

TIMOTHY PAUL KRANTZ, Ph. D.

*Chair, Environmental Studies Program
Salton Sea Database Program Manager*

Dr. Krantz brings over thirty years of professional experience in environmental assessment and land use planning to the project, combining experience in both the private and public sector, academia and environmental engineering. At the University of Redlands, Dr. Krantz is Chair of the Environmental Studies Program, and is the Salton Sea Database Program Director—a \$4.7 million geographic information system (GIS) database comprising the most authoritative GIS information clearinghouse for the region.

EDUCATION

Ph.D., Geography, University of California at Berkeley. 1994.
M.A., Latin American Studies, Stanford University. 1991.

REPRESENTATIVE EXPERIENCE

Distinguished Fulbright Scholar, U.S.-Austria International Exchange of Scholars Program (2009-2010)

Appointed to facilitate the Memorandum of Understanding for Environmental Cooperation between Austria and California; based at the Technische Universität Wien, Vienna, Austria; primarily working on renewable energy environmental technology transfer between Austria and California, the U.S. and European Union. Dr. Krantz spoke before the Austrian National Chamber of Commerce, United Nations Economic Commission for Europe in Prague, Czech Republic, and other high-level conferences on renewable energy technologies.

Director, Salton Sea Database Program (1998-Present)

Dr. Krantz managed the Salton Sea Database Program (SSDP) from its inception, established under federal assistance grants from the U.S. Environmental Protection Agency. The program coordinated the operations of a regional, watershed-scale database and GIS to facilitate decision-making regarding evaluation of restoration alternatives for the Salton Sea. Dr. Krantz sat on the Science Subcommittee established by Secretary of Interior Bruce Babbitt, overseeing data collection and integration into the GIS of hundreds of data sets and dozens of baseline studies and monitoring programs in the region. These include many field investigations that may be used to establish reference conditions for this proposed project, including physical geography, sediments, hydrology, limnology, fisheries, avian biology, desert pupfish, ecotoxicology, *et alus*.

Salton Sea Bathymetry

SSDP developed the most refined bathymetry available for the Salton Sea. The bathymetric model was created using USBR sonar data and high-resolution DOQQs correlated with sea level monitoring data to create splined topographic data for the Salton Sea river deltas, rendering high-quality resolution even in the shallows.

Diked Evaporation Pond Site Suitability Analysis

The SSDP prepared a multi-variable GIS analysis for site selection of solar evaporation pond facilities in and adjacent to the Sea. Siting criteria used for the analysis included distance from shore (above or below), slope, elevation, upstream drainages (flood constraint), distance from population centers, minimum area, etc. The weighted overlay for these data generated a ranked site suitability map for optimum locations of evaporation pond facilities, similar to the proposed habitat ponds called for in this project.

Principal Investigator for the Wetland Vegetation Mapping Project, Salton Sea Science Subcommittee.

Directed this baseline reconnaissance study for wetlands in the Salton Sea basin. Using Landsat-5 TM base map images, a preliminary low-resolution wetland coverage was developed. Then, using one-meter digital orthophotograph quarter-quadrangles (DOQQs), a high-resolution wetland vegetation coverage was created for all aquatic habitats adjacent to the Salton Sea and the primary tributary rivers.

Wildlife Health Monitoring Project

Coordinated development of a monitoring program strategy evaluating several technological approaches for wildlife health (fish and waterfowl) monitoring at the Salton Sea.

Bird Band Data and the Importance of the Salton Sea for Migratory Birds

Analyzed data from the U.S. Geological Survey Bird Banding Laboratory comprising 20,000 records of birds banded at the Salton Sea and recovered elsewhere, or birds banded elsewhere and recovered at the Salton Sea. The data were entered into the SSDP GIS, and can be displayed by species, guild, or as aggregated data. The resultant analysis was eye-opening: not only did the data show a migratory bird corridor along the Pacific Flyway, as expected, but it also showed a strong connection with the Great Salt Lake and the Central Flyway.

