a critical water supply for Santa Fe County.

Here is a 50-year outlook based on available water resource studies:

Historical and current conditions

- **A complex and vulnerable watershed:** The Galisteo Basin is a complex hydrological system with a history of intensive human activity, including grazing, agriculture, and urban development. Its main surface water feature, Galisteo Creek, is an intermittent stream that is dry most of the time. The basin relies on both the Galisteo Formation and the overlying Ancha Formation for its groundwater.
- **Groundwater depletion:** Since the 1990s and early 2000s, water levels in some nearby well fields have declined due to overuse. While a recent focus on surface water use in Santa Fe has allowed some well fields to recover, the long-term trend in the basin is one of increasing stress on groundwater resources.
- **Sedimentation and runoff:** Historical and ongoing land use practices have led to stream incision, erosion, and increased stormwater runoff, impairing the quality of surface water.
- **Archaeological and ecological significance:** The basin's archaeological value and role as a wildlife corridor and ecological hub add layers of complexity to water resource management.

50-year projections and challenges

New Mexico's overall water outlook provides a framework for the Galisteo Basin's future:

- **Reduced water availability:** The state anticipates at least 25% less water over the next 50 years due to climate change. For the Galisteo Basin, this translates to less precipitation, decreased snowpack and runoff, and reduced aquifer recharge.

- **Increased aridity:** Higher temperatures and aridity will further dry the landscape, intensifying drought conditions, and increasing the risk of extreme wildfires and erosion. This will also affect the limited riparian and wetland areas in the basin, which serve as crucial ecological stepping stones.
- **Strained resources:** Climate change will further stress already-vulnerable surface and groundwater supplies in the basin.
- **Conservation and innovation:** To secure New Mexico's water supply, the state's 50-Year Water Action Plan prioritizes conservation, new water supplies, and watershed protection.

Mitigation strategies and ongoing efforts

Local and state entities are working to mitigate water supply challenges, and these efforts are relevant to the future of the Galisteo Basin.

- **Groundwater protection:** Regulations and oversight will likely increase in response to the growing recognition of groundwater's vulnerability.
- **Source water protection:** Efforts to protect the source waters for public water systems are ongoing, though they don't apply directly to private wells in the basin.
- **Watershed restoration:** Strategies like the 2005 Galisteo Creek Watershed Restoration Action Plan, while not a 50-year plan, illustrate efforts to manage erosion and improve water quality.
- **Modeling and data:** The New Mexico Interstate Stream Commission is utilizing scientific assessments, such as the "Leap Ahead Analysis," to inform long-term planning. Local governments, including Santa Fe County, also provide tools for homeowners to manage and monitor their water use.

In summary, a 50-year analysis of the Galisteo Basin shows that water resources will face increasing pressure from climate change and ongoing human demand. Long-term water management will require balancing the basin's use as a critical water source for the region with the need to conserve and protect its vulnerable groundwater and fragile ecosystems.