Salton Sea Database Program
Center for Environmental Management
University of Redlands

Bibliographic Report on Salton Sea Wildlife Mortality

Search terms:
pelican, eared grebe, cormorant, shorebirds, waterfowl, corvina, tilapia, endangered species, fish kill, botulism, algal toxin, phytoplankton, dissolved oxygen, selenium, salinity, currents, freshwater, limnology

Search fields:
title, source, keyword, abstract

Searched in the “Salton Master 899” version of the SSDP database by Les Canterbury, December 1999.

19730000 ID: 7672
The effects of restricted circulation on the salt balance of Great Salt Lake, Utah
Utah Geological and Mineralogical Survey Water-Resources Bulletin
Volume: 18 *Issue:* *Page(s):* 54
File Name:

19850109 ID: 8237
ENDANGERED FISH OR WILDLIFE; COCHITO
Federal Register
Volume: 50 *Issue:* 6 *Page(s):* 1056
File Name:

19690000 ID: 7647
Energy transformations in salt lakes
Australian Society of Limnology Bulletin
Volume: 1 *Issue:* *Page(s):* 6-9
File Name:

19800900 ID: 1548
Environmental monitoring - meteorologic, oceanographic
Measurement and Control (United Kingdom)
Volume: *Issue:* *Page(s):* 118-122
File Name:

Examples of technology applied to environmental monitoring are presented. One study employed a towed hose array off the US East Coast which drew water continuously from 4 depths as the survey vessel moved through an industrial waste plume. The Salton Sea Region offshore California was surveyed to assess the environmental impact of hot, salty, and sulfur-laden waters from nearby geothermal wells on the area's ecology. Another study is characterizing the atmospheric conditions at the site of a nuclear power generating plant. Marine environment assessments are being performed in the Atlantic off shore, especially in Baltimore Canyon, to determine the impact of exploratory drilling on the environment. Environmental surveys are being prepared by oil and gas companies which are entering exploration and development of reserves on the Mid-Atlantic outer continental shelf. The detection effort which found a fallen nuclear-fuel core Soviet satellite in Canada also is described.|;

19730000 ID: 2256
Exploration and Exploitation of Geothermal Resources in Arid and Semiarid Lands, a Literature Review and Selected Bibliography
Arid Lands Resource Information Paper
Volume: *Issue:* 2 *Page(s):* 119
Tucson, AZ University of Arizona, Office of Arid Lands Studies
File Name:

CONTEMPORARY TECHNIQUES FOR EXPLORATION OF GEOTHERMAL RESOURCES ARE OUTLINED, WITH PARTICULAR EMPHASIS ON THE WESTERN U.S. AS TYPICAL OF PROBLEMS ENCOUNTERED IN ARID AND SEMIARID LANDS. THESE INCLUDE FIELD RECONNAISSANCE, INFRARED AERIAL RECONNAISSANCE, PHOTOGEOLOGIC MAPPING, DRILLING, GEOCHEMICAL ANALYSES OF GROUNDWATER, APPLICATION OF FLUID DYNAMICS TO NATURAL STEAM SYSTEMS, ELECTRICAL PROSPECTING, SEISMIC, GRAVITY, AND MAGNETIC SURVEYS. ENVIRONMENTAL IMPACTS, INCLUDING NOISE, ODORS, SUBSIDENCE, AND LEGAL PROBLEMS INVOLVING DEVELOPMENTAL REGULATIONS, ARE REVIEWED. THE ADVANTAGES OF CHEAP POWER, MULTIPLE USE INCLUDING GREENHOUSE AGRICULTURAL PRODUCTION AND DILUTION OF PRESENT SALINE IRRIGATION WATER SOURCES, POWER FOR COOLING AND HEATING ARE DISCUSSED. A 102-ITEM COMPUTERIZED BIBLIOGRAPHY, MOST WITH FULL ABSTRACTS, IS INCLUDED, PLUS AUTHOR INDEX, AND A DETAILED COMPUTERIZED KEYWORD INDEX CONSTRUCTED FROM TERMINOLOGY APPLIED TO EACH CITATION FROM THE WATER RESOURCES SCIENTIFIC CENTER'S WATER RESOURCES THESAURUS, 2ND ED. REFERENCE IS MADE THROUGHOUT THE TEXT TO THESE CITATIONS. (PAYLORE-ARIZONA)

19910000 ID: 1437
Fiscal Year 1990 program report: California Water Resources Center
Volume: *Issue:* *Page(s):* 50 p.
Riverside, CA? California Water Resources Center
File Name:

The report contains a synopsis of the results of research projects sponsored under Grant No. 14-08-00001-G1550, the 1990 Water Research Institute Program (WRIP) for the University of California Water Resources Center. Five projects investigating the following topic areas are: Mixing in Bay/Delta Flows, Dynamics of Selenium and Arsenic Oxidation in Water-Sediment Systems, Adaptive Grid Refinement for Groundwater Contaminant Transport Simulation, Salinity and Fish Effects on the Plankton and Benthos of the Salton Sea : Microcosm Experiment, and Effects of Global Climate Change and Increased Atmospheric CO2 on Water Use.

19761000 ID: 1863
Geotechnical environmental aspects of geothermal power generation at Herber[sic], Imperial Valley, California
Volume: *Issue:* *Page(s):* 98
File Name:

The feasibility of constructing a 25-50 MWe geothermal power plant using low salinity hydrothermal fluid as the energy source was assessed. Here, the geotechnical aspects of geothermal power generation and their relationship to environmental impacts in the Imperial Valley of California were investigated. Geology, geophysics, hydrogeology, seismicity and subsidence are discussed in terms of the availability of data, state-of-the-art analytical techniques, historical and technical background and interpretation of current data. Estimates of the impact of these geotechnical factors on the environment in the Imperial Valley, if geothermal development

19770314 ID: 1623
Geothermal-energy system readies for tryout
Chemical Engineering (N.Y.) (United States)
Volume: *Issue:* *Page(s):* 81
File Name:

Biphase Engines Inc. will try out its new device for power and fresh water production from geothermal hot brine in the Salton Sea area, Calif., or in New Mexico. The device passes the well mixture through a nozzle to a rotary steam-brine separator. The steam may be passed through a turbine and condensed to fresh water, and further power may be extracted from the hot brine. A full-scale system would produce a net 1.1 Mw electric power and 250,000 gal/day fresh water.|;

19720000 ID: 1942
Geothermal resource investigations, Imperial Valley, California, January 1972 : developmental concepts
Volume: *Issue:* *Page(s):* 58 p.
[Washington, DC] U.S. Department of the Interior, Bureau of Reclamation
File Name:

19690000 ID: 7661
Hydrology and chemistry of Great Salt Lake
Utah Geological and Mineralogical Survey Bulletin
Volume: 82 *Issue:* *Page(s):* 140-57
File Name:

19891024 ID: 2449
Irrigation-Induced Selenium Contamination Threatens Western States, NRC Report Says
Ground Water Monitor
Volume: *Issue:* *Page(s):*
File Name:

19840900 ID: 2082
Laboratory investigations
Site-Specific Res. Conducted in Support of the Salton Sea Solar Pond Proj., FY 1982 Rept. (SEE N85-14280 05-44)
Volume: *Issue:* *Page(s):* 31
Pasadena, CA California Institute of Technology, Jet Propulsion Laboratory
File Name:

The primary objectives were to examine the site-specific physical, chemical, and biological factors that impact construction, durability and performance of the proposed 5-MW (sub e) solar pond system at the Salton Sea . The interactions of the water, salt, and soil of the site and on material compatibility were examined. Potential interactions of the water/brine and soil are particularly important because the pond will utilize the naturally occurring clays as a bottom seal. Although there is a considerable and growing solar pond literature, little written information deals with the important site-specific investigations of water, salt, and soil. Therefore, technical effort was directed toward identifying the factors that should be investigated and determining methods of investigation. As a result, a by-product was the development of an approach for site-specific investigations and some specific methodologies. This development should continue in order to establish a generic approach for evaluating the suitability of any site for the construction of large-scale solar ponds (B.G.)

ID: 7696
Mean Relative Abundance of Flat-Tailed Horned Lizard Scat. 1979-1992. [map]
Volume: *Issue:* *Page(s):* 1 map.
File Name: 00000000_scatmap.pdf

19980000 ID: 4890
Oversight Hearing On Salton Sea Stabilization and Water Quality Improvement: Oversight Hearing Before the Subcommittee on Water and Power of the Committee on Resources, House of Representatives, 105th Congress, First Session
Volume: *Issue:* *Page(s):* 112 p.
Washington U.S. Government Printing Office
File Name: 19980000_house_committee_on_resources.pdf

19931000 ID: 8278
Plankton Surveys. (Latest citations from Oceanic Abstracts)
Volume: *Issue:* *Page(s):* 250 citations
File Name:

The bibliography contains citations concerning surveys of planktonic organisms. Seasonal variation, species composition, species succession, temporal and spatial distribution, photosynthetic properties, bioluminescence, and productivity are among the topics discussed. Areas studied include the Red Sea, the Mediterranian Sea, the Black Sea, the Gulf of California, the Indian Ocean, polar oceans, estuaries, coastal areas, and open ocean waters. (Contains 250 citations and includes a subject term index and title list.)

19940300 ID: 8276
Plankton Surveys. (Latest citations from Oceanic Abstracts)
Volume: *Issue:* *Page(s):* 250 citations
File Name:

The bibliography contains citations concerning surveys of planktonic organisms. Seasonal variation, species composition, species succession, temporal and spatial distribution, photosynthetic properties, bioluminescence, and productivity are among the topics discussed. Areas studied include the Red Sea, the Mediterranian Sea, the Black Sea, the Gulf of California, the Indian Ocean, polar oceans, estuaries, coastal areas, and open ocean waters. (Contains 250 citations and includes a subject term index and title list.)

19894000 ID: 8291
Plankton Surveys. January 1974-March 1989 (Citations from Oceanic Abstracts)
Volume: *Issue:* *Page(s):* 93 p.
File Name:

This bibliography contains citations concerning surveys of planktonic organisms. Seasonal variation, species composition, species succession, temporal and spatial distribution, photosynthetic properties, bioluminescence, and productivity are among the topics discussed. Areas studied include the Red Sea, the Mediterranian Sea, the Black Sea, the Gulf of California, the Indian Ocean, polar oceans, estuaries, coastal areas, and open ocean waters. A more detailed study of plankton species is presented in a separate bibliography.

19980000 ID: 8269
Recovery Plan for U.S. Pacific Populations of the East Pacific Green Turtle ('Chelonia mydas')
Volume: *Issue:* *Page(s):* 64 p.
File Name:

The East Pacific green turtle is listed as Endangered throughout its range. This regionally important population of the green turtle (Chelonia mydas althoough see Taxonomy), has exhibited an extreme decline over the last 30 years This decline was undoubtably caused by the massive overharvest of wintering turtles in the Sea of Cortez between 1950 and 1970, and the intense collection of eggs between 1960 and early 1980 on mainland beaches of Mexico. Primary threats to the species in U.S. waters are from entanglement in debris and boat collisions. Primary threats in Mexico are the (illegal) harvest of tu turtles and eggs. The recovery goal is the delist this regionally

19780000 ID: 7624
The saline lakes of Saskatchewan III: Chemical characteristics
Int. Revue. Ges. Hydrobiology
Volume: 63 *Issue:* 3 *Page(s):* 311-35
File Name:

19820611 ID: 2527
Salt gradient solar ponds (SGSPs) should be the first widely used solar energy system, being the cheapest way to collect large amounts of solar energy.
Science
Volume: *Issue:* *Page(s):* 1213+1
File Name:

With the development of high-tech photovoltaic cells, computer-controlled arrays of heliostats focusing sunlight on high-temperature boilers, and solar power stations in space, SGSPs have the allure of simplicity and a relatively long history of development. According to BS Macaleer of Meridian Corp and JE Rannels of DOE at the 9th Energy Technology Conference in Washington, DC, the California/Southern California Edison 5 MWe demonstration project at Salton Sea (Imperial Vally, Calif) has the built-in storage capacity and the ability to provide low temperature thermal energy on a large scale sufficient to power an organic Rankine cycle engineP Simple solar ponds are not new. In SGSPs, a vertical salinity gradient balances thermal buoyancy with increased density, quelling convection and permitting effective heat storage on the bottom. Drawbacks, however, include the inherent inefficiency in generating solar pond electricity via a Rankine cycle turbine, maintenance of the gradient and leaching of salts out of storage liners. Israeli SGSP development is the most sophisticated available in the West, especially in respect of maintaining gradient. Article discusses ways in which specific systems have solved the problems and projects that are on the drawing board.

19970528 ID: 4810
The Salton Sea: A valuable resource in crisis
Volume: *Issue:* *Page(s):*
File Name: 19970528_congress.pdf

19760100 ID: 1494
Thermal loop experimental facility, Salton Sea geothermal field, Niland, California: Environmental assessment
Volume: *Issue:* *Page(s):* 17
File Name:

The US Energy Research and Development Administration (ERDA) has negotiated a contract with San Diego Gas and Electric Company, San Diego, California, (SDG and E) to support and expedite technology development at thermal loop experimental facility already under construction by SDG and E in the Salton Sea Geothermal Field, near Niland, Imperial Valley, California. The facility is designed to simulate a 10 MWe geothermal electrical power plant, using 4-stage steam flash and binary cycle conversion equipment to extract heat from the high-temperature, high-salinity geothermal brines of the Salton Sea Field. An expansion valve will be used to simulate a power turbines to evaluate system operation. To date, economic development of this geothermal resource has been

inhibited by severe technical problems, primarily scaling buildup in equipment exposed to the highly concentrated brines. As a result of test conducted during the past several years, SDG and E has designed a heat transfer system which, if successful, will permit utilization of this resource.

Abalde, T. A.
19870400 ID: 4048
Feasibility of establishing a prawn culture project at Salton Sea, California (USA)
Volume: *Issue:* *Page(s):*
File Name:

Asian Inst. of Management, Makati, Metro Manila (Philippines). This study intends to determine the viability of setting a fully integrated intensive aquaculture system for Salton Sea Area in Southern California [USA]. The proposed project advances the prospect of developing prawn producing fishpond modules for the market of prawns in Southern California. Part 1 of the study is the U.S. shrimp industry itself and Part 2 intends to find out how feasible the proposed project in terms of marketing, technical and financial.

Abarbanel, H. D., K. M. Case, S. M. Flatte, W. A. Nierenberg, and K. M. Watson
19811000 ID: 1607
Assessment of some energy technologies associated with solar energy
Volume: *Issue:* *Page(s):* 51
File Name:

Three alternative solar energy generation concepts are discussed: salinity gradient solar ponds, osmotic membrane power generation, and thermochemical storage and transport. It is concluded that in specialized applications and in some special geographical circumstances, the salinity gradient solar pond can be an economically attractive way of producing 80/sup 0/C to 90/sup 0/C hot water or of generating electricity. Under most circumstances, however, the costs of salt, land, and pond liner will make the solar pond not competitive commercially at today's fuel prices. Power generation using osmotic membranes is not considered likely to be economically viable because of the high cost of membranes. (LEW)|;

Adams, V. Dean, and Vincent A. Lamarra, eds.
19830000 ID: 7913
Aquatic Resources Management of the Colorado River Ecosystem.
Volume: *Issue:* *Page(s):* xiii, 697 p.
Ann Arbor, MI Ann Arbor Science
File Name:

Adduci, Anthony J.
19810000 ID: 3307
Successful fluid management of the Salton Sea Reservoir
Lawrence Berkeley Laboratory Report. Proc. DOE-ENEL Workshop Coop. Res. Geotherm. Energy, 2nd
Volume: *Issue:* *Page(s):* 272-290
File Name:

0195-721X

Allanson, B. R.
19730000 ID: 7968
Summary: Physical Limnology of Man-Made Lakes.
Man-made lakes: their problems and environmental effects. William C. Ackermann, Gilbert F. White [and] E. B. Worthington, editors. J. Loreena Ivens, associate editor.
Volume: *Issue:* *Page(s):* 483-488
Washington, DC American Geophysical Union
File Name: 19730000_allanson_c.pdf

Alvarez Borrego, S., and L. A. Galindo Bect
19760500 ID: 8238
Hydrology of the upper Gulf of California: 1. Conditions during Autumn.
Calif. Coop. Oceanic Fisheries Investigations Reports
Volume: 18 *Issue:* *Page(s):* 51-59
File Name:

Some preliminary results from the October and December (1972) cruises are presented. The surface temperature and salinity distributions for the two cruises indicate that the net circulation, without considering tides, is

counterclockwise. Some characteristics of the distribution of the suspended sediments shown by space photographs taken by the ERTS-I satellite, support this. Comparing the dissolved oxygen surface distribution for October with that of December, it was deduced that the pollutants carried by the Colorado River , such as pesticides concentrated in planktonic organisms and suspended organic matter, are incorporated in the marine environment in a fashion as irregular as the fluvial regime of this zone. This indicates that any quantification of the pollutant income from river streams to the upper northern gulf, can only be presented in terms of total quantities

Alvarez Borrego, Saul, and Luis Arnulfo Galindo Bect
19740000 ID: 8249
Hidrologia del Alto Golfo de California; I, Condiciones Durante Otono. [The hydrology of the upper Gulf of California; 1, conditions during the Fall]
Ciencias Marinas
Volume: 1 *Issue:* 1 *Page(s):* 46-64
(Ensenada, B.C.) Instituto de Investigaciones Oceanologicas de la Universidad Autonoma de Baja California
File Name:

Anastas, G.
19800000 ID: 1619
High salinity geothermal energy conversion based upon the operating experience at the San Diego Gas and Electric DOE Geothermal Loop Experimental Facility located at the Niland Reservoir, Imperial Valley, California.
Volume: *Issue:* *Page(s):* 311-322
Second DOE-ENEL workshop for cooperative research
File Name:

Research at the Geothermal Loop Experimental Facility (GLEF) located at the Niland (or Salton Sea), Known Geothermal Resource Area (KGRA) on the southern shore of the Salton Sea in southeastern California was successfully concluded in September of 1979. In 13,000 hours of operation over a three and one half year period, the nominal 10 megawatt electrical equivalent GLEF provided the opportunity to identify problems in working with highly-saline geothermal fluids and to develop solutions that could be applied to a commercial flash geothermal power plant producing electricity. The experiences regarding the planning, construction and operation of the GLEF are summarized. Operating data are presented, as well as conclusions regarding the effect of a clarifier system on injection of spent brine.

Anastas, G., W. S. Bischoff, and H. K. Bishop
19790700 ID: 1629
Geothermal Loop Experimental Facility. Quarterly report, April-June 1979
Volume: *Issue:* *Page(s):* 115
File Name:

Since the Geothermal Loop Experimental Facility (GLEF) start-up in May, 1976, a substantial amount of information has been obtained on the operation of the plant and its components, brine and steam composition, production and injection wells, and the potential of the Niland Reservoir. The GLEF was modified in April, 1978, from a four stage flash/binary process to a two stage flash cycle for the extraction of energy from a high temperature, high salinity, liquid-dominated resource. A Reactor Clarifier/Media Filter System was put in operation in May, 1979 to demonstrate that suspended solids in the brine could be removed prior to brine injection into the reservoir. The general operations and accomplishments of the GLEF during the period are summarized.|;

Anastas, G., W. S. Bischoff, and H. K. Bishop
19790100 ID: 1701
Geothermal Loop Experimental Facility. Quarterly report, October-December 1978
Volume: *Issue:* *Page(s):* 164
File Name:

The Geothermal Loop Experimental Facility (GLEF) was modified in April 1978 from a four stage flash/binary process to a two stage cycle for the extraction of energy from a high temperature, high salinity, liquid-dominated resource. The overhaul and cleaning during October and pigging problems which led to a limited shutdown in December are discussed. Reservoir assessment, including production and injection wells, are discussed. Results of tests that were accomplished are included. Laboratory data obtained for steam, brine, binary and cooling water, and scale are indicated. Any equipment that required repairs or modifications to equipment and the clarifier/media filter are discussed. The status of the feasibility and surge studies is covered. (MHR)

Anastasiou, Clifford J.
19630000 ID: 4190
Fungi from salt lakes II : [Ascomycetes and fungi imperfecti from the Salton Sea]
Nova Hedwigia VI "Sonderabdruck aus Band VI."

Volume: 6 *Issue:* 3-4 *Page(s):* 243-276
Weinheim J. Cramer
File Name: 19630000_anastasiou_c.pdf

Anastasiou, Clifford J.
19630000 ID: 4858
The Fungi of the Salton Sea, California - Their Taxonomy, Biology, and Relationships
Volume: *Issue:* *Page(s):* 123
File Name: 19630000_anastasiou_2_c.pdf

Anderson, Daniel W., Lawrence R. Deweese, and Don V. Tiller
19770000 ID: 4895
Passive Dispersal of California Brown Pelicans
Bird-Banding
Volume: 48 *Issue:* 3 *Page(s):* 228-238
File Name: 19770000_anderson_c.pdf

Anderson, G. C.
19580700 ID: 7607
Some limnological features of a shallow saline meromictic lake
Limnology and Oceanography
Volume: 3 *Issue:* 3 *Page(s):* 259-70
File Name: 19580700_anderson_c.pdf

Anderson, L. D., and Kenneth W. Bruland
19881101 ID: 2886
Importance of methylated arsenic species in the biogeochemical cycling of arsenic in two California semiarid lakes; Salton Sea and Davis Creek Reservoir. [abstract]
Eos, Transactions, American Geophysical Union
Volume: 69 *Issue:* 44 *Page(s):* 1191
Washington, DC American Geophysical Union
File Name: 19881101_anderson.pdf

Anderson, S. H.
19830000 ID: 7694
Yuma Clapper Rail Recovery Plan
Volume: *Issue:* *Page(s):* 51
Albuquerque U.S. Fish and Wildlife Service
File Name: 19830000_anderson.pdf

Andes, Jerry Philip, Jr.
19870800 ID: 2930
Mineralogic and Fluid Inclusion Study of Ore-Mineralized Fractures in Drillhole State 2-14, Salton Sea Scientific Drilling Project, California, U.S.A. [abstract - M.S. thesis]
Volume: *Issue:* *Page(s):* 6 p.
Riverside, CA University of California
File Name: 19870800_andes_c.pdf

Andrus, D. S.
19960000 ID: 8271
Observational and Modeling Study of Two Gulf of California Surge Events [Master's thesis]
Volume: *Issue:* *Page(s):* 157 p.
File Name:

An observational and numerical study of two Gulf of California surges is undertaken to determine the mechanisms of surge development and evolution. While in each case the observations indicate that a boundary propagates northward over the Gulf of California, the sparsity of observations precludes the determination of a propagation mechanism. In contrast, the high resolution mesoscale model simulations provide a dynamically-consistent data set that can be used to evaluate gulf surge mechanisms. In each case the mesoscale model develops surges that move to the north-northwest along the Gulf of California consistent with the conceptual model proposed by Stensrud et al. (1996) although not predicted by the conceptual model. The stable air in the gulf region serves to allow the development and propagation of Kelvin waves northwestward along the Gulf of California and into Arizona

in the mesoscale model. Results also show that the mesoscale model is overly sensitive to convection within the gulf region and produces earlier and greater precipitation than suggested in observations, indicating a possible deficiency in either the convective parameterization scheme, model initialization, or both. Nonetheless, the success of the model in reproducing the gross features of these two surge events is a significant improvement over present operational models.

Anonymous
19570000 ID: 7936
Salton Sea corvina multiply: sport fishery prospects good.
Outdoor California
Volume: 18 *Issue:* *Page(s):* 10
File Name:

Anonymous
19740000 ID: 3202
Landlocked sea waters
Coastal Ecological Systems of the United States; II; Part V; C, Natural Temperate Ecosystems with Seasonal Programming, Odum, Howard T., ed.
Volume: *Issue:* *Page(s):* 48-54
Washington, DC Conservation Foundation, Washington, D.C. in cooperation with National Oceanic and Atmospheric Administration, Office of Coastal Environment
File Name:

Phytoplankton, Holocene

Anonymous
19780000 ID: 7938
The Salton Sea: Fishing the Great Inland Sea - Foster Home to the Orangemouth Corvina.
Outdoor California
Volume: 39 *Issue:* *Page(s):* 13-19
File Name:

Anthony, Mark, and Glenn Drummond
19730000 ID: 7972
Reservoir Water Quality Control.
Man-made lakes: their problems and environmental effects. William C. Ackermann, Gilbert F. White [and] E. B. Worthington, editors. J. Loreena Ivens, associate editor.
Volume: *Issue:* *Page(s):* 549-551
Washington, DC American Geophysical Union
File Name: 19730000_anthony_c.pdf

Arai, Tadashi
19730000 ID: 7970
Thermal Structure of the Artificial Reservoir.
Man-made lakes: their problems and environmental effects. William C. Ackermann, Gilbert F. White [and] E. B. Worthington, editors. J. Loreena Ivens, associate editor.
Volume: *Issue:* *Page(s):* 536-538
Washington, DC American Geophysical Union
File Name: 19730000_arai_c.pdf

Arnal, Robert E.
19541200 ID: 3255
Preliminary Report on the Sediments and Foraminifera from the Salton Sea, Southern California [Abstracts]
Geological Society of America Bulletin
Volume: 65 *Issue:* 12, part 2 *Page(s):* 1227-1228
File Name: 19541200_arnal_c.pdf

Arnal, Robert E.
19610000 ID: 4862
Limnology, Sedimentation, and Microorganisms of the Salton Sea, California
Geological Society of America Bulletin
Volume: 72 *Issue:* 3 *Page(s):* 427-78
File Name: 19610300_arnal_c.pdf

Arnal, Robert E.
19570000 ID: 2959
Limnology, sedimentation and microorganisms of the Salton Sea, California
Volume: *Issue:* *Page(s):*
File Name:

Arnow, Ted, and D. W. Stephens
19900000 ID: 7608
Hydrologic characteristics of the Great Salt Lake, Utah: 1847-1986
U.S. Geological Survey Water-Supply Paper
Volume: 32 *Issue:* 2332 *Page(s):*
U.S. Geological Survey
File Name:

Audet, D. J., M. Shaughnessy, and W. Radke
19970000 ID: 7768
Organochlorines and Selenium in Fishes and Colonial Waterbirds from the Salton Sea.
Volume: *Issue:* *Page(s):*
Fish and Wildlife Service
File Name:

Averett, R. C., and R. W. Brocksen
19700000 ID: 2262
Measuring the influence of water-quality changes on fish
Symposium on hydrobiology, 'Bioresources of shallow water environments'
Volume: *Issue:* *Page(s):* 212-222
File Name: 19700000_averett_c.pdf

THE INFLUENCE OF ENVIRONMENTAL CHANGES ON AQUATIC LIFE ARE BEING STUDIED AND THE PHYSIOLOGICAL STRESS DETERMINED. THE TECHNIQUE OF TOXICITY BIOASSAYS HAS BEEN FREQUENTLY USED TO DISCOVER THE MEDIAN TOLERANCE OF TEST ANIMALS TO WASTE CONCENTRATION OR ENVIRONMENTAL CHANGE, AND TO LETHAL TEMPERATURES. THE SWIMMING PERFORMANCE OF FISH AS A MEASURE OF SUBLETHAL STRESS HAS ALSO BEEN STUDIED. MORE VALUABLE IS WORK WHICH HAS BEEN DONE ON ENERGY AND MATERIAL UTILIZATION BY FISH, FROM THE POINT OF VIEW OF GROWTH AND ITS RELATED PROCESSES. AN EXPERIMENT ON JUVENILE COHO SALMON IS USED TO ILLUSTRATE THE INFLUENCE OF TEMPERATURE ON GROWTH AND STANDARD METABOLISM. GRAPHS SHOW CONSUMPTION-GROWTH CURVES AT DIFFERENT TEMPERATURES, AND STANDARD METABOLIC RATES. EXPERIMENTS WERE ALSO DONE ON THE INFLUENCE OF VARYING SALINITIES ON GROWTH, FOOD ASSIMILATION AND RESPIRATION OF YOUNG CORVINA FROM THE SALTON SEA, CALIFORNIA, AND RESULTS ARE DISCUSSED AND ILLUSTRATED BY GRAPHS. FOOD ASSIMILATION WAS HIGHEST AT THE MEDIUM 37PPT SALINITY, GROWTH OCCURRED AT ALL SALINITY LEVELS BUT MORE FOOD WAS REQUIRED FOR MAINTENANCE NEEDS AT THE EXTREMES OF 29 AND 45PPT SALINITIES. OXYGEN UPTAKE WAS ALSO HIGHEST AT THE TWO EXTREME LEVELS. ENERGY-DEMANDING PROCESSES AND OTHER STRESS FACTORS MIGHT ALSO BE TESTED, BUT GROWTH IS THE SINGLE BEST MEASURE OF THE INFLUENCE OF WATER-QUALITY CHANGES. (SEE ALSO W71-12029) (SMITH-PAI)

Bader, M. S. H.
19940000 ID: 7917
A New and Novel Process for Separation of Salts, Scale Salts and Norm Contaminant Salts from Saline Waters and Saline Solutions
Journal of Environmental Science and Health. Part A - Environmental Science and Engineering
Volume: 29 *Issue:* 10 *Page(s):* 2139-2149
File Name: 19940000_bader_c.pdf

A new and novel process for saline waters and saline solutions conversion has been provided that requires only a fair amount of a miscible organic solvent and heat transfer. Such requirements are ordinary in the nature of precipitation and vaporization. The proposed process consists of adding a miscible (strongly associated) organic solvent to saline water so that salt precipitates of the saline water are formed. The resultant salt precipitates (pure solids) are then separated from the organic-water mixture. After separating the salt precipitates, the miscible organic solvent is removed and recovered from the organic-water mixture. The recovered miscible organic solvent can then be returned to the process, and water is stripped out of trace of miscible organic solvent, and removed from the system as product water. The proposed process is potentially suited for the precipitation and separation of salts, scale salts, and NORM contaminant salts form saline water and saline solution as well as for the remediation of contaminated soils. (c) 1999 Inst for Sci Info.

Bailey, D. A., K. H. Rodenbaugh, V. M. J. Ryden, P. B. Schumann, P. M. Merifield, and W. D. Dritschilo
19830000 ID: 4933
Enhancement of Habitats for the Yuma Clapper Rail and Desert Pupfish in the Vicinity of the Salton Sea, California
ESE Report No. 83-52 for Southern California Edison Co. Contract No. C0991901
Volume: *Issue:* *Page(s):* 88 p.
Los Angeles, CA Environmental Science and Engineering
File Name: 19830000_bailey_c.pdf

Bain, Richard C., and John T. Marlar
19700000 ID: 2266
Water Quality Control Problems in Inland Sinks
Water Quality Management Problems in Arid Regions, Water Pollution Control Research Series, 13030 DYY, 6/69
Volume: *Issue:* *Page(s):*
File Name:

THE PROBLEMS OF PYRAMID LAKE, NEVADA, AND SALTON SEA, CALIFORNIA, ARE SIMILAR IN MANY WAYS AND ARE COMMON TO OTHER INLAND SINKS. SALINITY INCREASES AND WATER LEVEL FLUCTUATIONS ATTRIBUTABLE TO WATER AND SALT INFLOWS AND EVAPORATION LOSSES MAY BE CONTROLLED OR ABATED THROUGH RIVER BASIN AND WATER QUALITY MANAGEMENT SCHEMES. PYRAMID LAKE WATER LEVELS AND THE RATE OF SALINITY INCREASES CAN BE CONTROLLED BY INCREASING THE WATER SUPPLY TO THE LAKE. SALTON SEA SALINITY AND WATER LEVEL PROBLEMS CAN BE BETTER CONTROLLED BY SALT EXTRACTION, LOWER IRRIGATION EFFICIENCIES IN NEARBY AGRICULTURAL AREAS, BULKHEADING ON DEVELOPED PARTS OF THE SHORE, AND POSSIBLE FUTURE EVAPORATION POND OPERATION. EUTROPHICATION SYMPTOMS, ADVANCED IN THE SALTON SEA AND EMERGING IN PYRAMID LAKE, ARE LESS EASILY MANIPULATED. NATURAL FORCES OF DEPOSITION AND CONSUMPTION OF ORGANIC MATTER WITHIN THESE WATERS WILL TEND TO LIMIT NUTRIENT BUILDUP HOWEVER TRAPPING AND PREDATION EFFECTS ALONE WILL NOT ELIMINATE ALGAL BLOOMS. CONTROL OF EUTROPHICATION MUST BEGIN WITH CONTROL OR ELIMINATION OF MAJOR NUTRIENT SOURCES. IT IS CLEAR THAT UNLESS WATER QUALITY CONTROL MEASURES ARE TAKEN, BOTH BODIES OF WATER WILL EVENTUALLY BECOME AQUEOUS DESERTS. LOCAL, STATE AND FEDERAL EFFORTS ARE UNDERWAY TO PRESERVE OR ENHANCE THE WATER QUALITY AND ASSOCIATED USES OF THESE TWO INLAND SINKS. (SEE ALSO W71-06111) (WHITE-IOWA STATE)

Bainbridge, David
19900000 ID: 8090
Selenium in California. Volume 2: Critical Issues: a Report Prepared by the Dry Lands Research Institute, University of California, Riverside for the Water Resources Control Board, State of California
Publication (California. State Water Resources Control Board); no. 90-9-WQ.
Volume: *Issue:* *Page(s):* vi, 111 p.
[Sacramento?] California State Water Resources Control Board
File Name:

Bainbridge, David, Victor Wegrzyn, and Nabil Albasel
19880000 ID: 8089
Selenium in California. Volume 1: History, Chemistry, Biology, Uses, Management: a Report Prepared by the Dry Lands Research Institute, University of California, Riverside for the State Water Resources Control Board.
Report (California. State Water Resources Control Board); no. 88-10-I-WR.
Volume: *Issue:* *Page(s):* a-f, 120 p.
Sacramento, CA California State Water Resources Control Board
File Name:

Bardach, John E., and Bernard Dussart
19730000 ID: 7985
Effects of Man-Made Lakes on Ecosystems.
Man-made lakes: their problems and environmental effects. William C. Ackermann, Gilbert F. White [and] E. B. Worthington, editors. J. Loreena Ivens, associate editor.
Volume: *Issue:* *Page(s):* 811-817
Washington, DC American Geophysical Union
File Name: 19730000_bardach_c.pdf

Barlow, G. W.
19610000 ID: 7471

Social behavior of the desert pupfish, Cyprinodon macularius, in the field and in the aquarium
American Midland Naturalist
Volume: 65 *Issue:* *Page(s):* 339-59
File Name:

Barlow, George W.
19580828 ID: 4936
High Salinity Tolerance of Desert Pupfish, Cyprinodon Macularius [Ichthyological Notes]
Copeia
Volume: 1958 *Issue:* 3 *Page(s):* 231-2
File Name: 19580828_barlow_c.pdf

Barlow, George W.
19581000 ID: 4935
Daily Movements of Desert Pupfish, Cyprinodon macularius, in Shore Pools of the Salton Sea, California.
Ecology
Volume: 39 *Issue:* 4 *Page(s):* 580-587
File Name: 19581000_barlow_c.pdf

Barlow, J., T. Gerrodette, and G. Silber
19970100 ID: 8222
First estimates of vaquita abundance
MARINE MAMMAL SCIENCE
Volume: 13 *Issue:* 1 *Page(s):* 44-58
File Name:

The abundance of the only population of vaquitas, Gulf of California harbor porpoise (Phocoena sinus), is estimated from four surveys conducted in Mexico between 1986 and 1993, using a variety of methods. A line-transect approach was applied, using some parameters estimated from a related species, the harbor porpoise (Phocoena phocoena). Vaquita abundance is estimated as 503 (CV = 0.63) from 1986-1988 boat surveys, 885 (CV = 0.50) from 1988-1989 aerial surveys, 572 (CV = 1.43) from a 1991 aerial survey, and 224 (CV = 0.39) from a 1993 ship survey. A weighted log-linear regression indicates a rate of population change (decline) of - 17.7% per year (95% CI = -43.2% to +19.3%) between 1986 and 1993. All of these estimates of vaquita abundance indicate

Barnard, J. Laurens, and W. Scott Gray
19680000 ID: 3557
Introduction of an Amphipod Crustacean into the Salton Sea, California
Bulletin of the Southern California Academy of Sciences
Volume: 67 *Issue:* 4 *Page(s):* 219-232
File Name: 19680000_barnard_c.pdf

Barnard, J. L., and W. S. Gray
19690000 ID: 3556
Bio Geographic Relationships of the Salton Sea Amphipod Gammarus-Mucronatus
Bulletin of the Southern California Academy of Sciences
Volume: 68 *Issue:* 1 *Page(s):* 1-9
File Name: 19690100_barnard_c.pdf

Barnum, D. A.
19940000 ID: 7502
Low selenium in waterfowl wintering at Kern National Wildlife Refuge
National Biological Survey, Research Information Bulletin
Volume: 25 *Issue:* *Page(s):*
Fort Collins, CO U.S. Department of the Interior
File Name:

Barrera Guevara, J. C.
19900000 ID: 8327
The conservation of Totoaba macdonaldi (Gilbert), (Pisces: Sciaenidae), in the Gulf of California, Mexico
J. FISH BIOL
Volume: 37 *Issue:* supp. A *Page(s):* 201-202
File Name:

The totoaba, Totoaba macdonaldi , is the largest fish in the family Sciaenidae, with max reported length of almost 2 m and weights of up to 100 kg. This demersal sp is endemic to the Gulf of California, where formerly it supported an important commercial fishing industry and sport fishery, based mainly on its annual spring breeding migration to the shallow, brackish waters of the Colorado River delta at the northern end of the Gulf. In 1976, the totoaba was placed on the endangered list. The factors responsible for the population decline of the totoaba seem to be the combined effects of overfishing and alterations to its habitat. Overfishing of adults occurred during their annual breeding migrations to the Colorado delta and young fish have been decimated by shrimp trawls in the northern Gulf. Diversion of the Colorado River has converted the formerly brackish-water habitat, in the extreme northern Gulf of California, into a hypersaline environment, drastically altering the nursery grounds of the totoaba. Populations of totoaba remain greatly reduced and affected by illegal fishing and accidental catches of adults and juveniles (machorritos). Changes in salinity and currents in the upper Gulf of California have affected the nursery and spawning grounds, but the specific effects of these factors on the totoaba population have not been clearly demonstrated.

Barrett, T. J., and G. M. Anderson
19880400 ID: 1460
The solubility of sphalerite and galena in 1-5 m NaCl solutions to 300 degree C
Geochimica et Cosmochimica Acta
Volume: 52 *Issue:* 4 *Page(s):* 813-820
File Name:

Sphalerite and galena solubilities have been experimentally determined under H{sub 2}S-saturated conditions over the 3-5 molal (=m) NaCl range and for temperatures up to 95{degree}C. Using recent literature values for the stability constants of the chloride complexes of Zn and Pb up to 300{degree}C, the authors have calculated ZnS and PbS solubilities over the 25-300{degree}C and 1-5 m NaCl range. Field data from various geothermal systems have been used to calculate equilibrium solubilities of sphalerite and galena in these systems. High-salinity brines appear to range from supersaturated (Salton Sea , high-temperature) to strongly supersaturated (Red Sea, low temperature) with respect to these sulfides. By contrast, high-temperature seawater-salinity solutions at sediment-free spreading axes are grossly undersaturated in sphalerite and galena. The latter situation is of interest in that massive sulfide deposits are nevertheless forming from such solutions. On the other hand, vent fluids depositing sulfides at the sediment-covered axis in the Guaymas Basin appear to be near saturation in sphalerite and galena. This is probably related to the higher pH of these fluids, and the higher metal contents of the underlying sediments relative to basalts. Calculated solubilities for on-land geothermal systems yield values in reasonable agreement (<0.2 log units) in two of three cases.

Bartlett, R. W., D. D. Macdonald, and E. P. Farley
19790924 ID: 2177
Sulfide Precipitation of Heavy Metals from High Salinity Geothermal
Geothermal Resources Council, 3rd Annu Meet, Reno
Volume: *Issue:* *Page(s):*
File Name:

Large quantities of high salinity geothermal brine from the Salton Sea Geothermal area, Calif., contain significant amounts of silver, zinc, lead, iron, and manganese. A simple method of treating large volumes of spent bring to recover these metals is described. Precipitation with sulfides appears to be an effective treatment technique. Precipitation of zinc is found to be proportional to the amount of dissolved sulfide added. A small amount of dissolved sulfide precipitated lead to a residual concentration of about 6 ppm. Raising the ph of the brine markedly increased iron precipitation.

Baugh, T.
19790000 ID: 4992
In search of the desert pupfish
Freshwater and Marine Aquarium
Volume: 2 *Issue:* *Page(s):* 34-35, 82-83
File Name:

Bayly, I. A. E.
19690000 ID: 7609
Salt and brackish inland waters
Internationale Vereinigung für Theoretische und Angewandte Limnologie Verhandlungen
Volume: 17, part 1 *Issue:* *Page(s):* 419+ or 449+
File Name:

Beare, P. A., and J. B. Zedler
19870000 ID: 2216
Cattail Invasion and Persistence in a Coastal Salt Marsh: The Role of Salinity Reduction

Estuaries
Volume: 10 *Issue:* 2 *Page(s):* 165-170
File Name: 19870000_beare_c.pdf

The hypothesis that Typha domingensis (cattail) can invade tidal marshes only after soil salinities are substantially reduced was tested experimentally by comparing the salt tolerance of seeds, seedlings, and plants reared from rhizomes. Germination rates for four southern California populations reached 100% in fresh water, decreasing to 2% at 20 parts per thousand. The salt tolerance of seeds from three coastal populations was lower than that of the Salton Sea population. Salt tolerance of plants grown in the lab did not increase with age for seedlings up to 8 weeks old. Rhizome-bearing plants had greatly decreased growth at 10 parts per thousand and no growth at 25 parts per thousand. However, rhizomes of about 5% of the plants survived 9 months at 45 parts per thousand. The seeds and seedlings are salt sensitive, which explains why invasion into tidal marshes is restricted to prolonged periods of low soil salinity. The older, rhizome-bearing plants are salt tolerant, which explains how invading plants persist under hypersaline conditions. (Author 's abstract)

Bechtel Corporation
19780000 ID: 1783
Advanced design and economic considerations for commercial geothermal power plants at Heber and Niland, California. Final report
Volume: *Issue:* *Page(s):* 200
[Washington]; [Springfield, VA] Department of Energy, [Division of] Geothermal Energy
File Name:

Two separate studies, involving advanced design and economic considerations for commercial geothermal power plants using liquid-dominated hydrothermal resources, are presented. In the first study, the effects on design, capital cost, and bus bar electric energy production cost caused by an anticipated decline in available geothermal fluid temperature over the lifetime of power plants are described. A two-stage, flashed-steam energy conversion process was used for the conceptual design of the power plants, which operate from the moderate-temperature, low-salinity reservoir at Heber, California. Plants with net capacities of 50, 100, and 200 MWe (net) were investigated. The results show that it is important to include provision for geothermal fluid temperature decline in the design of power plants to prevent loss of electric energy production capability and to reduce bus bar electric energy costs. In the second study, the technical, economic, and environmental effects of adding regeneration to a 50 MWe (net) power plant employing the multistage-flash/binary process are described. Regeneration is potentially attractive because it recovers waste heat from the turbine exhaust and uses it in the power cycle. However, the pressure drop caused by the introduction of the regenerator decreases the turbine expansion and thus decreases system performance. An innovative approach was taken in the design of the regenerator, which minimized the expected performance degradation of the turbine. The result was that the performance, capital cost, and bus bar electric energy production cost are nearly the same for the processes with and without regeneration. On the other hand, the addition of regeneration has the environmental benefits of substantially reducing heat rejection to the atmosphere and cooling tower makeup and blowdown water requirements. It also increases the temperature of the brine returned to the field for reinjection.

