

Hydrologic Atlas No. 1

Water-Level Changes in the  
High Plains Aquifer of Texas, 1980-1990

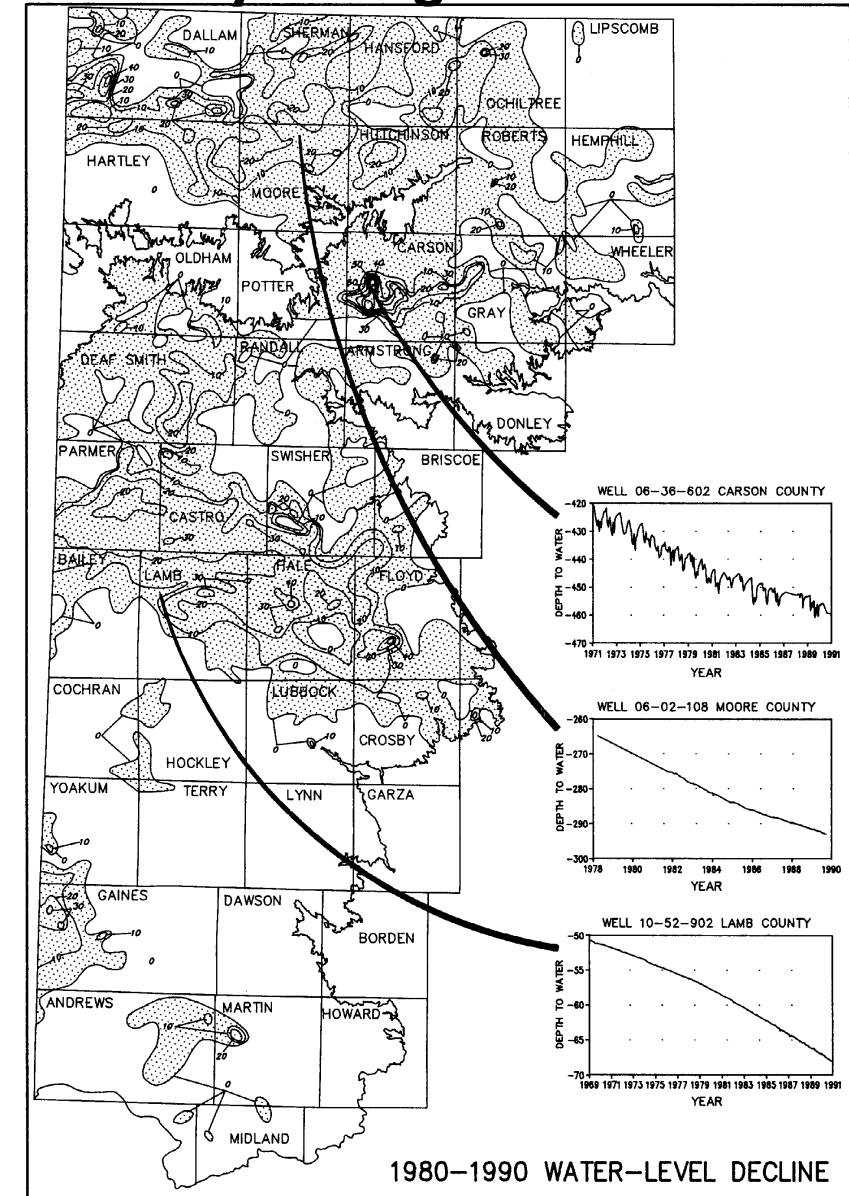
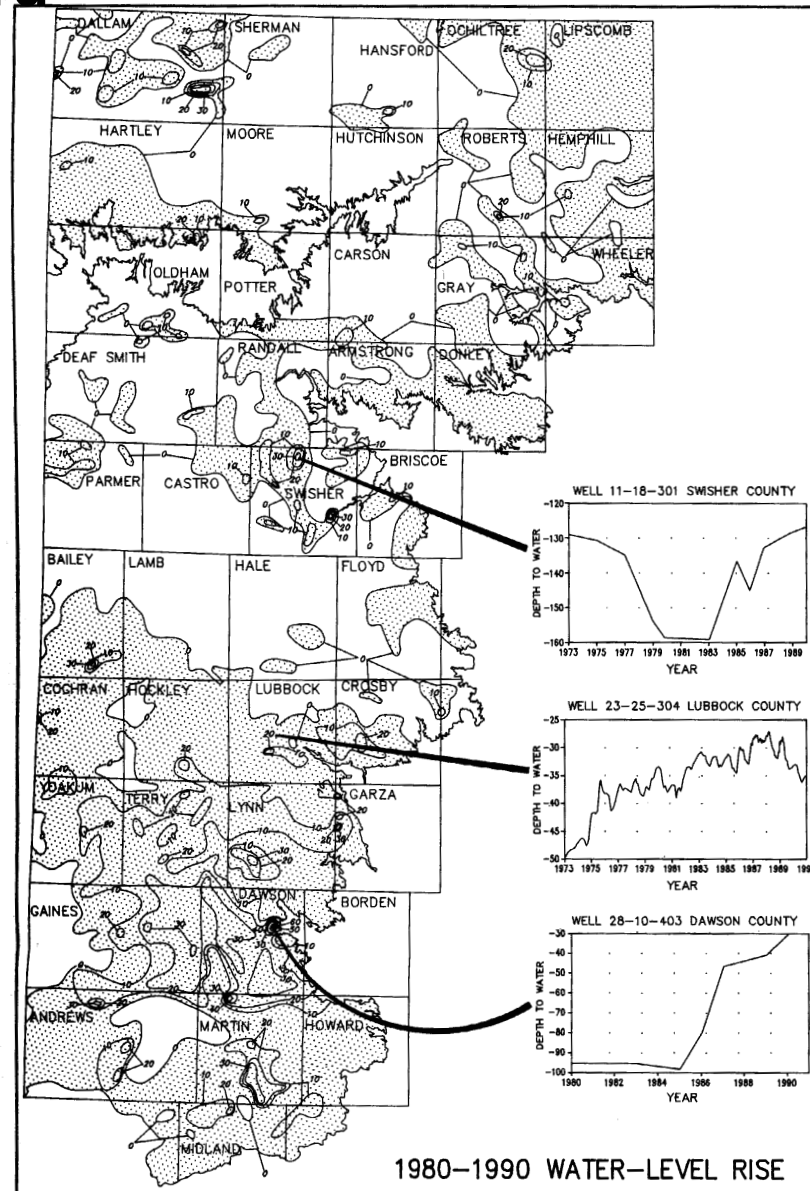
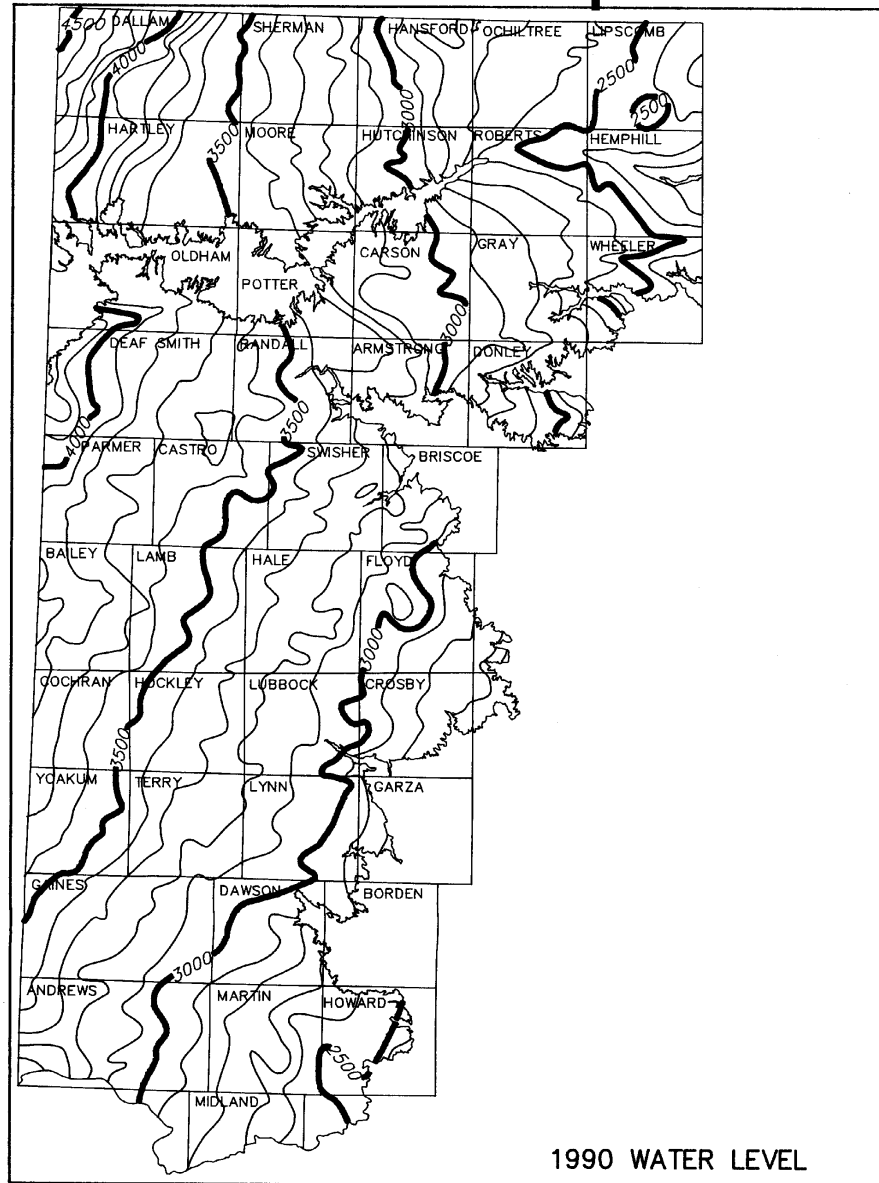


