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# PROCEEDINGS

## PERSPECTIVES ON THE EDWARDS AQUIFER (Balcones Fault Zone)

April 30, 1982



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San Marcos, Texas



## Edwards Water in the San Antonio River

by  
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Two dates are important! And for this presentation these dates are approximate, but significant.

### 1890 and 1940

1890 (or 1891) is about the time that the first successful wells were drilled into the Edwards aquifer.

Up until that time all Edwards water that was used was surface water --Edwards Plateau springs water which provided base flow for Nueces, Sabinal, Guadalupe, Frio, Medina and Blanco rivers and Edwards aquifer water from Leona, San Pedro, San Antonio, Comal and San Marcos springs.

Indians settled and lived along the river and around the springs, fished the waters and hunted and captured the game lured to the abundant flows.

In 1691 Europeans explored and wrote of their discoveries which led to formal exploration parties from Spain called "Entradas". Entradas were composed of military, religious and civilian divisions and were to explore, expand and assert possession and claim in the New World.

In 1709 the Espinosa-Olivares-Aguirre expedition camped along the San Antonio and San Pedro springs, and in 1716 another entrada led by Jose Domingo Ramon stopped at the San Antonio River. He wrote in his diary:

*... "There was sufficient water here for a city of one-quarter league, and the scenery along the San Antonio River is very beautiful, for there are pecan trees, grape vines, willows, elms and other timbers. We crossed said stream; the water, which was not very deep, reached to our stirrups. We went up the river, looking for a camping place and we found a very fine location." . . .*

Father Espinosa, also a member of the earlier entrada recorded:

*... "we arrived at the river San Antonio. This river is very desirable (for settlement) and favorable for its pleasantness, location, abundance of water and multitude of fish. . . .*

*... its luxuriance is enticing for the founding of missions and villages, for both its plains and its waters encourage settlement."*

Within two years, the first mission on the river, San Antonio de Valero (the Alamo) was founded in May of 1718.

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From 1718 to 1731, five missions were established along the San Antonio River. In 1726, the mission-fort La Bahia del Espiritu Santo was moved to the Guadalupe River and finally in 1749, to Goliad on the San Antonio River.

The missions and the settlements around the missions were dependent on the planting and harvesting of crops. To provide water for both their domestic uses and irrigation of their crops, the settlers built irrigation ditches or acequias, next to the river.

Each mission had its acequias, plus the upper labor ditch, the San Pedro ditch and the Alazan ditch. All of these acequias provided Edwards water required for all uses.

As the City of San Antonio expanded and grew, severe problems arose from the primitive and unsanitary water system. Cholera epidemics in 1846 and 1866 had the people crying for a modern, piped water system.

After several attempts to put together successful water systems, J.B. La Coste established the first real system for the City of San Antonio. In 1883, George W. Brackenridge purchased the utility and drilled shallow wells at the headwaters to supplement the springs -- but it wasn't until about 1890 that attempts were made to drill deep wells.

In 1891 Brackenridge completed the first successful well into the Edwards aquifer in the downtown Market Street location.

This change from Edwards surface water to Edwards well water in 1891 changed forever the way the Edwards surface water and Edwards underground would be.

Because Texas surface water laws are different from underground water laws, property rights, water rights and equities were affected and will continue to be affected. But not much was really noticed until about 1940.

Well production, or draft, was not significant in relationship to the capacity of the reservoir because the population, industry and agriculture did not need much water.

Between 1890 and 1940, the San Antonio River spring flow averaged about 60-65 cfs but experienced brief periods of no flow during 1899-98-99, 1939 and 1940. But also during this period, the highest flow (over 200 cfs) was reported in 1920.

Of historic note -- George Brackenridge not only purchased the water works in 1883, but he owned all the acreage around the headwaters of the San Antonio River and his home "Fernridge" was located there. Because of the droughts of the late 1890's, Brackenridge believed the river would die and he is recorded as saying:

*"I have seen this bold, bubbling, laughing river dwindle and fade away . . . . This river is my child and it is dying and I cannot stay here to see its last gasps. . . . I must go."*

Brackenridge sold two hundred eighty acres including "Fernridge" to the Sisters of Charity of the Incarnate Word and in 1899 he donated approximately 340 acres of land for the establishment of Brackenridge Park.

After 1940 with increased municipal, industrial and irrigation well withdrawal, the San Antonio springs (San Pedro) have diminished considerably, with long periods of no flow. From 1940-50, no flow; 1952-57 no flow; and from 1964-72 very little, if any flow. Since 1973 there has been springflow each year, but during the summer months of 1974, '75, '76, '78 and '80, there was no springflow.

Below San Antonio, the average flow of the San Antonio River has remained the same.

How can this be, with springflow diminishing?

Well, there has been an addition of other Edwards water -- slightly used!

It is Edwards' water, pumped from the aquifer, delivered in the municipal system, through the homes and industries, and returned and released through the sewerage system to the river -- not quite the same.

The mixture of Edwards springflow and used Edwards well water (with the used well water winning out) has created serious water quality problems downstream and will necessitate the expenditure of large sums of money to properly treat the wastes from San Antonio.

In downtown San Antonio, the beautiful river has been sustained (diminished yes, but sustained) by supplemental wells in Brackenridge Park which supply the river's base flow when the springs are not flowing.

At SARA we hope to enhance the use of Edwards water in the San Antonio River by supporting efforts to properly cleanse the used water. In some cases we treat the water and we also help recharge by dams in the Salado watershed.

We also will promote the supplemental use of surface water to augment the underground supply and promote conservation of our existing supply so that Comal, San Marcos and yes, occasionally, the San Antonio and the San Pedro springs will live to provide springflow of the finest quality for streamside uses, whether they be in downtown San Antonio, New Braunfels, San Marcos or at Poth, Falls City, Goliad or Seguin, Gonzales, Victoria or Port Lavaca.