Bechtel National, Inc., prepared by
19950700 ID: 7945
Site Inspection Report for Salton Sea Test Base, Imperial County, CA
Volume: *Issue:* *Page(s):* 5 v.
San Diego U.S. Naval Facilities Engineering Command. Southwest Division.
File Name:

Bechtel National, Inc., prepared by
19960600 ID: 7947
Final 1996 Annual Groundwater Monitoring Report, Salton Sea Test Base, Imperial County, CA
Volume: *Issue:* *Page(s):* 2 v.
San Diego U.S. Naval Facilities Engineering Command. Southwest Division. Contracts
File Name:

Bechtel National, Inc., prepared by
19970600 ID: 7948
Final Addendum to the Removal Site Evaluation Report, Salton Sea Test Base, Imperial County, CA (text)
Volume: *Issue:* *Page(s):* 1 v.
San Diego U.S. Naval Facilities Engineering Command. Southwest Division. Contracts
File Name: 19970600_bechtel_4_text.pdf

Ben-Yaakov, S., and I. R. Kaplan
19680000 ID: 3226
pH-temperature profiles in ocean and lakes using an in situ probe

Limnology and Oceanography
Volume: 13 *Issue:* 4 *Page(s):* 688-693
File Name:

An oceanographic pH probe recently developed and laboratory tested at UCLA (Ben-Yaakov and Kaplan, 1968) consists of four sensors--a transducer for pressure, a thermistor for temperature, a glass electrode, and a silver-silver chloride reference electrode with liquid junction for pH--connected to an electronic system for recording at the surface. The probe was used successfully to a depth of 700 m for direct measurement of pH-temperature profiles of sea water and sediment-water interface off the coast of southern California and in San Francisco Bay, and also in Salton Sea and Lake Arrowhead. Temperature, dissolved oxygen, and pH decrease with depth, showing close similarity in profile pattern; carbonate alkalinite (not measured) probably has an inverse

Bennett, Jewel
19981200 ID: 4683
Biological Effects of Selenium and Other Contaminants Associated with Irrigation Drainage in the Salton Sea Area, California, 1992-1994
Information Report
Volume: *Issue:* *Page(s):* ii, 35 p.
Washington, DC Department of the Interior, National Irrigation Water Quality Program
File Name:

Bennett, William W., and Robert D. Ohmart
19780100 ID: 4940
Habitat Requirements and Population Characteristics of the Clapper Rail (Rallus longirostris yumanensis) in the Imperial Valley of California
Volume: *Issue:* *Page(s):* 53 p.
University of California, Lawrence Livermore Laboratory
File Name: 19780100_bennett_c.pdf

Habitat requirements and population characteristics of the *Yuma* *Clapper* Rail (Rallus longirostris yumanensis) were examined in the Imperial Valley of California during 1977. Rails used fresh water areas containing mature stands of cattail (Typha domingensis) and bulrush (Scirpus californicus). Water level variation was found to influence the permanence of territories and the breeding effort. Marsh areas with permanent shallow water through the breeding season contained highest rail densities. Hatching success was high (90 percent), but so was chick mortality, perhaps due to the chicks' inability to swim, the great variability of water levels, and possible predation. Clapper Rails began arriving in the Imperial Valley in mid-March and remained until the beginning of October. Time of appearance and disappearance of crayfish (Procambarus and Orcopectes, the most common genera) was closely correlated with the arrival and departure dates of Clapper Rails. Ninety percent of the territories of paired birds contained high numbers of crayfish. A complete census of the valley during the latter half of May, using tape-recorded calls, elicited responses from 160 individuals. A small overwintering population remained as determined by the sampling of high density areas in January and November. Rail management suggestions based on the results of this paper are also proposed. (ERA citation 03:026943)

Benson, Norman G.
19730000 ID: 7975
Summary: Man-Made Lakes as Aquatic Ecosystems.
Man-made lakes: their problems and environmental effects. William C. Ackermann, Gilbert F. White [and] E. B. Worthington, editors. J. Loreena Ivens, associate editor.
Volume: *Issue:* *Page(s):* 588-589
Washington, DC American Geophysical Union
File Name: 19730000_benson_c.pdf

Biehler, S., and T. Lee
19770100 ID: 1717
Resource assessment of the Imperial Valley. Final report
Volume: *Issue:* *Page(s):* 93
File Name:

A resource assessment of the Imperial Valley has been made based on the use of the gravity anomalies as indicators of total excess mass. These data indicate a potential of producing electric power of 7 to 80 thousand megawatts for 30 years. Over half of the total potential is located in the Salton Sea Anomaly and approximately half of the potential of the Salton Sea field is water covered. An attempt has been made to assess not only the heat in storage in the fluid but also recoverable from the country rock by reinjection. Based on calculations, the natural recharge rate of heat in the Valley due to sea floor spreading is too small to give the resource an indefinite

life-span since the economic rates of withdrawal appear to be at least an order of magnitude greater.|;

Bigelow, F. H.
19080000 ID: 4941
Studies on the rate of evaporation at Reno, Nevada, and in the Salton Sink
National Geographic
Volume: 19 *Issue:* *Page(s):* 20-8
File Name:

Biological Environment Team
19970806 ID: 8128
Algal and Invertebrate Populations of the Salton Sea in Relation to Physical and Chemical Limnology
Volume: *Issue:* *Page(s):* 2 p.
File Name: 19970806_biology_environment_team_2.pdf

Biology Environment Team
19970806 ID: 8125
Limnological Survey of the Salton Sea
Volume: *Issue:* *Page(s):* 2 p.
File Name: 19970806_biology_environment_team.pdf

Birkner, J. H.
19780000 ID: 7504
Selenium in aquatic organisms from seleniferous habitats
Ph. D. thesis
Volume: *Issue:* *Page(s):*
Fort Collins Colorado State University
File Name:

Bischoff, W. S., H. K. Bishop, C. S. Cooney, W. H. Hanenburg, G. J. Hoaglin, W. O. Jacobson, D. K. Mulliner, D. G.Newell, and C. R. Swanson
19780400 ID: 1747
Geothermal Loop Experimental Facility. Quarterly report, January--March 1978
Volume: *Issue:* *Page(s):* 116
File Name:

The Geothermal Loop Experimental Facility (GLEF) utilizes a four stage flash/binary process for the extraction of energy from a high temperature, high salinity, liquid-dominated resource. Since plant start-up in May 1976, a substantial amount of information has been obtained on the operation of the plant, components, brine and steam composition, production and injection wells, and the potential of the Niland Reservoir. The general operation and activities of the GLEF during the period January 1978 through March 1978, are discussed. The production and injection well encountered no unusual difficulties. Scrubber performance tests were rerun this period and are discussed. Steam pH, conductivity, chemical composition, brine and scale properties, pigging, and component optimization efforts are discussed. The injection pump difficulties and condenser plugging problems are detailed. The feasibility study for a 50 MWe plant and H/sub 2/S abatement are discussed.|;

Bischoff, W. S., H. K. Bishop, C. S. Cooney, W. H. Hanenburg, G. J. Hoaglin, W. O. Jacobson, D. K. Mulliner, D. G.Newell, and C. R. Swanson
19780700 ID: 1748
Geothermal Loop Experimental Facility. Quarterly report, April--June 1978
Volume: *Issue:* *Page(s):* 148
File Name:

The Geothermal Loop Experimental Facility (GLEF) was modified to use a two stage flash process with two parallel flash trains for the extraction of energy from a high temperature, high salinity, liquid-dominated resource. Since plant start-up in May 1976, a substantial amount of information has been obtained on the operation of the plant, components, brine and steam composition, production and injection wells, and the potential of the Niland Reservoir. The general operation and accomplishments of the GLEF during the period April 1978 through June 1978 are discussed. The GLEF underwent a major redesign. Modifications and inspections of various GLEF equipment and systems are also discussed. Information about the production and injection wells flow testing and instrumentation are discussed. Information regarding coatings and linings for valves and piping is included. In the Chemistry Section there is a wide range of data taken from Brine, Steam, Scale, Binary, Condensate, and Cooling

Bischoff, W. S., C. H. Haas, G. J. Hoaglin, W. O. Jacobson, D. K. Mulliner, D. G. Newell, and C. R. Swanson
19781000 ID: 1651
Geothermal Loop Experimental Facility. Quarterly report, July-September, 1978 and annual report, October 1, 1977-September 30, 1978
Volume: *Issue:* *Page(s):* 141
File Name:

Information obtained on the operation of the plant, components, brine and steam composition, production and injection wells, and the potential of the Niland Reservoir are reviewed. The Geothermal Loop Experimental Facility (GLEF) was modified from a four stage flash/binary process to a two stage flash process with two parallel flash trains for the extraction of energy from a high temperature, high salinity, liquid-dominated resource. The general operation and accomplishments of the GLEF during the period from October 1977 through September 1978 are summarized and these activities during the period from July 1978 through September 1978 are detailed. The four stage flash/binary process test results were used in a Feasibility and Risk Study which identified the two stage flash cycle as the preferred cycle. The facility was modified to test critical portions of the cycle and testing was

Bishop, H. K., and J. R. Bricarello
19770000 ID: 1776
Scaling and corrosion in an experimental geothermal power plant.
Proceedings of the international symposium on oilfield and geothermal chemistry
Volume: Paper No. SPE *Issue:* *Page(s):* 237-240
International symposium on oilfield and geothermal
File Name:

The scaling and corrosion observed during the operation of the SDG and E/US ERDA Geothermal Loop Experimental Facility on high salinity (approximately 200,000 ppM) geothermal fluids are described. In general scaling occurred on all surfaces in contact with the geothermal fluids with the severity increasing as the temperature of the fluid declined. Composition ranged from a predominantly metal sulfide deposition in the first stage to a predominantly silica deposition in the latter stages and reinjection system. Heaviest deposits were observed just down stream of the injection pump. Corrosion of the mild steel vessel and piping has been low, possibly because of the reducing environment and protection by the scale deposits.|;

Bishop, H. K., C. S. Cooney, W. H. Hanenburg, N. C. Hodgdon, W. O. Jacobson, K. K. Li, and C. R. Swanson
19780100 ID: 1761
Geothermal loop experimental facility. Quarterly report, October--December 1977
Volume: *Issue:* *Page(s):* 103
File Name:

The Geothermal Loop Experimental Facility (GLEF) utilizes a four stage flash/binary process for the extraction of energy from a high temperature, high salinity, liquid-dominated resource. Since the start-up in May 1976, a substantial amount of informaion has been obtained on the operation of the plant, components, brine and steam composition, production and injection wells, and the potential of the Niland Reservoir.|;

Bishop, H. K., and D. B. Gilmore
19780600 ID: 1728
Sampling and analysis of geothermal brines from Niland Field, California.
Second workshop on sampling geothermal effluents
Volume: *Issue:* *Page(s):* 160-165
Second workshop on sampling geothermal effluents
File Name:

The Salton Sea Geothermal Field, which lies just south of the Salton Sea in the Imperial Valley of Southern California, produces a highly saline brine. Development of this resource requires that the properties of the geothermal fluids be fully understood. Currently, San Diego Gas and Electric (SDG and E) in cooperation with the US Energy Research and Development Administration has constructed and is operating a 10-MW Geothermal Loop Test Facility (GLEF), which utilizes geothermal fluid from the Salton Sea Field. SDG and E's experience in sampling and analyzing the geothermal fluid flowing through the GLEF is discussed.|;

Black, Glenn F.
19740500 ID: 4867
The Partyboat Fishery of the Salton Sea and the Apparent Effect of Temperature and Salinity on the Catch of Orangemouth Corvina, cynoscion xanthulus
Inland Fisheries Administrative Report
Volume: 74-5 *Issue:* *Page(s):* 14 p.
California Department of Fish and Game
File Name: 19740500_black.pdf

Black, Glenn F.
19790000 ID: 4943
Desert Pupfish Survey at the Salton Sea, August 12-16, 1979
Volume: *Issue:* *Page(s):* 11 p.
California Department of Fish and Game
File Name: 19790000_black.pdf

Black, Glenn F.
19800000 ID: 4945
Fisheries Survey of Salt Creek and the Springs and Seeps in the Dos Palmas Area
Memorandum dated January 25, 1980
Volume: *Issue:* *Page(s):* 3 p.
California Department of Fish and Game
File Name: 19800000_black_2.pdf

Black, Glenn F.
19800000 ID: 4946
Fisheries survey of Salt Creek drainage
Memorandum dated June 3, 1980
Volume: *Issue:* *Page(s):* 3 p.
California Department of Fish and Game
File Name: 19800000_black.pdf

Black, Glenn F.
19800000 ID: 4947
The status of the desert pupfish, Cyprinodon macularius, at the Salton Sea, California
Proceedings of the Desert Fishes Council
Volume: 10 *Issue:* *Page(s):* 31-2
File Name: 19800000_black_c.pdf

Black, Glenn F.
19800300 ID: 4849
Status of the Desert Pupfish, cyprinodon macularius (Baird And Girard), in California
Inland Fisheries Endangered Species Program Special Publication
Volume: 80-1 *Issue:* *Page(s):*
File Name: 19800300_black.pdf

Black, Glenn F.
19801015 ID: 4944
The Current Status and Future Management of the Desert Pupfish, Cyprinodon Macularius, Within California
Proceedings of the Desert Fishes Council
Volume: 11 *Issue:* *Page(s):* 47-8
Bishop, CA Desert Fishes Council
File Name: 19801015_black_c.pdf

Black, Glenn F.
19810000 ID: 4949
Transplant of Desert Pupfish and Reconnaissance Survey of San Felipe Creek
Memorandum dated August 14, 1981
Volume: *Issue:* *Page(s):* 3 p.
California Department of Fish and Game
File Name: 19810000_black_2.pdf

Black, Glenn F.
19810000 ID: 4950
Transplant of Desert Pupfish from San Felipe Creek to Palm Canyon Refugium, Anza Borrego Desert State Park
Memorandum dated September 25, 1981
Volume: *Issue:* *Page(s):* 2 p.
California Department of Fish and Game
File Name: 19810000_black.pdf

Black, Glenn F.
19830000 ID: 2215
Prognosis for Water Conservation and the Development of Energy Resources at the Salton Sea - Destruction or Preservation of this Unique Ecosystem
Aquatic Resources Management of the Colorado River Ecosystem. V. D. Adams, and V. A. Lamarra, eds.
Volume: *Issue:* *Page(s):* 363-382
Ann Arbor, MI Ann Arbor Science
File Name:

The fish, wildlife, and recreational values of the Salton Sea, California, are documented and potential impacts of water resources development are discussed. The 932-sq km water body, which collects agricultural drain water, lies in a sink 85 m below sea level and has no outlet. Recreational activities at the rate of 1.5 million recreation days annually include fishing (orangemouth corvina, bairdiella, and sargo being most successful), hunting (waterfowl), boating, camping, nature study (home for endangered, threatened, and rare species), and sightseeing. Present salinity is 38,000 ppm total dissolved solids (varied from 3,000 to 40,000 since 1907), and present surface level elevation is 69 m below sea level (varied from 60 m below sea level to 74 m below sea level). A project to conserve 25% of the annual Colorado River flow to the Salton by canal lining, reservoir regulation, and water reuse would drop the surface elevation to 74 m below sea level (year 2012) and increase salinity to 101,000 ppm total dissolved solids by 2007 and 96,000 ppm total dissolved solids by 2012. Without these conservation measures the surface elevation and salinity in 2012 are predicted to be 70 m below sea level and 59,000 ppm total dissolved solids. If geothermal resources are developed, the Sea will shrink to half its present size, and salinity levels will increase greatly. High salinities and smaller area would severely affect the fish and bird populations, the pileworm (an invertebrate fish food), and boating. Possible solutions to these environmental problems include evaporation and collection of salt, diversion of excess river water, and reinjection of geothermal water. (See also W86-02484) (Cassar-PTT)

Black, Glenn F.
19830000 ID: 4656
The Salton Sea and the push for energy exploitation of a unique ecosystem.
Cal-Neva Wildlife Transactions
Volume: *Issue:* *Page(s):* 1-14
File Name:

Blaney, H. F.
19550000 ID: 4955
Evaporation from and stabilization of Salton Sea water surface
Eos, Transactions, American Geophysical Union
Volume: 36 *Issue:* *Page(s):* 633-40
File Name: 19550000_blaney_c.pdf

Blinn, D. W.
19910000 ID: 7610
The diatom flora of Lake Eyre South: a large episodically filled salt lake in South Australia
Salt Lakes and Salinity. Williams, W. D., ed.
Volume: *Issue:* *Page(s):* 101-4
Hydrobiologia
File Name:

Blus, Lawrence J.
19820000 ID: 4684
Further Interpretation of the Relationship of Organochloride Residues in Brown Pelican Eggs to Reproductive Success
Environmental Pollution (Series A)
Volume: 28 *Issue:* 1 *Page(s):* 15-33
File Name: 19820000_blus_c.pdf

Boehm, R. F., and T. Newell
19800000 ID: 2108
Key questions in the application of salt-stratified solar ponds
Energy to the 21st Century. Proceedings of the 15th Intersociety Energy Conversion Engineering Conference
Volume: *Issue:* *Page(s):* 1438-43
File Name:

Three crucial questions are asked regarding the application of large-scale salt-stratified solar ponds: (1) what is the potential energy output of ponds in any specific location, (2) what techniques are best applied for harvesting energy and generating power, and (3) can analytical methods be applied successfully to predict the formation and long-term behavior of the convective zones. Partial answers to these questions are presented with reference to

work being done on the Great Salt Lake. (B.J.)

Bohlke, J. K., and J. J. Irwin
19890000 ID: 2845
Halogen ratios (Cl:Br:I) in natural fluid inclusions analyzed by laser ablation and noble gas mass spectometry
Geological Society of America, Abstracts with Programs
Volume: 21 *Issue:* 6 *Page(s):* 358
File Name:

Bohlke, J. K., and J. J. Irwin
19920100 ID: 3720
Laser microprobe analyses of Cl, Br, I, and K in fluid inclusions; implications for sources of salinity in some ancient hydrothermal fluids
Geochimica et Cosmochimica Acta
Volume: 56 *Issue:* 1 *Page(s):* 203-225
File Name:

The relative concentrations of Cl, Br, I, and K in fluid inclusions in hydrothermal minerals were measured by laser microprobe noble gas mass spectrometry on irradiated samples containing 10(-10) to 10(-8) L of fluid. Distinctive halogen signatures indicate contrasting sources of fluid salinity in fluid inclusions from representative 'magmatic' (St. Austell), 'metamorphic' (Alleghany), and 'geothermal' (Creode, Salton Sea) aqueous systems. Br/Cl mol ratios are lowest at Salton Sea (0.27-0.33 x 10(-3)), where high salinities are largely due to halite dissolution; intermediate at St. Austell (0.85 x 10(-3)), possibly representative of magmatic volatiles; and highest (near that of seawater) at Creede (1.5-2.1 x 10(-3)) and Alleghany (1.2-2.4 x 10(-3)), where dissolved halogens probably were leached from volcanic and (or) nonevaporitic sedimentary rocks. I/Cl mol ratios are lowest (near that of seawater) at Creede (1-14 x 10(-6)), possibly because organisms scavenged 1 during low temperature recharge; intermediate at Salton Sea (24-26 x 10(-6)) and St. Austell (81 x 10(-6)); and highest at Alleghany (320-940 x 10(-6)), probably because the fluids interacted with organic-rich sediments at high temperatures before being trapped. K/Cl mol ratios indicate disequilibrium with respect to hypothetical feldspathic alkali-Al-silicate mineral buffers at fluid inclusion trapping temperatures at Creede, and large contributions of (Na, K)-bicarbonate to total fluid ionic strength at Alleghany. Significant variations in Cl/Br/I/K ratios among different fluid inclusion types are correlated with previously documented mineralization stages at Creede, and with the apparent oxidation state of dissolved carbon at Alleghany. The new data indicate that Cl/Br/I ratios in hydrothermal fluid inclusions vary by several orders of magnitude, as they do in modern surface and ground waters. This study demonstrates that halogen signatures of fluid inclusions determined by microanalysis yield important information about sources of fluid salinity and provide excellent definition of fluid reservoirs and tracers of flow and interaction in ancient hydrothermal systems.

Bondurant, D. C., and R. H. Livesey
19730000 ID: 7964
Reservoir Sedimentation Studies.
Man-made lakes: their problems and environmental effects. William C. Ackermann, Gilbert F. White [and] E. B. Worthington, editors. J. Loreena Ivens, associate editor.
Volume: *Issue:* *Page(s):* 364-367
Washington, DC American Geophysical Union
File Name: 19730000_bondurant_c.pdf

Bosshard, B., J. Raumin, and B. Saurohan
19950000 ID: 1397
In situ bioremediation under high saline conditions.
Eleventh annual environmental management and technology conference/West -- HazMat/West '95: Technical papers
Volume: *Issue:* *Page(s):* 421-444 597 p.
Eleventh annual environmental management and techn
File Name:

An in situ bioremediation treatability study is in progress at the Salton Sea Test Base (SSTB) under the NAVY CLEAN 2 contract. The site is located in the vicinity of the Salon Sea with expected groundwater saline levels of up to 50,000 ppm. The site is contaminated with diesel, gasoline and fuel oils. The treatability study is assessing the use of indigenous heterotrophic bacteria to remediate petroleum hydrocarbons. Low levels of significant macro nutrients indicate that nutrient addition of metabolic nitrogen and Orthophosphate are necessary to promote the process, requiring unique nutrient addition schemes. Groundwater major ion chemistry indicates that precipitation of calcium phosphorus compounds may be stimulated by air-sparging operations and nutrient addition, which has mandated the remedial system to include pneumatic fracturing as an option. This presentation is tailored at an introductory level to in situ bioremediation technologies, with some emphasize on innovations in sparge air delivery, dissolved oxygen uptake rates, nutrient delivery, and pneumatic fracturing that should keep the expert's

Boyd, S.
19980000 ID: 7786
The importance of Mono Lake and Great Salt Lake to Eared Grebes nesting in British Columbia.
Presented at symposium on Wetland Connectivity and Waterbird Conservation in the western Great Basin. Sponsored by the Forest and Rangeland Ecosystem Science Center, BRD, U.S. Geological Survey, Corvallis, OR.
Volume: *Issue:* *Page(s):*
File Name:

Bozkurt, Umur
19890000 ID: 2860
A fluid inclusion study of selected boreholes, Salton Sea geothermal system, Imperial Valley, California
Volume: *Issue:* *Page(s):* 208 p.
File Name:

This report is based on an investigation of fluid inclusions in drill cutting samples recovered from the IW-1, IW-2, IW-6 and Elmore #4 wells in the Salton Sea Geothermal System (SSGS), Imperial Valley, California. These wells were all drilled in the central part of the system, with the IW wells being located slightly closer to center of the thermal anomaly. The cuttings collected from the Elmore #4 well indicate that fluids that existed in this region caused much more extensive hydrothermal alteration and mineralization than those that existed in the region of IW wells. Fluid inclusion analyses for the 335-447 m intervals of the IW-1 and IW-2 wells indicate that the salinities of vein fluids varied between 1.6 to 15.4 wt % NaCl eq. over a Th range from 131.0 to 252.0 degrees C. In the IW-1 and IW-6 wells at 843-1047 m the observed ranges of these parameters are 12.9-26.0 wt % NaCl eq. and 272.5-313.5 degrees C, respectively. Measurements taken from the Elmore #4 well at 1143-1478 m shows variations between 19.1-28.1 wt % NaCl eq. and 224.9-347.0 degrees C. The salinity changes in fluids trapped in (evaporitic) anhydrite and vein calcite from the IW-6 well (900 and 957 m) imply that dissolution of evaporites under reservoir conditions has contributed to salinity of the SSGS brine. A halite-bearing calcite crystal observed at 1241 m depth of the Elmore #4 well indicates that solid NaCl apparently existed at this depth and could have added to high salinities determined from this well. The Th values for certain intervals of the IW-1, IW-2 and Elmore #4 wells imply that fluids hotter than current temperatures have existed in the past. Th values for some sample depths of the Elmore #4 well fall as much as 37.6 degrees C lower than the logged temperatures, and thus indicate heating of this portion of the system after trapping. The NaCl/(CaCl (sub 2 eq.) weight ratios of the inclusions from the Elmore #4 well are in good agreement with that of the brine produced from this well, indicating that the ternary diagram for the system H (sub 2 O-NaCl-CaCl (sub 2 is applicable to fluid inclusion studies concerning brine types as complex as those from the SSGS.

Bradford, G. R., D. Bakhtar, and D. Westcot
19900100 ID: 2067
Uranium, Vanadium, and Molybdenum in Saline Waters of California.
Journal of Environmental Quality
Volume: 19 *Issue:* 1 *Page(s):* 105-108
File Name: 19900100_bradford_c.pdf

BIOSIS COPYRIGHT: BIOL ABS. Analyses of saline water samples from large salt water bodies, agricultural drainage and evaporation ponds, and soil water extracts were used to determine the extent of elevated uranium (U), vanadium (V), and molybdenum (Mo) in agricultural environments of the San Joaquin Valley. Saline water samples and soil extracts were pretreated by chelation and solvent extraction to separate and concentrate, U, V, and Mo for analyses. Mean concentrations of U, V, and Mo were considerably elevated in agricultural drainage and evaporation ponds of the San Joaquin Valley compared to saline waters of Salton Sea and Mono Lake. Relatively high correlation coefficients were observed between U, Mo, and salinity.

Brand, Christopher J., and Ruth M. Duncan
19830000 ID: 2550
Notes - Avian cholera in an American flamingo, Phoenicopterus ruber : A new host record.
California Fish and Game
Volume: 69 *Issue:* 3 *Page(s):* 190-191
File Name: 19830700_brand_c.pdf

During January-March 1979, an avian cholera epizootic at the south end of the Salton Sea in southern California killed an estimated 3,800 waterfowl, shorebirds, and wading birds. On 12 February, an American flamingo (P. ruber) carcass was found. Pasteurella multocida , the causative organism of avian cholera, was cultured from the liver and spleen. The isolate was identified as serotype I (Heddleston's scheme) by standard agar gel diffusion test. This case is the first reported occurrence of avian cholera in a flamingo, and adds to the large number of avian species known to be susceptible to this disease. In this instance, the specimen was of presumed captive origin and outside the natural range of the species.

Brandt, K. K., and K. Ingvorsen
19970000 ID: 7651

Desulfobacter halotolerans sp. nov., a halotolerant acetate-oxidizing sulfate-reducing bacterium isolated from sediments of Great Salt Lake, Utah
Systematic Applied Microbiology
Volume: 20 *Issue:* *Page(s):*
File Name:

Bray, N. A., M. C. Hendershott, J. M. Robles, and A. C. Carrasco
19841100 ID: 8298
Pichicuco 6: Gulf of California CTD Data Report. R/V New Horizon
Volume: *Issue:* *Page(s):* 260 p.
File Name:

During late fall of 1984, the R/B New Horizon occupied 230 CTD stations in the central and northern Gulf of California. The primary objectives of the cruise were to define the vertical fine structure characteristics in the high current area near Tiburon Island as well as in the Guaymas Basin; to examine the structure and evoluation of quasi-permanent density fronts found near Tiburon Island; and to examine the early winter hydrographic characteristics in the northern part of the Gulf, in anticipation of the late winter cruise, Pichicuco 7, carried out in March of 1985 (Bray, Robles and Carrasco, 1986). In this report we present individual profiles of temperature, salinity and density for each station, along with regional composite diagrams of potential temperature vs salinity. A detailed discussion of the techniques used to process the data is also included.

Bray, N. A., M. C. Hendershott, J. M. Robles, S. Shull, and A. C. Carrasco
19870300 ID: 8293
Pichicuco 5: Gulf of California CTD Data Report, R/V NEW HORIZON
Volume: *Issue:* *Page(s):* 114 p.
File Name:

During May of 1984, the R/V New Horizon occupied a total of 172 CTD stations in the northern half of the Gulf of California. Of these, 80 were part of a large-scale survey of hydro graphic properties in the Gulf, mainly cross-Gulf sections. The remaining stations were time series, or yoyo, stations in which temporal evolution of finestructure was examined. This report presents individual profiles of temperature, salinity and density for all stations, along with regional composite diagrams of potential temperature vs salinity.

Bray, N. A., J. M. Robles, and A. C. Carrasco
19850300 ID: 8297
Pichicuco 7: Gulf of California CTD Data Report: U.S. Research Vessel, R/V New Horizon
Volume: *Issue:* *Page(s):* 212 p.
File Name:

During late winter of 1985, the R/V New Horizon occupied a total of 149 CTD stations in tne northern half of the Gulf of California. The objective of the cruise was to examine winter hydrographic characteristics, especially as they might apply to water mass formation processes in the northern Gulf. This report presents individual profiles of temperature, salinity and density for those stations, along with regional composite diagrams for potential temperature vs salinity. A detailed discussion of the techniques used to process the data is also included, in which a new technique for computing high resolution salinity profiles is introduced.

Brisou, J., D. Courtois, and F. Denis
19740000 ID: 7611
Microbial study of a hypersaline lake in French Samaliland
Applied Microbiology
Volume: 27 *Issue:* 5 *Page(s):* 819-22
File Name:

Brock, T. D.
19690000 ID: 7612
Microbial growth under extreme conditions
Proceedings of 19th Symposium of Society for General Microbiology; 1969
Volume: *Issue:* *Page(s):*
Cambridge University Press
File Name:

Brooker, M. H. and L. R. Townley
19940000 ID: 7652
Flow and solute transport through a levee separating fluids with different densities
Water Resources Research

Volume: 30 *Issue:* 6 *Page(s):* 1847-56
File Name:

Brooks, Robert Richard, Bob J. Presley, and Isaac R. Kaplan
19670000 ID: 3331
Determination of copper in saline waters by atomic absorption spectrophotometry combined with ammonium N-pyrrolidinecarbodithioate-methyl isobutyl ketone extraction
Analytica Chimica Acta
Volume: 38 *Issue:* 3 *Page(s):* 321-326
File Name: 19670000_brooks_c.pdf

Brown, A. W. A., and J. O. Deom
19730000 ID: 7981
Summary: Health Aspects of Man-Made Lakes.
Man-made lakes: their problems and environmental effects. William C. Ackermann, Gilbert F. White [and] E. B. Worthington, editors. J. Loreena Ivens, associate editor.
Volume: *Issue:* *Page(s):* 755-764
Washington, DC American Geophysical Union
File Name: 19730000_brown73c.pdf

Brown, Randall L., and Louis A. Beck
19890000 ID: 2211
Subsurface Agricultural Drainage in California 's San Joaquin Valley
Biotreatment of Agricultural Wastewater, Mark E. Huntley, ed.
Volume: *Issue:* *Page(s):* 1-13
Boca Raton, FL CRC Press
File Name: 19890000_brown_c.pdf

Drainage problems have been around for some time, as has the perceived need to remove something from the water to make discharge of the water to a salt sink environmentally acceptable. This ' something ' has varied from total salts to nitrogen to pesticides to various trace elements, including selenium. As part of its Order WQ 85-1, the California State Water Resources Control Board established interim standards for the San Joaquin River for total salts, boron, selenium, and molybdenum. The interim selenium objective of 5 micrograms/L will likely drop to 2 micrograms/L after a few years. In the Grasslands Water District, duck club managers have long used subsurface drainage as an important part of their water supply. The blended drainage water, which was moderately high in selenium (in the 50 to 100 microgram/L range), flowed through the marshes and out to the San Joaquin River. Marsh vegetation and bacteria acted as a biological treatment system and removed much of the selenium as the water passed through the system. As a result of Order WQ 85-1 and concerns associated with elevated selenium levels in waterfowl, the duck clubs no longer take drainage water. The water now goes directly to the San Joaquin River, and treatment may be required to meet the new water quality objectives established for the river. Publicity over the Kesterson findings and concern over the possibility of similar problems with wildlife refuges receiving return flows from agriculture and other sources has resulted in the so-called ' westwide study'. In this study, the US Geological Survey and US Fish and Wildlife Service are conducting reconnaissance-level studies to determine if selenium or other trace elements are causing problems in other refuges throughout the West. In California, the Salton Sea and the Tulare Lake basin are included in the study program, and preliminary results have shown elevated selenium levels in biota from these two areas. (See also W90-08141) (Lantz-PTT)

Browne, R. A.
19820000 ID: 7613
The costs of reproduction in brine shrimp
Ecology
Volume: 63 *Issue:* 1 *Page(s):* 43-7
File Name:

Bumguardner, B. W., R. L. Colura, A. Henderson-Arzapalo, and A.-F. Maciorowski.
19920000 ID: 4962
Culture of spotted seatrout, orangemouth corvina, and their hybrids
California Fish and Game
Volume: 78 *Issue:* *Page(s):* 105-15
File Name:

Burrascano, C. G., and K. G. Spencer
19880600 ID: 2548

Dunaliella salina strain selection for beta-carotene production [abstract]
Journal of Phycology
Volume: 24 *Issue:* 2 supp. *Page(s):* 18
File Name: 19880000_burrascano_c.pdf

Seventeen isolates of Dunaliella salina from culture collections and the wild were compared for growth and ability to produce beta-carotene. Several rapidly-growing isolates from the Salton Sea (California) were then used in a program of mutation and selection for constitutive pigment production. Although no strain was found to produce as much beta-carotene in low light as in high light, substantial overall increases in beta-carotene content were observed. All strains showed similar beta-carotene isomer composition. Laboratory photosynthesis measurements and growth studies on a temperature gradient table were used as predictors of outdoor productivity. The increased carotene contents of the cells slowed cell division somewhat, but carotene productivity could be substantially

Butler, David L., Richard P. Krueger, Barbara Campbell Osmundson, Andrew L. Thompson, and Steven K. McCall
19910000 ID: 7505
Reconnaissance Investigation of Water Quality, Bottom Sediment, and Biota Associated with Irrigation Drainage in the Gunnison and Uncompahgre River Basins and at Sweitzer Lake, West-Central Colorado, 1988-89.
U.S. Geological Survey, Water Resources Investigations Report
Volume: *Issue:* *Page(s):* vii, 99 p.
Denver, CO U.S. Geological Survey
File Name: 19910000_butler.pdf

California Department of Fish and Game
19920000 ID: 4974
Endangered Yuma rail numbers skyrocket at IWA
News Release, July 24
Volume: *Issue:* *Page(s):* 3 p.
Long Beach California Department of Fish and Game
File Name:

Butler, E. W., and J. B. Pick
19820000 ID: 1594
Research conclusions and policy recommendations about geothermal development.
Geothermal energy development; problems and prospects in the Imperial Valley of California
Volume: *Issue:* *Page(s):* 305-331
New York Plenum Press
File Name:

The immediate goal of this study was to provide Imperial County with information which would be helpful in drafting a geothermal element for their General Plan of 1977. Most of the research findings in the population and public opinion areas were used in the Plan, but few policy recommendations were used. The authors recommend broadening the Plan and revising and updating it in 15 years. The agricultural Imperial Valley is unique in that it is an artificial environment, created out of a barren desert by irrigation. The concern is to preserve this fragile landscape from any harm from drilling and production processes. Apprehension about seismic activity and subsidence as a direct result of drilling cannot be alleviated until commercial sized units are in operation. Another problem to be dealt with then is the effect of development on water levels, salinity, and pollution in the Salton Sea, a major recreation area. Among the positive recommendations are to instigate an exchange program of data and personnel between Imperial County and the present operating plant of 150 MW /sub e/ in Mexico.|;

Byeseda, J. J., J. D. Hunter, and J. Denton
19850000 ID: 1526
Metal recovery from Imperial Valley hypersaline brine.
Volume: *Issue:* *Page(s):* 233-237
1985 international symposium on geothermal energy
File Name:

The Imperial Valley of California is rich in geothermal resources. A highly saline (hypersaline) brine containing 20-25 wt. % dissolved solids lies under the area near the Salton Sea . This brine can be exploited for electric power production and for metal recovery. A short review of the technology used for electricity generation is presented. The criteria for evaluating target metals and process routes for by-product recovery are reviewed. We show that solvent extraction technology can be used to recover zinc from this hypersaline brine resource. And we present experimental work on the development of a reagent formulation capable of selectively recovering 80-90% of the zinc from post-flash brine. This represents a yearly market value of about 10 million dollars for the zinc removed from the effluent of a 50 MW power plant.

California Department of Water Resources

19700000 ID: 5010
Geothermal Wastes and the Water Resources of the Salton Sea Area
California Department of Water Resources Bulletin
Volume: *Issue:* 143-7 *Page(s):* xiv, 123 p.
Sacramento California Department of Water Resources
File Name:

California Regional Water Quality Control Board. Colorado River Basin Region 7
19950000 ID: 4923
Issue Paper on Salton Sea Water Quality
Public Workshop, November 20, 1995, Indian Wells, California
Volume: *Issue:* *Page(s):*
File Name:

California Univ., La Jolla, San Diego Inst. of Marine Resources
19750000 ID: 8310
Research on the Marine Food Chain. Progress Report, July 1974--June 1975. Part I. Introduction and Account of Work in Progress. Part II. Manuscript Reports of Work Concluded. Part III. Cruise Summaries
Volume: *Issue:* *Page(s):* 921 p.
File Name:

The all-group field program during 1971-74 was on plankton dynamics in the central gyre of the North Pacific. Cruises to this area were completed, and the resultant manuscripts for the 1974-75 period are included in Part II of the report. During the past year the major field program was a series of four quarterly cruises in the Southern California Bight designed to evaluate the possible local and far-field effects of the cooling water system and thermal plume of the San Onofre Nuclear Power plant. Additional field programs included a cruise to the Gulf of California (R/V Alpha Helix) concerned with problems in marine photobiology, a cruise in Antarctic waters south of Buenos Aires (Islas Orcadas, formerly U.S.N.S. Eltanin) concerned with phytoplankton productivity, and a cruise in the Atlantic off northwestern Africa (F. S. Meteor) concerned with sediment microbiology.

California. State Water Resources Control Board. Division of Water Quality.
19900000 ID: 8088
Selenium and Agricultural Drainage Studies in California
Volume: *Issue:* *Page(s):* v.,
[Sacramento?] California State Water Resources Control Board
File Name:

California. State Water Resources Control Board. Division of Water Rights.
19890000 ID: 8087
Selenium and Agricultural Drainage Studies in California.
Volume: *Issue:* *Page(s):* iii, 179 p.
Sacramento, CA California State Water Resources Control Board
File Name:

Carozzi, A. V.
19620000 ID: 7653
Observations of algal biostromes in the Great Salt Lake, Utah
Journal of Geology
Volume: 70 *Issue:* 2 *Page(s):* 246-52
File Name:

Carpelan, L. H.
19570000 ID: 7614
Hydrobiology of the Alviso Salt Ponds
Ecology
Volume: 38 *Issue:* 3 *Page(s):* 375-90
File Name:

Carpelan, L. H.
19580000 ID: 4966
The Salton Sea. Physical and chemical characteristics

Limnology and Oceanography
Volume: 3 *Issue:* *Page(s):* 373-86
File Name:

Carpelan, L. H.
19610000 ID: 4968
Physical and chemical characteristics
The Ecology of the Salton Sea, California, in Relation to the Sportfishery. Fish Bulletin No. 113. B. W. Walker, ed.
Volume: *Issue:* *Page(s):* 17-32
California Department of Fish and Game
File Name: 19610000_carpelan_2.pdf

Carpelan, L. H.
19610000 ID: 4969
Phytoplankton and plant productivity
The Ecology of the Salton Sea, California, in Relation to the Sportfishery. Fish Bulletin No. 113. B. W. Walker, ed.
Volume: *Issue:* *Page(s):* 33-42
California Department of Fish and Game
File Name: 19610000_carpelan_3.pdf

Carpelan, L. H.
19610000 ID: 4970
Zooplankton
The Ecology of the Salton Sea, California, in Relation to the Sportfishery. B. W. Walker, ed. Fish Bulletin no. 113
Volume: *Issue:* 113 *Page(s):* 49-61
California Department of Fish and Game
File Name: 19610000_carpelan_4.pdf

Carpelan, L. H., and R. H. Linsley
19610000 ID: 4971
The pile worm, Neanthes succinea (Frey and Leukart)
The Ecology of the Salton Sea, California, in Relation to the Sportfishery. Fish Bulletin No. 113. B. W. Walker, ed.
Volume: *Issue:* *Page(s):* 63-76
California Department of Fish and Game
File Name: 19610000_carpelan_5.pdf

Carpelan, L. H., and R. H. Linsley
19610000 ID: 4972
The spawning of Neanthes succinea in the Salton Sea
Ecology
Volume: 42 *Issue:* *Page(s):* 189-90
File Name:

Carr, R. B., R. B. Crawford, C. S. McCaleb, and J. K. Prono
19760300 ID: 1879
Advanced energy systems: control of geothermal scaling and corrosion.
Energy and technology review: geothermal brine studies
Volume: *Issue:* *Page(s):* 1-6
File Name:

A major goal of the LLL geothermal project is development of the total-flow concept for converting the thermal energy of high-temperature, high-salinity brines to electric power. A series of field experiments leading to demonstration of this concept's feasibility will be conducted during the next three years at the Salton Sea geothermal area in Southern California. Initial experiments, covering the next six months, will concentrate on evaluating brine modification procedures for preventing scale deposition, together with preliminary materials testing. Later field work will emphasize advanced materials testing, control of suspended solids, conversion equipment performance, and brine reinjection methods. This article describes the initial experimental program and

Carter, J. P., and S. D. Cramer
19890000 ID: 1451
Materials of construction for Salton Sea geothermal brines
Volume: *Issue:* *Page(s):* 14 p.
File Name:

The high-temperature, high-salinity geothermal brines of the Salton Sea KGRA are a valuable source of energy and minerals. However, these brines are also very corrosive and cause early failure of many common materials of construction. Ferritic steels containing less than 18 wt pct chromium and austenitic steels perform poorly in these environments. This paper reports that the most acceptable materials of construction are the high-chromium ferritic stainless steels, nickel alloys, and titanium alloys.