by  
John B. Ashworth

1991



Texas Water Development Board



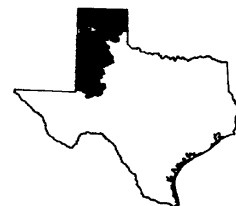
The High Plains aquifer of Texas is the southernmost extension of a regional aquifer which extends through eight states from the panhandle of Texas to South Dakota. The aquifer consists primarily of the Ogallala Formation but also includes other underlying, hydraulically-connected units in some areas. The water table, which regionally follows the surface topography, dips to the northeast, east, and the southeast at an average of about 15 feet per mile. In the vicinity of the Canadian River, however, ground-water movement is toward the river.

Approximately 40 percent of the Texas High Plains experienced a water-level rise during the preceding decade. This rise was primarily the result of above average precipitation and a decline of irrigation pumpage. The largest area of rise, in excess of 20 feet, occurred in Dawson and eastern Gaines Counties.

Water-level declines continue to occur in areas where pumpage is greater than recharge. Approximately 45 percent of the Texas High Plains experienced a water-level decline during the preceding decade. The largest area of decline was in the vicinity of the City of Amarillo well field in Carson County which has experienced up to 60 feet of decline over the past 10 years.

## Water-Level Changes in the High Plains Aquifer of Texas, 1980 - 1990

by  
**John B. Ashworth, Geologist**  
**1991**



INDEX MAP

