

Figure 1. General geology and location of ground-water subbasins in Antelope Valley.

Introduction

Antelope Valley is in the western part of the Mojave Desert in southern California, about 50 mi northeast of Los Angeles (fig. 1). Between 1975 and 1998, water levels in the valley have changed in response to a shift in ground-water use from agricultural to urban, declining in some areas and rising in others (Londquist and others, 1993). A study to document these changes was conducted by the U.S. Geological Survey in cooperation with the Antelope Valley Water Group. This report presents the water-level data and the changes that occurred during this study period.

Water-Level Data and Changes

Water levels for the period 1974 to 1998 were collected primarily between February and May; these data are listed in table 1. Most water-level measurements were made by the U.S. Geological Survey, in cooperation with the Antelope Valley-East Kern Water Agency, and some were supplied by the Palmdale Water District.

Water-level changes in Antelope Valley are documented in a series of maps showing changes in individual wells for five subperiods and the entire period from 1975 to 1998 (figs. 2-7). Each period uses a different number of wells as follows: 1975 to 1980 (137 wells), 1980 to 1985 (129 wells), 1985 to 1990 (127 wells), 1990 to 1995 (105 wells), 1995 to 1998 (121 wells), and 1975 to 1998 (83 wells). In general, water levels increased in

areas east and west of Lancaster and decreased from Rosamond to Palmdale and in the area surrounding Rogers Lake. However, it is recognized that each well may not equally represent the aquifer system because of variability in well construction, local pumping, and perched aquifer conditions.

References Cited

Blyden, R.M., Jr., 1967, Water resources of the Antelope Valley-East Kern Water Agency area, California: U.S. Geological Survey Open-File Report, 73 p.

Carlson, C.S., Leighton, D.A., Phillips, S.P., and Metzger, L.F., 1998, Regional water table (1996) and water-table changes in the Antelope Valley ground-water basin, California: U.S. Geological Survey Water-Resources Investigations Report 98-4022, 2 sheets.

Londquist, C.J., Rewis, D.L., Galloway, D.L., and McCaffrey, W.F., 1993, Hydrogeology and land subsidence, Edwards Air Force Base, Antelope Valley, California, January 1989-December 1991: U.S. Geological Survey Water-Resources Investigations Report 93-4114, 74 p.

Ward, A.W., Dixon, G.L., and Jachens, R.C., 1993, Geologic Setting of the East Antelope Basin, with emphasis on fissuring on Rogers Lake, Edwards AFB, Mojave Desert, California: U.S. Geological Survey Open-File Report 93-263, 9 p.

Vertical Datum
Sea level in this report "sea level" refers to the National Geodetic Vertical Datum of 1929—a geoid datum derived from a general adjustment of the first order level nets of the United States and Canada, formerly called Sea Level Datum of 1929.

Convert	By	To obtain
feet (ft)	30.48	meter
mile (mi)	1.609	kilometer

Well-Numbering System
Wells are identified and numbered according to their location in the rectangular system for the subdivision of public lands. Identification consists of the township number, north or south; the range number, east or west; and the section number. Each section is divided into 36 one-acre tracts lettered consecutively (except 1 and 36), beginning with 'A' in the northeast corner of the section and progressing in a boustrophedon pattern to 'Z' in the southeast corner. Within the 40-acre tract, wells are sequentially numbered in the order they are inventoried. The final letter refers to the base line and meridian. In California, there are three base lines and meridians: Stream, bolt (8), Mount Diablo (M), and San Bernardino (S). All wells in the study area are referenced to the San Bernardino base line and meridian. Well numbers consist of 15 characters and follow the format 607N01W22P01S. In this report, well numbers are abbreviated and written 7N10W22P1. The following diagram shows how the number for well 7N10W22P1 is derived.