Carter, J. P., and S. D. Cramer
19910506 ID: 1428
Materials of construction for high-salinity geothermal brines. Rept. of investigations/1992
Volume: *Issue:* *Page(s):* 16 p.
File Name:

The high-temperature, high-salinity geothermal brines in the Salton Sea Known Geothermal Resources Area (KGRA) are a valuable source of energy and mineral values. The brine and steam produced from them are corrosive and cause early failure of many common materials of construction. Mass-loss and electrochemical corrosion measurements were conducted on over 60 metal alloys in brine and steam environments produced from geothermal well Magmamax No. 1, located at the Salton Sea KGRA, at temperatures from 180 to 215 C, and in synthetic Magmamax brine at 105 and 232 C. General corrosion, crevice and pitting corrosion, and stress corrosion were examined along with the effects of dissolved gases. The alloys with the most acceptable corrosion performance in high-temperature, high-salinity geothermal environments were the high-chromium ferritic stainless steels, the Inconels and Hastelloys, and the titanium alloys.

Carter, John P., and Stephen D. Cramer
19921200 ID: 1943
Materials of Construction for High-Salinity Geothermal Brines
U.S. Bureau of Mines Report
Volume: *Issue:* *Page(s):*
File Name:

Construction materials suitable for use in brine and steam environments associated with high-salinity geothermal brines were sought. The brine and steam produced from one such geothermal brine in the Salton Sea Known Geothermal Resources Area, CA, are corrosive and cause early failure of many commonly used materials. Mass-loss and electrochemical corrosion measurements were made on metal alloys in brine and steam environments produced from a geothermal well; tests were also conducted with synthetic brine. High-chromium ferritic stainless steels, the Inconels and Hastelloys, and the titanium alloys displayed the most acceptable corrosion performance. (3 graphs, 15 references, 4 tables)

Cervinka, V.
19900000 ID: 7507
A farming system for the manegement of salt and selenium on irrigated land (Agroforestry).
Volume: *Issue:* *Page(s):*
Sacramento Agricultural Resources Branch, California Departme
File Name:

CH2M HILL
19950000 ID: 7510
Selenium bioaccumulation study at Chevron's Richmond Refinery Water Enhancement Wetland
Final Report to Chevron USA, Richmond, CA, and to the California Regional Water Quality Control Board, San Francisco Bay Region, Oakland
Volume: *Issue:* *Page(s):*
File Name:

Chang, R. T., and M. Hu
19750000 ID: 7654
Study of fluid movements through causeway
Journal of the Hydraulics Division, American Society of Civil Engineers
Volume: 101 *Issue:* HY1 *Page(s):* 155-65
File Name:

Chuburkov, Yu T., and L. M. Lebedev
19730000 ID: 4454
Hydrotherms and superheavy elements
Volume: *Issue:* *Page(s):* 16
File Name:

The most perspective region for the search for super-heavy elements in the USSR is the Caspian Sea, in particular, the hydro thermal ore-bearing system is Cheleken. Of interest, from the above point of view, are also the hydrotherms in California (Salton Sea region), in the Red Sea (Atlantis II and Discovery), and in New Zealand.

Cleveland, L., E. E. Little, D. R. Buckler, and R. H. Wiedmeyer
19930000 ID: 7514
Toxicity and bioaccumulation of waterborne and dietary selenium in juvenile bluegill (Lepomis macrochirus)
Aquatic Toxicology
Volume: 27 *Issue:* *Page(s):* 265-80
File Name:

Coachella Valley Water District
ID: 4799
The Salton Sea - A review of the Sea's history with an outline of several proposals to "save" it and some suggestions about preserving its beneficial uses
Volume: *Issue:* *Page(s):*
Coachella, CA Coachella Valley Water District
File Name: 19920000_cvwd.pdf

Cohen, Andrew N., and James T. Carlton
19980100 ID: 4460
Accelerating invasion rate in a highly invaded estuary
Science
Volume: 279 *Issue:* 5350 *Page(s):* 555-558
File Name:

The San Francisco Bay and Delta ecosystem may be the most invaded estuary in the entire world. Means of biological invasion in this area could be the large number of transport vectors and extensive nature and anthropogenic disturbances.

Cole, G. A., and R. J. Brown
19670000 ID: 7616
The chemistry of Artemia habitats
Ecology
Volume: 48 *Issue:* *Page(s):* 858-61
File Name: 19670000_cole_c.pdf

Cole, Gerald A.
19680000 ID: 7615
Desert Limnology
Desert Biology. G. W. Brown, Jr., editor.
Volume: 1 *Issue:* *Page(s):* 423-86
New York Academic Press
File Name: 19680000_cole_c.pdf

Coleman, George A.
19290700 ID: 4838
A Biological Survey of Salton Sea
California Fish and Game
Volume: 15 *Issue:* 3 *Page(s):* 218-227
File Name: 19290000_coleman_c.pdf

Colorado River Board of California
19920400 ID: 4819
Report to the California Legislature on the Current Condition of the Salton Sea and the Potential effects of Water Conservation
Volume: *Issue:* *Page(s):*
File Name: 19920400_colorado.pdf

Cook, Christopher, et al.
19950900 ID: 4800

Salton Sea Project - Phase I Final Report
Volume: *Issue:* *Page(s):* ii, 42 p.
Davis, CA University of California, Davis, Department of Civil and Environmental Engineering, Center for Water Resources and Environmental Engineering, Modeling Group
File Name: 19950900_cook.pdf

Cook, Christopher B., and Gerald T. Orlob
19970810 ID: 4351
Field Monitoring and Hydrodynamic Modeling of the Salton Sea, CA
Environmental and Coastal Hydraulics: Protecting the Aquatic Habitat: Volume 1: Proceedings of Theme B: Water for a Changing Global Community: the 27th Congress of the International Association for Hydraulic Research
Volume: *Issue:* *Page(s):* 659-664
New York American Society of Civil Engineers
File Name: 19970810_cook_c.pdf

Cook, Christopher B., David W. Huston, Gerald T. Orlob, Ian P. King, and S. Geoffrey Schladow
19980800 ID: 7997
Salton Sea Project Phase II Final Report: Data Collection and Analysis for Calibration and Verification of a Three-Dimensional Hydrodynamic Model.
Volume: *Issue:* *Page(s):* vii, 109 p.
Salton Sea Authority, California Department of Water Resources
File Name:

Cook, Christopher B., M. R. Jensen, D. W. Huston, G. T. Orlob, S. G. Schladow
19970500 ID: 7998
Salton Sea Project Phase II-A Report
Volume: *Issue:* *Page(s):* 24 p.
Davis, CA Center for Environmental and Water Resources Engineering, Department of Civil and Environmental Engineering, University of California
File Name:

Copeland, B. J.
19660000 ID: 7923
Environmental characteristics of hypersaline lagoons.
17th Annual AIBS Meeting
Volume: *Issue:* *Page(s):* 207-218
File Name:

Copeland, B. J., and Robert S. Jones
19650600 ID: 7618
Community metabolism in some hypersaline waters
Texas Journal of Science
Volume: 17 *Issue:* 2 *Page(s):* 188-205
File Name: 19650600_copeland_c.pdf

Costa-Pierce, Barry A., and Roger W. Doyle
19970000 ID: 4834
Genetic Identification and Status of Tilapia Regional Strains in Southern California
Tilapia Aquaculture in the Americas, Volume One, Barry A. Costa-Pierce and James E. Rakocy, eds.
Volume: *Issue:* *Page(s):*
Baton Rouge, LA World Aquaculture Society Books
File Name: 19970000_costapierce_c.pdf

Costa-Pierce, Barry A., and James Rakocy, eds.
19970000 ID: 7782
Tilapia Aquaculture in the Americas, vol. 1.
Volume: *Issue:* *Page(s):* 258 p.
Baton Rouge, LA World Aquaculture Society ; American Tilapia Association
File Name:

Costeseque, P., J.-P. Fortune, J. Schott

19770000 ID: 3668
On the Importance of Thermal Diffusion in the Formation of Brines in Geothermal Systems.
Proceedings 2nd Int. Symp. Water-Rock Interaction; Strasbourg; 1977
Volume: *Issue:* *Page(s):* 86-95
File Name:

Coughlan, D. J., and J. S. Velte
19890000 ID: 7515
Dietary toxicity of selenium-contaminated red shiners to striped bass
Transactions of the American Fisheries Society
Volume: 118 *Issue:* *Page(s):* 400-8
File Name:

Council for Agricultural Science and Technology
19940000 ID: 7516
Risk and benefits of selenium in agriculture
Issue Paper
Volume: 3 *Issue:* *Page(s):*
Ames, IA CAST
File Name:

Courtenay, Walter R.
19970000 ID: 7905
Tilapias as Non-Indigenous Species in the Americas: Environmental, Regulatory and Legal Issues.
Tilapia Aquaculture in the Americas, Volume One, Barry A. Costa-Pierce and James E. Rakocy, eds.
Volume: *Issue:* *Page(s):* 18-33
Baton Rouge, LA World Aquaculture Society
File Name:

Courtois, Louis A., and Stanley Hino
19790400 ID: 2236
Egg Deposition of the Desert Pupfish, Cyprinodon Macularius, in Relation to Several Physical Parameters
California Fish and Game
Volume: 65 *Issue:* 2 *Page(s):* 100-105
File Name: 19790400_courtois_c.pdf

Although various aspects of artificial propagation of the Desert Pupfish (Cyrinodon macularius) have been extensively studied, egg production has been limited in all of these studies because pairs of pupfish (one male and one female) were used in each tank. The present study examines reproduction of groups of pupfish, rather than pairs in relation to color of spawning substrate, salinity, and water depth. Fish used for experimentation were collected from canals around the Salton Sea , California, during January 1975, transported to the laboratory and subjected to various experiments designed to provide further understanding of environmental influences on the reproductive biology of this species. Results indicated that fish acclimated to 50/00 salinity deposited more eggs, usually in the deepest portion (37 cm) of their tank than fish acclimated to 150/00 salinity who utilized the intermediate depth (22 cm) of their tank for deposition significantly more than other available depths, color preference studies indicated that green spawning mops were more frequently used than gray, green or beige.

Cowles, R. B.
19340000 ID: 4981
Notes on the ecology and breeding habits of the desert minnow, Cyprinodon macularius
Copeia
Volume: *Issue:* *Page(s):* 40-2
File Name:

Cox, T. J.
19720000 ID: 7431
The food habits of the desert pupfish (Cyprinodon macularius) in Quitobaquito Springs, Organ Pipe National Monument, Arizona
Journal of the Arizona Academy of Science
Volume: 7 *Issue:* *Page(s):* 25-7
File Name:

Coyle, J. J., D. R. Buckler, C. G. Ingersoll, J. F. Fairchild, and T. W. May
19930000 ID: 7517
Effect of dietary selenium on the reproductive success of bluegills (Lepomis macrochirus)
Environ. Toxicol. Chem.
Volume: 12 *Issue:* *Page(s):* 551-65
File Name:

Cramer, Stephen D., and J. P. Carter
19800000 ID: 2704
Laboratory Corrosion Studies in Low- and High-Salinity Geobrines of the Imperial Valley, California
Bureau of Mines Report of Investigations
Volume: 8415 *Issue:* *Page(s):* 30 p.
Washington, DC U.S. Bureau of Mines
File Name:

Corrosion research is being conducted by the Federal Bureau of Mines to determine suitable construction materials for geothermal resource recovery plants. As part of this research, the corrosion resistance of 31 iron-, nickel-, aluminum-, copper-, titanium-, and molybdenum-base alloys was characterized and evaluated in laboratory corrosion studies in low- and high-salinity geobrines representative of those found in the Imperial Valley, Calif. General, crevice, pitting, weld, and stress corrosion were measured at 105 and 232C in deaerated brines and brines containing dissolved O2, CO2, and CH4.

Crane, G. K.
19821200 ID: 1592
Geothermal power plant results and status.
Proceedings of the sixth annual geothermal conference and workshop
Volume: *Issue:* *Page(s):* 3.4-3.6
Sixth annual geothermal conference and workshop
File Name:

Edison currently has three major geothermal power plant projects underway in the Imperial Valley, California. Two projects are research oriented, consisting of 10 MW units, one each at the high salinity Brawley and Salton Sea geothermal resource areas. The third is a commercial, 47 MW commercial unit at the Heber resource. The objective of the two 10 MW units is to develop and demonstrate the technology required to utilize these brines which are unique in the world with respect to their salinity levels which range between 100,000 and 300,000 parts per million total dissolved solids (ppM TDS).

Crane, M., T. Flower, D. Holmes, and S. Watson
19920000 ID: 7518
The toxicity of selenium in experimental freshwater ponds
Archives of Environmental Contamination and Toxicology
Volume: 23 *Issue:* *Page(s):* 440-52
File Name:

Crear, David, and Irwin Haydock
19710100 ID: 4982
Laboratory Rearing of the Desert Pupfish, Cyprinodon macularius
Fishery Bulletin
Volume: 69 *Issue:* 1 *Page(s):* 151-156
File Name: 19710100_crear.pdf

THE DESERT PUPFISH, CYPRINODON MACULARIUS IS A KILLIFISH (CYPRINODONTIDAE NATIVE TO THE LOWER COLORADO RIVER BASIN FROM SOUTHERN ARIZONA TO SOUTHERN CALIFORNIA AND THE SONOYTA RIVER OF NORTHERN SONORA, MEXICO. ITS ABILITY TO SURVIVE IN HARSH DESERT ENVIRONMENTS, PLUS OTHER IMPORTANT BIOLOGICAL CHARACTERISTICS RENDERS IT AN EXCEPTIONALLY HARDY LABORATORY ANIMAL POTENTIALLY VALUABLE FOR RESEARCH IN THE STUDY OF EMBRYOLOGY, GENETICS, PHYSIOLOGY, AND BEHAVIOR. IT IS EURYHALINE (0-70 SALINITY) AND EURYTHERNAL (8-44.6C) AND MAY BE USEFUL AS A BIOASSAY FOR EITHER FRESHWATER OR MARINE POLLUTANTS. THE RECENT INTRODUCTION OF EXOTIC SPECIES AND THE ENCROACHMENT OF CIVILIZATION IN THE SALTON SEA AREA OF CALIFORNIA HAVE DRASTICALLY REDUCED THE FORMERLY ABUNDANT PUPFISH POPULATIONS. LABORATORY REARING ELIMINATES THE NEED FOR CONTINUOUS EXPLOITATION OF A RAPIDLY CONTRACTING NATURAL POPULATION AND COULD SUPPLY ADEQUATE STOCKS FOR SANCTUARIES, THEREBY PRESERVING THE SPECIES FROM EXTINCTION. LABORATORY APPARATUS AND CONDITIONS ARE DESCRIBED FOR MAINTAINING LARVAL AND ADULT PUPFISH. PARASITES AND DISEASES ENCOUNTERED ARE DISCUSSED AND SUCCESSFUL TREATMENTS DESCRIBED. METHODS FOR SPAWNING AND REARING THE DESERT PUPFISH IN THE LABORATORY ARE DETAILED. (SEE ALSO W75-05016) (JONES-WISCONSIN)

Crisp, D. J., and J. D. Costlow, Jr.
19630000 ID: 7751
The Tolerance of Developing Cirripede Embryos to Salinity and Temperature
Oikos
Volume: 14 *Issue:* 1 *Page(s):* 22-34
File Name: 19630000_crisp_c.pdf

Cumbie, P. M., and S. L. Van Horn
19780000 ID: 7519
Selenium accumulation associated with fish mortality and reproductive failure
Proceedings Annu. Conf. Southeast. Assoc. Fish Wildl. Agencies
Volume: 32 *Issue:* *Page(s):* 612-24
File Name:

Cutter, G. A.
19860000 ID: 7520
Speciation of selenium and arsenic in natural waters and sediments, Vol. 1: Selenium speciation
Final Report to the Electric Power Research Institute, Palo Alto, CA
Volume: *Issue:* *Page(s):*
File Name:

Dange, Ajit D.
19860000 ID: 7752
Branchial Na+ -K+ -ATPase Inhibition in a Freshwater Euryhaline Teleost, Tilapia (Oreochromis mossambicus), During Short-Term Exposure to Toluene or Naphthalene: Influence of Salinity
Environmental Pollution (Series A)
Volume: 42 *Issue:* *Page(s):* 273-286
File Name: 19860000_dange_c.pdf

Day, Mike, and Daniel G. Nelson
19860000 ID: 7875
Irrigation Drainage Flows, Salinity and Trace Element Relationships in Broadview Water District
Toxic substances in agricultural water supply and drainage: defining the problems. Proceedings. 1986 Regional Meetings. U.S. Committee on Irrigation and Drainage. Summers, J. B., and S. S. Anderson, eds.
Volume: *Issue:* *Page(s):* 45-53
Denver, CO U.S. Committee on Irrigation and Drainage
File Name:

Deason, Jonathan P.
19890917 ID: 2165
Impacts of Irrigation Drainwater on Wetlands
Proceedings of the symposium on wetlands : concerns and successes
Volume: *Issue:* *Page(s):* xii, 586 pp., maps
Bethesda, MD American Water Resources Association
File Name:

The USDI has studied irrigation-induced contamination of wetlands receiving irrigation drainage water for nine locations. Observations of the studies included the high levels of selenium, and variations in the concentrations of inorganic analytes which indicate that contamination is site specific. It was also noted that closed watersheds such as the Salton Sea and Tulare Lake contain the highest levels of contaminants. Finally, the study showed that hydrologic and geochemical characteristics such as alkaline and highly seleniferous soils can serve as indicators of potential problems with irrigation drainage. A total of 20 areas in 13 states are to be evaluated as part of the program. ASSESSMENT; HABITAT, WETLAND; AGRICULTURAL DRAINAGE

Dendy, F. E., W. A. Champion, and R. B. Wilson
19730000 ID: 7963
Reservoir Sedimentation Surveys in the United States.
Man-made lakes: their problems and environmental effects. William C. Ackermann, Gilbert F. White [and] E. B. Worthington, editors. J. Loreena Ivens, associate editor.
Volume: *Issue:* *Page(s):* 349-357
Washington, DC American Geophysical Union

File Name: 19730000_dendy_c.pdf

Deverel, S.J., and R. Fujii
19870000 ID: 7491
Processes affecting the distribution of selenium in shallow ground water of agricultural areas, western San Joaquin valley, California
U.S. Geological Survey Open-File Report
Volume: *Issue:* *Page(s):*
File Name:

Dexter, D. M.
19930000 ID: 3706
Salinity tolerance of the copepod Apocyclops-dengizicus (Lepeschkin, 1900), a key food chain organism in the Salton Sea, California
Hydrobiologia
Volume: 267 *Issue:* 1-3 *Page(s):* 203-209
File Name: 19930000_dexter_c.pdf

The copepod Apocyclops dengizicus is a key item in the food chain of the Salton Sea where the salinity is currently 45 g l-1. The salinity of the Salton Sea may reach 90 g l-1 within the next 20 years. This study examined the salinity tolerance of this copepod. Large copepodite and adult A. dengizicus were introduced into various salinities with and without acclimation. The 96 h LC50 without acclimation was 101 g l-1. Mortality (at 96 h) without acclimation was low at salinities of 90 g l-1 or less. Copepod cultures were maintained, with successful reproduction of at least one new generation, at salinities of from 0.5 to 68 g l-1 for at least 120 days. Copepods maintained at higher salinities, up to 79 g l-1, remained alive up to 90 days, but a new generation was not produced. In laboratory studies of larval production and survivorship, few nauplii were released at salinities of 68 g

Dexter, D. M.
19950000 ID: 1967
Salinity tolerance of Cletocamptus deitersi (Richard 1897) and its presence in the Salton Sea
Bulletin of the Southern California Academy of Sciences
Volume: 94 *Issue:* *Page(s):* 169-171
File Name: 19950000_dexter_c.pdf

Doe, B. R., C. E. Hedge, and D. E. White
19660500 ID: 4456
Preliminary Investigation of the Source of Lead and Strontium in Deep Geothermal Brines Underlying the Salton Sea Geothermal Area
Economic Geology
Volume: 61 *Issue:* 3 *Page(s):* 462-83
File Name: 19660500_doe_c.pdf

Dolven, O. A., and Curtis O. Ness
19730000 ID: 7976
Bureau of Reclamation Reservoirs and the Environment.
Man-made lakes: their problems and environmental effects. William C. Ackermann, Gilbert F. White [and] E. B. Worthington, editors. J. Loreena Ivens, associate editor.
Volume: *Issue:* *Page(s):* 596-600
Washington, DC American Geophysical Union
File Name: 19730000_dolven_c.pdf

Domagalski, J. L., H. P. Eugster, and B. F. Jones
19900000 ID: 7619
Trace metal geochemistry of Walker, Mono, and Great Salt Lakes. Fluid-Mineral Interactions: A Tribute to H. P. Eugster
Geochemical Society, Special Publication
Volume: *Issue:* 2 *Page(s):* 315-353
File Name:

Domalgowski, J. L., W. H. Orem, and H. P. Eugster
19890000 ID: 7656
Organic geochemistry and brine composition in Great Salt, Mono, and Walker Lakes
Geochimica et Cosmochimica Acta
Volume: 53 *Issue:* 11 *Page(s):* 2857-72

File Name:

Doner, H. E., A. Pukite, and E. Yang
19820700 ID: 1584
Mobility through soils of certain heavy metals in geothermal brine water
Journal of Environmental Quality
Volume: 11 *Issue:* 3 *Page(s):* 389-394
File Name:

Geothermal energy conversion studies in agricultural areas of the Imperial Valley of southern California pose several questions with regard to potential accidental spill of brine water onto the land. Some of the geothermal brine waters (GBW) contain >30% total dissolved solids, mainly as NaCl, CaCl/sub 2/, and KCl, as well as several heavy metals such as Zn, Pb, Cu, and Cd. An investigation was undertaken to determine the mobility of Cd(II), Cu(II), and Zn(II) present in GBW through five agricultural soils. Columns of soils were leached with GBW collected from a well near the Salton Sea in California. The concentrations of Cd(II), Cu(II), Pb(II), and Zn(II) in the effluent were compared with their original concentrations to determine amounts of adsorption or retention in the soils. Heavy metal determinations also were made on whole soils before and after treatment. An estimate of the extent of Cl/sup -/ complexation with the metals was made from thermodynamic stability constants by use of the computer program GEOCHEM. Significant quantities (50-100%) of all heavy metals studied were complexed with Cl/sup -/. None of the soils adsorbed Cu(II) from the GBW, while Cd(II) was apparently removed from some soils. All soils adsorbed some Pb(II) and Zn(II), but after passing 10 pore volumes of solution their capacity for adsorption was negligible. A combination of mass action and Cl/sup -/ complexation most likely caused the high mobility of Cd(II), Cu(II), Pb(II), and Zn(II) in the GBW.|;

Downs, Colleen T., and David Ward
19971000 ID: 4461
Does Shading Behavior of Incubating Shorebirds in Hot Environments Cool the Eggs or the Adults?
Auk
Volume: 114 *Issue:* 4 *Page(s):* 717-724
File Name: 19971000_downs_c.pdf

When a taxidermic model of a Crowned Plover was alternated between incubating and shading positions in a nest of eggs, it was found that bird temperature, but not egg temperature, was lowered by shading behavior.

Dritschilo, W., and D. Vander Pluym
19840000 ID: 2072
An ecotoxicological model for energy development and the Salton Sea, California (USA).
Journal of Environmental Management
Volume: 19 *Issue:* 1 *Page(s):* 15-30
File Name:

HEEP COPYRIGHT: BIOL ABS. An ecotoxicological model is developed to facilitate evalution of impacts from energy development to the Salton Sea , California. Energy development is expected to change the water budget of the Salton Sea and thus modify the salinity of the sea. The model developed combines predictions of salinity changes resulting from a number of energy development scenarios with equations for fish population dynamics and saline toxicity data. The modeling approach is a useful case study of the development of a predictive preliminary ecological model in the absence of substantial empirical data. Full predictive capability will require validation and calibration against data currently being collected. Even without predictive ability, the model functions in organizing the necessary data collection.

DuBowy, P.
19890000 ID: 7521
Effects of diet on selenium bioaccumulation in marsh birds
Journal of Wildlife Management
Volume: 53 *Issue:* *Page(s):* 776-81
File Name:

Dunham, J. B.
19920000 ID: 4996
Evolutionary genetics of natural and refugia populations of desert pupfish Cyprinodon macularius
Proceedings of the Desert Fishes Council
Volume: 24 *Issue:* *Page(s):* 29-30
File Name:

Dunham, Jason. B., and W. L. Minckley

19980400 ID: 3677
Allozymic variation in desert pupfish from natural and artificial habitats: genetic conservation in fluctuating populations
Biological Conservation
Volume: 84 *Issue:* *Page(s):* 7-15
File Name: 19980400_dunham_c.pdf

We studied patterns of allozymic variation among wild and captive populations of endangered desert pupfish Cyprinodon m. macularius. Much of the existing variation can be attributed to different founder sources,founder and bottleneck effects, or a combination of all three. Local isolation, either natural or artificial, promotes divergence of both wild and captive populations. Divergence was countered over the natural long-term condition of drought by dispersal and population mixing during brief wetter periods. Such gene flow among populations is now precluded by anthropogenic control of hydrologic pattern. Recovery of this species to self-sufficiency will likely require re-establishment of a natural hydrology, which, for the foreseeable future, is unlikely in the lower Colorado River basin. If this charismatic desert species is to survive, resource managers must combine knowledge of ecological and genetic patterns with political realities. Until natural habitats are re-established, a captive management program that more closely mimics patterns of alternating gene flow and isolation should be implemented.

Dunlay, C. R.
19680600 ID: 8308
An Ecological Reconnaissance of the Deep Scattering Layers in the Eastern Tropical Pacific [Master's thesis]
Volume: *Issue:* *Page(s):* 71 p.
File Name:

This reconnaissance is the first ecological study of the deep scattering layers (DSL) in the eastern tropical Pacific. It was made during two three month cruises of the R/V TE VEGA, one of which was predominantly in the Gulf of California. The reconnaissance is based on over 100 fathometer echograms and 100 trawls which fished for a period of one hour with an opening and closing Tucker midwater trawl. Echograms of two fathometer frequencies (30 Kc and 11 Kc) indicated that two latitudinal scattering zones may exist. Temperature, oxygen, light intensity, faunal composition, and swimbladder morphology were investigated with relation to the DSL. The oxyclines associated with the eastern Pacific oxygen minimum zone seemed to have little effect on the DSL. Possible further evidence for the migration of DSL organisms for feeding purposes was apparent as the maximum night surface scattering was observed at the depth of maximum chlorophyll a or phytoplankton. Frequency comparisons indicated a possible gradient of the size of organisms in the DSL with smaller organisms toward the top of the layer. A twenty-four hour continuous observation of an equatorial Pacific DSL diurnal cycle and an evaluation of possible scattering organisms are included.

Eagle Crest Energy Company
19970000 ID: 7565
A Proposal To Develop 2,000 MW of Combined Cycle Capacity at the Salton Sea with an Option to Produce up to 275,000 Acre Feet a Year of Fresh Water, Removing Substantial Quantities of Salt to Lower the Salinity and Assist in Controlling the Salton Sea …
Volume: *Issue:* *Page(s):*
Rancho Mirage, CA
File Name:

Eddleman, William R.
19890000 ID: 5012
Biology of the Yuma Clapper Rail in the Southwestern U.S. and Northwestern Mexico: Final Report
Volume: *Issue:* *Page(s):* xi, 127 p., maps
[Yuma, AZ]; [Albuquerque, NM] U.S. Bureau of Reclamation, Yuma Projects Office; U.S. Fish and Wildlife Service Region 2
File Name:

The biology of the *Yuma* *clapper* rail was studied at Mittry Lake Wildlife Management Area and Crystal Beach Marsh from February 1985-December 1987. Aspects considered by the study included migration and wintering patterns, general life history, habitat use patterns, foods and seasonal availability of major prey, and the usefulness of the call count survey. A total of 122 *Yuma* *clapper* rails was captured using combinations of drift fences and traps and female solicitation tapes. Ninety-nine birds were fitted with radio transmitters to study migratory behavior and seasonal movements. Home range of *Yuma* *clapper* rails averaged > 7 ha, and was larger after the breeding season and during the winter. Nearly all birds concentrated their activity in core use areas that approximated previous estimates of territory size. Emergent marsh vegetation types were selected by rails in most habitat situations. When high water prevailed at Crystal Beach, birds selected higher sites dominated by willow, salt cedar, or upland edge vegetation. After breeding and in winter, birds at Mittry Lake increased their use of salt cedar stands for unknown reasons. *Yuma* *clapper* rails selected microhabitats with less coverage by vegetation, less residual mat of dead vegetation, less bare ground, more coverage by water, proximity to habitat changes, shallower water, and higher stem densities than were present at randomly selected sites. A well-developed residual mat could compensate for deep water. To further promote recovery of the *Yuma* *clapper* rail, additional areas need to be managed for the species. Managed units should be protected from

sudden changes in water depth, both from flooding and from drying so a reliable water supply would be available. (Lantz-PTT)

Eddy, S., and J. C. Underhill
19780000 ID: 7432
How to know freshwater fishes, third edition.
Volume: *Issue:* *Page(s):*
Dubuque, IO Wm. C. Brown Company Publishers
File Name:

Edmondson, J. M., and M. H. Smoot
19780000 ID: 2232
Geothermal Actuated Method of Producing Fresh Water and Electric Power. U.S. Patent No. 4 091,623,
Official Gazette of the United States Patent Office
Volume: *Issue:* *Page(s):* 9
File Name:

The salt content of water in the Salton Sea has increased in recent years to a level that is highly detrimental to marine life. By use of the invention, the Salton Sea may be reclaimed as a desirable environment for marine life. The method may be carried out by sequentially withdrawing water from the Salton Sea, distilling a portion of the withdrawn water by utilizing heat from the nearby geothermal sources, returning fresh potable distilled water to the Salton Sea, saline water to the geothermal reservoir, and concurrently generating electric power as the operation is carried out. A bore hole is formed in the earth adjacent a natural body of saline water such as the Salton Sea. The bore hole has pressurized mineral-containing fluid discharging at a temperature of greater than 212 degrees F. A closed reservoir is provided to which saline water can flow, preferably by gravity. Pressurized fluid from the geothermal source has a sufficient heat content that it tends to flash into steam when discharged into the reservoir under reduced pressure. The partially condensed steam and condensate flows to a heat exchange where condensation of steam to water is completed. In another form of the invention steam discharging from the closed reservoir is used to transform a low boiling point liquid to pressurized vapor that is used to drive a gas turbine that is connected to an electric generator. (Sinha-OEIS)

Edmondson, W. T., and G. C. Anderson
19650000 ID: 7620
Some features of saline lakes in central Washington
Limnology and Oceanography
Volume: 10 *Issue:* *Page(s):* R87-R96
File Name:

Ehret, G., A. Giez, C. Kiemle, and K. J. Davis
19950900 ID: 1400
Airborne water vapor DIAL and in situ observations of a sea-land interface
Deutsche Forschungsanstalt für Luft- und Raumfahrt, Institut für Physik der Atmosphäre. Report
Volume: *Issue:* *Page(s):* 34 p.
File Name:

Eisler, Ronald
19850700 ID: 4688
Cadmium Hazards to Fish, Wildlife, and Invertebrates: a Synoptic Review
U.S. Fish and Wildlife Service Biological Report. Contaminant Hazard Reviews Report
Volume: 85 *Issue:* 1.2 *Page(s):* 46
[Washington, DC] Fish and Wildlife Service, U.S. Dept. of the Inter
File Name: 19850700_eisler.pdf

Eisler, Ronald
19851000 ID: 7522
Selenium Hazards to Fish, Wildlife, and Invertebrates: a Synoptic Review
Biological report ; Contaminant hazard reviews report ; 85(1.5).
Volume: 5 *Issue:* *Page(s):* viii, 57 p.
Laurel, MD U.S. Fish and Wildlife Service
File Name: 19851000_eisler.pdf

Eisler, Ronald
19860100 ID: 4689
Chromium Hazards to Fish, Wildlife, and Invertebrates: a Synoptic Review
U.S. Fish and Wildlife Service Biological Report. Contaminant Hazard Reviews Report
Volume: 85 *Issue:* 1.6 *Page(s):* 60
Laurel, MD Fish and Wildlife Service, U.S. Dept. of the Inter
File Name: 19860100_eisler.pdf

Eisler, Ronald
19870400 ID: 4690
Mercury Hazards to Fish, Wildlife, and Invertebrates: a Synoptic Review
U.S. Fish and Wildlife Service Biological Report. Contaminant Hazard Reviews Report
Volume: 85 *Issue:* 1.10 *Page(s):* 90
Laurel, MD Fish and Wildlife Service, U.S. Dept. of the Inter
File Name:

Eisler, Ronald
19880100 ID: 8043
Arsenic Hazards to Fish, Wildlife, and Invertebrates: A Synoptic Review
Patuxent Wildlife Research Center
Volume: 85 *Issue:* 1.12 *Page(s):* 92
U.S. Department of the Interior, Fish and Wildlife Service
File Name: 19880100_eisler.pdf

Eisler, Ronald
19890000 ID: 4691
Mercury Hazards to Fish, Wildlife, and Invertebrates: a Synoptic Review
U.S. Fish and Wildlife Service Biological Report
Volume: 85 *Issue:* 1.19 *Page(s):* 61
File Name:

Eisler, Ronald
19930400 ID: 7746
Zinc Hazards to Fish, Wildlife and Invertebrates: A Synoptic Review
Biological Report; Contaminant hazard reviews
Volume: 10 *Issue:* *Page(s):* iv., 106 p.
Washington, DC U.S. Department of the Interior, Fish and Wildlife Service
File Name:

Eisler, Ronald
19940000 ID: 4692
A Review of Arsenic Hazards to Plants and Animals with Emphasis on Fishery and Wildlife Resources.
Arsenic in the Environment, Part II: Human Health and Ecosystem Effects. J.O. Nriagu, ed.
Volume: *Issue:* *Page(s):* 185-259
New York, NY John Wiley
File Name: 19940000_eisler_c.pdf

Eisler, Ronald
19970000 ID: 4693
Zinc Hazards to Plants and Animals with Emphasis on Fishery and Wildlife Resources
Ecological Issues and Environmental Impact Assessment. P.N. Cheremisinoff, ed.
Volume: *Issue:* *Page(s):* 443-537 802 p.
Houston, TX Gulf Publishing
File Name:

Elders, W. A.
19880000 ID: 2826
Initial results of the Salton Sea Scientific Drilling Project (SSSDP); a research borehole in an active hydrothermal system in Southern California, U.S.A.
Deep drilling in crystalline bedrock; Volume 2, Review of deep drilling projects, technology, sciences and prospects for

the future. Boden, A., and K. G. Eriksson, eds.
Volume: *Issue:* *Page(s):* 381-390
Berlin; New York Springer-Verlag
File Name:

Elders, W. A., and J. B. Moody
19850000 ID: 1522
The Salton Sea geothermal field as a natural analog for the near-field in a salt high-level nuclear waste repository
Scientific Basis for Nuclear Waste Management VIII. Proceedings of the Eighth International Symposium
Volume: 44 *Issue:* *Page(s):* 565-572
New York North-Holland
File Name:

The Salton Sea Geothermal Field (SSGF), on the delta of the Colorado River in southern California, is being studied as a natural analog for the near-field environment of proposed nuclear waste repositories in salt. A combination of mineralogical and geochemical methods is being employed to develop a three-dimenisonal picture of temperature, salinity, lithology, mineralogy, and chemistry of reactions between the reservoir rocks and the hot brines. Our aim is to obtain quantitative data on mineral stabilities and on mobilities of the naturally occurring radionuclides of concern in Commercial High-Level Waste (CHLW). These data will be used to validate the EQ3/6 geochemical code under development to model the salt near-field repository behavior. Maximum temperatures encountered in wells in the SSGF equal or exceed peak temperatures expected in a salt repository. Brines produced from these wells have major element chemistry similar to brines from candidate salt sites. Relative to the rocks, these brines are enriched in Na, Mn, Sr, Ra, and Po, depleted in Ba, Si, Mg, Ti, and Al, and strongly depleted in U and Th. However, the unaltered rocks contain only about 2 to 3 ppm of U and 4 to 12 ppm of Th, largely in detrital epidotes and zircons. Samples of hydrothermally altered rocks from a wide range of temperature and salinity show rather similar uniform low concentrations of these elements, even when authigenic illite, chlorite, ipidote and feldspar are present. These observations suggest that U and Th are relatively immobile in these hot brines. However, Ra, Po, Cs, and Sr are relatively mobile. Work is continuing to document naturally occurring radionuclide partitioning between SSGF minears and brine over a range of temperature, salinity, and lithology. 8 refs., 7 figs., 2 tabs.

Elders, Wilfred A., and Brian Hitchon
19860000 ID: 2974
The Salton Sea Scientific Drilling Project; an investigation of an active hydrothermal system in the Colorado River delta of California
Extended Abstracts - International Symposium on Water-Rock Interaction
Volume: 5 *Issue:* *Page(s):* 193-196
File Name:

Elders, Wilfred A., and Judith B. Moody
19840000 ID: 2168
The Salton Sea Geothermal Field as a natural analog for the near-field in a salt high-level nuclear waste repository
Scientific Basis for Nuclear Waste Management VIII. Proceedings of the Eighth International Symposium
Volume: *Issue:* *Page(s):* 565-572
File Name:

The Salton Sea Geothermal field, CA, is being studied as a natural analog for the near-field environment of proposed radioactive waste repositories in salt. Mineralogical and geochemical methods are being employed to develop a three-dimensional picture of temperature, salinity, lithology, mineralogy, and chemistry of reactions between reservoir rocks and hot brines. Maximum temperatures encountered in wells in the field equal or exceed peak temperatures expected in a salt repository. Brines from the wells have major element chemistry similar to brines from candidate salt sites. Observations suggest that uranium and thorium are relative immobile in the hot brines. THERMAL ANALYSIS; CALIFORNIA; SALT; LEACHING; URANIUM; THORIUM

Elders, Wilfred A., and John H. Sass
19881110 ID: 2627
The Salton Sea Scientific Drilling Project
Journal of Geophysical Research
Volume: 93 *Issue:* B11 *Page(s):* 12953-12968
File Name: 19881110_elders_c.pdf

In March 1986 a research borehole, called the "State 2-4," reached a depth of 3.22 km in the Salton Sea geothermal system of southern California. This was part of the Salton Sea Scientific Drilling Project (SSSDP), the first major (i.e., multimillion dollar) research drilling project in the U.S. Continental Scientific Drilling Program. The principal goals of the project were to investigate the physical and chemical processes of a high-temperature, high-salinity, magmatically driven hydrothermal system. The borehole encountered temperatures of up to 355 degree C and produced metal-rich, alkali chloride brines containing 25 wt per-cent of total dissolved solids. The

rocks penetrated exhibit metamorphism and ore genesis in action. They show a progressive transition from unconsolidated lacustrine and deltaic sediments to hornfelses, with lower amphibolite facies mineralogy, accompanied by pervasive veins containing iron, copper, lead, and zinc ore minerals. The SSSDP included an intensive program of rock and fluid sampling, flow testing, and downhole logging and scientific measurement. The purpose of this paper is to introduce this special section of the Journal of Geophysical Research on the SSSDP, to describe briefly the background of the project and the drilling and testing of the borehole, to summarize the initial scientific results, and to discuss how the lessons learned are applicable to future scientific drilling projects. (copyright) American Geophysical Union 1988

Enami, M., J. G. Liou, and D. K. Bird
19921200 ID: 3715
Cl-Bearing Amphibole in the Salton Sea Geothermal System, California
Canadian Mineralogist
Volume: 30 *Issue:* 4 *Page(s):* 1077-1092
File Name:

Calcic amphiboles with up to 2.7 wt.% Cl occur in metasandstones, metabasites and veins at depths between 3,100 to 3,180 m and temperatures in excess of 350-degrees-C in the State 2-14 well of the Salton Sea geothermal system (California). These amphiboles were formed by reactions involving high-salinity geothermal fluids, with 15.4 to 19.7 wt.% total dissolved Cl. Coexisting phases include quartz, plagioclase, K-feldspar, epidote, clinopyroxene, apatite, and titanite. The Cl-bearing amphiboles range in composition from hastingsitic (Cl > 1 wt.%) to actinolitic (Cl < 0.5 wt.%). Texturally complex intergrowths of actinolitic and hastingsitic amphiboles occur at depths greater than 3,140 m, suggesting a miscibility gap between the two amphiboles. Measured compositional variations suggest a crystal-chemical control on the Cl content in the calcic amphiboles: (1) the chlorine content of amphiboles increases with increasing edenite substitution { [A](Na,K)[4]Al square -1Si-1}; (2) the maximum observed Cl content of an amphibole increases with increasing X(Fe2+) value. Comparison of Cl content in amphiboles from the Salton Sea geothermal system, submarine metabasites, skarns, high-grade metamorphic rocks and igneous rocks implies that a main factor in controlling Cl-for-OH substitution in amphibole is different in low- and high-chlorinity environments. In low-chlorinity environments, the Cl content of an amphibole increases with increasing chlorinity of the coexisting fluid, and is defined by partitioning of Cl between the two phases, as well as the crystal-chemical constraints imposed by (Na+K), Fe, and Al substitution. On the other hand, amphiboles coexisting with the Salton Sea and more saline fluids are enriched in Cl; Cl content strongly depends on X(Fe2+) and the edenite content of the amphiboles. They may achieve a maximum Cl content, and the extent of Cl-for-OH substitution is crystal-chemically controlled.

Engberg, R. A.
19910000 ID: 3498
Concentration and Distribution of Selenium Associated with Irrigation Drainage in the Western United States. Proceedings of the United States - People's Republic of China Bilateral Symposium on Droughts and Arid-Region Hydrology, September 16-20, Tucson, Arizona. Kirby, W. H., and W. Y. Tan, eds. Open-File Report - U. S. Geological Survey.
Volume: *Issue:* *Page(s):* 113-123
Reston, VA U.S. Geological Survey
File Name: 19910000_engberg.pdf

Concentrations, distributions and sources of selenium from irrigated lands were studied between 1986 and 1990 at 20 reconnaissance study areas in the western states of USA as part of the Department of the Interior's National Irrigation Water Quality Programme. Samples of water, bottom sediment, whole-body fish and bird livers were collected before, during and after irrigation seasons from streams, canals, lakes and groundwater in each area. Selenium concn in water ranged from <1 mu g/litre in 42% of the 586 samples to 4800 mu g/litre in a well in southern Colorado. Selenium concn in bottom sediment ranged from < 0.1 mu g/g to 85 mu g/g. In whole-body fish selenium concn were 0.1-50 mu g/g dry wt. Cretaceous marine shales were probably the original sources for selenium for 16 of the 20 areas studied. Evaporative concentration of the irrigation water was the mechanism responsible for elevated selenium concn in water, bottom sediment, and biota in the Salton Sea area. Other sources were Permian deposits, lacustrine deposits and Cainozoic volcanic deposits.

