

Basin 23

Rio Grande



Rio Grande Basin Narrative Summary

The Rio Grande/Río Bravo, originates in the San Juan Mountains of southern Colorado, and flows to the south across New Mexico before entering Texas about 20 miles northwest of El Paso. After entering Texas the remaining two-thirds of the river, 1,248 miles, forms the international boundary between the United States and Mexico from El Paso to the Gulf of Mexico. The total length of the Rio Grande/Río Bravo from the San Juan Mountains to the Gulf of Mexico is 1,896 miles long. The river and its tributaries drain 335,500 square miles in three US and five Mexican states (Colorado, New Mexico, and Texas; Chihuahua, Coahuila, Durango, Nuevo Leon, and Tamaulipas). However, only 182,215 square miles (88,968 square miles in the US and 48,259 square miles in Texas), actually drain into surface waters that eventually flow to the Gulf of Mexico.

The basin has been divided into 14 segments. Three of the segments are major reservoirs (Amistad and Falcon International Reservoirs and Red Bluff Reservoir), which have a combined surface area of 163,776 surface acres, and 1551 stream miles.

Monitoring coverage in the basin has improved through the coordinated efforts of the TCEQ, and International Boundary and Water Commission-Texas Clean Rivers Program.

According to data from the 2000 census (United States and Mexico) there are roughly 4,440,461 residents living along the Texas and Mexico border. The majority of the border population reside in seven paired sister cities. The most populated of the border cities are El Paso/Ciudad Juárez, Laredo/Nuevo Laredo and Brownsville/Matamoros. The economy of the area is based on wholesale and retail trade, oil and gas production, agriculture, manufacturing, international trade, tourism, and recreation.

Due to the basin's size and wide range of geologic and climatic conditions, the water quality of the Rio Grande/Río Bravo varies greatly. Most of the flow of the Rio Grande/Río Bravo is diverted for irrigation and municipal uses at the American Canal in Texas and the Acequia-Madre Canal in Mexico before it reaches El Paso. Downstream of El Paso, most of the flow consists of treated municipal wastewater from El Paso, rainfall runoff and irrigation return flow. Flow increases again at Presidio/Ojinaga where inflow from Mexico's Río Conchos enters the Rio Grande/Río Bravo. The presence of metals and pesticides has been identified sporadically throughout the Rio Grande/Río Bravo Basin. Elevated fecal coliform densities occur in the river downstream of major US-Mexico border cities due to municipal waste treatment facilities in Texas and untreated wastewater in Mexico. Chloride, sulfate, and total dissolved solids concentrations are increasing in the Rio Grande Rio Grande/Río Bravo due to repeated use of water for irrigation, especially in the west Texas portion of the basin. Elevated nutrient levels can be elevated in the Rio

Grande/Río Bravo. Water quantity as well as quality is an issue in this basin. High demands for irrigation and drinking water by both the United States and Mexico and an extended drought have caused a reduction in available water.

Major tributaries to the Rio Grande/Río Bravo are the Devils River, Pecos River and San Felipe Creek in Texas, and the Río Conchos, Río Salado, Río San Juan, Río Alamo, and Río San Rodrigo in Mexico. The Devils River and San Felipe Creek have no known water quality problems. The Pecos River drains a substantial part of New Mexico and far West Texas. The saline waters entering Texas are stored in Red Bluff Reservoir. Downstream of the reservoir, the salinity in the Pecos River continues to increase.