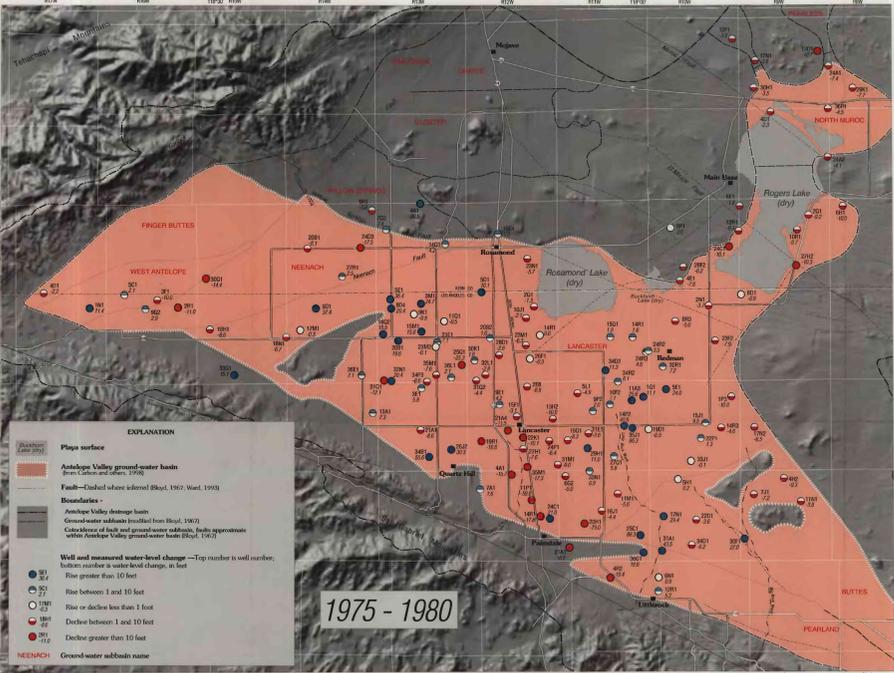


Figure 2. Water-level change in wells in the Antelope Valley, 1975-80.

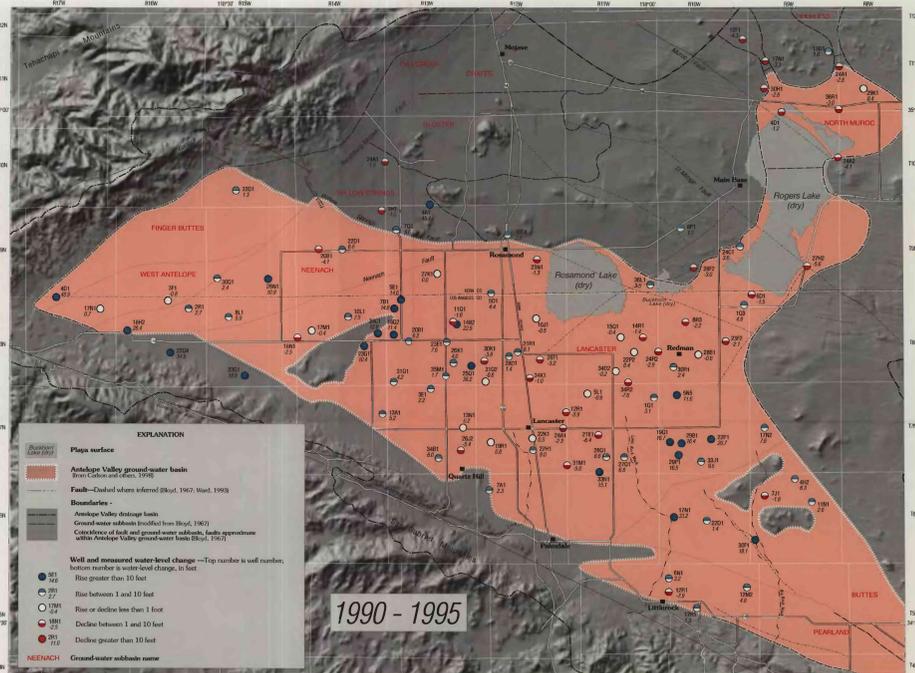


Figure 5. Water-level change in wells in the Antelope Valley, 1990-95.