Engberg, R. A.
19950625 ID: 2204
Identification and remediation of irrigation related water-quality problems in the Colorado River Basin, western United Proceedings of Water Resources and Environmental Hazards: Emphasis on Hydrologic and Cultural Insights in the Pacific Rim.
Volume: *Issue:* *Page(s):*
Herndon, VA American Water Resources Association
File Name:

Reconnaissance investigations of irrigation-related water quality problems have been conducted by the Department of the Interior's National Irrigation Water Quality Program at seven federal irrigation project areas

within, or that receive water diverted from, the Colorado River Basin. Elevated concentrations of oxyanions including selenium, arsenic, boron, and others were detected in significant numbers of water, sediment or biota samples from four areas, and detailed studies of the source, transport and fate of these oxyanions are complete or underway at these areas. Selenium is the principal oxyanion of concern in all areas. Selenium is associated with Cretaceous-age marine shales which comprise much the near-surface geology of the Upper Colorado River Basin. Low rainfall, high evaporation, and internal drainage enhance the accumulation of selenium. Maximum selenium concentrations in micrograms per liter (ug/l) of 0.4 (water), 12 (sediment), 32 (waterfowl), and 48 (fish) have been observed in the Middle Green River area and deformed waterbird embryos have been recovered that demonstrate selenium toxicosis. The reservoirs on the Colorado River act as oxyanion sinks. The median selenium concentration of water diverted from the Lower Colorado River and delivered to the Salton Sea area is 2 ug/l. Evaporation concentrates selenium to amounts potentially harmful to wildlife in drainwater delivered to the Salton Sea. Remedial planning is underway at the Middle Green River area, in Utah. Remedial planning may include construction and non-construction solutions, incentives, best management practices, and land retirement. The public is involved in every aspect of the remedial planning process.

Engberg, R. A., and M. A. Sylvester.
19930000 ID: 5013
Concentrations, distribution, and sources of selenium from irrigated lands in western United States
Journal of Irrigation and Drainage Engineering
Volume: 119 *Issue:* *Page(s):* 522-36
File Name:

Engineering-Science, Inc , Arcadia, CA
19800200 ID: 2220
Potential Consequences of Reject Stream Replacement Projects on Aquatic, Terrestrial, and Recreation Resources: Volume II, Aquatic Resources. Prepared for Lower Colorado Regional Office, Water and Power Resources Service
Volume: *Issue:* *Page(s):* 329 p.
Boulder City, NV U.S. Bureau of Reclamation
File Name:

Effects on terrestrial resources are discussed for several proposed projects for replacing the 44,000 acre-feet/year of brine flow rejected from the Yuma Desalting Plant. Proposed locations for these projects are the Imperial Valley, California , or Butler Valley, Arizona. Vegetation and wildlife characteristics are reported for both areas. The Imperial Valley has nine types of communities from wetlands and river riparian to cresote bush and sand dunes. The animal population (54 species of mammals, 297 species of birds, 42 species of reptiles and amphibians) features several special interest birds and reptiles. The major concern is the rare black rail and the endangered *Yuma* *clapper* rail, which would be severely threatened by the wetlands elimination. The mammal population is comprised of few game mammals but many furbearers and rodents. Waterfowl are abundant. Butler Valley is a sparsely settled, productive desert community is the most attractive wildlife habitat. Five endangered or threatened wildlife species are found in the Butler Valley: peregrine falcon, desert bighorn, zone-tailed hawk, desert tortoise, and Gila monster. Ten species of blue list birds (not endangered in the study area, but scarce in other areas of the U.S.) live in this valley. (Cassar-PTT)

Engle, Carole R.
19970000 ID: 7912
Marketing Tilapias
Tilapia Aquaculture in the Americas, Volume One, Barry A. Costa-Pierce and James E. Rakocy, eds.
Volume: *Issue:* *Page(s):* 244-258
Baton Rouge, LA World Aquaculture Society
File Name:

Engle, Carole R.
19970000 ID: 7911
Economics of Tilapia Aquaculture.
Tilapia Aquaculture in the Americas, Volume One, Barry A. Costa-Pierce and James E. Rakocy, eds.
Volume: *Issue:* *Page(s):* 229-243
Baton Rouge, LA World Aquaculture Society
File Name:

Environmental Solutions, Inc.
19871028 ID: 7684
Final Environmental Impact Report/ Environmental Assessment (EIWEA) for the proposed VCR Mining Project Imperial

County, California
Volume: *Issue:* *Page(s):*
File Name: 19871028_esi.pdf

Epp, R. W., and P. W. Winston
19770110 ID: 7753
Osmotic Regulation in the Brackish-water Rotifer Brachionus Plicatilis (Muller)
Journal of Experimental Biology
Volume: 68 *Issue:* *Page(s):* 151-156
File Name: 19770110_epp_c.pdf

ERC Environmental and Energy Services Co.
19900500 ID: 7678
Desert Valley Company's Monofill Facility Final Environmental Impact Report
Volume: *Issue:* *Page(s):*
File Name: 19900500_erc.pdf

Escamilla Perez, Ana Lilia
19940000 ID: 5891
The Effects of Increasing Salinity on the Reproduction, Feeding Behavior, Growth Rate, Osmoregulation and Survival of the Barnacle Balanus amphitrite (Crustacea, Thoracia) from the Salton Sea, California
Volume: *Issue:* *Page(s):* 78 p.
Loma Linda, CA Loma Linda University
File Name: 19940000_escamilla_c.pdf

Escamilla-Perez, A., and D. L. Cowles
ID: 3792
Balanus amphitrite (Crustacea, Thoracica) in the Salton Sea: Effects of increasing salinity
American Society of Limnology and Oceanography 199
Volume: *Issue:* *Page(s):*
American Society of Limnology and Oceanography 199
File Name:

Eskesen, J. H.
19770400 ID: 1825
Study of practical cycles for geothermal power plants. Final report
Volume: *Issue:* *Page(s):* 160
File Name:

A comparison is made of the performance and cost of geothermal power cycles designed specifically, utilizing existing technology, to exploit the high temperature, high salinity resource at Niland and the moderate temperature, moderately saline resource at East Mesa in California's Imperial Valley. Only two kinds of cycles are considered in the analysis. Both employ a dual flash arrangement and the liberated steam is either utilized directly in a condensing steam turbine or used to heat a secondary working fluid in a closed Rankine (binary) cycle. The performance of several organic fluids was investigated for the closed cycle and the most promising were selected for detailed analysis with the given resource conditions. Results show for the temperature range investigated that if the noncondensible gas content in the brine is low, a dual flash condensing steam turbine cycle is potentially better in terms of resource utilization than a dual flash binary cycle. (The reverse is shown to be true when the brine is utilized directly for heat exchange.) It is also shown that despite the higher resource temperature, the performance of the dual flash binary cycle at Niland is degraded appreciably by the high salinity and its output per unit of brine flow is almost 20 percent lower than that of the steam turbine cycle at East Mesa. Turbine designs were formulated and costs established for power plants having a nominal generating capacity of 50 MW. Three cycles were analyzed in detail. At East Mesa a steam turbine and a binary cycle were compared. At Niland only the binary cycle was analyzed since the high CO/sub 2/ content in the brine precludes the use of a steam turbine there. In each case only the power island equipment was considered and well costs and the cost of flash separators, steam scrubbers and piping to the power plant boundary were excluded from the estimate.

Evermann, B. W.
19300000 ID: 5015
Report of the director of the museum and of the aquarium for the year 1929
Proceedings of the California Academy of Sciences
Volume: 18 *Issue:* *Page(s):* 542-79
File Name:

Fairbrother, A., R. S. Bennett, L. A. Kapustka, E. J. Dorward-King, and W. J. Adams
19970000 ID: 7523
Risk to birds from selenium in the southshore wetlands of Great Salt Lake, Utah
Understanding Selenium in the Aquatic Environment, W. J. Adams (ed.), Proceeding of Kennecott Salt Lake City Symposium. Kennecott Utah Copper, Magna, UT, March 6-7, 1997
Volume: *Issue:* *Page(s):*
File Name:

Farley, Eldon P., C. A. Watson, Lorraine Macdonald, D. Digby, Robert W. Bartlett, and Gopala Krishnan
19801200 ID: 2175
Recovery of Heavy Metals from High Salinity Geothermal Brine
NTIS Report
Volume: Pb81-222218 *Issue:* *Page(s):* 131
File Name:

Large quantities of high salinity geothermal brine from the Salton Sea Geothermal area, CA, contain significant amounts of lead, zinc, iron, and manganese. A simple method of treating spent brine is required to economically recover these metals. Results from a two-year laboratory investigation of sulfide precipitation are discussed.
SULFIDES; IRON; MANGANESE; ZINC; LEAD

Faulkner, D. John
19970806 ID: 8129
Toxic Algal Blooms and Their Possible Role in Fish and Bird Mortality at the Salton Sea
Volume: *Issue:* *Page(s):* 2 p.
File Name: 19970806_faulkner.pdf

Faulkner, D. John
19990000 ID: 8097
A Survey of Algal Toxins in the Salton Sea: Synthesis Document
Volume: *Issue:* *Page(s):* 1 p.
File Name:

Feltz, Herman R., and Richard A. Engberg
19940624 ID: 2186
Historical Perspective of the U.S. Department of Interior National
AWRA/et al Effects of Human-Induced Changes on Hydrol Syst Symp, Jackson Hole, WY
Volume: *Issue:* *Page(s):* 1011-1020
File Name: 19940624_feltz_c.pdf

The National Irrigation Water Quality Program was initiated by USDI to determine whether irrigation-related problems existed at USDI-constructed or -managed irrigation projects, national wildlife refuges, or other wetland areas. By 1992, the project had been expanded to include 26 study areas in 14 western states. The program, which is described, involves five stages: site identification, reconnaissance, detailed studies, cleanup planning if needed, and remediation. At all sites, selenium was the trace element found most frequently. The highest Se concentration was found in the Salton Sea area, CA, but minimum concentrations were also found in all areas, indicating the widely variable occurrence of the element. Concentrations in bottom sediments were very low. The program also involves assessment of Se concentrations in fish and migratory birds. Data from this phase indicate that bioaccumulation of Se is evident in the higher tropic levels of the food chain in nearly every study area, but that they remain below reported thresholds of concern.

Ferrari, R. L., and P. Weghorst
19970500 ID: 2647
Salton Sea: 1995 Hydrographic GPS Survey (Revised May 1997)
Volume: *Issue:* *Page(s):* 30
File Name: 19970500_ferrari.pdf

Fialkowski, W., and W. A. Newman
19980000 ID: 7777
A Pilot Study of Heavy Metal Accumulations in a Barnacle from the Salton Sea, Southern California
Marine Pollution Bulletin
Volume: 36 *Issue:* 2 *Page(s):* 138
File Name:

Fish, James F. and William C. Cummings
19721000 ID: 4861
A 50-db Increase in Sustained Ambient Noise from Fish (Cynoscion xanthulus)
Journal of the Acoustical Society of America
Volume: 52 *Issue:* 4(2) *Page(s):* 1266-70
File Name: 19721000_fish_c.pdf

Ambient noise was measured once a month in the Salton Sea , California, from January to August 1970 with a calibrated recording system. The nighttime spectrum level at 1000 Hz increased nearly 50 dB from January to May. The change in level resulted entirely from a chorus of sounds produced by a single species of fish-the orangemouth corvina, Cynoscion xanthulus. The seasonal peak of sound production coincided with their breeding season. This increase in ambient noise level is the greatest sustained effect ever reported from underwater natural

Fleischer, R. C., G. Fuller, and D. B. Ledig
19950000 ID: 2545
Genetic structure of endangered clapper rail (Rallus longirostris) populations in southern California
Conservation Biology
Volume: *Issue:* *Page(s):*
File Name:

We assessed the genetic structure of two subspecies of endangered Clapper Rails (Rallus longirostris) in Southern California using DNA fingerprinting to uncover variation in minisatellite DNA. Minisatellite DNA variation in the Salton Sea population of the R. l. yumanensis subspecies was at a level typical of outbred avian species (average proportion of fragments shared, or S, was 0.33). Variation was extremely low (S from 0.63 to 0.77), however, within four coastal, salt-marsh populations of the subspecies R. l. levipes located along a transect extending about 260 km northwest from the Mexican border. Between-population similarity (S sub(ij)) was also high for the four levipes populations, although individuals of the small, isolated population at Mugu Lagoon consistently clustered separately in phenograms constructed using neighbor-joining or other algorithms. Individuals of yumanensis always clustered as a sister group to all levipes individuals. The minisatellite data were contrasted with the extremely low mtDNA and RAPD variation we found in both subspecies. We propose that variation in these less-mutable markers was lost in a bottleneck that occurred at least 1000 years ago, thus allowing sufficient time for recovery of variation in the rapidly mutating (mu similar to 0.001/gamete/generation) minisatellites (t = 1/ mu , or 1000 generations). A second, more-recent bottleneck, or series of bottlenecks within a metapopulation structure, likely resulted in the depauparate variation seen in levipes today. We suggest that translocations from large to small levipes populations could restore important genetic variation to the small populations and would not compromise genetic boundaries.

Flowerdew, M. W.
19850000 ID: 5016
Indices of genetic identity and distance in three taxa within the Balanus amphitrite Darwin complex (Cirripedia, Thoracia)
Crustaceana
Volume: 49 *Issue:* *Page(s):* 7-15
File Name: 19850000_flowerdew_c.pdf

Foreman, L. D., ed.
19970500 ID: 7695
Flat-tailed Horned Lizard Rangewide Management Strategy: Report of Interagency Working Group.
Volume: *Issue:* *Page(s):* iii, 92
File Name: 19970500_foreman.pdf

Fournier, R. O.
19871103 ID: 2876
Nonequilibrium three-phase flow during testing of the Salton Sea scientific drill hole; implications regarding interpretation of fluid inclusions in natural hydrothermal systems.
Eos, Transactions, American Geophysical Union, 1987 fall meeting
Volume: *Issue:* *Page(s):* 1537
File Name:

Fournier, R. O.
19881110 ID: 1464
Double-diffusive convective transfer of thermal energy within the Salton Sea geothermal brine.
Exploration and development of geothermal resources
Volume: *Issue:* *Page(s):* 65-68 621 p.
File Name:

This paper emphasized that the double-diffusive convection model is suitable to explain the variations on pressure,

temperature, heat flow, and salinity observed thorough the Salton Sea geothermal system. The author denied several other models for the Salton Sea hydrothermal system which consist of the model of large-scale convection, the model of the diffusion of water downward, the model of the distribution of brine in response to a temperature gradient and the model of small vertical convection accompanied with large-scale horizontal flow. The author concluded that the important parameters are the contrasting rates of transport of heat and salt across a boundary layer separating cooler less saline water above from hotter more saline water below and that this model can explain the density profile of the hydrothermal reservoir consistently. 17 refs., 1 fig., 1 tab.

Fournier, R. O.
19900000 ID: 3741
Double-diffusive convection in geothermal systems: the Salton Sea, California, geothermal system as a likely
Geothermics
Volume: 19 *Issue:* 6 *Page(s):* 481-96
File Name:

Much has been published about double-diffusive convection as a mechanism for explaining variations in composition and temperature within all-liquid natural systems. However, relatively little is known about the applicability of this phenomenon within the heterogeneous rocks of currently active geothermal systems where primary porosity may control fluid flow in some places and fractures may control it in others. The main appeal of double-diffusive convection within hydrothermal systems is that it is a mechanism that may allow efficient transfer of heat mainly by convection, while at the same time maintaining vertical and lateral salinity gradients. The Salton Sea geothermal system exhibits the following reservoir characteristics: (1) decreasing salinity and temperature from bottom to top and center toward the sides, (2) a very high heat flow from the top of the system that seems to require a major component of convective transfer of heat within the chemically stratified main reservoir, and (3) a relatively uniform density of the reservoir fluid throughout the system at all combinations of subsurface temperature, pressure, and salinity. Double-diffusive convection can account for these characteristics very nicely.

Fournier, Robert O.
19870707 ID: 2981
Double-Diffusive Convective Control of Salinities Within the Salton Sea Hydrothermal System.
Eos, Transactions, American Geophysical Union
Volume: 68 *Issue:* 27 *Page(s):* 628
American Geophysical Union
File Name: 19870707_fournier.pdf

Frankenberger, W. T.
ID: 7920
Soil management factors affecting volatilization of selenium…
Geomicrobiology Journal
Volume: 92 *Issue:* *Page(s):* 265
File Name:

French, R. L.
19840800 ID: 1543
Salton Sea solar pond power plant design study and regional applicability
Volume: *Issue:* *Page(s):* 30
File Name:

Ormat collected and organized the data base and conducted conceptual plant design, performance, and cost analysis. JPL conducted site-specific studies related to solar pond chemistry, soil biological activity, and dike design and construction. WESTEC conducted environmental investigation studies and performed an environmental assessment. SCE provided planning support for licensing and permitting and technical evaluations of the system design and cost estimate.

French, R. L., and I. Meitlis
19800000 ID: 1618
Salton Sea project.
Volume: *Issue:* *Page(s):* 6.30-6.31
National conference on renewable energy technologi
File Name:

The principles of the operation of a solar pond are described. A proposed solar pond concept for the Salton Sea in Southern California is illustrated. In addition to providing energy for the generation of commercial electric power, the solar pond project will cause a reduction in the ever-rising salinity of the Salton Sea, thus preserving the established ecosystem. (LEW)|;

French, R. L., H. E. Marsh, E. J. Roschke, and Y. C. Wu
19840901 ID: 1550
Site-Specific Research Conducted in Support of the Salton Sea Solar Pond Project - FY 1982 report
Volume: *Issue:* *Page(s):* 110
File Name: 19840901_french.pdf

The design and operation of a salt-gradient solar pond power plant at the Salton Sea presents problems not encountered at small research ponds that have been built in the United States. The specific characteristics of the Salton Sea site and the desire to construct the pond using the local clay as a sealant represent major deviations from previous solar pond experience. This document reports on the site-specific research conducted by the Jet Propulsion Laboratory in support of the plant design. The research activity included validation of the spectrophotometric light transmission measurement technique, a search for options for clarifying the turbid and colored water of the Salton Sea, development of water clarification specifications in terms common to industry practice, quantification of gas production from microbiological reactions in the ground, a determination of the combined effects of temperature and salinity on the permeation of the local clays, and a preliminary evaluation of

French, R. L., and I. Meitlis
19800000 ID: 1638
Salton sea solar pond project
Proceedings, Intersoc. Energy Convers. Eng. Conf. (United States)
Volume: *Issue:* *Page(s):* 1430-1431
File Name:

The feasibility of constructing salt gradient solar ponds within the Salton Sea is being studied. These ponds would serve a dual purpose: (1) become a depository for unwanted salt and (2) supply thermal energy for driving turbine electric power systems. Under present circumstances, the rise in salinity is expected to eliminate fish life and create other unfavorable conditions. The proposed concept would have a power generation potential of 600 MWe. 4

Fruh, E. Gus, and Herman M. Clay, Jr.
19730000 ID: 7961
Selective Withdrawal as a Water Quality Management Tool for Southwestern Impoundments.
Man-made lakes: their problems and environmental effects. William C. Ackermann, Gilbert F. White [and] E. B. Worthington, editors. J. Loreena Ivens, associate editor.
Volume: *Issue:* *Page(s):* 335-341
Washington, DC American Geophysical Union
File Name: 19730000_fruh_c.pdf

Gahler, Arnold R.
19690000 ID: 2269
Sediment-water nutrient interchange
Proceedings of the Eutrophication-Biostimulation Assessment Workshop, June 19-21, 1969, California Univ, Berkeley, Sanitary Engine…
Volume: *Issue:* *Page(s):*
File Name:

QUANTITATIVE MEASUREMENT OF NUTRIENT INTERCHANGE BETWEEN SEDIMENTS AND OVERLYING LAKE WATER IS DIFFICULT EITHER BY FIELD OR LABORATORY TESTS. NUTRIENT AVAILABILITY IN LAKE SEDIMENTS WAS DETERMINED BY ANALYSIS OF INTERSTITIAL WATER FROM SEDIMENTS TAKEN FROM OREGON LAKES AND OTHERS IN WESTERN UNITED STATES. MUCH SOLUBLE PHOSPHORUS AND NITROGEN IS AVAILABLE FOR ALGAL GROWTH WHEN SEDIMENT IS PHYSICALLY MIXED WITH OVERLYING WATER. IN SHALLOW LAKES, MIXING OCCURS BY RESUSPENSION OF SEDIMENTS FROM WAVE ACTION, STIRRING BY BENTHIC ORGANISMS, FISH, BOATING, GAS RELEASE, LIFTING OF SEDIMENT BY ALGAL GROWTHS, AND DIFFUSION. CORES INDICATE CONCENTRATIONS OF NUTRIENTS IN INTERSTITIAL WATER AT LEVELS 2-6 FEET BELOW THE SEDIMENT-WATER INTERFACE. THIS INFORMATION MAY BE USEFUL IN PREDICTING VALUE OF DREDGING FOR LAKE RESTORATION. FREEZING AND STORAGE CHANGES SEDIMENTS ONLY FRESH SEDIMENTS GIVE ACCURATE DETERMINATIONS OF SOLUBLE NUTRIENTS IN INTERSTITIAL WATER. IRRADIATION OF SEDIMENTS WITH COBALT FOR STERILIZATION INCREASED SOLUBLE ORTHOPHOSPHATE AND SOLUBLE ORGANIC COMPOUNDS IN INTERSTITIAL WATER. LABORATORY EXPERIMENTS INDICATE UPPER KLAMATH LAKE, OREGON, SEDIMENTS PROMOTE ALGAL GROWTH AND ELIMINATION OF SEDIMENT NUTRIENT RELEASE BY ADDITIVES FORMING HYDROUS OXIDES AND INSOLUBLE PHOSPHATES INDICATE THAT THIS TECHNIQUE MAY PROVIDE ONLY TEMPORARY LAKE RESTORATION. (SEE VOL 3, NO 7, FIELD 5C, ENTRY W70-02775). (JONES-WISCONSIN)

Gallup, D. L.

19950000 ID: 3824
Agricultural uses of excess steam condensate - Salton Sea geothermal field
Volume: *Issue:* *Page(s):*
File Name:

Unocal Corporation operated three power generation facilities at the Salton Sea geothermal field through 1993. Condensed steam from these facilities was primarily employed for makeup water to cooling towers. Especially during winter months, however, an excess of condensate was produced that required disposal via water injection wells. Beneficial agricultural uses of this excess condensate were investigated in laboratory and field studies. Condensate proved to have application in leaching saline soils and in irrigating certain crops due to its low salinity, heat, and ammonia (natural nitrogen fertilizer) content. Condensate and Class 1 irrigation water/condensate mixtures generally produced healthier crops than irrigation water alone in both laboratory greenhouse and field tests. Drawbacks to the use of steam condensate for agricultural applications are an elevated boron content that may be toxic to certain plants and the potential for poor penetration of soils. (Author abstract) 8 Refs.

Gallup, Darrell, L.
19910000 ID: 3831
Agricultural uses of excess steam condensate - Salton Sea KGRA
Volume: *Issue:* *Page(s):*
File Name:

At the Salton Sea geothermal field, Unocal currently operates three power generation facilities. Condensed steam from these facilities is primarily employed for makeup water to cooling towers. Especially during winter months, an excess of condensate is produced that is disposed via cold water injection wells. Agricultural uses of this excess condensate have been investigated to minimize disposal obstacles. Condensate has been tested in leaching saline soils and in irrigating crops. Due to its low salinity, heat, and nitrogen fertilizer contents, condensate appears to be attractive as an irrigation water supplement. The drawbacks to the use of condensate are its boron content and the potential for poor penetration of soils. (Author abstract) Refs.

Garfield, N., C. A. Collins, T. A. Rago, A. Mascarenhas, and A. S. Devora
19950300 ID: 8274
Pegasus in the Sea of Cortes Area (PESCAR) Pegasus Data Report for PESCAR Cruises in April and December 1992
Volume: *Issue:* *Page(s):* 91 p.
File Name:

Results of direct ocean current measurements at the entrance of the Gulf of California (Sea of Cortes) are presented. Velocity measurements were made using an acoustically-tracked dropsonde called Pegasus at six sites across the entrance to the Gulf. 49 Pegasus deployments were completed over the course of two oceanographic cruises in April 1992 and December 1992/January 1993. During each cruise two complete velocity transections were obtained, providing four independent realizations of the current structure. The data herein are presented by Pegasus deployment site as six sets of mean and individual velocity profiles.

Garrett, G. P., and C. R. Inman
19840000 ID: 7524
Selenium-induced changes in fish populations of a heated reservoir
Proceedings Annu. Conf. Southeast. Assoc. Fish Wildl. Agencies
Volume: 38 *Issue:* *Page(s):* 291-301
File Name:

Gaskill, J. H.
19700000 ID: 7657
Waterfowl studies on the southeastern Great Salt Lake
Volume: *Issue:* *Page(s):*
Salt Lake City, UT University of Utah
File Name:

Gaxiola-Castro, G., S. Alvarez-Borrego, M. F. Lavín, A. Zirino, and S. Najera-Martinez
19990200 ID: 8332
Spatial variability of the photosynthetic parameters and biomass of the Gulf of California phytoplankton
Journal of Plankton Research
Volume: 21 *Issue:* 2 *Page(s):*
File Name:

Spatial variability of the central Gulf of California (CGC) phytoplankton biomass and photosynthetic parameters in relation to physical forcing was studied. Sampling was carried out in November, and the surface T degree C range was 20-27.5 degree C. Strong tidal mixing in the Midriff Islands regions injects relatively cool, nutrient-rich waters to the euphotic zone. Some of this water is transported via jets and cool filaments throughout the Gulf. In general,

chlorophyll a (Chl) of small phytoplankton (<8 [mgr]m) (up to >2.5 mg/m super(3)) was higher than that of large phytoplankton. Highest values of phytoplankton assimilation numbers (P super([Bgr])m) [3.17 mg C/(mg Chla)/h], and photosynthetic efficiency [agr] super([Bgr])) [0.23 mg C/(mg Chl a)/h/(W m super(2))] were determined for the large phytoplankton cells (>8 [mgr]m). Our hypothesis that P super([Bgr])m values increase from cooler to warmer waters is not supported by the data. We found a 27-fold spatial difference of Chl, compared with a 10-fold difference of P[Bgr]m and a 6-fold difference of [agr] super([Bgr]). Thus, in our study area, the major source of variability for primary productivity (PP) comes from Chl, and not from P super([Bgr])m and [agr] super([Bgr]). Therefore, we propose that it is possible to estimate late-fall PP for the CGC using average photosynthetic parameters. Average values for P super([Bgr])m and [agr] super([Bgr]) of total phytoplankton were 0.72 mg c/(mg Chl a)/h and 0.12 mg C (mg Chl/a)/h, (W/m super(2)), with standard errors of 0.07 and 0.03, respectively.

Gillespie, D. M., and D. W. Stephens
19770000 ID: 7621
Some aspects of plankton dynamics in the Great Salt Lake, Utah
Desertic Terminal Lakes, Proceedings of Conference
Volume: *Issue:* *Page(s):* 401-10
File Name:

Gillespie, R. B., and P. C. Baumann
19860000 ID: 7525
Effects of high tissue concentrations of selenium on reproduction by bluegills
Transactions of the American Fisheries Society
Volume: 115 *Issue:* *Page(s):* 208-13
File Name:

Giulianelli, J. L., A. M. Naghmush, and D. Yogi Goswami
19840000 ID: 1556
Solar energy penetration profiles in solar ponds.
Solar Engineering -- 1984
Volume: *Issue:* *Page(s):* 18-24
File Name:

This paper reports a method for determining the fraction of solar energy that penetrates to a given depth in a salt-gradient solar pond. The procedure is based upon calculations using the recorded absorption spectra of the brines sampled from the pond. Spectra are recorded using a unique procedure developed especially for accurately measuring low absorbances in brines. A computer program converts absorbances, solution densities, and pond depths into the solar energy penetration profile for a solar spectrum that is assumed to be at normal incidence to the surface. The uncertainty in the predicted profiles is not more than five percent at a depth of one meter. The method was used to calculate penetration profiles through untreated and ozone-treated water and brines from the Salton Sea . The results lead one to predict that a hypothetical solar pond made from ozone-treated Salton Sea water and brines is close to Weinberger Water Type 4. The procedure can be used for evaluating the effectiveness of clarification treatments on colored brines, and for obtaining input data for calculating thermal performances in

Giulianelli, J. L., and Mohamed Naghmush Abdulmagid
19830000 ID: 3637
A technique for determining solar energy penetration profiles in solar ponds
Colorado School of Mines quarterly
Volume: *Issue:* *Page(s):* 31-40
File Name:

Presentation d'une methode de determination de la fraction de l'energie solaire penetrant a une profondeur donnee dans un bassin solaire a gradient de salinite. Application au calcul des profils de penetration dans des eaux et des saumures non traitees et ozonisees en provenance de Salton Sea , site potentiel d'etablissement de grands bassins solaires

Glenn, E. P., R. S. Felger, A. Burquez, and D. S. Turner
19920000 ID: 8036
Cienega de Santa Clara: Endangered Wetland in the Colorado River Delta, Sonora, Mexico
Natural Resources Journal
Volume: 32 *Issue:* 4 *Page(s):* 817-823
File Name:

The Cienga de Santa Clara, a little-known, 20,000 ha brackish wetland area in the delta of the Colorado River in Sonora Mexico, is undergoing alterations due to the operation of the Yuma Desalting Plant by the Bureau of Reclamation (BUREC) in the United States. This is the largest remaining wetland in the delta region, containing rare and endangered species including the Desert Pupfish and the *Yuma* *Clapper* Rail, yet no official consideration

has been given to the effect of the altered conditions on the wetland flora and fauna. When the plant reaches full operation, the net flow into the wetland will be reduced by approximately 64% and the salinity will increase from approximately 3,200 ppm to 7,300 ppm. No analysis of the effect of reduced flow and increased salinity has been made. BUREC has stated that, since the wetland did not exist in 1975 when their Environmental Impact Statement was made, they are not obligated to consider the impact of the plant on the area in 1992. Policy decisions regarding the wetland must weigh the benefits of the desalting plant against the costs of habitat loss. These decisions can not be made until several questions are answered. Since there is no outlet to the sea from the wetland, the area may be viewed as a closed evaporation basin salinity could build up over time and alter the habitat. As evaporation continues, the buildup of heavy metals needs to be monitored. No assessment has been made of the effect of the desalting plant on the size of the wetland because of reduced flow and evaporation. Monitoring and mitigation measures need to be put into place minimize damage. The question of BUREC's responsibility has not been resolved. (Rohrbach-PTT)

Glymph, Louis M.
19730000 ID: 7962
Summary: Sedimentation of Reservoirs.
Man-made lakes: their problems and environmental effects. William C. Ackermann, Gilbert F. White [and] E. B. Worthington, editors. J. Loreena Ivens, associate editor.
Volume: *Issue:* *Page(s):* 342-348
Washington, DC American Geophysical Union
File Name: 19730000_glymph_c.pdf

Gober, J.
19940000 ID: 7534
The relative importance of factors influencing selenium toxicity
Effects of Human-Induced Changes on Hydrologic Systems. Proceedings of Annual Summer Symposium of the American Water Resources Association, June 26-29, 1994, Jackson Hole, Wyoming. R.A. Marston and V.R.
Volume: *Issue:* *Page(s):* 1021-1031
Bethesda, MD American Water Resources Association
File Name:

Goldberg, A.
19760300 ID: 1869
Geothermal materials studies.
Quarterly report, January--March 1976
Volume: *Issue:* *Page(s):* 27
File Name:

The LLL Geothermal Program has evolved into two basic activities: to provide advanced technologies for hydrothermal systems with emphasis on the Total Flow Process, and a recently initiated Industrial Support Program to provide technical assistance to joint ERDA/industry projects. The Metallurgy Division is carrying out a materials effort in support of both activities. The goal for the Total Flow Process Program is to solve the brine chemistry and materials problems in order to be able to test this process using the high temperature/high salinity brines located in the Salton Sea Geothermal Field. The short-range goal of the geothermal materials group is to select structural materials and fabrication processes for a 100-kW, brine tolerant turbine scheduled to be field tested by the end of FY 1977. The materials selected must be corrosion resistant to the high salinity acid brines and exhibit resistance to erosion-assisted corrosion that may arise from impingement by the high velocity brine droplets and entrained particulates. The turbine material must also be capable of supporting high sustained stresses due to centrifugal forces without being subjected to delayed failure by stress corrosion cracking or corrosion fatigue. Candidate materials will be evaluated through an integrated program of laboratory activity and field testing. In the Industrial Support Program, corrosion will be monitored during operation of the San Diego Gas and Electric Company's (SDG and E) Geothermal Test Loop Facility. Other candidate plant materials will also be tested for their corrosion resistance to provide a basis for substitution should present materials prove to be inadequate.|;

Goldberg, A., and R. E. Garrison
19770000 ID: 1838
Materials evaluation for geothermal applications: turbine materials.
Geothermal : state of the art : papers presented at the Geothermal Resources Council Annual Meeting, 9-11 May, 1977, San Diego, California
Volume: *Issue:* *Page(s):* 107-109
Davis, CA Geothermal Resources Council
File Name:

A number of candidate turbine materials are being evaluated for their resistance to erosion, corrosion, and stress corrosion cracking (SCC) in geothermal brines. These materials include Fe-, Ni-, Co-, and Ti-base alloys, coatings and ceramics. Tapered wearblades, simulating the leading edge of a turbine blade, are exposed to the direct impact of a two-phase nozzle exhaust. Bent beam SCC specimens, which are constrained in fixtures attached to the wearblade holders, are also exposed to this exhaust. The results of a test series in which acidified liquid brine was expanded to atmospheric pressure are described. The tests were performed at the LLL Field Test Station near Niland in the Salton Sea Geothermal Field. Evaluation of the exposed materials indicates that Ti-base alloys show the most promise for turbine wheel components in the high salinity geothermal environments.|;

Goldsmith, M.
19710209 ID: 4821
Salinity Control Study Salton Sea Project
Volume: *Issue:* *Page(s):* 105 p.
San Bernardino Aerospace Corporation
File Name: 19710209_goldsmith.pdf

Goldsmith, M.
19760000 ID: 1828
Geothermal development and the Salton Sea
Energy (Oxford) (United Kingdom)
Volume: *Issue:* *Page(s):* 367-373
File Name:

One of the limiting factors on energy development in the arid American West is the availability of water. Even geothermal development must take into account the hydrologic cycle of the surrounding area. In the Imperial Valley, the bloodstream of the economic body is water and, owing to the nature of the region and its water source, the mineralized Colorado River, the disposal of waste water is of major importance. The Salton Sea is presently the sump for agricultural drainage in that area. Geothermal development in the Valley will involve the flow to the surface of large quantities of highly mineralized water. After extraction of heat, the water must be safely disposed of. Moreover, many geothermal power generation methods would require cooling water supplies, and other methods may require water for reservoir injection. Geothermal development may well impact the hydrologic cycle. Conversely, the requirements of the local hydrologic cycle may well impact the nature of geothermal development. The purpose of this study is to examine the relationship of the Salton Sea, a key element of the Imperial Valley water system, to potential geothermal development. 12 refs.

Goldsmith, M.
19760200 ID: 1846
Geothermal development and the Salton Sea
EQL memorandum - California Institute of Technology, Environmental Quality Laboratory ; no. 17
Volume: 17 *Issue:* *Page(s):* 15
Pasadena Environmental Quality Laboratory, California Insti
File Name: 19760200_goldsmith_c.pdf

The purpose of this study is to examine the relationship of the Salton Sea, a key element of the Imperial Valley water system, to potential geothermal development. The most damaging effect would be the direct flow of geothermal brines into the Sea in large quantity (e.g., flow from several typical production wells). Not only would the rate of salinity increase be noticeably accelerated, but the added water would aggravate an already disturbingly high surface level situation. Both water quantity and quality considerations suggest that the Salton Sea cannot be used as a repository for large amounts of geothermal brine. Diversion of some of the inflow to the Salton Sea will have the beneficial effect of lowering the surface level, but will also tend to increase the salinity level. The use of Salton Sea water for injection fluid to maintain geothermal reservoir pressure will lower the elevation of the Sea and reduce its salinity. However, these beneficial effects will only be felt after the passage of many years, thus geothermal development does not offer an instant solution to the immediate problems of water quality in the Salton

Goldsmith, M.
19761200 ID: 1813
Engineering aspects of geothermal development in the Imperial Valley
Volume: *Issue:* *Page(s):* 54
File Name:

In order to provide background for introduction of a Geothermal Element into the General Plan of the County of Imperial, California, studies were conducted on resource evaluation, engineering development, environmental impact, economics, regulation, and so forth. This document is a collection of reviews of engineering matters pertinent to the County's plan. Briefly, the contents include discussions of drilling practice, costs, and land requirements. Brief notes on reinjection and on fluid transmission follow. The section on power plants attempts to give scaling relationships for land area, costs, and performance, according to size and reservoir temperature. The problem of cooling power plants is important, particularly in an arid agricultural area. Cooling requirements, water availability, and water suitability are discussed in turn. The question of the interactions of the hydrologic cycle,

withdrawals for cooling, and the Salton Sea is covered in a separate EQL document. Finally, there are sections devoted to nonelectrical uses for the geothermal resources, including production of fresh water and chemicals. T

Goldsmith, M.
19780400 ID: 1780
Engineering aspects of geothermal development with emphasis on the Imperial Valley of California
Energy (Oxford) (United Kingdom)
Volume: *Issue:* *Page(s):* 127-148
File Name:

This review was prepared in support of a geothermal planning activity of the County of Imperial. Engineering features of potential geothermal development are outlined. Acreage requirements for drilling and powerplants are estimated, as are the costs for wells, fluid transmission pipes, and generating stations. Rough scaling relationships are developed for cost factors as a function of reservoir temperature. Estimates are made for cooling water requirements, and possible sources of cooling water are discussed. Availability and suitability of agricultural wastewater for cooling are emphasized. The utility of geothermal resources for fresh water production in the

Grace, John L., Jr.
19730000 ID: 7971
Selective Withdrawal from Man-Made Lakes.
Man-made lakes: their problems and environmental effects. William C. Ackermann, Gilbert F. White [and] E. B. Worthington, editors. J. Loreena Ivens, associate editor.
Volume: *Issue:* *Page(s):* 539-548
Washington, DC American Geophysical Union
File Name: 19730000_grace_c.pdf

Granju, Jean-Pierre, Jack Garrison, and James Price
19730000 ID: 7960
Hydraulic Transients in Man-Made Lakes.
Man-made lakes: their problems and environmental effects. William C. Ackermann, Gilbert F. White [and] E. B. Worthington, editors. J. Loreena Ivens, associate editor.
Volume: *Issue:* *Page(s):* 320-326
Washington, DC American Geophysical Union
File Name: 19730000_granju_c.pdf

Greenwald, G. M., and S. H. Hurlbert
19930000 ID: 7926
Microcosm analysis of salinity effects on coastal lagoon plankton assemblages.
Hydrobiologia
Volume: 267 *Issue:* *Page(s):* 307-335
File Name:

Groh, John M., Annette J. Ciccateri, and Richard E. Casey
19910000 ID: 2858
Foraminifera and other organisms associated with the hydrothermal vent systems of the Salton Sea. (abstract)
Geological Society of America, Abstracts with Programs
Volume: 23 *Issue:* 5 *Page(s):* 36
File Name: 19910000_groh_c.pdf

Gutierrez Galindo, E. A., G. Flores Munoz, G. Olguin Espinoza, and J. A. Villaescusa Celaya
19900000 ID: 8345
Biodisponibilidad de metales traza en almejas y mejillon del valle agricola de Mexicali y alto golfo de California.
Ciencias Marinas
Volume: 16 *Issue:* 4 *Page(s):* 1-28
File Name:

Gutierrez-Galindo, E., G. Flores-Muñoz, and J. V. Celaya
19880000 ID: 8214
Chlorinated hydrocarbons in molluscs of the Mexicali Valley and Upper Gulf of California/Hidrocarburos clorados en moluscos del valle de Mexicali y alto Golfo de California
Ciencias Marinas
Volume: 14 *Issue:* 3 *Page(s):* 91-113
File Name:

The degree of contamination by organochlorinated pesticides and polychlorinated biphenyls in freshwater clams (Corbicula fluminea), clams (Chione californiensis) and mussels (Modiolus capax) from the Mexicali Valley and Upper Gulf of California, Mexico, does not represent a risk to human health or to be the environment.

