

CHEMICAL/PHYSICAL LIMNOLOGY OF THE SALTON SEA

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A one-year sampling program is being conducted to assess the current chemical and physical conditions in the Salton Sea. Analyses include general physical conditions and water quality parameters, nutrients, trophic state variables, major cations and anions, trace metals and organic compounds. Samples are collected from three locations in the main body of the lake and from the three major tributaries.

The Salton Sea was formed in 1905 when an accident caused the Colorado River to flow into the Salton Sink. The Salton Sea has a current water surface elevation of 227 feet below sea level and has no outlet other than evaporation. Salt concentrations have fluctuated over the years as the level of the Sea has changed, but levels have generally increased. The Salton Sea currently has a salinity of over 43 ppt, or about 30% greater than sea water. Proposed reductions in inflow volumes are expected to cause this level to increase.

Nutrient concentrations are high and lead to frequent algal blooms, which in turn contribute to low dissolved oxygen concentrations. The tributaries have a much lower salt content, but consist primarily of agricultural return flows with high nutrient levels. Concentrations of trace metals and organic compounds do not appear to be of major concern.

Once monitoring has been completed, data will be used to develop information on nutrient and suspended solids loading to the Salton Sea. The geochemical model, PHRQPITZ, will be used to evaluate potential chemical reactions limiting the solubility of selected water quality variables.