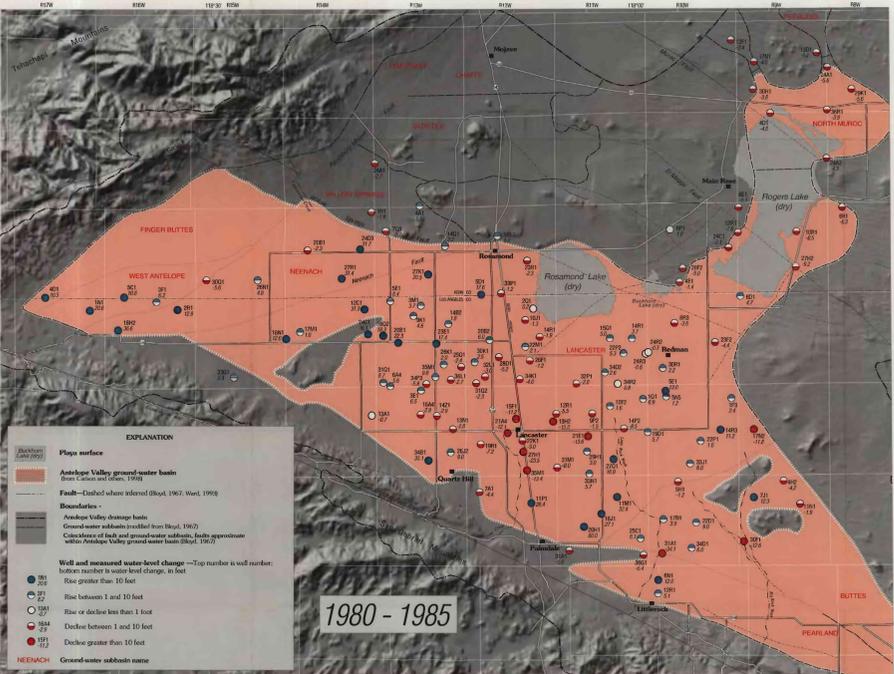


Figure 3. Water-level change in wells in the Antelope Valley, 1980-85.

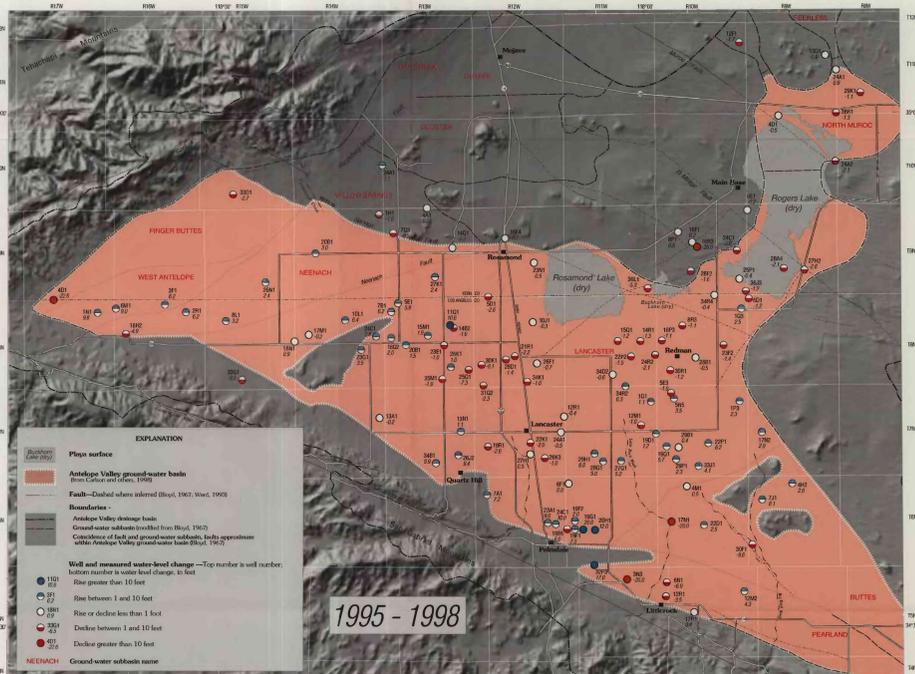


Figure 6. Water-level change in wells in the Antelope Valley, 1985-90.