Gutierrez-Galindo, E. A., G. Flores Muñoz, J. A. Villaescusa Celaya, and A. Arreola Chimal
19940501 ID: 8154
Spatial and Temporal Variations of Arsenic and Selenium in a Biomonitor (Modiolus capax) from the Gulf of California, Mexico
Marine Pollution Bulletin
Volume: 28 *Issue:* 5 *Page(s):* 330-333
File Name: 19940500_gutierrez_c.pdf

Hagar, J., and J. Garcia
19880500 ID: 4818
A Review of the Potential Biological Response to Salinity Changes in the Salton Sea
Volume: *Issue:* *Page(s):* 26 p.
Davis, CA Meyer resources
File Name: 19880500_hagar_c.pdf

Hamilton, S. J., and B. Waddell
19940000 ID: 7536
Selenium in eggs and milt of razorback sucker (Xyrauchen tezanus)in the middle Green River, Utah
Archives of Environmental Contamination and Toxicology
Volume: 27 *Issue:* *Page(s):* 195-201
File Name:

Hamilton, S. J., K. J. Buhl, N. L. Faerber, R. H. Wiedmeyer, and F. A. Bullard
19900000 ID: 7537
Toxicity of organic selenium in the diet to Chinook salmon
Environ. Toxicol. Chem.
Volume: 9 *Issue:* *Page(s):* 347-58
File Name:

Hammer, U. T.
19780000 ID: 7622
The saline lakes of Saskatchewan I: Background and rationale for saline lakes research
Internationale Revue der Gesamten Hydrobiologie
Volume: 63 *Issue:* 2 *Page(s):* 173-77
File Name:

Hammer, U. T., R. C. Haynes, J. R. Lawrence, and M. C. Swift
19780000 ID: 7625
Meromixis in Waldsea Lake, Saskatchewan
Verh. Internat. Verein. Limnol.
Volume: 20 *Issue:* *Page(s):* 192-200
File Name:

Hammer, U. T., K. F. Walker, and W. D. Williams
19730000 ID: 7626
Derivation of daily phytoplankton production estimates from short-term experiments in some shallow, eutrophic Australian saline lakes
Australian Journal of Marine and Freshwater Research
Volume: 24 *Issue:* *Page(s):* 259-66
File Name:

Hammer, U. Theodore, and Robert C. Haynes
19780000 ID: 7623
The Saline Lakes of Saskatchewan II: Locale, Hydrography and other Physical Aspects
Internationale Revue der Gesamten Hydrobiologie
Volume: 63 *Issue:* 2 *Page(s):* 179-203
File Name: 19780000_hammer_c.pdf

Hansen, L. D., K. J. Maier, and A. W. Knight
19930000 ID: 7538
The effect of sulfate on the bioconcentration of selenate by Chironomus decorus and Daphnia magna
Archives of Environmental Contamination and Toxicology
Volume: 25 *Issue:* *Page(s):* 72-8
File Name:

Hanson, J. A.
19720000 ID: 4844
Tolerance of High Salinity by the Pileworm, neanthes succinea, from the Salton Sea, California
California Fish and Game
Volume: 58 *Issue:* 2 *Page(s):* 152-154
File Name: 19720000_hanson_c.pdf

Hanson, Jack A.
19700000 ID: 4876
Salinity Tolerances for Salton Sea Fishes
Inland Fishery Administrative Report
Volume: *Issue:* *Page(s):* 7 p.
File Name: 19700000_hanson_c.pdf

Harrar, J. E., and E. Raber
19840000 ID: 1531
Chemical analyses of geothermal waters and Strategic Petroleum Reserve brines for metals of economic importance
Geothermics
Volume: *Issue:* *Page(s):* 349-360
File Name:

Waters from seven hydrothermal-geothermal, one geopressured-geothermal, and six Strategic Petroleum Reserve wells have been surveyed for 12 metals of economic importance using trace chemical analysis techniques. The elements sought were Cr, Co, Mn, Ta, Sn, V, Nb, Li, Sr, Pt, Au and Ag. Platinum was found at a concentration of approx. 50 ppb in a brine from the Salton Sea geothermal area. Brine from this region, as has been known from previous studies, is also rich in Li, Sr and Mn. Higher concentrations (approx. 900 ppm) of Sr are found in the high-salinity geopressured brines. None of the fluids contained interesting concentrations of the other metals. Good recovery of precious metals at sub-ppm concentrations from synthetic high salinity brines was achieved using Amborane reductive resin, but similar recovery in the laboratory using real brines could not be demonstrated. Several analytical techniques were compared in sensitivity for the determination of the precious metals; neutron activation analysis with carrier separation is the best for gold and platinum in geothermal brines. 26 references, 7

Harrar, J. E., F. E. Locke, C. H. Otto, Jr., L. E. Lorenson, S. B. Monaco, and W. P. Frey
19820200 ID: 1611
Field tests of organic additives for scale control at the Salton Sea Geothermal Field
Society of Petroleum Engineers Journal
Volume: *Issue:* *Page(s):* 17-27
File Name:

A pilot-size brine handling system was operated from Magmamax Well 1 in southern California to study the characteristics of siliceous scale deposition and to evaluate the possibility of treating the brine with chemical additives to control scaling. The rates of formation, chemical constitution, and morphology of the scales were examined as functions of temperature, brine salinity, substrate material, and antiscalant additive activity. The most active classes of compounds were those containing polymeric chains of oxyethylene and polymeric nitrogen compounds that are cationic in character. The best single compound was Corcat P-18. 30 refs.|;

Hart, Cheryl M.
19940000 ID: 5831
Salinity and Fish Effects on Salton Sea Invertebrates: a Microcosm Experiment [M.S. Thesis]
Volume: *Issue:* *Page(s):* 102 p.
San Diego, CA San Diego State University
File Name: 19940000_hart_c.pdf

Harthill, N.
19781200 ID: 1744

Quadripole resistivity survey of the Imperial Valley, California
Geophysics (United States)
Volume: *Issue:* *Page(s):* 1485-1500
File Name:

A quadrupole resistivity survey of the Imperial Valley, California, was carried out from the Salton Sea in the north to the Mexican border in the south. The east and west boundaries of the survey were the topographic limits of the valley. The quadripole resistivity method consists of sequentially energizing two orthogonal bipole sources with a square wave of electric current and measuring the resultant electric fields with a pair of orthogonal wire receivers. Two resultant electric fields are measured and by combining them in different proportions, their resultant can be made to rotate through 360 degrees. By performing this procedure, an ellipse of resistivity can be calculated at each measurement location. The arithmetic mean of the maximum and minimum axes of the ellipse is a tensor invariant resistivity. It was this value which was used to define the variation of electrical resistivity over the Imperial Valley. The quadripole survey of the Imperial Valley was undertaken to compare its known geothermal fields with previously unsurveyed areas. The results show that the geothermal fields of the Imperial Valley have distinctive resistivity characteristics. A large circular area south of the city of Brawley was found which has the same characteristics as the known geothermal fields. From the resistivity data, it is predicted that this south Brawley resistivity anomaly represents a geothermal field which will produce water with a temperature of approximately 200/sup 0/C and with a salinity between 20,000 and 50,000 ppM. A well to test the prospect was scheduled to be drilled early in 1978.|;

Hartman, O.
19360000 ID: 5832
New species of polychaetous annelids of the family nereidae from California
Proceedings of the United States National Museum
Volume: 83 *Issue:* *Page(s):* 467-80
File Name:

Hauser, W. J.
19750000 ID: 7475
An unusually fast growth rate for Tilapia zillii
California Fish and Game
Volume: 61 *Issue:* *Page(s):* 54-6
File Name:

Hauser, W. J.
19770000 ID: 7476
Temperature requirements of Tilapia zillii
California Fish and Game
Volume: 63 *Issue:* *Page(s):* 228-33
File Name:

Hedgpeth, Joel W.
19670000 ID: 7755
Ecological Aspects of the Laguna Madre, A Hypersaline Estuary
Estuaries, ed. G. H. Lauff
Volume: *Issue:* *Page(s):* 408-419
Washington, DC American Association for the Advancement of Science
File Name: 19670000_hedgpeth_c.pdf

Heinrich, Christoph A., Anita S. Andrew, Ronald W. T. Wilkins, and David J. Patterson
19890000 ID: 3851
Fluid inclusion and stable isotope study of synmetamorphic copper ore formation at Mount Isa, Australia.
Volume: *Issue:* *Page(s):*
File Name:

Earlier structural studies indicate that the dolomitic and siliceous breccias and contained copper mineralization at Mount Isa (Queensland, Australia) formed during regional deformation and greenschist facies metamorphism of their host mid-Proterozoic metasediments. The metasomatic breccia body (locally called 'silica dolomite') is zoned, with an outer halo of sparry dolomitic alteration replacing finely laminated dolomitic-pyritic metasediments. The core of the dolomitic breccia next to the underlying altered greenstones is overprinted by siliceous breccia containing the bulk of the chalcopyrite ore. Fluid inclusions in quartz and dolomite were studied by microthermometry, micro-Raman spectrometry, and semiquantitative electron microprobe analysis of inclusion salts. Two types of aqueous inclusions are restricted to dolomitic breccia: CaCl//2-rich (group 1) and salinity (approximately 25 wt %) similar to recent Salton Sea geothermal brines; and low-salinity with 10 to 20 mole

percent CO//2 (CO//2-rich, group 2). The working hypothesis for the syntectonic and synmetamorphic fluid-rock interaction and copper ore formation at Mount Isa is proposed. (Edited author abstract) 76 Refs.

Heinz, G. H.
19960000 ID: 7539
Selenium in birds
Interpreting Environmental Contaminants in Animal Tissues, W. N. Beyer, G. H. Heinz, and A. W. Redmon, eds.
Volume: *Issue:* *Page(s):* 453-464
Boca Raton, FL Lewis Publishers
File Name:

Heinz, G. H., D. J. Hoffman, and L. G. Gold
19890000 ID: 7494
Impaired reproduction of mallards fed an organic form of selenium
Journal of Wildlife Management
Volume: 53 *Issue:* *Page(s):* 418-28
File Name:

Heinz, G. H., D. J. Hoffman, A. J. Krynitsky, and D. M. G. Weller
19870000 ID: 7493
Reproduction in mallards fed selenium
Environ. Toxicol. Chem.
Volume: 6 *Issue:* *Page(s):* 423-33
File Name:

Helgeson, H. C.
19680300 ID: 1924
Geologic and thermodynamic characteristics of Salton Sea geothermal system
American Journal of Science
Volume: *Issue:* *Page(s):* 129-66
File Name:

Hendershott, M. C.
19930400 ID: 8279
Analyses of Data from Fine Structure and Circulation Studies in the Gulf of California (Final rept. 1 Mar 91-30 Sep 92)
Volume: *Issue:* *Page(s):* 3 p.
File Name:

The objective of this proposal was to complete the analysis and manuscripts of the CTD data collected in the Gulf of California. The most important accomplishment of the present reporting period has been completion, submission for publication to Deep Sea Research and acceptance, subject to minor modifications requested by a referee, of a paper by Ph.D. student Juan Rodrigues-Sero and M.C. Hendershott describing fine structure in the Gulf of California. The title is 'Vertical Temperature Gradient Finestructure Spectra in the Gulf of California.' We have also made significant progress on a manuscript with A. de Leon and A. Badan Dangon, of CICESE (Ensenada, Mexico) in which ADCP data collected in the northern Gulf of California in January 1990 are processed to extract the tidal velocity field there. The initial reduction of observations is complete, but we wish to include in the publication a comparison with tidal model results to be provided by researchers at CICESE and then to re-analyze the data using the model fields as a basis set rather than simple polynomials in the space coordinates.... Fine structure, Mixing,

Hendrickson, J. R.
19731019 ID: 8316
Study of the Marine Environment of the Northern Gulf of California
Volume: *Issue:* *Page(s):* 128 p.
File Name:

The author has identified the following significant results. Results of studies of the oceanography of the northern Gulf of California (Mexico) are reported. A remote, instrumented buoy measuring and telemetering oceanographic data by ERTS-1 satellite was designed, constructed, deployed, and tested. Regular cruises by a research ship on a pattern of 47 oceanographic stations collected data which are analyzed and referenced to analysis of ERTS-1 satellite imagery. A thermal dynamic model of current patterns in the northern Gulf of California is proposed. Findings are examined in relation to the model.

Herbst, D. B. and Bradley, T. J.
19890000 ID: 7627
Salinity and nutrient limitations on growth of benthic algae from two alkaline salt lakes in the Western Great Basin (USA)
Journal of Phycology
Volume: 25 *Issue:* *Page(s):* 673-8
File Name:

Hergenrader, Gary L., Mark J. Hammer
19730000 ID: 7973
Eutrophication of Small Reservoirs in the Great Plains.
Man-made lakes: their problems and environmental effects. William C. Ackermann, Gilbert F. White [and] E. B. Worthington, editors. J. Loreena Ivens, associate editor.
Volume: *Issue:* *Page(s):* 560-566
Washington, DC American Geophysical Union
File Name: 19730000_hergenrader_c.pdf

Hermanutz, R. O., K. N. Allen, T. H. Roush, and S. F. Hedtke
19920000 ID: 7540
Effects of elevated selenium concentrations on bluegills (Lepomis macrochirus) in outdoor experimental streams
Environ. Toxicol. Chem.
Volume: 11 *Issue:* *Page(s):* 217-24
File Name:

Hernandez Becerril, D. U.
19920000 ID: 8264
Observations on two closely related species, Chaetoceros tetrastichon and C. dadayi (Bacillariophyceae).
NORD. J. BOT.
Volume: 12 *Issue:* 3 *Page(s):* 365-371
File Name:

Two tropical-subtropical species of the diatom genus Chaetoceros, C. tetrastichon and C. dadayi were studied in light, scanning and transmission electron microscopy, from plankton samples collected in the Gulf of California, off the coasts of Baja California and the Mediterranean Sea. Both species are usually found to be attached to a tintinnid. The basic structure of both species agrees with previous studies of species belonging to the subgenus Phaeoceros , including the finely perforated cell wall of the valves and the presence of one rimoportula in every valve of the cells in the chain, which is located in the centre of the annulus.

Higginson, R. Keith, and Manuel Lopez, Jr.
19780600 ID: 4798
Colorado River Basin Salinity Control Projects Title I Division Cocahella Canal Unit Definite Plan Report June 1978
Volume: *Issue:* *Page(s):*
Bureau of Reclamation
File Name: 19780600_higginson.pdf

Hill, Blaber, and Boltt
19750000 ID: 7918
The limnology of Lagoa Poelela.
Transactions of the Royal Society of South Africa
Volume: 41 *Issue:* *Page(s):* 263-271
File Name:

Hilton, J.
19450000 ID: 5837
Where barnacles grow on the sage
Desert Magazine
Volume: 1945 *Issue:* *Page(s):* 4-5
File Name:

Hogg, N. D.
19730000 ID: 5838
Chlorinated Hydrocarbon Pesticide Residues, Salton Sea, California
M.S. Thesis
Volume: *Issue:* *Page(s):*

Pomona California Polytechnic University
File Name: 19730000_hogg_c.pdf

Holburt, Myron B.
19841000 ID: 7735
The Lower Colorado: A Salty River
California Agriculture
Volume: 38 *Issue:* 10 *Page(s):* 6-8
File Name: 19841000_holburt_c.pdf

Holt, B.
19781000 ID: 1724
Geothermal power plant design risks.
Proceedings of the second geothermal conference and workshop
Volume: *Issue:* *Page(s):* 109-112
Second geothermal conference and workshop
File Name:

The following risks are covered: scale, two-phase flow, steam quality, waste disposal, and equipment. These risks are discussed as they relate to the hypersaline brine characteristic of the Salton Sea KGRA and the medium temperature low salinity brine characteristic of the Heber KGRA. The two cases cover the range of conditions that may be expected in a large number of liquid-dominated reservoirs. (MHR)|;

Honma, H., M. Nakata, M., and N. Shikazono
ID: 4365
Dissolution of Platinum in Hydrothermal HCl Solution at 150.DEG.C..
Shigen Chishitsu
Volume: *Issue:* *Page(s):*
File Name:

The dissolution of platinum at 150.DEG.C. was experimentally studied in various HCl aqueous solutions, over period of 120 days. We obtained high concentrations of platinum in very low pH, high fo2 and highly saline conditions. For instance, platinum concentration in 3N HCl solution as starting condition reaches to about 6600ppm. Such high dissolved amount of platinum in the run is possibly caused by the generation and leakage of hydrogen gas from the system, which gives rise to the decomposition of H2O. On the other hand, the results obtained by other runs are roughly consistent with theoretical calculation of platinum solubilities in chloride solutions by Mountain and Wood (1988) and analytical results of Salton Sea geothermal waters by MCKIBBEN et al.(1990) who also suggested that platinum is considerably soluble in acidic, high fo2 and highly saline solutions.

Hoover, F. G.
19710000 ID: 5842
Status Report on Tilapia mossambica (Peters) in Southern California
Inland Fisheries Administrative Report
Volume: 71-16 *Issue:* *Page(s):* 32 p.
California Department of Fish and Game
File Name:

Hoover, Franklin G., and James A. St. Amant
19700100 ID: 7935
Establishment of Tilapia Mossambica Peters in Bard Valley, Imperial County, California.
California Fish and Game
Volume: 56 *Issue:* 1 *Page(s):* 70-71
File Name: 19700100_hoover_c.pdf

Hosier, Dennis Jerome
19750000 ID: 7784
The Ecology of Avian Botulism at the Salton Sea, California
Volume: *Issue:* *Page(s):* 66 p.
Pomona, CA California State Polytechnic University
File Name: 19750000_hosier_c.pdf

Hosomi, M. and R. Sudo
19920400 ID: 7557

Sediment Control on Lake Eutrophication Using an Ecological Model
Management of Bottom Sediments Containing Taoxic Substances: Proceedings of the U.S./Japan Experts Meeting (12th) held in Yokohama, Japan on 11-14 November 1986
Volume: *Issue:* *Page(s):* 185-210
Japan National Inst. For Environmental Studies, Tsukuba
File Name:

Eutrophication of closed water bodies is still one of the major environmental concerns in Japan. The percentage of lakes and reservoirs whose water cannot satisfy the Environmental Quality Criteria is the lowest when compared with those of rivers or sea areas (Environment Agency of Japan 1985). For the conservation and restoration of closed fresh waters, the Environment Agency enacted a new law, Law Concerning Special Measures for Conservation of Lake Water Quality on 13 May 1983. Local governments are required to make all possible efforts for eutrophication control, such as removal of polluted bottom sediments, artificial aeration/circulation, and reduction of nutrients loads. Ecological models are widely used for assessing the effectiveness of various means for eutrophication control (Nyholm 1978, Orlob 1983, Matsuoka 1984). However, most conventional models presuppose that release rates of nutrients from bottom sediments are constant or are given by a forcing function (Larsen, Mercier, and Malueg 1973; Imboden and Gachter 1978; Gulliver and Stefan 1982). Sediment submodels, therefore, are rarely incorporated into the ecological models (Jorgensen 1976). Strictly speaking, it is almost impossible for these models to predict the effects of sediment dredging and/or reduction of external loadings on the profiles of nutrient concentrations along the depth of sediments and, consequently, interaction (i.e. release and sedimentation) between bottom sediment and overlying water. The purpose of this study is to develop an ecological model of a lake, Lake Yunoko, combined with a dynamic model of bottom sediments and to assess various policies for eutrophication control with special emphasis on management of the bottom sediment.

Hughes, Gilbert H.
19670000 ID: 4401
Analysis of Techniques Used to Measure Evaporation from Salton Sea, California
U.S. Geological Survey Professional Paper
Volume: 272-H *Issue:* *Page(s):* 151-176
Washington, DC [U.S. Government Printing Office?]
File Name:

Hurlbert, Allen, ed.
19970300 ID: 7685
Wildlife use of agricultural drains in the Imperial County, California
U.S. Fish and Wildlife Service. Salton Sea National Wildlife Refuge
Volume: *Issue:* *Page(s):*
File Name: 19970300_hurlbert.pdf

Hussainy, S. U.
19720000 ID: 7628
Bacterial and algal chlorophyll in two salt lakes in Victoria, Austraila
Water Research
Volume: 6 *Issue:* *Page(s):* 1361-5
File Name:

Hutchinson, G. Evelyn
19371000 ID: 7629
A Contribution to the Limnology of Arid Regions: Primarily Founded on Observations Made in the Lahontan Basin
Transactions of the Connecticut Academy of Arts and Sciences
Volume: 33 *Issue:* *Page(s):* 47-132
New Haven, CT Connecticut academy of arts and sciences
File Name:

Ibrahim, Majed, Roy Yeaman, Mike Radecki, and Bonnie Arthur.
19960300 ID: 7951
Base Realignment and Closure Cleanup Plan (BCP) for Salton Sea Test Base, Imperial County, CA
Volume: *Issue:* *Page(s):* 1 v.
U.S. Department of the Navy
File Name:

Imperial Irrigation District
19880505 ID: 4831
Salton Sea Mitigation Plan Phase I - A Proposal to Mitigate the Adverse Effects of Salinity on Water Quality, Fisheries,

Wildlife, and Recreation at the Salton Sea
Volume: *Issue:* *Page(s):*
File Name: 19880505_iid.pdf

Imperial Irrigation District
19890500 ID: 4880
IID/MWD Water Conservation Program Impacts To Salton Sea
Volume: *Issue:* *Page(s):*
File Name: 19890500_iid.pdf

Indelicato, S. R., and A. R. Loeblich III
19860000 ID: 4651
A revision of the marine peridinioid genera (Pyrrhophyta) utilizing hypothecal-angular plate relationships as a taxonomic guideline.
Japanese
Volume: *Issue:* *Page(s):* 153-162
File Name:

International Conference on the Biology and Culture of Tilapias (1980: Bellagio, Italy) R. S. V. Pullin, and R. H. Lowe-McConnell, eds.
19820000 ID: 7914
The Biology and Culture of Tilapias: Proceedings of the International Conference on the Biology and Culture of Tilapias, 2-5 September 1980 at the Study and Conference Center of the Rockefeller Foundation, Bellagio, Italy: sponsored by the Internat…
Volume: *Issue:* *Page(s):* viii, 432 p.
Manila ICLARM
File Name:

International Symposium on Inland Saline Lakes (5th: 1991: Hotel Titikaka, Bolivia), Hurlbert, Stuart H., ed.
19930000 ID: 3334
Saline Lakes V. Proceedings of the Vth International Symposium on Inland Saline Lakes, held in Bolivia, 22-29 March 1991 / edited by Stuart H. Hurlbert.
Volume: *Issue:* *Page(s):* viii, 335 p.
Dodrecht; Boston Kluwer Academic
File Name:

This publication comprises 24 papers presented at the symposium: saline lakes of the former USSR; Mongolian salt lakes; Chinese saline lakes; major ion chemistry of some southern African saline systems; formation of manganese oxyhydroxides on the Dead Sea coast; microbial mats in the hydromagnesite-magnesite playas of the Cariboo Plateau, Canada; effects of microbial activity on the hydrochemistry and sedimentology of Lake Logipi, Kenya; physico-chemical characteristics of La Salada de Chiprana, Spain; the Dead Sea; Quaternary and recent Lamprothamnium groves, Argentina; Dunaliella salina from saline environments, Peru; effects of NaCl and KNO 'SUB 3' concentrations on the abscisic acid content of Dunaliella sp.; spatial heterogeneity of macrophytes in Lake Gallocanta, Spain; importance of nitrogen in Pyramid Lake, Nevada; population model for the alkali fly at Mono Lake; salinity tolerance of the copepod Apocyclops dengizicus , Salton Sea, California; seasonal change in a saline temporary lake, Fuente de Piedra, Spain; the fauna of athalassic saline waters in Australia and the Altiplano of South America; the penetration of cladocerans into saline waters; zooplankton associations in East African lakes; benthic invertebrates, Sud Lipez region, Bolivia; saline lakes of the Paroo, NSW, Australia; conservation of salt lakes; and microcosm analysis of salinity effects on coastal lagoon plankton assemblages. Twenty- three of the papers are abstracted separately in Ecological Abstracts (See 94L/10533-4, 10537, 10544, 10548-9, 10553, 10586, 10616, 10669, 10683-4 and 10689-90) and Geographical Abstracts: Physical Geography . -S.R.Harris

International Symposium on Man-Made Lakes, Their Problems and Environmental Effects (1971 : Knoxville, Tenn.)
19730000 ID: 7954
Man-made lakes: their problems and environmental effects
Volume: *Issue:* *Page(s):* xi, 847 p.
Washington, DC American Geophysical Union
File Name:

Irelan, Burdge
19710000 ID: 3192
Salinity of Surface Water in the Lower Colorado River-Salton Sea Area
U.S. Geological Survey Professional Paper

Volume: 486-E *Issue:* *Page(s):* 40 p.
Washington, DC U.S. Government Printing Office
File Name: 19710000_irelan.pdf

Water resources of lower Colorado River; Salton Sea area

Irwin, George A.
19710000 ID: 5845
Water-quality data for selected sites tributary to the Salton Sea, California, August 1969-June 1970
U.S. Geological Survey Open File Report
Volume: *Issue:* *Page(s):* 12 p.
Menlo Park U.S. Geological Survey
File Name:

Irwin, R. J.
19960000 ID: 7542
Draft selenium profile
Prototype Contaminants Encyclopedia
Volume: *Issue:* *Page(s):*
Fort Collins, CO U.S. National Park Service
File Name:

Isaacs, J. D.
19730900 ID: 7479
Potential trophic biomasses and trace-substance concentrations in unstructured marine food webs
Marine Biology
Volume: 22 *Issue:* 2 *Page(s):* 97-104
File Name: 19730900_isaacs_c.pdf

Jehl, J. R., Jr.
19880000 ID: 7794
Biology of the Eared Grebe and Wilson's Phalarope in the nonbreeding season; a study of adaptations of saline lakes.
Studies in Avian Biology
Volume: 12 *Issue:* *Page(s):* 1-74
File Name:

Jehl, J. R., Jr., and P. K. Yochem
19860000 ID: 3530
Movements of Eared Grebes Podiceps-Nigricollis Indicated by Banding Recoveries
Journal of Field Ornithology
Volume: 57 *Issue:* 3 *Page(s):* 208-212
File Name: 19860000_jehl_c.pdf

Banding returns through 1984 of 41 Eared Grebes suggest the following patterns. Birds from central North America migrate south or southeasterly to winter in northeastern Mexico and the adjoining gulf. Grebes from the central and eastern Great Basin and High Plains probably stage at Great Salt Lake and winter at the Salton Sea or Gulf of California [USA]. These may mingle in winter with birds from the western Great Basin and western Canada, which migrate southward east of the Cascade and Sierra Nevada ranges and stage at Mono Lake, before continuing to the Salton Sea or Gulf of California. Very few grebes winter along the Pacific coast.

Jehl, Joseph R., Jr.
19930500 ID: 2331
Observations on the Fall Migration of Eared Grebes, Based on Evidence from a Mass Downing in Utah. [Short Communications]
Condor
Volume: 95 *Issue:* 2 *Page(s):* 470-473
File Name: 19930500_jehl_c.pdf

Data from a mass downing of Eared Grebes migrating from Great Salt Lake, UT, to Salton Sea, CA, which occurred on Dec 10, 1991 were analyzed and compared with findings of previous studies on the birds' fall migration. Results revealed that 97% of the sample was made of adults. It was suggested that the 8.1 gram (g) lighter average masses of samples from Cedar City compared to the average of Minersville grebes was due to fat catabolism. A minimum mass of 20 g for pectoral muscles was found for Utah specimens, while stomach content mass averaged 1.9 g. Southern Utah was viewed as a hazardous but essential part of the fall migration route.

Jehl, Joseph R., Jr.
19960000 ID: 3681
Mass Mortality Events of Eared Grebes in North America
Journal of Field Ornithology
Volume: 67 *Issue:* 3 *Page(s):* 471-476
File Name: 19960000_jehl_c.pdf

Large-scale mortality events involving fared Grebes (Podiceps nigricollis) have been documented in the West for more than a century. The most persistent causes are adverse weather during migration and disease. The cause of the largest event, involving an estimated 150,000 individuals at the Salton Sea in 1992, has yet to be

Jellison, R. S., G. L. Dana, and J. M. Melack
19920000 ID: 7630
Ecosystem responses to changes in freshwater inflow to Mono Lake, California
The History of Water: Eastern Sierra Nevada, Owens Valley White-Inyo Mountains
Volume: *Issue:* *Page(s):* 107-118
University of California
File Name:

Jennings, Mark R., and Marc P. Hayes
19931130 ID: 7705
Amphibian and reptile species of special concern in California
Volume: *Issue:* *Page(s):*
Rancho Cordova, CA California Department of Fish and Game, Inland Fisheries
File Name: 19931130_jennings.pdf

Johnson, John A.
19940626 ID: 2187
The Salton Sea: Past History, Future Prospects
AWRA/et al Effects of Human-Induced Changes on Hydrol Syst Symp, Jackson Hole, WY
Volume: *Issue:* *Page(s):* 949-955
File Name: 19940626_johnson_c.pdf

The Salton Sea, which is located in the Salton Basin that extends from Palm Springs, CA, to the Gulf of California, was formed largely due to human intervention. Water for the sea originated as diversion from the Colorado River during early settlement of the region. When the diversion structure failed in 1905, which caused the entire flow of the Colorado River to pour into the basin, the diversion was closed and the Salton Sea was born. With no egress, evaporation eventually caused a rapid decline in surface elevation, but levels have steadily increased since 1920 due to the expansion in irrigated agricultural production and increased inflows from irrigation. Since 1924, the Salton Sea has been used as a repository for agricultural drainage. By the mid-1950s, the salinity concentration of the water had risen to approximate the salinity of the ocean. The history of the Salton Sea is chronicled, and efforts to maintain the salinity and elevation of the sea in relation to the natural degradation processes occurring are

Johnson, M. W.
19530000 ID: 5847
The copepod Cyclops dimorphus Kiefer from the Salton Sea
American Midland Naturalist
Volume: 49 *Issue:* *Page(s):* 188-92
File Name:

Johnson, Terry B., and Robert B. Spicer
19850400 ID: 7703
Status Report: Phrynosoma mcallii
Volume: *Issue:* *Page(s):* 61
Albuquerque U.S. Fish and Wildlife Service. Office of Endange
File Name: 19850400_johnson.pdf

Jordan, D. S., and R. E. Richardson.
19070000 ID: 5848
Description of a new species of killifish, Lucania browni, from a hot spring in lower California
Proceedings of the United States National Museum
Volume: 33 *Issue:* (No. 1572)? *Page(s):* 319-21
File Name:

Kelley, Robert L., and Ronald L. Nye
19841000 ID: 2223
Historical Perspective on Salinity and Drainage Problems in California
California Agriculture
Volume: 38 *Issue:* 10 *Page(s):* 4-6
File Name: 19841000_kelley_c.pdf

Salinity and drainage problems have plagued agriculture in California from the time irrigation was introduced in the second half of the nineteenth century. The Imperial Valley has had difficulties with salinization for several decades at the same time as it has become one of the most productive farming regions in the world. Shortly after 1901 serious salt and soil saturation problems became evident. Not until the 1940s was a solution found. About 100,000 acres were underlain with a network of concrete and clay tile by 1949, and for the first time since measurement were begun in 1943, more salt was removed from the Valley than was brought in. Another set of salt related problems in the Valley that may worsen in the near future involves both the surface elevation and the saltiness of the Salton Sea. The San Joaquin Valley, situated in the southern two-thirds of California 's great Central Valley is another area with a long history of salinity problems. From the late 1870s to about 1915, there was a parallel development of salinity and drainage problems. From 1915 to 1950 an agricultural boom and proliferation of irrigation district elevated drainage from an individual to a community undertaking. A solution that revolutionized drainage methods was the introduction of deep-well pumping in 1920. From the mid-1950s and continuing to the present, serious drainage problems have developed on the west side of the Valley trough. In the mid-1960s the federal and state governments began planning for a jointly constructed $86 million master drain that would eventually traverse 280 miles from Bakersfield to an unspecified point in the Delta. This plan ran into complications and only about 82 miles are completed. Delay in completing the Drain may result in major production loses for many Westlands farmers in the near future. (Baker-IVI)

Kepner, W. G., W. C. Hunter, W. R. Eddleman, and D. B. Radtke
19900000 ID: 8034
Selenium Bioaccumulation in Yuma Clapper Rail and Other Rallids from the Lower Colorado River Valley
American Fisheries Society, Arizona-New Mexico Chapter, The Wildlife Society, Joint Annual Meeting Eastern Arizona College, Thatcher, Arizona, February 2, 1990, proceedings
Volume: *Issue:* *Page(s):*
File Name:

Kim, Juhee
19730000 ID: 2059
Ecosystem of the Salton Sea
Man-Made Lakes: Their Problems and Environmental effects. William C. Ackermann, Gilbert F. White [and] E. B. Worthington, editors. J. Loreena Ivens, associate editor.
Volume: *Issue:* *Page(s):* 601-605
Washington, DC American Geophysical Union
File Name: 19730000_kim_c.pdf

HEEP COPYRIGHT: BIOL ABS. CALIFORNIA USA ROTIFER ANNELID BARNACLE PLANT COPEPOD MICROORGANISM INVERTEBRATE FISH BACTERIA POLLUTION

Kim, Juhee, and Martin K. Nakaji
19690000 ID: 3559
Microbial ecology of the Salton Sea [abstract]
Bacteriological Proceedings
Volume: 69 *Issue:* *Page(s):* 35
File Name: 19690000_kim_c.pdf

King, K. A.
19880000 ID: 7544
Elevated selenium concentrations are detected in wildlife near a power plant
Research Information Bulletin
Volume: 88-31 *Issue:* *Page(s):*
Fort Collins, CO U.S. Fish and Wildlife Service
File Name:

King, K. A., T. W. Custer, and D. A. Weaver
19940000 ID: 7545
Reproductive success of barn swallows nesting near a selenium-contaminated lake in east Texas, USA
Environmental Pollution

Volume: 84 *Issue:* *Page(s):* 53-8
File Name:

Kinne, O.
19650000 ID: 7480
Salinity requirements of the fish, Cyprinodon macularius
Public Health Serv., Publ.
Volume: 999-WP-25 *Issue:* *Page(s):* 187-92
File Name:

Knowles, Joan N., and W. D. Williams
19730000 ID: 7924
Salinity Ranges and Osmoregulatory Ability of Corixids (Hemiptera: Heteroptera) in South-East Australian Inland
Australian Journal of Marine and Freshwater Research
Volume: 24 *Issue:* 3 *Page(s):* 297-302
File Name: 19731100_knowles_c.pdf

Ko, A., D. B. Guy, and S. V. Cabibbo
19790000 ID: 1711
Geothermal desalination and power cogeneration plant.
Expanding the geothermal frontier / Geothermal Resources Council Annual Meeting, 24-27 September 1979, Reno,
Volume: *Issue:* *Page(s):* 341-344
Davis, CA Geothermal Resources Council
File Name:

A study is summarized as part of an overall effort to control the serious salinity problem of the Colorado River waters delivered to Mexico. The objective of this study was to make a process selection recommendation for a plant which would utilize East Mesa, California geothermal fluid to cogenerate desalted water for discharge into the river and sufficient electric power to make the plant independent of external suppliers. In the selected process, a portion of the geothermal fluid was flashed to produce steam for a condensing steam turbine/generator unit. The remainder of the fluid was used as feedwater for a multi-stage flash (MSF) desalination unit. Water from the Salton Sea was mixed with the brine discharge from the MSF unit and the blend was reinjected into the geothermal

Koenig, James B.
19710000 ID: 3136
Salton Sea; a new approach to environmental problems in a major recreation area.
Environmental planning and geology. Nichols, D. R., and C. C. Campbell
Volume: *Issue:* *Page(s):* 106-113
Washington, DC U.S. Department of Housing and Urban Development
File Name:

Kratzer, C. R., W. Dritschilo, L. J. Hannah, and M. A. Broutman
19850800 ID: 1520
Predicting impacts from water conservation and energy development on the Salton Sea, California
Water Resources Bulletin
Volume: 21 *Issue:* 4 *Page(s):* 565-572
File Name: 19850800_kratzer_c.pdf

An input-output model was developed to predict changes in Salton Sea salinity and water level until the year 2000 due to proposed water conservation efforts and geothermal and solar pond energy developments. The model SALINP provided good agreement with the observed salinities for 1960-80. While SALINP was not overly sensitive to one-year changes in any of the major inputs, a change in the historical means of the Imperial Valley runoff and evaporative loss inputs produced a significant effect on future predictions. The proposed water conservation

Kratzer, C. R., L. J. Hannah, and M. A. Broutman
ID: 3802
Salinity Changes in the Salton Sea Due to Solar Pond and Geothermal Development
18th Annual American Water Resources Association C
Volume: *Issue:* *Page(s):*
18th Annual American Water Resources Association C
File Name:

measures caused the predicted Salton Sea salinity for 2000 to greatly exceed 40,000 ppm, the level at which adverse effects to wildlife are believed to occur. The possible geothermal development also produced predicted

salinities considerably above 40,000 ppm. The salinity predictions for solar ponds by themselves and in conjunction with geothermal development were below 45,000 ppm for 2000. The solar pond and geothermal combination also resulted in a predicted lowering of the natural water level by 5 to 7 feet by 2000.

Kültz, D., and K. Jürss
19930602 ID: 7757
Biochemical characterization of isolated branchial mitochondria-rich cells of Oreochromis mossambicus acclimated to fresh water or hyperhaline sea water
Journal of Comparative Physiology B
Volume: 163 *Issue:* *Page(s):* 406-412
File Name: 19930602_kültz_c.pdf

Kuhl, D. L., and L. C. Oglesby
19790800 ID: 1977
Reproduction and survival of the pileworm Nereis succinea in higher Salton Sea salinities.
Biological Bulletin
Volume: 157 *Issue:* 1 *Page(s):* 153-165
File Name: 19790800_kuhl_c.pdf

Upper salinity limits for reproduction and survival of N. succinea are established in the Salton Sea (a quasi-marine ecosystem) to assess the possibility that pileworm failure due to increased salinity from either evaporation or brine spills may adversely affect the sportfishery. The experiments indicated that reproduction in the Salton Sea will continue undiminished at salinities =45o/oo, and possibly <=50o/oo. Gradually increasing salinities, therefore, will not adversely affect the pileworm until some years after collapse of the sportfishery which seems sensitive to salinities <=40o/oo. Immature worms survived salinities >65o/oo with only short-term survival at =80o/oo which is >2 times the present salinity of the Salton Sea (36o/oo). The fertilization and early cleavage stages are less tolerant of higher salinities than are the later developmental stages.

Kumaraswamy, Es. P.
19730000 ID: 7957
Retardation of Evaporation from Open Water Storages
Man-made lakes: their problems and environmental effects. William C. Ackermann, Gilbert F. White [and] E. B. Worthington, editors. J. Loreena Ivens, associate editor.
Volume: *Issue:* *Page(s):* 278-282
Washington, DC American Geophysical Union
File Name: 19730000_kumaraswamy_c.pdf

Lacey, R. E.
19800000 ID: 1669
Energy by reverse electrodialysis. Final report
Ocean Engineering
Volume: 7 *Issue:* 1 *Page(s):* 1-47
File Name:

Langbein, W. B.
19610000 ID: 7631
Salinity and hydrology of closed lakes
U.S. Geological Survey Professional Paper
Volume: 412 *Issue:* *Page(s):* 20
File Name:

Langbein, Walter Basil
19610000 ID: 7658
Salinity and hydrology of closed lakes: a study of the long-term balance between input and loss of salts in closed lakes
U.S. Geological Survey Professional Paper
Volume: 412 *Issue:* *Page(s):* 20 p.
Washington, DC U.S. Government Printing Office
File Name:

Lange, G. D., and A. C. Hurley
19750000 ID: 7481
A theoretical treatment of unstructured food webs
Fishery Bulletin
Volume: 57 *Issue:* *Page(s):* 378-81

File Name:

Larsen, H.
19670000 ID: 7632
Biochemical aspects of extreme halophilism
Advances in Microbial Physiology
Volume: 1 *Issue:* *Page(s):* 97-133
File Name:

Lasker, Reuben, Richard H. Tenaza, and Lawrence L. Chamberlain
19720000 ID: 3328
The response of Salton Sea fish eggs and larvae to salinity stress.
California Fish and Game
Volume: 58 *Issue:* 1 *Page(s):* 58-66
File Name: 19720000_lasker_c.pdf

Lau, Sabrina, and Claude Boehm
19911100 ID: 4994
A Distribution Survey of Desert Pupfish (Cyprinodon macularius) around the Salton Sea, California
Volume: *Issue:* *Page(s):* 21
California Department of Fish and Game. Inland Fi
File Name: 19911100_lau.pdf

Lavaniegos, B. E., and D. Lopez-Cortes
19971200 ID: 8333
Fatty acid composition and community structure of plankton from the San Lorenzo Channel, Gulf of California
Estuarine, Coastal and Shelf Science
Volume: 45 *Issue:* 6 *Page(s):* 845-854
File Name:

The San Lorenzo Channel is located in the southeast end of the La Paz Bay, between the prominence called La Paz Peninsula and Espiritu Santo Island. This channel connects the bay with the Gulf of California. The structure of the plankton community and fatty acid composition of nano-, micro- and zooplankton are described during four seasons of 1994 from the San Lorenzo Channel. During August, the warmest temperature in the surface water was observed and a thermocline developed between 20 and 30 m. In the remaining months, a well-mixed layer occurred in the upper 30 m. The chlorophyll a content of the nanoplankton fraction (<38 mu m) was higher than the microplanktonic fraction (38-200 mu m) year round. Maximal chlorophyll values occurred in January, which may be associated with organic matter, since phytoplankton was lower than at other seasons. The relative abundance of diatoms increased from January (57% of phytoplankton) to November (99%). The increment was mainly due to Nitzschia and Chaetoceros. Dinoflagellates were always low (0.03-1.36 cells/ml). Copepods (mainly Eucalanus) dominated the zooplankton in winter and fall, while in spring and summer, the abundance of doliolids was similar to the copepods (Nannocalanus minor dominated). Four fatty acids (16:0, 16:1, 18:0, 18:1) were the most conspicuous in the plankton, representing usually between 40 and 80% of the total fatty acids throughout the water column. In winter, higher fatty acid content and higher relative amounts of 16:0 and 16:1 were observed than in the warm months. Stearic acid (18:0) peaked during fall. The major seasonal differences occurred in the nanoplankton, which had peaks of 20:5 during January, and 16:4 in April. A strong decrease in polyunsaturated fatty acids (PUFA) occurred during the warm months. The fatty acid composition of microplankton and larger zooplankton was similar in winter-spring. Individual copepods of selected species (Eucalanus sewelli, Rhincalanus nasutus, Centropages furcatus and Labidocera acuta) showed fatty acid profiles similar to the mixed zooplankton, with some differences in content of PUFA.

Lavín, M. F., V. M. Godínez, and L. G. Alvarez
19981200 ID: 8085
Inverse-Estuarine Features of the Upper Gulf of California
Estuarine, Coastal and Shelf Science
Volume: 47 *Issue:* 6 *Page(s):* 769-795
File Name: 19980612_lavin_c.pdf

The Upper Gulf of California is the shallow (depth <30 m), tidal area at the head of the Gulf of California. It is an inverse estuary, due to the high evaporation rate (E apprx 1.1 m year-1) and almost nil freshwater input from rainfall and the Colorado River. Historical and recent hydrographic data show that the area is almost vertically well-mixed throughout the year, that the horizontal distribution of properties follows the bathymetry, and that the hydrography has a strong annual modulation. As in other negative estuaries, the year-round salinity increase toward the head causes the density to do likewise, despite the seasonally reversing temperature gradient. The pressure gradient thus formed leads to water-mass formation and gravity currents (speed apprx0.1 ms-1), both in

winter and in summer. In winter, the high salinity water sinks beyond 200 m, while in summer it only reaches a depth of 20-30 m. The gravity currents appear to be modulated by the fortnightly tidal cycle, with events in neap tides. This phenomenon causes the presence, at least during neap tides, of slight stratification (DELTAsigmat

Lawrence, J. R., R. C. Haynes, and U. T. Hammer
19780000 ID: 7633
Contribution of photosynthetic green sulphur bacteria to total primary production in a meromictic saline lake
Verh. Internat. Verein. Limnol.
Volume: 20 *Issue:* *Page(s):* 201-7
File Name:

Layton, D. W.
19760000 ID: 2238
Water Supply Dilemmas of Geothermal Development in the Imperial Valley of California
Paper presented to Twelfth American Water Resources Conference and Symposium, Chicago, Illinois September 19-20, 1976
Volume: *Issue:* *Page(s):* 21
File Name:

Although four of six known geothermal resource areas in California 's Imperial Valley are exploitable for electrical power, with a combined potential of 4000-55000 megawatts sustainable for 25 years, serious water supply problems for cooling must be solved. Available water resources include: (1) water imported from the Colorado River, (2) agricultural waste waters, (3) water from the Salton Sea , (4) groundwater, and (5) steam condensate from the geothermal plants. Problems arising from geothermal development are: (1) institutional considerations, (2) water supply costs, (3) technical problems, and (4) environmental impact on the Salton Sea. To sustain 5500 mw of energy production, over 300,000 acre-feet of freshwater would be required for wet cooling towers, amounting to 10% of water annually diverted to the valley from the Colorado River, primarily for irrigation. Colorado River water salinity is the principal water quality problem in the valley the water contains nearly 1.2 tons of salt/acre-foot. The geothermal resource areas in the valley suffer from thermal inefficiencies caused by low reservoir temperatures, producing more waste heat per unit of electrical output and greater need for cooling water. Constraints on obtaining more water will mainly be determined by the quantity of irrigation water allocated by the Imperial Irrigation District to geothermal projects and potential subsidence control policies. The consequences of each alternative are evaluated. (Lynch-Wisconsin)

Layton, D. W.
19780200 ID: 1778
Water supply dilemmas of geothermal development in the Imperial Valley of California
Water Resources Bulletin
Volume: 14 *Issue:* 1 *Page(s):* 133-143
File Name: 19780200_layton_c.pdf

There are four known geothermal resource areas in the Imperial Valley that have a combined potential of over 4,000 megawatts of electrical energy for 25 years. Water resources available to support geothermal energy development are imported Colorado River water, agricultural waste waters, Salton Sea water, and groundwater. In addition, geothermal power plants can produce their own cooling water from steam condensate. Nevertheless, the relatively high water requirements of geothermal facilities along with a series of real and potential constraints may cause water supply dilemmas involving both the acquisition and use of cooling water. Important constraints are institutional policies, water supply costs, technical problems, and impacts upon the Salton Sea. These constraints and related dilemmas are examined in light of relevant information on the valley's water resources, geothermal resources and energy technologies, cooling water requirements, and water supply options.|;

Layton, D. W.
19780922 ID: 1957
Water for Long-Term Geothermal Energy Production in the Imperial Valley
UCRL
Volume: *Issue:* 52576 *Page(s):* 48
File Name:

FIVE POSSIBLE SOURCES OF COOLING WATER TO BE USED IN THE PRODUCTION OF AN ESTIMATED 3000-5000 MW/YR OF ELECTRICITY DURING THE NEXT 30 YR FROM THE GOETHERMAL RESOURCES OF CALIFORNIA'S IMPERIAL VALLEY ARE IDENTIFIED. THE SOURCES ARE IRRIGATION WATER, WASTE WATERS ROM AGRICULTURE, STEAM CONDENSATE, GROUNDWATER, AND WATER FROM THE SALTON SEA. TECHNICAL, REGULATORY, AND ENVIRONMENTAL CONSTRAINTS THAT COULD LIMIT THE AVAILABILITY OF THESE WATER SOURCES ARE DISCUSSED. SIX COMBINATIONS OF VARIOUS POLICIES THAT REPRESENT POTENTIAL REGULATORY CONTROLS AND A RANGE OF FUTURE WATER BALANCES IN THE IMPERIAL VALLEY ARE CONSIDERED.

