ABSTRACT

HYDROLOGY AND WATER QUALITY OF THE COLUSA BASIN DRAINAGE SYSTEM

by

Robert William Craig

Master of Arts in Physical Science
Earth Science Option
California State University, Chico
Summer 1976

A statistical analysis of historical temperature, electrical conductivity, turbidity, and flow data shows that there has been a significant change in some parameters at certain locations. For an 18 year period of record, the Colusa Drain at the Highway 20 Overcrossing has increased in temperature at the 80 percent confidence limit and decreased in discharge at the 95 percent confidence limit. From 1968 to 1973, the drain at the Highway 20 Overcrossing shows a decrease in turbidity and temperature at the 95 percent confidence limit. The Colusa Drain Outfall registered a decrease of temperature at the 95 percent limit for the period 1968 to 1973.

Turbidity measurements taken in 1974 suggest that high levels of turbidity were associated with row-crop production
in the lower portions of the Colusa Drainage System. A pipette analysis of water collected near the Colusa Drain Outfall indicated that nearly 50 percent of the suspended material is fine silt, (.0058-.0029mm).