Senior Associate Scientist in charge of the Ecological Services Division for Levine-Fricke-Recon (1995-1997)

Directed wetland habitat evaluations and restoration projects for this environmental engineering firm. Developed ecological performance criteria and data collection protocols to measure ecosystem recovery; and designed and directed remediation and restoration programs. These projects included several salt marsh and saline pond ecological restoration projects, including the Arrowhead Marsh (Port of Oakland), Oro Loma Marsh (East Bay Regional Park District), Pier 98 (City of San Francisco) and Goleta Slough (Santa Barbara Municipal Airport).

Environmental Impact Assessment

With over thirty years of professional experience in the field of environmental impact assessment, Dr. Krantz is an authority on federal and state environmental compliance regulations almost since the inception of CEQA/NEPA and the body of environmental legislation to come out of the 1970s. He has worked on hundreds of Environmental Impact Reports/Environmental Impact Studies (EIRs/EISs), and teaches courses and workshops on the subject at the University of Redlands and to professional organizations.

SELECTED PUBLICATIONS/PRESENTATIONS ON THE SALTON SEA

Cloern, James (Lead Author); Timothy Krantz (Contributing Author); J. Emmett Duffy (Topic Editor). 2007. "Eutrophication." In Encyclopedia of Earth. Eds. Cutler J. Cleveland (Washington, D.C.: Environmental Information Coalition, National Council for Science and the Environment). [Retrieved July 21, 2008].
<<http://www.eoearth.org/article/Eutrophication>>

Krantz, Timothy (Lead Author); Brian Black (Topic Editor). 2007. *Lake Cahuilla, United States*. In: Encyclopedia of Earth. Eds. Cutler J. Cleveland (Washington, D.C.: Environmental Information Coalition, National Council for Science and the Environment). [First published in the Encyclopedia of Earth October 17, 2006; Last revised March 25, 2007; Retrieved July 21, 2008].
<[http://www.eoearth.org/article/Lake Cahuilla, United States](http://www.eoearth.org/article/Lake_Cahuilla,_United_States)>

Krantz, Timothy (Lead Author); Brian Black (Topic Editor). 2006. *Salton Sea, California*. In: Encyclopedia of Earth. Eds. Cutler J. Cleveland (Washington, D.C.: Environmental Information Coalition, National Council for Science and the Environment). [Published in the Encyclopedia of Earth September 21, 2006; Retrieved July 21, 2008]. <[http://www.eoearth.org/article/Salton Sea, California](http://www.eoearth.org/article/Salton_Sea,_California)>

Krantz, Timothy. 2005. *Salton Sea International Avian Airport: bird band data and their indications of importance of the Salton Sea for migratory birds*. In Proceedings of the Salton Sea Centennial Symposium, A Salton Sea for the 21st Century: Science, Rehabilitation, Management, March 30-April 1, 2005, San Diego, California.

Krantz, Timothy. 2005. Featured in the four-time Emmy award-winning documentary film, *Voices of the Monument*, directed by Bernard Nathanson.

Krantz, Timothy. 2003. *Salton Sea*. In Encyclopedia of Water Science, Bobby Alton Stewart and Terry A. Howell, eds. Marcel Dekker, Inc. 1040pp.

Krantz, Timothy. 2003. *Salton Sea: California's Everglades*. A booklet brief prepared for Congressional and other elected officials, published by the Salton Sea Authority. 23pp.

Joseph E. Buckles, K. Kashiwase, and T. Krantz. 2002. *Reconstruction of prehistoric Lake Cahuilla shoreline using GIS and GPS*. In Hydrobiologia 473:1-3.

Krantz, Timothy, Ed. 2002. *Salton Sea Atlas*. ESRI Press. 127pp.

Sculley, Bob, et alus. incl. Dr. Krantz. 2002. *The potential for fugitive dust problems at the Salton Sea if water levels are lowered significantly from current conditions*. White paper summary of the Salton Sea Science Office Air Quality Workshop, April 3-4, 2002, La Quinta, California.