Layton, D. W.
19790000 ID: 1737
Water-related impacts of geothermal energy production in California's Imperial Valley
Expanding the geothermal frontier / Geothermal Resources Council Annual Meeting, 24-27 September 1979, Reno,
Volume: *Issue:* *Page(s):* 365-368
Davis, CA Geothermal Resources Council
File Name: 19790000_layton_c.pdf

To successfully develop the geothermal resources of the Imperial Valley, adequate supplies of cooling water must be obtained. The primary sources of water include waste waters from agricultural lands, condensate from flashed-steam facilities, and irrigation water. The major advantages and disadvantages of these supplies are examined and then the consequences of adopting six sets of water policies to support three scenarios of geothermal energy production are assessed. The assessment includes analyses of potential constraints to development as a result of restrictive water policies. It also includes predictions of changes in the Salton Sea's elevation and salinity caused by the consumption of agricultural drain water for cooling.|;

Layton, David, ed.
19800700 ID: 2227
An Assessment of Geothermal Development in the Imperial Valley of California: Volume 1 - Environment, Health and Socioeconomics.
Volume: *Issue:* *Page(s):* xv, 246p.?
Washington, DC U.S. Department of Energy
File Name:

The Imperial Valley contains nearly a third of the nation 's identified hot-water geothermal resources. The valley, with its 475,000 acres of irrigated lands and warm climate, also represents one of the more important agricultural resources of the United States. The most important potential impacts involve air quality changes resulting from emissions of hydrogen sulfide, and increases in the salinity of the Salton Sea resulting from the use of agricultural waste waters for power plant cooling. Extensive withdrawals of agricultural waste waters to support geothermal development will accelerate increases in the Salton Sea's salinity, putting added stress on its quasi-marine ecosystem. Large withdrawals of waste waters would not be necessary if steam condensate was used as the sole source of cooling water for flashed-steam power plants. A county policy favors the full injection of withdrawn geothermal fluids in order to protect against land subsidence, and therefore external sources of water will probably be needed for geothermal operations. For the most part, geothermal activities will be compatible with irrigated agriculture, but negative impacts of a site-specific nature caused by land subsidence, cooling tower drift, or accidental spills of geothermal fluids could occur. Residual geothermal fluids will be disposed of by subsurface injection to geothermal reservoirs. The socioeconomic consequences of geothermal development will generally be beneficial. (Moore-SRC)

Layton, David, ed.
19800700 ID: 8169
An Assessment of Geothermal Development in the Imperial Valley of California: Volume 2, Environmental Control Technology.
Volume: *Issue:* *Page(s):* xiii,
Washington, DC U.S. Department of Energy
File Name:

The Imperial Valley contains nearly a third of the nation 's identified hot-water geothermal resources. The valley, with its 475,000 acres of irrigated lands and warm climate, also represents one of the more important agricultural resources of the United States. The most important potential impacts involve air quality changes resulting from emissions of hydrogen sulfide, and increases in the salinity of the Salton Sea resulting from the use of agricultural waste waters for power plant cooling. Extensive withdrawals of agricultural waste waters to support geothermal development will accelerate increases in the Salton Sea's salinity, putting added stress on its quasi-marine ecosystem. Large withdrawals of waste waters would not be necessary if steam condensate was used as the sole source of cooling water for flashed-steam power plants. A county policy favors the full injection of withdrawn geothermal fluids in order to protect against land subsidence, and therefore external sources of water will probably be needed for geothermal operations. For the most part, geothermal activities will be compatible with irrigated agriculture, but negative impacts of a site-specific nature caused by land subsidence, cooling tower drift, or accidental spills of geothermal fluids could occur. Residual geothermal fluids will be disposed of by subsurface injection to geothermal reservoirs. The socioeconomic consequences of geothermal development will generally be beneficial. (Moore-SRC)

Layton, David W.
19801000 ID: 2176
Environment, Health, Socioeconomics, and Environmental Control Technology: Executive Summary.
An Assessment of Geothermal Development in the Imperial Valley of California.
Volume: *Issue:* *Page(s):* vii, 31 p.

Washington, DC : Springfield, VA U.S. Department of Energy
File Name: 19801000_layton.pdf

Findings of a two-volume report that deals with the impacts and environmental controls associated with geothermal plants in California's Imperial Valley are summarized. One-third of the U.S.'s hot-water resource potential is contained in the Valley. Repercussions of developing these resources include: violation of air Quality standards through emissions of hydrogen sulphide; negative effects on ecosystems from the increased salinity of the Salton Sea; and damage to irrigation systems from the extraction of geothermal fluids. Other minor impacts are listed. The production of 3000 Mw of electrical power by the year 2010 is discussed. SUPPLY-DEMAND

Legner, E. F., and F. W. Pelsue
19770919 ID: 2195
Adaptations of Tilapia to Culex and chironomid midge ecosystems in South California.
Proceedings and papers of the Forty-fifth Annual Conference of the Californian Mosquito and Vector Control Association, Inc., February 13-16, 1977. Grant, C. D., ed.
Volume: *Issue:* *Page(s):* 95-97
File Name: 19770919_legner_c.pdf

Tilapia hornorum, T. mossambica and T. zillii, which had previously been used for the biological control mainly of chironomid larvae although they also feed on aquatic weeds, were bred and used to stock irrigation channels and other bodies of water in southern California from 1971 onwards following the multiplication of aquatic weeds in the irrigation system of the lower desert regions (see RAE/B 66, 1709), which in turn had led to accumulations of dead weeds that harboured moquitoes. By 1974, Tilapia populations had increased noticeably in most stocking areas, and control of weeds, Culex spp. and chironomids was obtained, even in swiftly flowing canals that were less favourable to the reproduction of the fish. Particular attention is drawn to the unusual adaptation of Tilapia in the Coyote Creek (near Los Angeles), in which all 3 species had been introduced; by 1976 only T. hornorum had persisted and multiplied so as to exceed a density of 7 fish/ft2 of water surface in September, and by November of each year starvation characteristics were observed in adults caught for sport. Significant reduction of chironomids in this area for 2 years rendered chemical treatment unncecessary. This extraordinary multiplication of T. hornorum at the expense of the other 2 species is attributed to daily tidal washes from the sea into the creek, the discharge of warm effluent from a nearby power generating plant, and the absence of predators. A more balanced situation was found to exist in a Salton Sea fishery, where all 3 species of Tilapia coexisted together with several species of fish predators.

Leitner, Philip, and Gilbert S. Grant
19780224 ID: 2727
Observations on Waterbird Flight Patterns at Salton Sea, California, October 1976--February 1977
Volume: *Issue:* *Page(s):* 41 p.
University of California, Lawrence Livermore Laboratory
File Name: 19780224_leitner.pdf

One of the major tasks of this study was to document the regional flight patterns of bird populations in Imperial Valley, California. Vast numbers of shorebirds and waterbirds are known to use this region during migration and many spend the entire winter here. Large flocks are often seen moving along the southern shoreline of Salton Sea or out into adjacent croplands to feed. The high voltage electric transmission lines which will be required in connection with future geothermal power plants could pose a serious hazard to these bird populations. Baseline data concerning the locations of heavily travelled flight corridors and the typical range of flight altitudes would provide a valuable input to decisions on transmission line siting. (ERA citation 03:029381)

Lemly, A. Dennis
19860000 ID: 7886
Effects of Selenium on Fish and Other Aquatic Life
Toxic substances in agricultural water supply and drainage: defining the problems. Proceedings. 1986 Regional Meetings. U.S. Committee on Irrigation and Drainage. Summers, J. B., and S. S. Anderson, eds.
Volume: *Issue:* *Page(s):* 153-162
Denver, CO U.S. Committee on Irrigation and Drainage
File Name:

Lieberman, S. H., and S. Potuznik
19861000 ID: 8292
Varifront III Expedition Data Report (USNS DE STEIGUER CRUISE 1202-82). Bioluminescence, Hydrographic, Nutrient, and Satellite Data from the Gulf of California (November-December 1981)
Volume: *Issue:* *Page(s):* 105 p.
File Name:

This report presents data from the expedition Varifront III, which measured stimulated planktonic bioluminescence and related physical, chemical, and biological parameters. Satellite imagery of sea surface temperature and

chlorophyll was also collected. The study established a data base to develop correlates for a productive model of the distribution and intensity of planktonic bioluminescence in surface and near-surface ocean waters.

Lin, Anching, and P. Wang
19780000 ID: 7659
Wind tides of the Great Salt Lake
Utah Geology
Volume: 5 *Issue:* 1 *Page(s):* 17-25
File Name:

Lin, E. I. H.
19820000 ID: 1595
A review of the salt-gradient solar pond technology
Volume: *Issue:* *Page(s):* 60
File Name:

The state of the salt-gradient solar pond technology is reviewed. Highlights of findings and experiences from existing ponds to data are presented, and the behavior, energy yield, operational features, and economics of solar ponds are examined. It is concluded that salt-gradient solar ponds represent a technically feasible, environmentally benign, and economically attractive energy producing alternative. In order to bring this emerging technology to maturity, however, much research and development effort remains to be undertaken. Specific R D areas requiring the attention and action of technical workers and decision-makers are discussed, both from the perspectives of smaller, thermally-oriented ponds and larger, electricity generating ponds.|;

Linsley, R. H., and L. H. Carpelan.
19610000 ID: 5860
Invertebrate fauna
The Ecology of the Salton Sea, California, in Relation to the Sportfishery. B. W. Walker, ed. Fish Bulletin no. 113
Volume: *Issue:* *Page(s):* 43-7
California Department of Fish and Game
File Name: 19610000_linsley.pdf

Littlefield, W. M.
19660000 ID: 3233
Hydrology and physiography of the Salton Sea, California [map]
Hydrology Investigation Atlas HA-22
Volume: *Issue:* *Page(s):* 1 sheet
Washington, DC U.S. Geological Survey
File Name:

The Salton Sea occupies parts of Imperial and Riverside Counties, and lies below sea-level 125 mi northeast of the Gulf of California; the two bodies of water are separated by the Colorado River delta. In the geologic past the sea was a part of the Gulf of California, and the Colorado River discharged alternately into the Gulf and the sea. The sea bed was a dry lake until irrigation was started in 1901 in the Imperial Valley; Colorado River floods increased its depth and volume until 1907 when water surface reached its maximum level, 195.9 feet below sea level. Since 1907 the water level has gradually receded as evaporation greatly exceeded inflow. Inflow occurs as rain and surface- and ground-water flow; the latter is about 50,000 acre-feet per yr. In 1962 salinity of the sea was

Loeblich, A. R., III
19680000 ID: 3558
A New Marine Dinoflagellate Genus, Cachonina, in Axenic Culture from the Salton Sea, California with Remarks on the Genus Peridinium
Proceedings of the Biological Society of Washington
Volume: 87 *Issue:* *Page(s):* 91-6
File Name: 19680000_loeblich_c.pdf

Loiselle, P. V.
19780000 ID: 3810
Determinants of female choice of spawning partner in Salton Sea pupfish, Cyprinodon macularius (Teleostei: Cyprinodontidae)
Animal Behavior Society Annual Meeting, Seattle, W
Volume: *Issue:* *Page(s):*
Animal Behavior Society Annual Meeting, Seattle, W
File Name:

Loiselle, Paul V.
19801015 ID: 8093
Spawn Recognition by Male Cyprinodon Macularius Californiensis
Proceedings of the Desert Fishes Council
Volume: 11 *Issue:* *Page(s):* 46
Bishop, CA Desert Fishes Council
File Name: 19801015_loiselle_c.pdf

Loiselle, Paul V.
19830000 ID: 2780
Filial cannibalism and egg recognition by males of the primitively custodial teleost Cyprinodon macularius californiensis Girard (Atherinomorpha: Cyprinodontidae).
Ethology & Sociobiology
Volume: 4 *Issue:* 1 *Page(s):* 1-9
New York Elsevier Science Publishing Co., Inc.
File Name: 19830000_loiselle_c.pdf

Discusses the territoriality of the male Salton Sea pupfish, who engage in limited filial cannibalism but can distinguish between their own eggs and those fertilized by other males using olfactory cues. Females lack this ability. This asymmetry is explained as a function of the polyandrous behavior of females and the persistent occupancy of food-poor spawning territories by males. Egg discrimination appears to have evolved as a defense against the activities of nonterritorial peripheral males, who will spawn in a resident's territory whenever the opportunity arises, and may be considered analogous to the defensive behavior shown by avian victims of brood parasites. (52 ref) (PsycINFO Database Copyright 1984 American Psychological Assn, all rights

Lombard, G. L.
19770000 ID: 1796
Start-up and test operation at the SDG and E/ERDA Niland Geothermal Loop Experimental Facility. Energy and mineral resource recovery
Volume: *Issue:* *Page(s):* 52-53
File Name:

A nominal 10 Megawatt Geothermal Loop Experimental Facility was constructed near the Salton Sea . Operations were initiated in May, 1976, after two months of system check-out testing. During the start-up operations several modifications were made to the steam/condensate systems and the brine system controls. Scale deposits were successfully cleaned from the brine reinjection system and other brine-handling piping. The reinjection pump performance has been better than expected and a solution has evolved which extended the bearing life in this severe environment. Nearly one year of operational experience has been generally very successful. The thermal energy of the high salinity, high temperature resource has been successfully extracted. Simplified control and handling of the brine and flashed steam/condensate has allowed: scale to be removed, plant operators to anticipate problems, and limited maintenance costs. Plant modifications have included replacement of on-off controls with proportional elements, revised pump bearings, and replacement of modifications to valves.

Lombard, G. L., and J. M. Nugent
19760000 ID: 1866
San Diego Gas and Electric Company's pioneering geothermal test work in the Imperial Valley of Southern California, Proceedings of the second United Nations symposium on the development and use of geothermal resources
Volume: *Issue:* *Page(s):* 2037-2043
Second United Nations symposium on the development
File Name:

Geothermal energy from steam and hot brines in the Imperial Valley of southern California, USA, is as yet untapped, but has the potential for a significant contribution to the energy supply of the region. San Diego Gas and Electric Company is engaged in a field testing and development program for the extraction of this energy. The main problems lie in the high salinity of the brines (average, 225,000 ppM), the entrainment of corrosive solids in the steam, and the significant amount (3 percent by weight) of noncondensable gases in the fluids. A binary-cycle generating system is planned, which will use isobutane as a working fluid and two-stage flashing to extract the geothermal heat. In 1973 and 1974, laboratory and field tests showed some difficulties with scaling in the equipment and in the reinjection system, but these problems have proved to be tractable. During 1975, San Diego Gas and Electric Company has been building a 10-MW Geothermal Test Facility near Niland, California, at the southern end of the Salton Sea , for the next stage in the developmental work for the extraction of commercial

Lopez-Cortes, D. J., J. J. Bustillos-Guzman, and C. H. Lechuga-Deveze
19920300 ID: 8203
RELATIONSHIP OF MESOZOOPLANKTON AND NANOPHYTOPLANKTON WITH TEMPERATURE AND SALINITY IN GREAT ISLANDS ZONE GULF OF CALIFORNIA

INDIAN J MAR SCI
Volume: 21 *Issue:* 1 *Page(s):* 17-20
File Name:

Relationship of mesozooplankton (measured as protein and carbohydrate), nanophytoplankton (as chlorophyll a) with temperature and salinity, was studied during August-September 1987. Circulation in the upper Gulf followed its general dynamics despite the presence of an ENSO (El Nino Southern Oscillation) event. A tongue of relatively high salinity water flowed southward through the Ballenas Channel and mixed with a water mass of lower salinity from the central Gulf, creating a front which promoted a patch of nanophytoplankton and mesozooplankton. Surface chl a from nanophytoplankton increased from 0.2 to 1.1 mg .cntdot. m-3 through 10 miles south of San Lorenzo Island. Protein and carbohydrate from mesozooplankton showed 2 sub-surface (20 m) patches, with 20 - 50 and 15 - 45 mg .cntdot. m-3 respectively in the same area. Fronts can be regarded as places of biological significance due to the accumulation of living and non living organic material.

Lopez-Cortes, D. J., J. J. Bustillos-Guzman, and C. H. Lechuga-Deveze
19961200 ID: 8194
Seston distribution in relation to winter hydrographic conditions in central Gulf of California.
Indian Journal of Marine Sciences
Volume: 25 *Issue:* 4 *Page(s):* 209-296
File Name:

The influence of water exchange, between the upper and central Gulf of California, on the spatial distribution of photosynthetic and non-photosynthetic carbon (chlorophyll-a, proteins and carbohydrates) of nano, micro and mesoparticles was studied. The results revealed typical winter circulation patterns of primarily mixed, stratified and frontal structures. The photosynthetic fraction (nano and microphytoplankton) dominated the southern stratified structure of the sampling area, while the northern mixed structure was mainly influenced by non-photosynthetic particles. The observed spatial distribution pattern of organic particles suggests a northern influence from surface and subsurface waters flowing from the shallow upper Gulf, dominated mostly by detritus and hence, a microheterotrophic food chain. The encounter of this upper Gulf water with clear and fertile waters moving northward. create a frontal zone dominated by phytoplankton and the classical food chain. This process could be the origin of the high phytoplankton biomass in the central Gulf of California during the winter. A general scheme.

Losordo, Thomas M.
19970000 ID: 7909
Tilapia Culture in Intensive Recirculating Systems.
Tilapia Aquaculture in the Americas, Volume One, Barry A. Costa-Pierce and James E. Rakocy, eds.
Volume: *Issue:* *Page(s):* 185-211
Baton Rouge, LA World Aquaculture Society
File Name:

Lowe-McConnell, Rosemary H.
19730000 ID: 7979
Summary: Reservoirs in Relation to Man - Fisheries.
Man-made lakes: their problems and environmental effects. William C. Ackermann, Gilbert F. White [and] E. B. Worthington, editors. J. Loreena Ivens, associate editor.
Volume: *Issue:* *Page(s):* 641-654
Washington, DC American Geophysical Union
File Name: 19730000_lowe-mcconnell_c.pdf

Lubzens, E., G. Minkoff, and S. Marom
19850000 ID: 7761
Salinity dependence of sexual and asexual reproduction in the rotifer Brachionus plicatilis
Marine Biology
Volume: 85 *Issue:* *Page(s):* 123-126
Springer-Verlag
File Name: 19850000_lubzens_c.pdf

Lundberg, A. W.
19770805 ID: 1810
Technology development for high-salinity geothermal resources
Volume: *Issue:* *Page(s):* 30
File Name:

An impulse turbine for Total Flow utilization of geothermal fluids was tested. Performance measurements verify the calculational model. The research goal of 70% engine efficiency remains credible. Addition of acid to the brine

prevents scaling and precipitation at moderate costs. Corrosion and erosion of turbine materials for the Total Flow Process are not severe. (JB)|;

Macaleer, B. S., and J. E. Rannels
19820700 ID: 1575
Salt gradient solar pond technology in the US
Energy Technology (Wash., D.C.) (United States)
Volume: *Issue:* *Page(s):* 1269-1282
File Name:

The Jet Propulsion Laboratory has concluded that a potential exists for salt-gradient solar ponds. In a solar pond, there are three layers of salinity. The top layer absorbs sunlight, the middle serves as an insulator, while allowing radiation to pass through to the bottom layer, of the thickest salinity, which stores the energy. Selection of a site of adequate insolation, inexpensive land, free from aquifer interference, is discussed. The pond is filled by the injection procedure, as outlined. Costs vary dramatically based on site parameter limitations of insolation, water, salt, and aquifer. DOE has initiated RandD programs to address the problem of gradient zone erosion, characterize the parameters of heat extraction, and investigate the interactions of soil and brine. A feasibility study has been made at Salton Sea in the Imperial Valley. Other sites are being studied.|;

MacDougal, D. T.
19070000 ID: 5861
The desert basins of the Colorado delta
Bulletin of the American Geographical Society
Volume: 34 *Issue:* *Page(s):* 705-29
File Name:

Madison, R. J.
19700000 ID: 7660
Effects of a causeway on the chemistry of the brine in Great Salt Lake, Utah
Utah Geological and Mineralogical Survey Water-Resources Bulletin
Volume: 52, 14? *Issue:* *Page(s):*
File Name:

Maloney, Neil J., Prem K. Saint, and Curt D. Schneider
19910000 ID: 2801
Hydrological relationships of water quality and water sources in Salt Creek Basin, Imperial Valley, California.
Geological Society of America, 1991 annual meeting
Volume: *Issue:* *Page(s):* 268
File Name:

Marinone, S. G.
19970415 ID: 8181
Tidal Residual Currents in the Gulf of California: Is the M2 Tidal Constituent Sufficient to Induce Them?
Journal of Geophysical Research
Volume: 102 *Issue:* C4 *Page(s):* 8611-8623
File Name:

Mark, Wesley
19881000 ID: 8236
Vanishing Vaquitas
Oceans
Volume: 21 *Issue:* 5 *Page(s):* 52+
File Name:

Only discovered in 1956, the Gulf of California porpoise called vaquita is another marine species threatened by being caught not only in fishing nets but also in the conflict between economic and environmental concerns. There may only be 50 of these reclusive animals left in the world, with a range that may be no greater than 150 miles. In 1985, the vaquita was added to the US endangered species list. A ban imposed by the Mexican national fisheries ministry, Pesca, on totoaba fishing was expected to help the vaquita but had the opposite effect because of a totoaba black market and the setting of more gill nets in the upper gulf. A proposal to establish a national park in the Colorado River delta and to prohibit gill netting in the upper gulf is promising, but the plan could be stymied by competition over the control of fishing between Pesca and Mexico's newest environmental agency, the Secretariat of Urban Development and Ecology.

Marsh, H. E.
19830800 ID: 1576
Investigation of indigenous water, salt and soil for solar ponds
Proceedings, Intersoc. Energy Convers. Eng. Conf. (United States)
Volume: *Issue:* *Page(s):* 1976-1981
File Name:

The existence of salt-gradient solar ponds in nature is a strong indication that the successful exploitation of this phenomenon must account adequately for the influences of the local setting. Sun, weather and other general factors are treated elsewhere. This paper deals with water, salt, and soil. A general methodology for evaluating and, where feasible, adjusting the effects of these elements is under development. Eight essential solar pond characteristics have been identified, along with a variety of their dependencies upon properties of water, salt and soil. The comprehensive methodology, when fully developed, will include laboratory investigation in such diverse areas as brine physical chemistry, light transmission, water treatment, brinesoil interactions, sealants, and others. With the Salton Sea solar pond investigation as an example, some methods under development are described.

Marsh, P. C., and D. W. Sada
19930900 ID: 4995
Desert Pupfish (Cyprinodon macularius) Recovery Plan
Volume: *Issue:* *Page(s):* i, 67, [54] p.
Phoenix, AZ U.S. Fish and Wildlife Service
File Name: 19930900_marsh.pdf

Marsh, Paul C., and Donald W. Sada
19930900 ID: 7700
Desert Pupfish Recovery Plan [comments attached]
Volume: *Issue:* *Page(s):* 57+ p.
Phoenix U.S. Fish and Wildlife Service
File Name: 19930900_marsh.pdf

Martin, Gerald
19950800 ID: 4823
Salton Sea Barrier-Curtain Project
Volume: *Issue:* *Page(s):*
File Name: 19950800_martin_c.pdf

Mason, D. T.
19670000 ID: 7634
Limnology of Mono Lake, California
University of California Publications in Zoology
Volume: 83 *Issue:* *Page(s):* 102
University of California
File Name:

Matsui, M.
19810000 ID: 5862
The effects of introduced teleost species on social behavior of Cyprinodon macularius californiensis
M.S. Thesis
Volume: *Issue:* *Page(s):* 61 p.
Glendale, CA Occidental College
File Name:

Matsui, Margaret
ID: 4851
Final Report To Southern California Edison Company
Volume: *Issue:* *Page(s):*
File Name: 198x0000_matsui_c.pdf

Matsui, Margaret L., Alan Bond, Gary Jordan, Robert Moore, Peter Garrahan, Kerry Iwanaga, and Steven Williams
19911215 ID: 4857
Abundance and Distribution of the Ichthyoplankton in the Salton Sea, California in Relation to Water Quality

Final Performance Report, Inland and Anadromous Sportfish Management and Research, Federal Aid Project F-51-R, Subproject VI Salton Sea Sport Fish Research, Study No. 3 Salton Sea Sport Fish Eggs and Larval Distribution
Volume: *Issue:* *Page(s):* ii, 41 p.
California Department of Fish and Game
File Name: 19911215_matsui.pdf

Matsui, Margaret, Jo Ellen Hose, Peter Garrahan, and Gary A. Jordan
19920600 ID: 1403
Developmental Defects in Fish Embryos from Salton Sea, California
Bulletin of Environmental Contamination and Toxicology
Volume: 48 *Issue:* *Page(s):* 914-920
File Name: 19920600_matsui_c.pdf

The Salton Sea is the largest inland body of water in California. It currently supports a sportfishery for orangemouth corvina (Cynoscion xanthulus). Other species of importance are the bairdiella (Bairdiella icistius) and sargo (Anisotremus davidsonii). The future status of the fishery is uncertain for several reasons including possible impacts from chemical contaminants entering the Sea via agricultural drains and rivers. There are also relatively large inputs of sewage from the New River and the Alamo River. Although these rivers discharge into the south end, strong currents and winds create rapid dispersion throughout the Salton Sea. Responding to environmental concerns, the State of California Department of Fish and Game supported a study on the population dynamics of Salton Sea fishes. Ichthyoplankton samples were collected for three spawning seasons, and fish embryos were evaluated for normal development. The development of fish embryos has been used for monitoring the effects of pollution in the New York Bight and in northern Europe, where malformation rates of up to 50% were found in embryos collected near highly contaminated rivers and waste dumping areas. This report describes significant incidences of malformed fish embryos collected from the Salton Sea. However, because of extreme hydrographical conditions present at the Sea which might be at least partially responsible for the observed malformations, supporting information on embryonic development was obtained in this study by controlled spawning of Salton Sea fishes in the laboratory. 18 refs., 1 tab.

Matsui, Margaret L., Gwendolyn. L. Lattin, Robert Moore, Claire Mulski, and Alan B. Bond
19911215 ID: 4856
Salinity Tolerence of Anisotremus Davidsoni
Final Performance Report, Inland and Anadromous Sportfish Management and Research, Federal Aid Project F-51-R, Subproject VI Salton Sea Sport Fish Research, Study No. 2, Salinity Tolerance of the Egg and Larvae and Adult Life Stages of Salton Sea Sport Fi
Volume: *Issue:* *Page(s):* 23 p.
California Department of Fish and Game
File Name: 19911215_matsui_2.pdf

Matsui, Margaret L., Gwendolyn. L. Lattin, Robert Moore, Claire Mulski, and Alan B. Bond
19911215 ID: 5865
Salinity Tolerance of Cynoscion Xanthulus
Final Performance Report, Inland and Anadromous Sportfish Management and Research, Federal Aid Project F-51-R, Subproject VI Salton Sea Sport Fish Research, Study No. 2, Salinity Tolerance of the Egg and Larvae and Adult Life Stages of Salton Sea Sport Fi
Volume: *Issue:* *Page(s):* 27 p.
California Department of Fish and Game
File Name: 19911215_matsui_3.pdf

May, R. C.
19720000 ID: 5867
Effects of Temperature and Salinity on Eggs and Early Larvae of the Sciaenid Fish, Bairdiella icistia (Jordan and
Ph.D. Dissertation. University of California, San Diego
Volume: *Issue:* *Page(s):* 281 p.
File Name:

May, R. C.
19750000 ID: 5868
Effects of acclimation on the temperature and salinity tolerance of the yolk-sac larvae of Bairdiella icistia (Pisces: Sciaenidae)
Fishery Bulletin
Volume: 73 *Issue:* *Page(s):* 249-55
File Name:

May, Robert C.
19740000 ID: 4854
Effects of Temperature and Salinity on Yolk Utilization in Bairdiella icistia (Jordan and Gilbert) (Pisces: Sciaenidae)
Journal of Experimental Marine Biology and Ecology
Volume: 16 *Issue:* *Page(s):* 213-225
North-Holland Publishing Company
File Name: 19740000_may_c.pdf

May, Robert C.
19750000 ID: 4853
Effects of Temperature and Salinity on Fertilization, Embryonic Development, and Hatching in bairdiella icistia (Pisces: Sciaenidae), and the Effect of Parental Salinity Acclimation on Embryonic and Larval Salinity Tolerance
Fishery Bulletin
Volume: 73 *Issue:* 1 *Page(s):* 1-22
File Name: 19750000_may.pdf

May, Robert C.
19760000 ID: 4852
Effects of Salton Sea Water on the Eggs and Larvae of bairdiella icistia (Pisces: Sciaenidae)
California Fish and Game
Volume: 62 *Issue:* 2 *Page(s):* 119-131
File Name: 19760000_may_c.pdf

McCabe, B. C., and E. Zajac
19850000 ID: 1536
geothermal salinity control system
Volume: *Issue:* *Page(s):* v
File Name:

Highly saline geothermal brine, such as that produced from the lower geothermal reserve of the Salton Sea geothermal field, is diluted with non-geothermal water of much lower salinity in a mixing zone proximate the high temperature end of a geothermal power plant, and preferably down in the production well just above the production zone, so as to reduce the chloride salt content of the production brine to a level that is at or below the saturated level at reinjection temperatures, thereby preventing any material chloride salt scaling at any location in the plant through reinjection. The permanent cemented-in production casing in the well is protected against the corrosive effects of the hot production brine by means of a removable production liner that is generally coextensive with the casing. Said mixing zone is provided in the lower portion of the liner, and the liner establishes an annulus between it and the casing through which said non-geothermal water flows downwardly to the mixing zone so as to exclude the production brine from contact with the casing.

McCaskie, Guy
19700400 ID: 3554
Shorebird and waterbird use of the Salton Sea.
California Fish and Game
Volume: 56 *Issue:* 2 *Page(s):* 87-95
File Name: 19700400_mccaskie_c.pdf

McCawley, F. X., and J. P. Carter
19780000 ID: 1678
Materials for use in corrosive geothermal brine environments.
Geothermal systems materials: a workshop/symposium
Volume: *Issue:* *Page(s):* 245-255
Geothermal systems materials: a workshop/symposiu
File Name:

Some of the laboratory and field corrosion tests conducted in both low- and high-salinity brines are presented. Some of the equipment failures due to corrosion and scaing that occurred during laboratory and field tests are also discussed. Laboratory studies included weight-loss, crevice, and pitting corrosion, stress-corrosion cracking, linear-polarization measurements, and corrosion attack of welded materials. The laboratory work was conducted in autoclaves using high-salinity brines at a temperature of 232/sup 0/C and a pressure of 450 psig. Materials were evaluated in both deaerated brines and in brines which contained O/sub 2/, CH/sub 4/, and CO/sub 2/ gases. Materials evaluated include 1020, 4130, COR-TEN/sup 4/ and Mariner steels; 316 L, 430, and E-Brite 26-1 stainless steels; commercially pure titanium, TiCode-12, Ti-0.2%Pd, Inconel 625, and Hastelloy C-276. Field corrosion tests

were conducted on brine from the East Mesa (low salinity) and Salton Sea (high salinity) Imperial Valley.

McCright, R. D.
19801120 ID: 1660
Corrosion behavior of materials exposed to hypersaline geothermal brine
Volume: *Issue:* *Page(s):* 18
File Name:

The corrosion rate and corrosion attack characteristics were determined for thirteen commercially available materials exposed in a geothermal production well for three months. The materials included carbon steels, Cr-Mo alloy steels, martensitic and ferritic stainless steels, high-nickel alloys, and titanium. The environment at the 1800 ft (600 m) depth of exposure was a single phase high salinity brine. The prevailing temperature was 260/sup 0/C and the prevailing pressure was 630 psi (4.0 MPa) during the exposure period. Results indicated that the carbon steels suffered intense generalized and localized corrosion. Addition of Cr and Mo to steels imparted significant improvement in the corrosion performance in this aggressive environment. Of the stainless steels tested, the most resistant were those containing a few percent molybdenum.|;

McCright, R. D., W. F. Frey, and G. E. Tardiff
19800529 ID: 2687
Localized Corrosion of Steels in Geothermal Steam/Brine Mixtures
Volume: *Issue:* *Page(s):* 6p
File Name:

CONF-800920-20. Coupons of eight different carbon and chrome-moly alloy steels were exposed to high temperature, high salinity wellhead brine flow at a geothermal well in the Salton Sea Geothermal Field for periods of up to six months. The corrosion rate and corrosion attack morphology of each coupon was determined. Exposure time was a test variable and ranged from one month to six months. Test results indicate that carbon steels generally suffer high corrosion rates and are susceptible to severe localized attack which shows a mesa-canyon pattern. Chrome-moly alloy steels corrode at much lower rates and show an attack pattern of small shallow pits. With time, these pits grow mostly in the lateral direction. These results suggest that chrome-moly alloy steels offer significant improvement over carbon steels and that the disk-shaped pits are not likely to lead to rapid

McDonald, C. C., and O. J. Loeltz
19760000 ID: 5872
Water Resources of Lower Colorado River-Salton Sea Area as of 1971, Summary Report
Professional Paper
Volume: 486-A *Issue:* *Page(s):* 34 p.
Washington, DC U.S. Geological Survey
File Name: 19760000_mcdonald.pdf

McGuire, Thomas R., and Gloria Ciria Valdez-Gardea
19740000 ID: 8235
Endangered Species and Precarious Lives in the Upper Gulf of California
Culture Agric
Volume: 19 *Issue:* 3 *Page(s):* 101+
File Name:

The Upper Gulf of California and Colorado River Delta Biosphere Reserve was established to halt ecosystem deterioration and protect several endangered marine species. The political environment that spawned the biosphere reserve and the environmental politics that accompanied the implementation process are examined. Structural adjustments of the small upper gulf community to the new economic order forced upon it (e.g., drastically altered fishing regulations) also are explored. In the efforts to save the totoaba, vaquita, and other endangered marine species, conservation biologists did not take into account total ecosystem or rural community aspects. Detailed examination of changes since the biosphere was established in 1993 suggest that a responsible fishery and environmental protection can both be achieved under a newly privatized offshore sector, as private processing plant owners now have a vested interest in the viability of the inshore shrimping sector. The latter may relieve fishing pressure on stocks of less abundant species.

McGurty, B. M., and D. W. Ruth
19780000 ID: 5873
Reptile, Amphibian and Fish Survey of the San Felipe Creek and San Sebastian Marsh Areas, Imperial and San Diego Counties, California
Volume: *Issue:* *Page(s):* 45 p.
Riverside, CA U.S. Bureau of Land Management
File Name:

McKibben, M. A.
19880600 ID: 2663
Sulfide-oxide-silicate phase equilibria and associated fluid inclusion properties in the Salton Sea geothermal system, California. Final technical report, September 1, 1985-February 1, 1988.
Volume: *Issue:* *Page(s):* 8
File Name:

Our studies involved petrographic, fluid inclusion, geochemical and stable isotopic studies of drillcores and fluids from the Salton Sea geothermal system. Our initial studies revealed the presence of previously-unrecognized evaporitic anhydrite at depth throughout the geothermal system. The high salinity of the Salton Sea geothermal brines previously had been attributed to low-temperature dissolution of surficial evaporitic deposits by meteoric waters. Our microthermometric studies of halite--containing fluid inclusions in the meta-evaporites indicated that the high salinity of the geothermal brines is derived in part from the hydrothermal metamorphism of relatively deeply-buried salt and evaporites. In addition, our research concentrated on mineralized fractures in drillcores.

McKibben, Michael A.
19900000 ID: 2839
Constraints on hydrothermal metal transport from studies of active geothermal systems.
V.M. Goldschmidt conference; program and abstracts
Volume: *Issue:* *Page(s):* 64
File Name:

McKibben, Michael A.
19920000 ID: 1416
Modern and Ancient Mineralization in the Salton Trough Rift [abstract]
Geological Society of America, Abstracts with Programs
Volume: *Issue:* *Page(s):* A24
File Name: 19920000_mckibben_c.pdf

The Salton Trough of SW North America is an active continental rift, the landward extension of the divergent tectonics of the Gulf of California. Shallow magmatic heat sources, thick porous sediments, tectonic activity and saline lakes interact to yield a variety of Pleistocene to modern hydrothermal systems. The oldest mineralization, the fish Creek evaporite, is a CASO[sub 4] deposit formed by a pre-rift Tertiary marine incursion. 4--5 million years ago the prograding Colorado River delta bisected the Trough, influencing the character of Pliocene and younger hydrothermal activity. The northern part of the Trough became a closed basin filled intermittently by large freshwater lakes. Along the W margin of the rift lies the Modoc hot spring gold deposit. This deposit occurs at the intersection of a range-front growth fault with fossil lake levels, suggesting paleohydrologic control by ancient lakes. Active geothermal systems within the Trough include low-T systems such as Heber and East Mesa, localized along high-angle faults where shallow groundwaters are conductively heated above basement highs. These blind systems have no surface expression and only moderate geophysical anomalies. High-T (> 250 C) active systems occur in sediment filled pull-apart basins developed over spreading center fragments (e.g., Salton Sea, Brawley, Cerro Prieto). These systems exhibit high heat flow, strong gravity and magnetic anomalies, and often have surface manifestations such as Quaternary volcanoes and thermal features. Many contain hot metalliferous brines that have evolved in the saline lake environment of the northern Trough.

McKibben, M. A., J. P. Andes, Jr., A. E. Williams, and William R. Dickinson
19870000 ID: 2905
Ore-forming processes in the Salton Sea geothermal system, California; new insights from the SSSDP cores.
Geological Society of America, 1987 annual meeting and exposition
Volume: *Issue:* *Page(s):* 766-767
File Name:

McKibben, Michael A., C. Stewart Eldridge, and Alan E. Williams
19881000 ID: 2915
Sulfur and Base Metal Transport in the Salton Sea Geothermal System.
New Horizons, Geothermal Resources Council, Transactions, 1988 Annual Meeting, 9-12 October 1988, San Diego, California.
Volume: 12 *Issue:* *Page(s):* 121-125
Davis, CA Geothermal Resources Council
File Name: 19880000_mckibben_c.pdf

McKibben, M. A., A. E. Williams, W. A. Elders, and C. S. Eldridge
19870900 ID: 1492
Saline brines and metallogenesis in a modern sediment-filled rift: the Salton Sea geothermal system, California, U.S.A.

Applied Geochemistry
Volume: 2 *Issue:* 5-6 *Page(s):* 563-578
File Name:

A report is given on the geochemistry of brines in the Salton Sea geothermal system in the USA. After describing the geothermal system and locations of the wells, temperature profiles with depth and results from stable isotope geochemistry are presented. Finally a model for ore-forming processes is described.

McKibben, M. A., A. E. Williams, and Susumu Okubo
19880500 ID: 1461
Metamorphosed Plio-Pleistocene evaporites and the origins of hypersaline brines in the Salton Sea geothermal system, California: Fluid inclusion evidence
Geochimica et Cosmochimica Acta
Volume: 52 *Issue:* *Page(s):* 1047-1056
File Name:

The Salton Sea geothermal system (SSGS) occurs in Plio-Pleistocene deltaic-lacustrine-evaporite sediments deposited in the Salton Trough, an active continental rift zone. Temperatures up to 365{degree}C and hypersaline brines with up to 26 wt.% TDS are encountered at 1-3 km depth in the sediments, which are undergoing active greenschist facies hydrothermal metamorphism. Previous models for the origins of the Na-Ca-K-Cl brines have assumed that the high salinities were derived mainly from the downward percolation of cold, dense brines formed by low-temperature dissolution of shallow non-marine evaporites. New drillcores from the central part of the geothermal field contain metamorphosed, bedded evaporites at 1 km depth consisting largely of hornfelsic anhydrite interbedded with anhydrite-cemented solution-collapse shale breccias. Fluid inclusions trapped within the bedded and breccia-cementing anhydrite homogenize at 300{degree}C and contain saline Na-Ca-K-Cl brines. Some of the inclusions contain up to 50 vol.% halite, sylvite and carbonate crystals at room temperature, and some halite crystals persist to above 300{degree}C upon laboratory heating. The data are consistent with the trapping of halite-saturated Na-Ca-K-Cl fluids during hydrothermal metamorphism of the evaporites and accompanying solution collapse of interbedded shales. The authors conclude that many of the slat crystals in inclusions are the residuum of bedded evaporitic salt that was dissolved during metamorphism by heated connate fluids.

