ABSTRACT

A WATER RESOURCES EVALUATION FOR SHASTA VALLEY,
SISKIYOU COUNTY, CALIFORNIA

by
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Shasta Valley is located in the central part of Siskiyou County, California, about 12 miles south of the Oregon-California border. The valley has an area about 250 square miles; and is situated between the Klamath Mountains on the west and the Cascade Range on the east. The hydrologic basin for Shasta River is roughly 30 miles (north and south), by 15 miles (east and west). This basin extends from Mount Shasta to the south, down to the Klamath River to the north.

Measurements of precipitation (rain and snow), stream flow, surface water storage, ground water well elevations and discharge, surface water quality, and ground water quality were obtained from several source agencies, along with Seymour Mack's geological study of Shasta Valley.
The data were analyzed in an attempt to understand the relationships between precipitation and stream flow, precipitation and surface water storage, precipitation and ground water storage, ground water well elevation and ground water movement, geology and well production, geology and surface water quality, geology and ground water quality to determine the effect, if any, from the recent drought. In the process of this analysis it was found that little change had occurred in these relationships over time in Shasta Valley, California. Ground water and surface water chemistry correlated with the geology in the basin. Although decreases in precipitation, stream flow, ground water well elevation, and surface and ground water storage were noticed, these conditions were temporary, and the Shasta Valley hydrologic and hydrogeologic system should rebound to normal conditions when the current drought ends. No stress from over draft was noticed for this system.