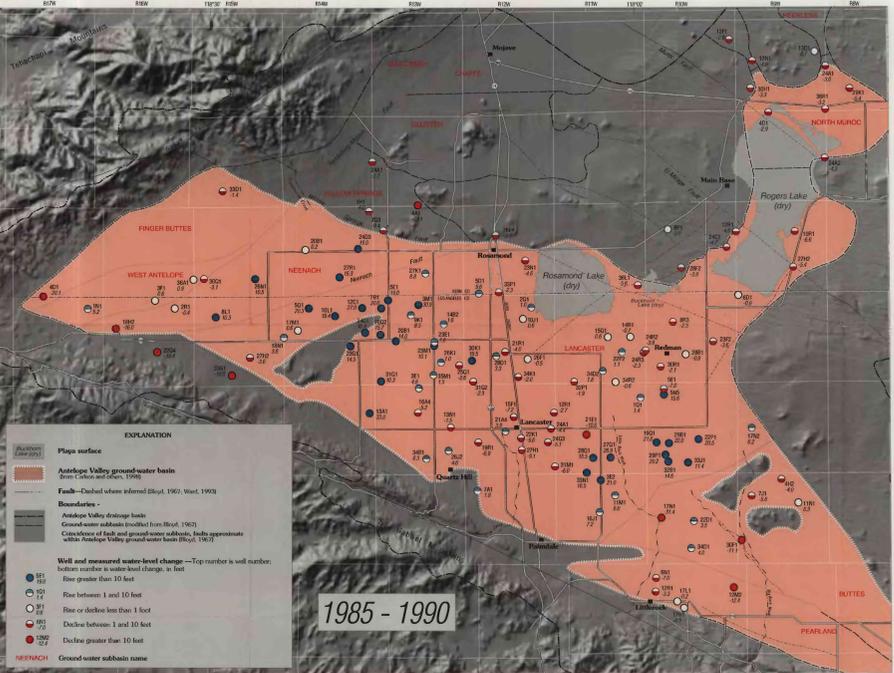


Figure 4. Water-level change in wells in the Antelope Valley, 1985-90.

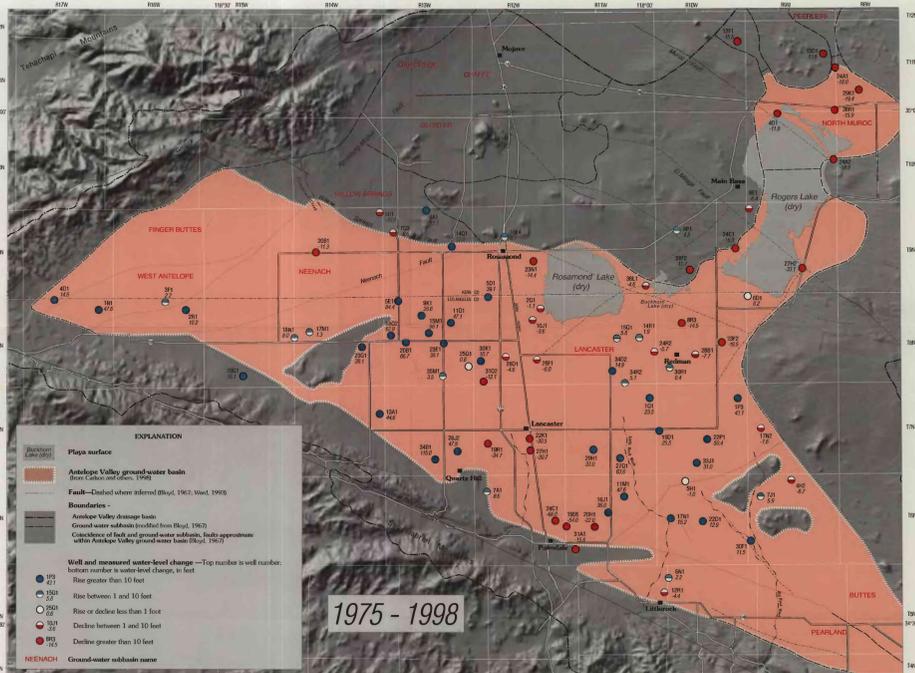


Figure 7. Water-level change in wells in the Antelope Valley, 1975-98.

Water-Level Changes (1975 - 98) in the Antelope Valley, California

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USGS Open-File Report 98-561, 1998. 1:50,000 scale. 1:50,000 scale. 1:50,000 scale.

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