Meidav, T., and R. Furgerson
19720600 ID: 4451
Resistivity studies on the Imperial Valley geothermal area, California
Geothermics
Volume: 1 *Issue:* 2 *Page(s):* 47-62
File Name:

Electrical resistivity was employed for mapping the Imperial Valley of California as part of a multi-disciplinary approach to assess its geothermal potential. Vertical and lateral resistivity changes were determined from Schlumberger depth soundings with effective probing depths up to 8000 ft. Known geothermal anomalies appear as residual resistivity lows superimposed on the regional gradient that decreases northwestward from the southeast corner of the Imperial Valley, near the Colorado River, to values about two orders of magnitude lower at the Salton Sea. A regional salinity gradient in the Imperial Valley trends northwest from a very low salinity at the Colorado River near Yuma, Arizona, to a very high salinity at the Salton Sea geothermal field. Abrupt changes in salinity exist across the Imperial fault, with salinities being much higher west of the fault. Maximum salinities can be estimated by combining the ground resistivity survey and formation factor-depth relationships compiled from well logs. From a technical point of view, the apparent-resistivity and longitudinal-resistivity maps are nearly identical at a probing depth of 3000 ft. Hence continuous profiling at a Schlumberger AB/2 spacing of 3000 ft should permit an effective, low-cost reconnaissance method for still-unsurveyed areas of the Imperial Valley. (auth)

Meidav, T., R. West, A. Katzenstein, and Y. Rotstein
19760500 ID: 1872
Electrical resistivity survey of the Salton Sea geothermal field Imperial Valley, Calfornia. [Schlumberger, equatorial, and dipole-dipole soundings]
Volume: *Issue:* *Page(s):* v
File Name:

v. An extensive electrical resistivity survey was conducted in the Salton Sea Geothermal Field, Imperial Valley, California. Very high energizing power (upward of 200 amperes) was employed to determine the extremely low resistivities (less than 0.5 ohmmeters) which were expected, to depths of 3 to 6 km. A combination of Schlumberger, equatorial, and dipole-dipole sounding techniques was employed and ultra-low commutation periods were used to avoid skin depth effects. Some depth soundings were extended into the sea by means of the equatorial sounding approach. The findings of the resistivity survey are combined with a previously reported marine seismic survey of the Salton Sea . They indicate that a very complex structural-hydrogeological pattern exists in the area. Integration of all existing data suggests that the Salton Sea geothermal field is an expression of active crustal spreading presently taking place along the southern shore of the Sea. The resistivity survey revealed the existence of six significant faults in the area. These are named here as the Wister, Calipatria, Red

Hill, Brawley, Fondo and Westmorland Faults. The discovered faults act as either aquicludes or aquitards, probably with varying degrees of sealing effectiveness along their length. Comparison of existing isothermal maps, structural maps and the iso-resistivity data leads to the conclusion that sharp salinity gradients must exist in the area. Radical changes in vertical and lateral resistivity distributions suggest that a complex stratigraphic-temperature-salinity pattern exists in the area.

Merifield, P. M., J. E. Marzolf, and D. L. Lamar
19700100 ID: 8326
Marine Sand Waves in El Infiernillo Channel Gulf of California
Volume: *Issue:* *Page(s):* 73 p.
File Name:

El Infiernillo Channel, averaging 5 km in width, separates Tiburon Island from the Sonoran mainland. Ebb currents flowing south from the channel form sand waves and tidal current ridges in Kunkaak Bay in water depths of less than 3 m. Surface ebb currents up to 1.7 knots, producing Froude Numbers of about 0.27, were measured. The sand waves have wavelengths ranging from 12 m to 75 m and amplitudes from 0.30 m to 0.75 m. The sediment consists of well-sorted, coarse-grained sand; size-frequency distributions of the sediment samples are positively skewed. No relationship was found between sand-wave morphology and grain size in Kunkaak Bay. In Agua Dulce Bay at the north end of the channel, sand waves are developed in fine-grained sand. Size-frequency distributions of the sediment samples are negatively skewed. The sand on the crests was found to be coarser in grain size and less negatively skewed than the sand in the troughs. The sand waves have wavelengths of 180 m to 250 m and amplitudes from 1.1 m to 1.5 m. The steep sides face with the flood tide, but the sand waves were not forming during the periods of observation.

Merrifield, M. A.
19890000 ID: 8285
Shelf Circulation in the Gulf of California [Doctoral thesis]
Volume: *Issue:* *Page(s):* 118 p.
File Name:

The 1983-84 long-term moored observations in the Gulf of California are used to describe the dynamically important spatial and temporal scales of the shelf circulation on opposite sides of the 150-km wide gulf, and to investigate the characteristics of coastal-trapped waves that propagate into the gulf along the mainland shelf. Observation results include: (1) Local wind forcing is not observed. (2) Flow on the facing shelf regions is uncorrelated, although recirculation with basin flow is observed on both shelves. Net surface transport is correlated with the cross Gulf pressure gradient. (3) A rise in subinertial sea level on the mainland shelf is accompanied by a drop in isotherm depths such that pressure fluctuations rapidly decay with depth. 4) Cross shelf geostrophy is weakly apparent on both shelves. Acceleration of along shelf currents is correlated with along shelf pressure gradient on the mainland shelf, indicating the presence of remotely forced waves. Next, an empirically derived propagating signal is compared with a coastal-trapped wave model. The model is forced by a simple extrapolation of storm winds to the coast. Complex empirical orthogonal functions are assessed as a possible method for isolating propagating variability in the gulf data set. Study results indicate that CEOFs are inadequate for detecting the wave signal due to the wide-banded frequency characteristics of the signal.

Merrifield, M. A., C. D. Winant
19891215 ID: 8286
Shelf Circulation in the Gulf of California: A Description of the Variability
Journal of Geophysical Research
Volume: 94 *Issue:* C12 *Page(s):* 18133-18160
File Name:

Merrifield, M. A., C. D. Winant, J. M. Robles, R. T. Guza, N. A. Bar
19860400 ID: 8296
Observations of Currents, Temperature, Pressure, and Sea Level in the Gulf of California 1982-1986. A Data Report/Observationes de Corrientes, Temperatura, Presion y Nivel Mar en el Golfo de California 1982-1986. Informe de Datos
Volume: *Issue:* *Page(s):* 147 p.
File Name:

Numerous observatins of horizontal currents, ocean temperature, and bottom pressure were made in the Gulf of California from Nov 1982 through Jan 1986 as part of a joint field experiment conducted by researchers at Centro de Investigation Cientifica y de Education Superior de Ensenada and at Scrippts Inst. along a transect in the central region of the Gulf, as well as the interrelationship among the various fields measured. This report includes a brief description of the instrumentation, a discussion of the data analysis procedures, and presents the time series and simple statistics of the observations.

Meyer, Jewell L., and Jan van Schilfgaarde
19841000 ID: 7738
Case History: Salton Basin
California Agriculture
Volume: 38 *Issue:* 10 *Page(s):* 13-16
File Name: 19841000_meyer_c.pdf

Meyer Resources, Inc.
19881200 ID: 4816
Problems and Potential Solutions at Salton Sea
Volume: *Issue:* *Page(s):*
California Resources Agency
File Name: 19881200_meyer.pdf

Michels, D. E.
19811000 ID: 1601
Flash pressure of geothermal liquids and depth of initial flashing in wellbores
Transactions - Geothermal Resources Council
Volume: *Issue:* *Page(s):* 365-368
File Name:

Flash pressures have been measured for fluid from deep wells at East Mesa and near the Salton Sea KGRA. Compared to gas-free liquids at respective temperatures, the flash pressures range from 17 to 345 psi above the handbook values. Mainly this is due to CO/sub 2/. The location of initial flashing in a geothermal well is important to the productivity of the well and to the selection of casing. Predictions of flow characteristics and optimum size of casing should involve good estimates of the vapor pressure component due to noncondensable gases. CO/sub 2/ usually is the most important of these. Depth of flashing can be predicted from the vapor pressure, shut-in formation pressure, fluid density, and productivity index if they are known or can be estimated. A technique for

Michels, D. E.
19880000 ID: 3426
Salinity stabilization for non-advecting brine in the temperature gradient with applications to the Salton Sea geothermal system
Transactions - Geothermal Resources Council
Volume: *Issue:* *Page(s):* 127-130
File Name:

Mickey, Wendell V.
19730000 ID: 7967
Reservoir Seismic Effects.
Man-made lakes: their problems and environmental effects. William C. Ackermann, Gilbert F. White [and] E. B. Worthington, editors. J. Loreena Ivens, associate editor.
Volume: *Issue:* *Page(s):* 472-479
Washington, DC American Geophysical Union
File Name: 19730000_mickey_c.pdf

Milanovich, F., R. Ireland, W. Mills, M. Moran, and L. Oglesby
19760000 ID: 5877
Aquatic ecosystems and geothermal development in the Imperial Valley
Potential Effects of GeothermalEnergy Conversion on Imperial Valley Ecosystems. J. H. Shinn, ed.
Volume: *Issue:* *Page(s):* 32-43
Livermore University of California, Lawrence Livermore Laboratory
File Name:

Miller, R. R.
19430000 ID: 5878
The Status of Cyprinodon macularius and Cyprinodon nevadensis, Two Desert Fishes of Western North America
Occasional Paper of the Museum of Zoology
Volume: 473 *Issue:* *Page(s):* 25 p.
University of Michigan
File Name:

Miller, R. R.

19680000 ID: 5879
Records of some native freshwater fishes transplanted into various waters of California, Baja California, and Nevada
California Fish and Game
Volume: 54 *Issue:* *Page(s):* 170-9
File Name:

Mills, W. L.
19770000 ID: 1785
Bioassay procedure to evaluate the acute toxicity of salinity and geothermal pollutants (pesticides) to Gambusia affinis. Final report
Volume: *Issue:* *Page(s):* 22
File Name:

The salinity tolerance of Gambusia affinis was determined in static bioassays. Gambusia easily tolerated salinity of 47.5 percent in 96 hour static bioassays. Survival at this level was 93.3 percent with the lowest survival being 68 percent at 40 percent salinity. The acute toxicities of endrin, DDT, aldrin, and dieldrin to Gambusia were determined by static and intermittent-flow bioassays. Toxicity was measured as the Mediant lethal Concentration (TL/sub 50/) for 96-hr exposures. TL/sub 50/ values were lower in the intermittent-flow bioassays than in static bioassays. Residue concentrations were also compared in surviving and dead fish from the intermittent-flow bioassays. Residue concentrations in fish that died during tests were higher than those of fish that survived. However, the range of concentrations in dead and living fish overlapped.|;

Minkoff, G., E. Lubzens, and D. Kahan
19830000 ID: 7764
Environmental factors affecting hatching of rotifer (Brachionus plicatilis) resting eggs
Hydrobiologia
Volume: 104 *Issue:* *Page(s):* 61-69
Netherlands Dr. W. Junk Publishers
File Name: 19830000_minkoff_c.pdf

Miracle, Maria R., and Manuel Serra
19890000 ID: 7763
Salinity and temperature influence in rotifer life history characteristics
Hydrobiologia
Volume: 186/187 *Issue:* *Page(s):* 81-102
File Name: 19890000_miracle_c.pdf

Mock, John E., Ronald S. H. Toms, and Gene Beeland
19840000 ID: 3864
Growth in Geothermal Power generation Capacity and DOE's Supporting Role.
Volume: *Issue:* *Page(s):*
File Name:

The author reviews the Department of Energy's geothermal program and reports on some of its activities. A large percentage of the new capacity currently projected for hydrothermal fluid use is to be located in the Imperial Valley of Southern California near the Mexican border. The Imperial Valley reservoirs are diverse in character. Contrary to the very hot, highly saline nature of the Salton Sea and Brawley fluids, the fluids of the Heber and East Mesa reservoirs are of moderate temperature, defined as between 150 DEGREE -200 DEGREE C (302-392 DEGREE F) and are much more benign in terms of salinity. While it is economically feasible to use the flash-steam technology with brines at the upper end of this temperature range, a consensus exists that the use of binary technology will provide a more efficient system for these 150 DEGREE -200 DEGREE C brines. Some predict a 30 to 40 percent gain in net effectiveness over the flash-steam technology when modifications are perfected to the binary cycle to accommodate the characteristics of geothermal fluids. DOE has also sponsored research on a gravity-head geothermal energy conversion system which is a binary plant with the primary heat exchanger down-hole in the well. This technology appears promising for increased power output over conventional binary plants.

Moffitt, J.
19320500 ID: 5880
Clapper rails occur on marshes of Salton Sea, California
Condor
Volume: 34 *Issue:* *Page(s):* 137
File Name: 19320500_moffitt_c.pdf

Molina, Kathy C.

19960000 ID: 2062
Population Status and Breeding Biology of Black Skimmers at the Salton Sea, California.
Western Birds
Volume: 27 *Issue:* 3 *Page(s):* 143-158
File Name: 19960000_molina_c.pdf

BIOSIS COPYRIGHT: BIOL ABS. RRM. RESEARCH ARTICLE RYNCHOPS-NIGER BLACK SKIMMER POPULATION STATUS BREEDING BIOLOGY POPULATION SIZE NESTING SALINITY POLLUTION POPULATION STUDIES SALTON SEA CALIFORNIA USA

Moore, C. V., and J. H. Snyder
19740300 ID: 2720
Management of Saline Water
Volume: *Issue:* *Page(s):* 26
File Name: 19740300_moore_c.pdf

Recent research on the economics of saline water management was surveyed and principal conclusions summarized. Salinity studies in the Colorado River Basin, Imperial Valley, Orange County(California), and Salton Sea were examined. Effects of agriculture on quantity and quality of water, methods of increasing irrigation efficiency, salinity in urban and recreational water uses, international and legal aspects of salinity, and cost-sharing in salinity control are discussed. Salinity in a river basin tends to increase from the headwaters to the mouth. The saline waters of the Colorado River pose major management problems in the regions studied, and are also important in relations with Mexico. Total water withdrawals exceed annual replenishments, and total dissolved salinity in the lower reaches of the river are near or beyond threshold uses. Estimated economic losses to domestic users are about $16 million and are projected to increase to a possible level of about $28 million by 1980.

Moore, Joseph N., and Michael C. Adams
19860000 ID: 2893
Thermal and chemical evolution of the caprock in the Salton Sea geothermal field, California
Volume: *Issue:* *Page(s):* 699
File Name:

Moore, K. E.
19820000 ID: 5881
Results of Recent Fisheries Surveys of the Desert Pupfish Resources in San Felipe Creek and Salt Creek.
Memorandum dated-November 19, 1982
Volume: *Issue:* *Page(s):* 2 p.
California Department of Fish and Game
File Name:

Moore, K. E.
19830000 ID: 5882
Results of Two Fisheries Surveys of the Desert Pupfish Resource in and around the Salton Sea, Imperial and Riverside Counties
Memorandum dated November 14, 1983
Volume: *Issue:* *Page(s):* 5 p.
California Department of Fish and Game
File Name:

Moore, K. E.
19840000 ID: 5883
San Felipe Creek - Desert Pupfish Survey
Memorandum dated May 1, 1984
Volume: *Issue:* *Page(s):* 1 p.
California Department of Fish and Game
File Name:

Mora, M. A., and D. W. Anderson
19950000 ID: 4897
Selenium, Boron, and Heavy Metals in Birds from the Mexicali Valley, Baja California, Mexico
Bulletin of Environmental Contamination and Toxicology
Volume: 54 *Issue:* *Page(s):* 198-206
New York Springer-Verlag
File Name: 19950000_mora_c.pdf

Mora, M. A. Z.
19840000 ID: 7444
Seasonal and geographical variation of organochlorines in waterfowl from California and Mexico
University of California, Davis, unpublished MS thesis
Volume: *Issue:* *Page(s):*
File Name:

Morrill, R. A.
19730400 ID: 2140
Current measurements in the Salton Sea using ERTS multispectral imagery
Volume: *Issue:* *Page(s):* 44
File Name:
There are no author-identified significant results in this report.

Morrissey, M. T.
19880000 ID: 8290
Postharvest Fishery Losses. Proceedings of an International Workshop Held in Kingston, Rhode Island, April 12-16,
Volume: *Issue:* *Page(s):* 259 p.
File Name:

Research and project guidelines for postharvest fishery losses; Postharvest fishery losses: A definition of terms; Fisheries policy and organization: Influence on postharvest losses; Postharvest fisheries research and the food system in developing countries; Quality assurance: Is it feasible in less developed countries; Economics and seafood quality; Fish quality in the Philippines; Histamine and Clostridium botulinum in fresh and salted seafoods in Brazil; The reduction of postharvest losses by improved catch handling and storage at sea; The sardine fishery of the Gulf of California; Uses of fish waste from the artisanal fishery of Ecuador; Postharvest losses in traditionally processed fish products in less developed countries; New methods to reduce postharvest fishery losses in traditionally processed fresh fish in less developed countries.

Morton, F. I.
19830000 ID: 7675
Operational estimates of lake evaporation
Journal of Hydrology
Volume: 66 *Issue:* 1-4 *Page(s):* 77-100
Amsterdam, Netherlands Elsevier
File Name:

Morton, F. I.
19790200 ID: 2234
Climatological Estimates of Lake Evaporation
Water Resources Research
Volume: 15 *Issue:* 1 *Page(s):* 64-76
File Name: 19790200_morton_c.pdf

A model for estimating areal evaporation and transpiration was modified slightly to provide estimates of annual lake evaporation from monthly observations of temperature, humidity, and sunshine duration (or radiation) in the land environment. The model estimates were higher than the more conventional estimates in humid areas and lower in arid areas, with the latter tendency particularly noticeable in the case of Lake Nasser on the Nile River. However, the results agreed very well with comparable water budget estimates for Lake Hefner in Oklahoma, the Salton Sea and Silver Lake in California, Pyramid Lake in Nevada, Lake Ontario, and Dauphin Lake in Manitoba. The model results also compared reasonably well with energy budget estimates of the evaporation from Lake Mead on the border between Arizona and Nevada when the net inflow of heat was taken into account. A technique that provided such realistic results over a wide range of depths and environments with readily available data proved useful in water resource or environmental impact studies. Examples of such uses were provided by maps of Canada and the southeastern United States and showed average annual values of the lake evaporation, average values of the difference between the evaporation from a projected reservoir, and the combined evaporation and transpiration from the area before flooding. (Roberts-ISWS)

Mundhenke, D. J.
19691000 ID: 8324
The Relationships Between Water Masses and Euphausiids In the Gulf of California and the Eastern Tropical Pacific [master's thesis]
Volume: *Issue:* *Page(s):* 118 p.
File Name:

The object of this investigation was to determine the relationships between the euphausiid populations and the surface and subsurface water masses in the Gulf of California and the Eastern Tropical Pacific. The data was collected during two three month cruises of the R/V TE VEGA. Aspects of the horizontal and vertical distributions of both the euphausiids and the water masses are presented. Euphausiid distributions found by another investigator are presented for comparison. The study was based on 120 trawls which fished for a period of one hour each with an opening and closing Tucker midwater trawl. Thirteen different species of euphausiids were caught. The data suggests that there is no direct relationship between the distribution of euphausiids and the distribution of water masses in the limited area considered. New extensions of the horizontal and vertical ranges of

Muramoto, F. S., and W. A. Elders
19840500 ID: 1564
Correlation of wireline log characteristics with hydrothermal alteration and other reservoir properties of the Salton Sea and Westmorland geothermal fields, Imperial Valley, California, USA
Volume: *Issue:* *Page(s):* 109
File Name:

A detailed study of wireline logs from 11 wells in the Salton Sea and Westmorland geothermal systems was undertaken in order to determine the effects of hydrothermal alteration on the response of electrical and gamma-gamma density well logs. For the Salton Sea geothermal field, definite correspondence between log responses and hydrothermal mineralogy is evident, which in turn is related to the physical properties of the rocks. Three hydrothermal and one unaltered zone can be identified from log data on shales. These are: (1) the unaltered montmorillonite zone (<100/sup 0/ to 190/sup 0/C); (2) the illite zone (100/sup 0/ to 190/sup 0/C to 230/sup 0/ to 250/sup 0/C); (3) the chlorite zone (230/sup 0/ to 250/sup 0/C to 290/sup 0/ to 300/sup 0/C); and (4) the feldspar zone (>290/sup 0/ to 300/sup 0/C). The characteristic responses on well logs by which these zones are identified result primarily from changes in clay mineralogy of the shales and increases in density with progressive hydrothermal metamorphism. In the Westmorland geothermal field, differentiating mineral zones from log responses was only partially successful. However, analyses of both well log and petrologic data for wells Landers 1 and Kalin Farms 1 suggest that the former is heating up and the latter is cooling.

Mustahal, Shigehisa Yamasaki, and Hachiro Hirata
19910000 ID: 7762
Salinity Adaptability of Five Different Strains of the Rotifer Brachionus plicatilis
Nippon Suisan Gakkaishi
Volume: 57 *Issue:* 11 *Page(s):* 1997-2000
File Name: 19910000_mustahal_c.pdf

Muth, A.
19921200 ID: 7701
Development of Baseline Data and Procedures for Monitoring Populations of the Flat-tailed Horned Lizard, Phrynosoma mcallii
Volume: *Issue:* *Page(s):*
Palm Desert, CA University of California, Riverside, Deep Desert C.
File Name: 19921200_muth.pdf

Muth, Allan and Mark Fisher
19890410 ID: 7704
A Report on the Status of Native Lizards on the Salton Sea Naval Test Base, Imperial County, California
Volume: *Issue:* *Page(s):* 37
U.S. Fish and Wildlife Service
File Name: 19890410_muth.pdf

Naiman, Robert J.
19790000 ID: 7445
Preliminary food studies of Cyprinodon macularius and Cyprinodon nevadensis (Cyprinodontidae)
Southwestern Naturalist
Volume: 24 *Issue:* 3 *Page(s):* 538-41
File Name: 19790000_naiman_c.pdf

Needham, P. B., Jr., A. P. Murphy, and F. X. McCawley
19760000 ID: 1852
Scaling in both high- and low-salinity brines.
Volume: *Issue:* *Page(s):* 127-144
Conference on scale management in geothermal energ
File Name:

Engineering observations made during field operations in the Imperial Valley during 1974, 1975, and 1976 are reported. Interest in the scaling phenomena is directed only to (1) its interference with corrosion studies, and (2) the possible role that it may play in any minerals recovery technique. The work reported consists of chemical, structural and thermodynamic analyses of scales obtained from wells on the Salton Sea geothermal field and on the East Mesa geothermal field. In some cases there is little reliable information on the well operating parameters (flow rates, time, temperature, pressure or "correct" chemistry) for which the scales were obtained. For other cases, particularly for the 1975 operation of Mesa 6-1 and for the 1976 operation of Magmamax No. 1, there is at least the beginnings of some semblance of reliable background information.

Nelson, D., D. M. Suekawa, and D. S. Havertz
19740000 ID: 7662
Trophic relationship of brine fly and algae of the Great Salt Lake, Utah
Proceedings of Utah Academy of Science, Arts, and Letters
Volume: 51 *Issue:* 4 *Page(s):* 50-5
File Name:

Nemec, J.
19730000 ID: 7965
Summary: Interaction between Reservoirs and the Atmosphere and Its Hydrometeorological Elements. Man-made lakes: their problems and environmental effects. William C. Ackermann, Gilbert F. White [and] E. B. Worthington, editors. J. Loreena Ivens, associate editor.
Volume: *Issue:* *Page(s):* 398-405
Washington, DC American Geophysical Union
File Name: 19730000_nemec_c.pdf

Nicol, K.
19890000 ID: 5002
1989 Desert Pupfish Survey at Salt Creek, riverside County. Memorandum dated September 25, 1989
Volume: *Issue:* *Page(s):* 2
California Department of Fish and Game
Fish and G
File Name: 19890000_nicol_2.pdf

Nicol, K.
19890000 ID: 5001
1988 Desert Pupfish Survey at Salt Creek, Riverside County. Memorandum dated September 25, 1989
Volume: *Issue:* *Page(s):* 2
California Department of Fish and Game
Fish and G
File Name: 19890000_nicol.pdf

Nicol, K.
19870000 ID: 5000
1987 Desert Pupfish Survey of Salt Creek. Memorandum dated August 3, 1987
Volume: *Issue:* *Page(s):* 2
California Department of Fish and Game
Fish and G
File Name: 19870000_nicol.pdf

Nicol, K.
19860000 ID: 5885
Desert Pupfish Survey, Salt Creek, Riverside County
Memorandum dated May 16, 1986
Volume: *Issue:* *Page(s):* 2 p.
California Department of Fish and Game
File Name: 19860000_nicol.pdf

Nicol, K.
19900000 ID: 5886
Desert Pupfish Survey - Salt Creek
Memorandum dated August 21, 1990
Volume: *Issue:* *Page(s):* 1 p.

File Name: 19900000_nicol.pdf

Nilsen, E. T., M. R. Sharifi, P. W. Rundel, W. M. Jarrell, and R. A. Virginia
19830000 ID: 2226
Diurnal and Seasonal Water Relations of the Desert Phreatophyte Prosopis glandulosa (Honey Mesquite) in the Sonoran Desert of California
Ecology
Volume: 64 *Issue:* 6 *Page(s):* 1381-1393
File Name: 19830000_nilsen_c.pdf

Prosopis glandulosa var. torreyana in the Sonoran Desert of southern California acquired its water from a ground water source 4-6 m deep. Harper 's Well, the test site, lies at an elevation of -30 m at the base of the Fish Creek Mountains, 15 km west of the southern tip of the Salton Sea. Diurnal and seasonal cycles of aboveground environmental conditions, soil moisture, and soil water potential (to 6 m depth) were measured to determine environmental water availability and water stress. Leaf water potential, leaf conductance, leaf transpiration, relative saturation deficit of leaves, osmotic potential, and turgor potential were measured to evaluate plant adaptations to environmental water stress. Soil water potential was low (-4.0 to -5.0 MPa) in surface soil in relation to deep soil (-0.2 MPa). The difference was due to high surface soil salinity and low surface water content. Climatic conditions at the research site produced extreme water stress conditions in summer months when temperatures reached 50 C, vapor pressure deficit (VPD) reached 8 kPa, and surface soil water potential was below -4.5 MPa. Considerable plant water stress developed in these trees (midday leaf water potential -4.8 MPa), but osmotic adjustment occurred and turgor was maintained on a diurnal and seasonal cycle. P. glandulosa has adapted to avoid water stress by utilizing deep ground water, but this phreatophyte has also evolved physiological adaptations, such as osmotic adjustment and seasonally changing stomatal sensitivity to VPD, which result in greater tolerance of water stress. (Moore-IVI)

Nolan, B. T., and M. L. Clark
19970000 ID: 5887
Selenium in irrigated agricultural areas of the western United States
Journal of Environmental Quality
Volume: 26 *Issue:* *Page(s):* 849-57
File Name:

Nordlie, F. G., D. C. Haney, and S. J. Walsh
19920000 ID: 7766
Comparisons of Salinity Tolerances and Osmotic Regulatory Capabilities in Populations of Sailfin Molly (Poecilia latipinna) from Brackish and Fresh Waters
Copeia
Volume: 3 *Issue:* *Page(s):* 741-746
File Name: 19920000_nordlie_c.pdf

Nordlie, F. G., D. C. Haney, and S. J. Walsh
19920000 ID: 7446
Comparisons of salinity tolerances and osmotic regulatory capabilities in populations of sailfin molly (Poecilia latipinna) from brackish and fresh water
Copeia
Volume: *Issue:* *Page(s):* 741-6
File Name:

Norman, David I., Philip R. Kyle, and Charles Baron
19890200 ID: 3594
Analysis of trace elements including rare earth elements in fluid inclusion liquids
Economic Geology and the Bulletin of the Society of Economic Geologists
Volume: *Issue:* *Page(s):* 162-166
File Name:

Nugent, J. M., and L. R. Vick
19770000 ID: 1833
Well operations-Salton Sea geothermal field.
Geothermal : state of the art : papers presented at the Geothermal Resources Council Annual Meeting, 9-11 May, 1977, San Diego, California
Volume: *Issue:* *Page(s):* 233-234

Davis, CA Geothermal Resources Council
File Name:

Significant geothermal reservoir operating experience was gained in the Salton Sea Geothermal Field in the Imperial Valley of Southern California. The geothermal field operation consists of two production wells and two injection wells providing fluid supply and fluid disposal for the ERDA-San Diego Gas and Electric Company Geothermal Loop Experimental Facility at Niland. Some operating problems have been experienced with the Woolsey No. 1 production well and the two injection wells. Analysis and maintenance including logging, deepening, workover and testing have been performed. These operations provide empirical insights into the day to day operation of a high temperature, high salinity hot water geothermal reservoir.

Nur, N., and W. J. Sydeman

ID: 7842

Population dynamics and demographic processes of Brandt's Cormorants in a variable environment: survival, breeding probability, and reproductive success.
Bird Study. In press.
Volume: *Issue:* *Page(s):*
File Name:

O'Connor, D. J.
19890000 ID: 3500
Seasonal and long-term variations of dissolved solids in lakes and reservoirs.
Journal of Environmental Engineering (New York)
Volume: 115 *Issue:* 6 *Page(s):* 1213-1234
File Name: 19891200_oconnor_c.pdf

The seasonal and long-term variations of dissolved solids in lakes and reservoirs were analyzed in accordance with the hydrologic- and mass-balance equations. The following were studied: (1) the effects of deicing salts on chloride levels in Irondequit bay, New York; (2) salinity changes due to surface inflow and irrigation drainage in the closed basin of Salton Sea, California; (3) the effect of impoundment on water quality in Cheney Reservoir, Kansas; and (4) the salinity increase in Mono Lake, California, USA. The volume and surface area were expressed as power functions of depth that yield analytical solutions for the long-term analysis. The equation defining the water elevation and volume may be approximated by exponential functions that simplify the solution of the mass-balance equation of the dissolved solids. For the intermediate and seasonal time scales, periodic and exponential functions define the hydrological components, providing the forcing functions for the dissolved solids equations. For both cases, an exponential residence time transform the mass-balance equation, leading to analytical solutions. Given the mass and volume, the concentration follows. The temporal variations of dissolved solids, calculated by the associated mass and volumetric equations were compared to the observed change in salinity in lakes and reservoirs various geophysical and hydrological characteristics.

Oakes, C. S.
19850000 ID: 1475
Strong salinity gradients in the northeastern part of the Salton Sea geothermal field, CA: a fluid inclusion and brine chemistry study
Geological Society of America, Abstracts with Programs
Volume: *Issue:* *Page(s):* 679
File Name:

Geothermal wells in the northeastern Salton Sea geothermal field produce concentrated Na-Ca-K-Cl brines. Maximum dissolved constituents do not exceed 260,000 ppm. Fluid inclusion homogenization temperatures from cuttings of vein calcite and quartz are in close agreement with temperature logs and indicate maximum reservoir temperatures between 290/sup 0/ and 310/sup 0/C at 3140 to 3565 m. Melting temperatures of inclusion fluids indicate the trapping of both low salinity and high salinity vein-forming solutions. The high salinity inclusion fluids appear similar to the produced reservoir fluids in their total dissolved solids, while both high salinity and low salinity inclusions imply temperatures similar to that of the reservoir. The low salinity inclusions occur over broad intervals above and below the much less vertically extensive high salinity inclusion fluids. Although the presence of interstratified high salinity and low salinity brines should be gravitationally unstable, flow tests of one well, at varying well head pressures, produced two brines of distinctly different compositions. Consequently, the persistence of two different brines requires severe impedance of vertical permeability. Stratification of brines in this geothermal system carries significant implications for the formation models of some epithermal ore deposits by mixing of fluids of different salinity, pH, fO/sub 2/, fS/sub 2/, temperature, etc. Additionally, there are very strong economic advantages to the possible production of hot, dilute brines rather than the currently produced highly saline brines.

Oakes, Charles Steger
19880000 ID: 2874
Evidence for replacement of dilute hydrothermal solutions by hot, hypersaline brine in the northeastern part of the

Salton Sea geothermal system, California; a fluid inclusion and oxygen isotope study [M.S. thesis]
Volume: *Issue:* *Page(s):* 115 l.
Riverside, CA University of California, Riverside
File Name:

The Salton Sea Geothermal System (SSGS) is a high-temperature hypersaline geothermal system on the delta of the Colorado River developed in Tertiary to Holocene sedimentary rocks. This thesis studied samples from the Fee #1, Fee #5, and Britz #3 geothermal wells in the northeastern part of the SSGS, which produce Na-Ca-K-Cl brines containing from 117,000 to 253,000 ppm total dissolved solids (TDS). Fluid inclusion homogenization temperatures from vein calcite and quartz cuttings are in close agreement with temperature logs and indicate maximum reservoir temperatures between 290 degrees and 310 degrees C at 3140 to 3565 m for these wells. Ice melting temperatures of fluid inclusions imply the trapping of both 'low' salinity (10,000-100,000 ppm NaCl equivalent) and high salinity solutions in vein minerals. Moderate to high salinity inclusion fluids appear similar to the produced reservoir fluids in TDS, while both high salinity and low salinity inclusions imply paleo-reservoir temperatures similar to those measured by temperature logs. The occurrence of low salinity fluid inclusions in production horizons which now produce high salinity brines implies that the saline brines have displaced more dilute fluids. Fluid inclusions within vein minerals from the Britz #3 well that have higher salinities than the production brine, however, indicate that the converse has also occurred. Replacement of low salinity brines by high salinity brines has apparently occurred only at depths where reservoir temperature has been > or =270 degrees C. delta (super 18) O compositions of brines calculated to be in equilibrium with calcite and quartz veins imply that the veins were deposited from three isotopically distinct brines characterized by delta (super 18) O values of -4per mill, to -2per mill, (super differs from) -1per mill, and +1per mill to +3per mill. The low range of compositions appear to correspond to low salinity brines that were present at reservoir temperatures of 240 degrees -310 degrees C. Veins implying the heavy range of compositions were apparently precipitated from high salinity brines at temperatures >270 degrees C. The process responsible for producing a brine with an extremely limited intermediate delta (super 18) O composition is enigmatic. The delta (super 18) O value of the latter brine may be characteristic of: high salinity brines in regions of the reservoir where water/rock ratios are high; high salinity brines that ….

Ogden Environmental and Energy Services Co., Inc.
19950300 ID: 4824
Salton Sea Management Project Summary of Salinity and Elevation Management Alternatives
Volume: *Issue:* *Page(s):*
File Name: 19950300_ogden.pdf

Ogden Environmental and Energy Services Co., Inc.
19960600 ID: 4825
Salton Sea Management Project Evaluation of Salinity and Elevation Management Alternatives. Project No. 313561000
Volume: *Issue:* *Page(s):*
Imperial, CA Salton Sea Authority
File Name: 19960600_ogden.pdf

Oglesby, L. C.
19730000 ID: 7482
The Salton Sea: A Tour of the Geology and Biology of an Accidental Desert Salt Lake
Volume: *Issue:* *Page(s):* 32 p.
Ives Community Press, Claremont for the Pomona Val
File Name:

Oglesby, L. C.
19770000 ID: 5888
Reproduction and Survival of the Pileworm Nereis succinea in Higher Salton Sea Salinities
PO 3452003, Imperial Valley Environmental Project, Environmental Sciences Division
Volume: *Issue:* *Page(s):* 42 p.
File Name:

Oglesby, L. C.
19800000 ID: 2032
Responses to Higher Salton Sea Salinities by the Euryhaline Snail Thiara-Granifera
American Zoologist
Volume: 20 *Issue:* 4 *Page(s):* 873
File Name: 19800000_oglesby_c.pdf

Oglesby, Larry C.
19770700 ID: 2037
Notes - A Newly Introduced, Brackish-Water Snail in the Salton Sea Basin, California
California Fish and Game
Volume: 63 *Issue:* 3 *Page(s):* 180-182
File Name: 19770700_oglesby_c.pdf

Ohlendorf, Harry M., D. W. Anderson, D. E. Boellstorff, and B. M. Mulhern
19850000 ID: 4899
Tissue Distribution of Trace Elements and DDE in Brown Pelican
Bulletin of Environmental Contamination and Toxicology
Volume: 35 *Issue:* *Page(s):* 183-192
File Name: 19850000_ohlendorf_c.pdf

Ohlendorf, H. M., and K. C. Marois
19900000 ID: 2061
Organochlorines and selenium in California night-heron and egret eggs.
Environmental Monitoring and Assessment
Volume: 15 *Issue:* 1 *Page(s):* 91-104
File Name:

Exceptionally high concentrations of DDE were found in black-crowned night-heron (Nycticorax nycticorax) (geometric mean 8.62 ug g(-1) wet wt.) and great egret (Casmerodius albus)(24.0 ug g(-1)) eggs collected from the Imperial Valley (Salton Sea), California in 1985. DDE concentrations in 14 of the 87 (16%) randomly selected night-heron eggs from six colonies (two in San Francisco Bay, three in the San Joaquin Valley, and one at Salton Sea) were higher than those associated with reduced reproductive success of night-herons (8 ug g(-1)). In addition, mean shell thickness of night-heron eggs collected from the San Joaquin Valley and from San Francisco Bay during 1982-1984 was significantly less than pre-DDT thickness and was negatively correlated (r = -0.50, n = 75, P less than 0.0001) with DDE concentration. Mean selenium concentration in night-heron eggs from Salton Sea (1.10 ug g(-1)) was significantly higher than in eggs from three locations in the San Joaquin Valley, and in egret eggs

Olson, Oscar E.
19860000 ID: 7881
Toxic Effects of Selenium on Man
Toxic substances in agricultural water supply and drainage: defining the problems. Proceedings. 1986 Regional Meetings. U.S. Committee on Irrigation and Drainage. Summers, J. B., and S. S. Anderson, eds.
Volume: *Issue:* *Page(s):* 111-119
Denver, CO U.S. Committee on Irrigation and Drainage
File Name:

Orlob, Gerald, Geoffrey Schladow, and Christopher Cook
19980700 ID: 7552
[Salton Sea Project Phase II Final Report (Draft) Data Collection and Analysis for Calibration and Verification of a Three-Dimensional Hydrodynamic Model]
Volume: *Issue:* *Page(s):* ii-viii, 87 p.
[Davis, CA] [University of California, Davis, Center for Environmental and Water Resources Engineering, Modeling Group]
File Name: 19980700_orlob.pdf

Ormat Technical Services, Inc.
19890000 ID: 4815
Appendix "A" Salton Sea "Hydrological Model" Computations
Volume: *Issue:* *Page(s):*
File Name: 19890300_ormat_2_c.pdf

Ormat Technical Services, Inc.
19890300 ID: 4814
Salton Sea Project Preliminary Study
Volume: *Issue:* *Page(s):*
Sparks, NV Ormat Technical Services
File Name: 19890300_ormat_c.pdf

Osborn, William Leonard

19890000 ID: 2851
Formation, diagenesis, and metamorphism of sulfate minerals in the Salton Sea geothermal system, California, U.S.A. [M.S.thesis]
Volume: *Issue:* *Page(s):* 162 l.
Riverside, CA University of California, Riverside
File Name:

The Salton Sea geothermal system, located in the Salton Trough of southern California, offers a unique opportunity to study the formation, diagenesis, and metamorphism of continental evaporites in an active rift environment. This report is based on an investigation of sulfate minerals found in drill cuttings and core from various wells drilled in the Salton Sea geothermal field, especially those recovered from the 3.2km-deep Salton Sea Scientific Drilling Project well State 2-14. The Salton Trough is a continental rift zone, forming the transition from the divergent tectonics of the East Pacific Pise to the strike-slip tectonics of the San Andreas Fault System. Infilling of the rift by the bi-polar Colorado River delta for the past 4Ma has isolated the northern part of the trough, forming the closed Salton Basin in an orographic desert. High evaporation rates combined with an extremely variable hydrologic budget have resulted in the episodic formation of saline lakes and lacustrine evaporites. Rapid subsidence and rift-related intrusions at depth subject the Pleistocene and younger sediments to temperatures up to 350 degrees C at 2-3km depth within the Salton Sea geothermal system (SSGS). Stratiform sulfate structures observed in drill core are produced by deposition in various playa-sabkha subenvironments: laminated to massively bedded sulfates were deposited subaqueously in perennial and ephemeral saline lakes; gypsum (now pseudomorphed-by anhydrite) was precipitated within fluid-saturated sediments in lake-fringing saline mudflats; and nodular sulfates were formed in the capillary zone of surrounding dry mudflats. Gypsum is the only primary evaporitic sulfate found in the SSGS, where it undergoes dehydration to anhydrite at 80-105 degrees C and depths of 200-250m. Fluid inclusions in gypsum contain 4-12 wt.% equivalent NaCl fluids. Gypsum dehydration apparently dilutes these fluids, forming inclusions in anhydrite that contain <4 wt.% equivalent NaCl fluids. Fluid inclusion homogenization temperatures closely parallel the thermal profile measured in boreholes, implying continual recrystallization of anhydrite to maintain thermal equilibrium with the prevailing geothermal gradient. Continuous recrystallization allows heterogeneous mixing of relatively dilute fluids from inclusions with more concentrated geothermal brines, producing inclusions containing fluids ranging from 13-25 wt. equivalent NaCl. These coexist spatially with 25 wt. NaCl geothermal brines.

Oskam, Gijsbert
19730000 ID: 7978
A Kinetic Model of Phytoplankton Growth and Its Use in Algal Control by Reservoir Mixing. [abstracted]
Man-made lakes: their problems and environmental effects. William C. Ackermann, Gilbert F. White [and] E. B. Worthington, editors. J. Loreena Ivens, associate editor.
Volume: *Issue:* *Page(s):* 629-631
Washington, DC American Geophysical Union
File Name: 19730000_oskam_c.pdf

Oster, J. D., Glenn J. Hoffman, and Frank E. Robinson
19841000 ID: 7739
Management Alternatives: Crop, Water, and Soil
California Agriculture
Volume: 38 *Issue:* 10 *Page(s):* 29-32
File Name: 19841000_oster_c.pdf

Otis, Webster, and John A. Maga
19740500 ID: 4801
Draft Environmental Impact Statement - Proposed Salton Sea Project, Imperial and Riverside Counties, California
Volume: *Issue:* *Page(s):*
File Name: 19740500_otis.pdf

Owen, L. B., G. E. Tardiff, and R. C. Feber (ed.)
19790400 ID: 1716
Scale and solids control at the Salton Sea KGRA.
Proceedings of workshop on scale control in geothermal energy extraction systems
Volume: *Issue:* *Page(s):* 42-44
Workshop on scale control in geothermal energy ext
File Name:

The viability of energy conversion processes intended for electric power production at liquid-dominated geothermal resources can be jeopardized by severe scaling, corrosion, and suspended solids problems that arise as a consequence of the high chloride content and trace element composition of geothermal brine. For instance, the Salton Sea KGRA (SSKGRA) is the largest known high-temperature hydrothermal resource in this country, yet all previous attempts, dating back to the 1920's, to produce power economically at the field have been unsuccessful. In 1974, the Laboratory's Geothermal Program began to address the problems related to utilization of high-salinity

geothermal resources. Initial emphasis was placed on solving the scale and solids problem since adequate control was recognized as a mandatory requirement for operation of a TOTAL FLOW turbine at the SSKGRA. Furthermore, a totally programmatic approach was adopted insofar as programmatic time frames did not allow for detailed laboratory investigations. A primary virtue of this philosophy was avoidance of the severe difficulties associated with exactly duplicating complex brine systems at elevated temperatures and pressures in the laboratory. Our strategy combined operation of field experimental loops with analysis of scale and solids formation rates, chemical compositions, microstructures, and thermochemistry, coupled with appropriate literature surveys in order to identify potentially effective control measures.|;

Pace, F., R. Ferrara, and G. DelCarratore
19770000 ID: 7635
Effects of sub-lethal doses of copper sulphate and lead nitrate on growth and pigment composition of Dunaliella salina
Bulletin of Environmental Contamination and Toxicology
Volume: 17 *Issue:* 6 *Page(s):* 679-85
File Name:

Packard, A. S., Jr.
18710000 ID: 7636
On insects inhabiting salt water
American Journal of Science
Volume: 1 *Issue:* *Page(s):* 100-10
File Name:

Page, G. W., W. D. Shuford, J. E. Kjelmyr, and L. E. Stenzel.
19920000 ID: 7800
Shorebird numbers in wetlands of the Pacific Flyway: a summary of counts from April 1988 to January 1992. (Report)
Volume: *Issue:* *Page(s):*
Stinson Beach, CA Point Reyes Bird Observatory
File Name:

Page, Gary W., Lynne E. Stenzel, W. David Shuford, and Charles R. Bruce
19910000 ID: 3725
Distribution and Abundance of the Snowy Plover on Its Western North American Breeding Grounds
Journal of Field Ornithology
Volume: 62 *Issue:* 2 *Page(s):* 245-255
File Name: 19910000_page_c.pdf

State-wide surveys between 1977 and 1980 indicated up to 10,200 breeding Snowy Plovers (Charadrius alexandrinus) in Washington, California, Oregon and Nevada. Recent surveys of these states (and also Utah) in 1988 and 1989 provided further information on the species' distribution and abundance and showed a possible decline in numbers. In western North America, the Snowy Plover breeds at various sites on either side of the Great Basin; in the San Joaquin Valley, Mojave Desert and Salton Sea regions of California; in Arizona and New Mexico; and along the Pacific Coast from southern Washington into Mexico. Along the United States coast plovers are most numerous from San Francisco Bay south. In 1988 and 1989, the breeding population size in Washington, Oregon, California, and Nevada was estimated to be about 7900 birds, and in Utah about 1700. Most plovers (about 7700) were at interior sites, some (about 1900) were coastal. The estimated population size in 1988-1989 for Washington, California, Oregon and Nevada was about 20% lower than for 1977-1980. Numbers have declined on the Oregon coast since 1979. Several interior sites also had fewer birds in 1988-1989. Often these declines were associated with changes in habitat availability. Since 1978 plover numbers in the San Joaquin Valley have increased sharply at newly constructed agricultural waste water ponds. No surveys have been made in Mexico, Idaho, Arizona, or New Mexico.

Palmer, R.
19660000 ID: 7663
Hydrologic Study of the Great Salt Lake
Volume: *Issue:* *Page(s):*
Salt Lake City Utah Water and Power Board
File Name:

Pearce, Fred
19870611 ID: 2983
Banishing the salt of the Earth
New Scientist
Volume: 114 *Issue:* 1564 *Page(s):* 53-56
File Name: 19870611_pearce_c.pdf

Peelgren, M. L.
19820115 ID: 1616
Salton Sea Project: Phase 1. Final report
Volume: *Issue:* *Page(s):* 133
File Name:

A feasibility study was made for a salt gradient solar pond power plant in or near the Salton Sea of California. The conclusions are very supportive of continuing the project into the next phase; design and construction of a 5-MWe proof-of-concept experiment, and ultimate construction by an electric utility company of a 600-MWe plant. The Solar Pond concept will provide an environmental benefit to the Salton Sea by reversing the increasing salinity trend that, if unchecked, will eventually kill all life in the sea. The greatest cost drivers determined for the 5-MWe plant are the lake dike construction and pond sealing. Problems remaining to be resolved include method of brine production from Salton Sea water for the first unit (which will require evaporation pond area and time), the high turbidity and color content of the Salton Sea water (which will require pre-treatment), and other questions related to pond permeability, bio-activity and soil/brine chemical reactions. All technical and environmental problems appear solvable and/or manageable if care is taken in mitigating impacts.

Pequex
ID: 7916
Ecophysiology of salt acclimitisation in Crustacea - a mini review
Belgian Journal of Zoology
Volume: 124 *Issue:* *Page(s):* 49
File Name:

Pick, James B., and Edgar W. Butler
19790000 ID: 1666
Limiting factors on geothermal development, Imperial County, California, U. S. A.
Modelling, planning and decision in energy systems. M. H. Hamza, ed.
Volume: *Issue:* *Page(s):* 145-150
File Name:

Imperial County's geothermal-resource development is potentially limited by numerous factors. The County's geothermal electrical capacity, currently 11 MWe, is anticipated to reach 2500 to 6800 MWe by the year 2020. Six limiting factors of potential importance are examined: transmission lines, financing, politics, cooling water, direct-use transmission pipelines, and brine waste disposal. Routing and construction of high-voltage transmission lines of 1000-MWe capacity are essential, because the county is presently restricted by a local transmission network of only 300-MWe capacity. Financing is a limitation, because of the large sums of money required for power production (currently, about $1 million/MW of capacity). Political factors are likely to surface into major importance, if geothermal development threatens the present agribusiness orientation of the County, among other reasons. The origins of several recent geothermal leadership disputes are discussed. Another limitation is the supply, quality, and environmental impact of cooling water. The latter includes effects on agriculture and on the level and salinity of the Salton Sea . Direct-use transmission pipelines are a limiting factor, because of both high cost and environmental impacts. As geothermal capacity reaches maximum levels, brine waste disposal will become a problem, as brine reinjection is not always feasible.|;

Pimentel, K. D., R. R. Ireland, and G. A. Tompkins
19780404 ID: 1779
Chemical fingerprints to assess the effects of geothermal development on water quality in Imperial Valley
Volume: *Issue:* *Page(s):* 5
File Name:

A two-year baseline water quality study was conducted in the Imperial Valley. The data accumulated, together with the drinking and irrigation water criteria and the known costs of chemical analyses, augment findings on brine chemistry throughout the Valley and on constituents in the Vail 4A Drain, an agricultural drain in the Salton Sea KGRA. These suggest minimum parameters that should be monitored in future programs for water quality management during the development of the geothermal resources in Imperial Valley. They are concentrations of B, Li, Mn, Zn, Na, K, Ca, Mg, Cl, SO/sub 4/, CO/sub 3/, and HCO/sub 3/, TDS, SC, pH, and temperature. Arsenic, Se, Pb, and Ni should also be considered in the future because of their possible elevation in some brines above

Plumb, John A.
19970000 ID: 7910
Infectious Diseases of Tilapias.
Tilapia Aquaculture in the Americas, Volume One, Barry A. Costa-Pierce and James E. Rakocy, eds.
Volume: *Issue:* *Page(s):* 212-228
Baton Rouge, LA World Aquaculture Society
File Name:

Poff, N. LeRoy, J. David Allan, and Mark B.Bain
19971200 ID: 4517
The natural flow regime.
BioScience
Volume: *Issue:* *Page(s):*
File Name:

Polster, W., and H. L. Barnes
19900000 ID: 1429
Geothermal systems in sediment-filled rift valleys: Hydrodynamic and geochemical characteristics.
Fifteenth workshop on geothermal reservoir engineering: Proceedings
Volume: *Issue:* *Page(s):* 89-95 274 p.
Fifteenth workshop on geothermal reservoir enginee
File Name:

The authors have compiled detailed geophysical, hydraulic and geochemical data from numerous major liquid-dominated geothermal fields in order to develop a generalized hydrodynamic and geochemical model for typical geothermal systems which are found in sediment-filled rift valleys. The location of these geothermal fields is determined by their tectonic framework and associated structures like spreading ridges, subduction zones, and continental rifts. This study is dominated by the extensive data available on moderate to high temperature geothermal fields which are typically found within continental rifts or where oceanic spreading ridges extend onto the continent. Representative examples of this common type of geothermal systems are the East Mesa, Salton Sea (both USA), Cerro Prieto (Mexico), and Olkaria field (Kenya).

Polster, Wolfgang, and H. L. Barnes
19940000 ID: 3565
Comparative hydrodynamic and thermal characteristics of sedimentary basins and geothermal systems in sediment-filled rift valleys
American Association of Petroleum Geologists Memoir.
Volume: *Issue:* *Page(s):* 437-457
File Name:

Pomeroy, R. D., and H. Cruse
19651200 ID: 5899
A Reconnaissance Study and Preliminary Report on a Water Quality Control Plan for Salton Sea
Volume: *Issue:* *Page(s):* 239 p.
Pasadena Pomeroy, Johnston and Bailey Engineers
File Name: 19651200_pomeroy.pdf

Popper, D., and T. Lichatowich
19750000 ID: 7452
Preliminary success in predator contact of Tilapia mossambica
Aquaculture
Volume: 5 *Issue:* *Page(s):* 213-4
File Name:

Post, F. J.
19770000 ID: 7664
The microbial ecology of the Great Salt Lake
Microbial Ecology
Volume: 3 *Issue:* *Page(s):* 143-65
File Name:

Potts, W. T. W., M. A. Foster, P. R. Rudy, and G. Parry Howells
19670000 ID: 7759

Sodium and water balance in the cichlid teleost, Tilapia Mossambica
Journal of Experimental Biology
Volume: 47 *Issue:* *Page(s):* 461-470
File Name: 19670000_potts_c.pdf

Pozuelo, M., and L. M. Lubian
19930000 ID: 7765
Asexual and sexual reproduction in the rotifer Brachionus plicatilis cultured at different salinities
Hydrobiologia
Volume: 255-256 *Issue:* *Page(s):* 139-143
Belgium Kluwer Academic Publishers
File Name: 19930000_pozuelo_c.pdf

Pratt, H. R., and E. R. Simonson
19760100 ID: 1760
Geotechnical studies of geothermal reservoirs
Volume: *Issue:* *Page(s):* 56
File Name:

It is proposed to delineate the important factors in the geothermal environment that will affect drilling. The geologic environment of the particular areas of interest are described, including rock types, geologic structure, and other important parameters that help describe the reservoir and overlying cap rock. The geologic environment and reservoir characteristics of several geothermal areas were studied, and drill bits were obtained from most of the areas. The geothermal areas studied are: (1) Geysers, California, (2) Imperial Valley, California, (3) Roosevelt Hot Springs, Utah, (4) Bacca Ranch, Valle Grande, New Mexico, (5) Jemez Caldera, New Mexico, (6) Raft River, Idaho, and (7) Marysville, Montona. (MHR)|;

Premuzic, E. T., M. S. Lin, and L. Lian
19960400 ID: 2648
Recent advances in biochemical technology for the processing of geothermal byproducts
Volume: *Issue:* *Page(s):* 11p
File Name:

BNL-62987; CONF-9604116-3. Laboratory studies has shown the biochemical technology for treating brines/sludges generated in geothermal electric powerproduction to be promising, cost-efficient, and environmentally acceptable. For scaled-up field use, the new technology depends on the chemistry of the geothermal resources which influences choice of plant design and operating strategy. Latter has to be adaptable to high/low salinity, temperatures, quantity to be processed, and chemistry of brines and byproducts. These variables are of critical and economic importance in areas such as the Geysers and Salton Sea. The brines/sludges can also be converted into useful products. In a joint effort between industrial collaborators and BNL, several engineered processes for treating secondary and other byproducts from geothermal power production are being tested. In terms of field applications, there are several options. Some of these options are presented

Prentice, J. A.
19850100 ID: 4866
Orangemouth Corvina survival in the fresh water
Progressive Fish-Culturist
Volume: 47 *Issue:* 1 *Page(s):* 61-63
File Name: 19850100_prentice.pdf

Orangemouth corvina (Cynoscion xanthulus), Pacific Ocean sciaenids, have created a substantial fishery in the Salton Sea, a land-locked saltwater lake in southern California. The present study was conducted to determine if orangemouth corvina could tolerate fresh water and thereby be stocked into freshwater environments as a predator on overabundant forage species. All orangemouth corvina survived conversion to fresh water. After conversion to fresh water was initiated fish became more excitable and did not feed for the first 5-7 days: then feeding returned to normal. Fish remained excitable for approximately 8 weeks to the point that any movement over aquaria would cause fish to dart across the aquarium and often crash into the sides.

Prentice, J. A., R. L. Colura, and B. W. Bumguardner
19890000 ID: 5892
Observations on induced maturation and spawning of orangemouth corvina
California Fish and Game
Volume: 75 *Issue:* *Page(s):* 27-32
File Name:

Presser, T. S., M. A. Sylvester, and W. H. Low

19940500 ID: 8035
Bioaccumulation of Selenium from Natural Geologic Sources in Western States and its Potential Consequences
Environmental Management
Volume: 18 *Issue:* 3 *Page(s):* 423-436
File Name:

Ecological impacts of water-quality problems have developed in the western United States resulting from the disposal of seleniferous agricultural wastewater in wetland areas. Overt effects of selenium toxicosis occurred at five areas where deformities of wild aquatic birds were similar to those first observed at Kesterson National Wildlife Refuge in the west-central San Joaquin Valley of California. These areas are: Tulare Lake Bed Area, California, Middle Green River Basin, Utah, Kendrick Reclamation Project Area, Wyoming, Sun River Basin, Montana, and Stillwater Wildlife Management Area, Nevada. Potential for ecological damage is indicated at six more sites in Oregon, Colorado, the Colorado/Kansas border, and South Dakota out of 16 areas in 11 states where biological tissue data were collected. This conclusion is based on the fact that selenium bioaccumulated in bird livers to median levels that had exceeded or were in the range associated with adverse reproductive effects. Selenium concentrations in samples of fish and bird eggs support these conclusions at a majority of these areas. Reason for concern is also given for the lower Colorado River Valley, although this is not exclusively a conclusion from these reconnaissance data. Biogeochemical conditions and the extent of selenium contamination of water, bottom sediment, and biota from which this assessment was made are given here. In a companion paper, the biogeochemical pathway postulated for selenium contamination to take place from natural geologic sources to aquatic wildlife is defined.

Pullin, R. S. V., and R. H. Lowe-McVonnell (eds.)
19820000 ID: 7453
The biology and culture of tilapias
Volume: *Issue:* *Page(s):*
Manila International Centre for Living Aquatic Resources
File Name:

Quiros, G., A. Badan-Dangon, and P. Rida
19920300 ID: 8202
M2 Currents and Residual Flow in the Gulf of California
Neth J Sea Res
Volume: 28 *Issue:* 4 *Page(s):* 251-259
File Name:

The full nonlinear, vertically-averaged equations of motion are time integrated through a finite difference scheme on a regular grid that reproduces the topography of the Gulf of California with a mesh size of 14 km. The model is forced through a remote, open-ocean boundary to the south by a linear superposition of the incoming and outgoing Kelvin waves of the M2 tide. Friction, parameterized by a quadratic depth-dependent law, and a viscosity close to 10-3 .cntdot. m2 .cntdot. s-1, suffice to stabilize the model. The resulting maps of tidal elevations and phase agree adequately with those drawn by other authors from coastal observations. The computed tidal flows are dominated by the effects of the large bathymetric gradients; the current accelerate markedly in the narrows and straits around the Gulf's large islands, and effects of resonance and bottom friction are evident in the shallow northern Gulf. An average of the computed flow over an integral number of tidal cycles yield a residual circulation with typical values two orders of magnitude smaller than those of the instantaneous flow, organized in basin-wide closed cells with adjacent gyres rotating in opposite senses. The largest cell is a counterclockwise gyre found in the northern Gulf, which is probably driven by a transfer of tidal vorticity to the mean field through a bottom frictional torque. Residual flows are also important in the region of the large islands where the rectification is induced by the large topographic gradients in the channels and sills. The M2 residual circulation should remove a passive tracer from the upper Gulf in several months, or close to one year. No appreciable residual effects of the M2 tide are observed in the southern part of the Gulf.

Radecki, Mike, Majed Ibrahim, and Bonnie Arthur.
19941200 ID: 7949
Base Realignment and Closure Plan (BRAC) Cleanup Plan. Draft of Revision #1.
Volume: *Issue:* *Page(s):* 1 v.
San Diego U.S. Naval Facilities Engineering Command. Southwest Division.
File Name:

Radecki, Mike, Roy Yeaman, and Bonnie Arthur.
19970300 ID: 7950
Base Realignment and Closure Cleanup Plan (BCP) for Salton Sea Test Base, Imperial County, CA.
Volume: *Issue:* *Page(s):* 1 v.
U.S. Department of the Navy

File Name:

Radtke, D. B., W. G. Kepner, and R. J. Effertz
19880200 ID: 5894
Reconnaissance Investigation of Water Quality, Bottom Sediment, and Biota Associated with Irrigation Drainage in the Lower Colorado River Valley, Arizona, California, and Nevada, 1986-87
Water Resources Investigations Report
Volume: *Issue:* *Page(s):* 77 p.
Tucson, AZ U.S. Geological Survey
File Name: 19880200_radtke.pdf

Raimondi, Peter T.
19920400 ID: 2335
Adult plasticity and rapid larval evolution in a recently isolated barnacle population.
Biological Bulletin
Volume: 182 *Issue:* 2 *Page(s):* 210 11
File Name: 19920400_raimondi_c.pdf

Balanus amphitrite, a common barnacle species, was introduced into the landlocked Salton Sea in 1943 or 1944. In 1949, Balanus amphitrite from the Salton Sea was classified as the subspecies, Balanus amphitrite saltonensis, based upon morphological differences between Salton Sea and coastal individuals. This classification was maintained following an investigation of the Balanus amphitrite complex in 1975. Such a designation implies that the morphological divergence is underlain by genetic differences. Using field and laboratory transplantations, I tested the alternative hypothesis that the observed morphological divergence in the adult stage of Balanus amphitrite was the result of phenotypic plasticity. The results show that the divergence in the examined adult characters is in fact due to environmentally induced phenotypic plasticity. There were also phenotypic differences between larvae from the Salton Sea and those from coastal habitats that only became apparent during experimentation with the adult stage. Here, however, experimental results suggest that the divergence was due to an evolutionary process, probably selection. These results also provide the basis for two slightly precautionary conclusions: (1) the observation that individuals living in typical and novel habitats differ cannot even weakly indicate a cause for the difference, and (2) a consideration of the divergence of populations is incomplete if all of the life history stages of the organism are not studied.

Rakocy, James E.
19970000 ID: 7908
Integrating Tilapia Culture with Vegetable Hydroponics in Recirculating Systems.
Tilapia Aquaculture in the Americas, Volume One, Barry A. Costa-Pierce and James E. Rakocy, eds.
Volume: *Issue:* *Page(s):* 163-184
Baton Rouge, LA World Aquaculture Society
File Name:

Ramirez, B. V.
19930300 ID: 8280
Recovery Plan for the Vaquita, 'Phocoena sinus' (Final rept)
Volume: *Issue:* *Page(s):* 41 p.
File Name:

Rawlins, Tom, Mary E. Radel, and William McKay
19910000 ID: 4797
Controlling the Salinity of the Salton Sea - by transferring water to the Gulf of California
Bureau of Reclamation
Volume: *Issue:* *Page(s):*
File Name: 19911000_rawlins.pdf

Reed, J. M., N. Warnock, and L. W. Oring (eds.).
19970000 ID: 7857
Conservation and management of shorebirds in the western Great Basin of North America.
International Wader Studies
Volume: 9 *Issue:* *Page(s):* 1-81
File Name:

Reed. J. M., N. Warnock, and L. W. Oring.
19970000 ID: 7858

Censusing shorebirds in the western Great Basin of North America.
International Wader Studies
Volume: 9 *Issue:* *Page(s):* 29-36
File Name:

Reed, M.
19730800 ID: 1921
Imperial Valley.
Geothermal world directory 1973. Meadows, K. F., ed.
Volume: *Issue:* *Page(s):* 141-9
File Name:

<Augmentation> Potential source of electric power, heat, fresh water, and chemicals from geothermal resources

Reinecke, Ken, and Don Delnicki
19900000 ID: 4884
A Bibliographic Database for North American Waterfowl and Their Wetland Habitats
Research Information Bulletin
Volume: 90 *Issue:* 105 *Page(s):* 2 p.
U.S. Department of the Interior, Fish And Wildlife Serivce
File Name: 19900000_reinecke.pdf

Reisen, W. K., J. L. Hardy, and H. D. Lothrop
19950500 ID: 2785
Landscape Ecology of Arboviruses in Southern California: Patterns in the Epizootic Dissemination of Western Equine Encephalomyelitis and St. Louis Encephalitis Viruses in Coachella Valley, 1991-1992.
Journal of Medical Entomology
Volume: 32 *Issue:* 3 *Page(s):* 267-75
File Name: 19950500_reisen_c_2.pdf

Temporal and spatial patterns in the initiation and dissemination of western equine encephalomyelitis and St. Louis encephalitis virus activity in Coachella Valley during 1991 and 1992 were detected by testing pools of host-seeking Culex tarsalis Coquillett for virus infection and sentinel chickens for seroconversions. Both viruses repeatedly were detected first at a salt marsh adjacent to the Salton Sea in the southeastern corner of the study area and then disseminated to the northwest to freshwater marsh, agricultural, and residential habitats. Virus dissemination was relatively slow (< 1 km/d) and may have been accomplished by dispersive host-seeking mosquitoes. Repeated early-season recovery of virus activity indicated that both viruses may persist interseasonally in salt

Reisen, W. K., H. D. Lothrop, S. B. Presser, J. L. Hardy, and E. W. Gordon
19970300 ID: 2783
Landscape ecology of arboviruses in southeastern California: temporal and spatial patterns of enzootic activity in Imperial Valley, 1991-1994.
Journal of Medical Entomology
Volume: 34 *Issue:* 2 *Page(s):* 179-88
File Name: 19970300_reisen_c.pdf

Western equine encephalomyelitis (WEE) and St. Louis encephalitis (SLE) viruses were detected in the Imperial Valley during the summers of 1991-1994 by isolation from the primary vector, Culex tarsalis Coquillett, and by the seroconversion of sentinel chickens. Enzootic transmission consistently was not detected first each year at sampling sites near specific landscape features such as a heron rookery and other riparian habitats along the New River, sites along the Mexican border, or saline and freshwater marshes along the southern shore of the Salton Sea. Despite mild winter temperatures and the elevated vernal abundance of Cx. tarsalis, WEE and SLE activity was not detected until June or July, indicating considerable amplification may be necessary before detection by testing mosquito pools for virus infection or sentinel chicken sera for antibodies. Results did not permit the spatial focusing of early season control efforts or research on mechanisms of virus interseasonal persistence.

Rex, Robert W.
19830900 ID: 3016
Origin of the brines of the Imperial Valley, California. The Geological Society of America, 96th annual meeting
Volume: *Issue:* *Page(s):* 670
File Name:

Rhoades, James D.
19841000 ID: 7743
Use of Saline Water for Irrigation

California Agriculture
Volume: 38 *Issue:* 10 *Page(s):* 42-43
File Name: 19841000_rhoades_c.pdf

Rich, Julie
19920000 ID: 7665
Currents and circulation in Great Salt Lake
M.S. Thesis
Volume: *Issue:* *Page(s):*
University of Utah, Department of Geography
File Name:

Richards, T. L.
19780000 ID: 3547
Seed oyster production in the Salton Sea, California, USA.
Proceedings National Shellfisheries Association
Volume: 68 *Issue:* *Page(s):* 91
File Name: 19780000_richards_c.pdf
PNSFA

Riley, W. D., R. P. Walters, F. X. McCawley, G. R. Conner, and P. B. Needham, Jr.
19800000 ID: 1625
Well engineering and sampling variables in the evaluation of geobrines. Report of investigations/1980
Volume: *Issue:* *Page(s):* 25
File Name:

An analytical program has been conducted at the Avondale Research Center to determine the chemical constituents of some high- and low-salinity geobrines found in the Imperial Valley of California. Data are reported for the early stages of brine production of four geothermal wells--the low-salinity, medium-enthalpy brines from the East Mesa Known Geothermal Resource Area (KGRA), Mesa 6-1 and 6-2, and the high-salinity, high enthalpy brine from the Salton Sea KGRA, Magmamax 1 and Woolsey 1.|;

Rinehart, Roberta B., and Donald A. McFarlane
19950000 ID: 3697
Early Holocene Vegetation Record from the Salton Basin, California
Quaternary Research
Volume: 43 *Issue:* 2 *Page(s):* 259
File Name:

Plant and vertebrate macrofossils in an early Holocene fossil packrat (Neotoma sp.) midden with a radiocarbon age of 8640 +/- 100 C-14 yr B.P. are reported from the Chocolate Mountains, near the Salton Sea , Riverside County, California. An inventory of the midden has permitted a comparison of the modern flora and fauna of the site with that extant during the early Holocene. Whereas the biota had assumed most aspects of its modern Sonoran desert aspect by this date, statistically significant evidence of differences is attributed to an increased flow of surface water in Salt Creek, a high-standing, low-salinity Lake LeConte, and the late arrival of some characteristic Sonoran desert plants. These observations are consistent with models of significant fall-winter precipitation in the Sonoran Desert, although we cannot exclude alternative explanations. (C) 1995 University of

Riney, T. D., J. W. Pritchett, and S. K. Garg
19780000 ID: 1542
Salton Sea geothermal reservoir simulations
Transactions - Geothermal Resources Council
Volume: *Issue:* *Page(s):* 571-574
File Name:

The Salton Sea geothermal field (SSGF) is a high salinity, high-temperature resource. Intermittent brine production/injection has been performed since May 1976, but no associated fluid flow data have been published. However, the Lawrence Livermore Laboratory has correlated the data available from surface measurements and logs from various wells in the SSGF. The limited data base and the MUSHRM simulator have been used to synthesize a preproduction reservoir model for a portion of the SSGF. The simulator is applied to the model to examine reservoir performance under different assumptions to improve understanding of the system and its

Ririe, G. T.
19920000 ID: 1417

Structure and mineralization in the Salton Trough, California
Geological Society of America, Abstracts with Programs
Volume: *Issue:* *Page(s):* A24
File Name:

The Salton Trough (ST) is located in southeastern California and extends into northern Baja, Mexico. Structurally the ST consists of predominantly northwest-trending, right-lateral, strike-slip faults separated by a series of down-dropped basinal areas. A variety of processing techniques were used to enhance gravity and magnetic data which were used to help define the structural styles present in the sediment-filled ST, and to define the boundaries of the basinal areas. The system of strike-slip faults and related basinal areas in interpreted to be a late Neogene style of deformation that overprints an earlier-formed extensional basin. The intrusion of Neogene intrusive rocks into the sediment-filled ST has resulted in the development of a number of geothermal systems including the Salton Sea (SS) system. A characteristic feature of the commercially productive geothermal systems in the ST is the presence of high-temperature (> 250 C) saline brines. The chemistry of these brines varies widely within the ST. Data from a large number of analyses of the SS geothermal system brines and scales document the presence of a variety of metallic elements including: Pb, ZN, Cu, Mn, Ag, and Au. A variety of mineral deposits occur within and adjacent to the ST including the large open pit Mesquite gold mine. However, none of the gold deposits along the margin of the ST formed from a fossil geothermal system analogous to the SS system. Fossil analogs to SS type systems are suggested to be present in the Proterozoic Mt. Isa block in northern Australia. Deposits in this part of Australia consist of several world-class base metal deposits including the Mt. Isa mine. Structural controls on the localization of geothermal systems in the ST may be similar to those controlling the distribution of mineralization in ancient continental rift systems such as those in northern Australia.

Roberts, Carol A.
19971000 ID: 4892
Contaminants in Pelicans Collected During the Avian Botulism Event at the Salton Sea in 1996
Volume: *Issue:* *Page(s):*
U.S. Fish and Wildlife Service
File Name: 19971000_roberts.pdf

Roberts, Carol A.
19960600 ID: 4893
Trace Element and Organochlorine Contamination in Prey and Habitat of the Yuma Clapper Rail in the Imperial Valley, California
Volume: *Issue:* *Page(s):*
U.S. Fish and Wildlife Service
File Name: 19960600_roberts.pdf

Robinson
ID: 7921
An experimental study of phytoplankton feeding in three tilapias.
Journal of Fish Biology
Volume: 46 *Issue:* *Page(s):* 449
File Name:

Robinson, M. K.
19730000 ID: 8321
Atlas of Monthly Mean Sea Surface and Subsurface Temperatures in the Gulf of California, Mexico
San Diego Society of Natural History Memoir
Volume: *Issue:* 5 *Page(s):* 98 p.
File Name:

The atlas contains monthly mean sea temperature charts of the surface and four subsurface levels of the Gulf of California and the Pacific Ocean adjacent to the West Coast of Baja California, Mexico. The charts are presented in an expanded scale to show the complicated seasonal changes in sea temperature in the Gulf of California, and the great contrast between these temperatures and those on the Pacific side of Baja California.

Roedder, Edwin, and Kevin W. Howard
19881110 ID: 2612
Fluid inclusions in Salton Sea Scientific Drilling Project core: Preliminary results
Journal of Geophysical Research
Volume: 93 *Issue:* B11 *Page(s):* 13159-13164
File Name: 19881110_roedder_c.pdf

Fluid inclusions (191) in calcite, quartz, K-feldspar, and epidote from (roughly-equal)1-mm veinlets in cores and well cuttings from 604-2560 m homogenize from 217 degree to greater-than 500 degree C and vary widely in salinity, suggesting a complex history of fluids surrounding these samples. No daughter minerals were seen, and no

clathrates were recognized on freezing. Vapor-rich inclusions under pressure, presumably containing COSUB(2) and/or CHSUB(4), were found from a wide range of depths, suggesting that effervescence has occurred. Low-salinity fluids (1.2-4.0 wt per-cent NaCl eq) were present as deep as 1939 m. The data can be explained by a combination of processes such as thermal metamorphism of evaporites and other sediments and mixing of water from metamorphic dehydration reactions with partly evaporated Colorado River water. (copyright) American

Rogers, Austin Flint
19260400 ID: 3262
Geology of Cormorant Island, Salton Sea, Imperial County, California [abstract]
Pan-American Geologist
Volume: *Issue:* *Page(s):* 249-250
File Name:

Rogers, F. L.
19490000 ID: 5895
Three new species of Balanus amphitrite from California
Journal of Entomology and Zoology
Volume: 41 *Issue:* *Page(s):* 23-32
File Name:

Rogers, Herbert H., Julian J. Raynes, Frank H. Posey, Jr., and Willis E. Ruland
19730000 ID: 7974
Lake Destratification by Underwater Air Diffusion.
Man-made lakes: their problems and environmental effects. William C. Ackermann, Gilbert F. White [and] E. B. Worthington, editors. J. Loreena Ivens, associate editor.
Volume: *Issue:* *Page(s):* 572-577
Washington, DC American Geophysical Union
File Name: 19730000_rogers_c.pdf

Roman R., Martha
19980900 ID: 8338
Managing wetlands in northwestern Mexico
Endangered Species UPDATE
Volume: 15 *Issue:* 5 *Page(s):* SS12-SS13
File Name:

Rorabaugh, Jim
19940400 ID: 7699
An Analysis of Scat Counts as a Survey Method for the Flat-Tailed Horned Lizard (Phrynosoma mcallii)
Volume: *Issue:* *Page(s):* 78
File Name: 19940400_rorabaugh.pdf

Ross, W. H.
19150000 ID: 5896
The Chemical Composition of the Water of the Salton Sea and Its Annual Variation in Concentration
The Imperial Valley and the Salton Sink, H. T. Cory, ed.
Volume: *Issue:* *Page(s):* 37-41
San Francisco John J. Newbegin
File Name: 19150000_ross_c.pdf

Rothé, J. P.
19730000 ID: 7966
Summary: Geophysics Report.
Man-made lakes: their problems and environmental effects. William C. Ackermann, Gilbert F. White [and] E. B. Worthington, editors. J. Loreena Ivens, associate editor.
Volume: *Issue:* *Page(s):* 441-454
Washington, DC American Geophysical Union
File Name: 19730000_rothe_c.pdf

Rushforth, S. R. and Felix, E. A.
19820000 ID: 7666

Biotic adjustments to changing salinities in the Great Salt Lake, Utah, USA
Microbial Ecology
Volume: 8 *Issue:* *Page(s):* 157-61
File Name:

RWQCB
19580000 ID: 5898
Salton Sea Bacteriological Study
Volume: *Issue:* *Page(s):* 47 p.
California Bureau of Sanitary Engineering and Colo
File Name:

Saiki, Michael K.
19900000 ID: 2065
Elemental Concentrations in Fishes from the Salton Sea, Southeastern California.
Water, Air, and Soil Pollution
Volume: 52 *Issue:* 1-2 *Page(s):* 41-56
File Name: 19900000_saiki_c.pdf

BIOSIS COPYRIGHT: BIOL ABS. The Salton Sea is a 93 000 ha saline lake fed by drainage water from more than 283 000 ha of irrigated lands in the Imperial and Coachella valleys of California. A total of 21 composite samples of four recreationally important fish species- bairdiella (Bairdiella icistia), orangemouth corvina (Cynoscion xanthulus), sargo (Anisotremus davidsoni), and Mozambique tilapia (Tilapia mossambica)- collected there were analyzed for 14 elements. Twelve of these elements were detected in one or more of the samples: As, B, Co, Cu, Fe, Hg, Mo, Ni, Pb, Se, V, and Zn. Cadmium and T1 were not detected. The ranges in concentrations of elements in the skinless fillets of bairdiella, corvina, and sargo, and in whole bodies of all four fishes were comparable to levels that are typically measured in saltwater fishes. Only Se concentrations were elevated (as much as 14 mug g-1 dry weight in both fillets and whole bodies) in this series of samples. Elevated concentrations of Se have already led to public health advisories concerning the consumption of fish and might eventually cause the demise of fish and might eventually cause the demise of fish populations from toxic effects.

Salomons, W., and U. Fostner
19840000 ID: 7496
Metals in the Hydrocycle
Volume: *Issue:* *Page(s):*
Berlin, Heidelberg, New York, Springer-Verlag
Tokyo
File Name:

San Diego Source (Internet)
19960000 ID: 4908
Disease Killing Pelicans Now Felling Other Birds As Well
Volume: *Issue:* *Page(s):*
File Name:

Santa Maria Del Angel, E., S. Alvarez Borrego, and F. E. Muller Karger
19940415 ID: 8226
GULF-OF-CALIFORNIA BIOGEOGRAPHIC REGIONS BASED ON COASTAL ZONE COLOR SCANNER IMAGERY
Journal of Geophysical Research
Volume: 99 *Issue:* NC4 *Page(s):* 7411-7421
File Name:

Topographically, the Gulf of California is divided into a series of basins and trenches that deepen to the south. Maximum depth at the mouth is greater than 3000 m. Most of the northern gulf is less than 200 m deep. The gulf has hydrographic features conducive to high primary productivity. Upwelling events have been described on the basis of temperature distributions at the eastern coast during winter and spring and at the western coast during summer. Tidal amplitude may be as high as 9 m in the upper gulf. On the basis of discrete phytoplankton sampling, the gulf was previously divided into four geographic regions. This division took into consideration only the space distribution, taxonomic composition, and abundance of microphytoplankton. With the availability of the coastal zone color scanner (CZCS) imagery, we were able to include the time variability of pigments to make a more detailed biogeographic division of the gulf. With weekly composites of the imagery, we generated time series of pigment concentrations for 33 locations throughout the gulf and for the whole life span of the CZCS. The time series show a clear seasonal variation, with maxima in winter and spring and minima in summer. The effect of upwelling at the eastern coast is clearly evident, with high pigment concentrations. The effect of the summer upwelling off the Baja California coast is not evident in these time series. Time series from locations on the

western side of the gulf also show maxima in winter and spring that are due to the eddy circulation that brings upwelled water from the eastern side. Principal-component analysis was applied to define 14 regions. Ballenas Channel, between Angel de la Guarda and Baja California, and the upper gulf always appeared as very distinct regions. Some of these 14 regions relate to the geographic distributions of important faunal groups, including the benthos, or their life cycles. For example, the upper gulf is a place for reproduction and the nursery of many fish species, marine mammals and birds are specially abundant in Ballenas Channel, sardine spawning mostly occurs in the central gulf in spring, and shrimp are abundant off mainland Mexico.

Sastri, S., T. K. Vaidyanathan, H. E. Marsh, and R. L. French
19840900 ID: 2080
Material selection consideration for solar ponds
Volume: *Issue:* *Page(s):*
File Name:

Among the various candidate materials tested, stainless steel shows the best potential for applications as heat exchanger components in solar ponds. Even stainless steel may lead to pitting type of corrosion. Weight loss measurements are probably unsatisfactory for corrosion evaluation in solar pond situations. Also included are the results from the potentiodynamic anodic polarization analysis, corrosion rate calculation via corrosion behavior diagrams, and immersion weight loss measurements. (B.G.)

Schoenherr, A. A.
19790000 ID: 3508
Niche separation within a population of freshwater fishes in an irrigation drain near the Salton Sea, California.
Bulletin of the Southern California Academy of Sciences
Volume: 78 *Issue:* 1 *Page(s):* 46-55
File Name: 19790000_schoenherr_c.pdf

The fish fauna of the King Street canal is a mixture of native and introduced species. Inflow from a thermal well at 42 deg C and irrigation runoff at 22 deg C were responsible for a thermal gradient that, in addition to differences in flow, held fishes in remarkably pure species populations. On 19 March 1977, Cyprinodon macularius was found most abundantly in water 10 cm deep at 39 deg C. Gambusia affinis occurred in flowing water 25 cm deep at 32 deg C. Only Poecilia sphenops inhabited a cool water outflow 18 cm deep at 22 deg C. Downflow, Poecilia latipinna was taken most commonly in slow moving water up to 50 cm deep at 26 deg C, and Notropis lutrensis occurred in riffles up to 25 cm deep at similar temperatures. Flooding during late summer 1977 and subsequent reconstruction of the canal obliterated most of the habitat diversity. All five species survived, albeit seriously reduced in number, and the species sorting that was previously observed also was no longer in evidence. Thermal differences remained, and a pond was constructed that impounded hot water. Later, on 17 July 1978, the pond included Cyprinodon macularius, Gambusia affinis, Poecilia latipinna and a new introduction, Tilapia zilli. Downstream, Cyprinodon macularius, Poecilia sphenops, and Notropis lutrensis were taken in flowing water.

Schoenherr, A. A.
19850000 ID: 5902
Replacement of Cyprinodon macularius by Tilapia zilli in an irrigation drain near the Salton Sea
Proceedings of the Desert Fishes Council
Volume: 13 *Issue:* *Page(s):* 65-6
File Name:

Schoenherr, A. A.
19890000 ID: 5004
A Comparison of Two Populations of the Endangered Desert Pupfish (Cyprinodon macularius)
Volume: *Issue:* *Page(s):* 14
California Department of Fish and Game
File Name:

Schoenherr, A. A.
19920000 ID: 5005
The effect of a flash flood on the Salt Creek, Riverside County, population of the endangered desert pupfish
Proceedings of the Desert Fishes Council
Volume: 22 *Issue:* *Page(s):* 53-60
File Name: 19920000_schoenherr_c.pdf

Schoenherr, A. A.
19930000 ID: 7748

Rise and fall of the desert pupfish, Cyprinodon macularius, at the Salton Sea.
Ashes, faults and basins.
Volume: *Issue:* *Page(s):*
Redlands, CA San Bernardino County Musuem Association
File Name:

Schoenherr, A. A., and C. R. Feldmeth
19920600 ID: 5006
Thermal tolerances for relict populations of desert pupfish
Proceedings of the Desert Fishes Council
Volume: 23 *Issue:* *Page(s):* 49-51
File Name: 19920600_schoenherr_c.pdf

Schoenherr, Allan A.
19881200 ID: 5903
A review of the life history and status of the desert pupfish, Cyprinodon macularius
Bulletin of the Southern California Academy of Sciences
Volume: 87 *Issue:* 3 *Page(s):* 104-134
File Name: 19881200_schoenherr_c.pdf

Schroeder, R., J. Wolfe, and R. Effertz
19860000 ID: 5904
Work Plan for Irrigation Drainage Field Reconnaissance Study: Salton Sea Area, California
Volume: *Issue:* *Page(s):* 26 p.
San Diego U.S. Geological Survey
File Name:

Schroeder, R. A., D. U. Palawski, and J. P. Skorupa
19870321 ID: 7553
Selected toxic trace-element and pesticides concentrations in water, sediment, and biota from the Southern Tulare Lake Area near Kern National Wildlife Refuge, California
Selenium and Agricultural Drainage: Implications for San Francisco Bay and the California Environment (Selenium 4) (Alice Q. Howard, editor.)
Volume: *Issue:* *Page(s):* 142-62
Berkeley, CA
File Name:

Schroeder, Roy A., Donald U. Palawski, and Joseph P. Skorupa
19880200 ID: 7554
Reconnaissance Investigation of Water Quality, Bottom Sediment, and Biota Associated with Irrigation Drainage in the Tulare Lake Bed Area, Southern San Joaquin Valley, California, 1986-87
U.S. Geological Survey, Water-Resources Investigations Report
Volume: *Issue:* *Page(s):* vi, 86 p.
U.S. Geological Survey
File Name: 19880200_schroeder.pdf

Schroeder, Roy A., James G. Setmire, and John C. Wolfe
19880000 ID: 2903
Trace elements and pesticides in Salton Sea area, California.
Proceedings on Planning now for irrigation and drainage
Volume: *Issue:* *Page(s):* 700-707
Irrigation Division, American Society of Civil Engineers
File Name:

Seiler, R. L.
19960000 ID: 5906
Synthesis of data from studies by the National Irrigation Water-Quality Program
Water Resources Bulletin
Volume: 32 *Issue:* *Page(s):*
File Name:

Seiler, R. L., and J. P. Skorupa
19950500 ID: 7555
Identification of areas at risk for selenium contamination in the Western United States
American Institute of Hydrology Meeting
Volume: *Issue:* *Page(s):* 85-94
File Name:

Selenium Symposium (2nd: 1985: Berkeley, Calif.)
19850323 ID: 8094
Selenium and Agricultural Drainage: Implications for San Francisco Bay and the California Environment: Proceedings of the Second Selenium Symposium, March 23, 1985, Berkeley, California
Volume: *Issue:* *Page(s):* vi, 178 p.
Tiburon, CA Bay Institute of San Francisco
File Name: 19850323_selenium_c.pdf

Setmire, J. G., J. C. Wolfe, and R. K. Stroud
19900000 ID: 2069
Reconnaissance Investigation of Water Quality, Bottom Sediment, and Biota Associated with Irrigation Drainage in the Salton Sea Area, California, 1986-87.
Volume: *Issue:* *Page(s):* 68 p.
Sacramento, CA U.S. Geological Survey
File Name: 19900000_setmire.pdf

TD3: Water, bottom sediment, and biota were sampled during 1986-87 in the Salton Sea area to determine concentrations of trace elements and pesticides as part of the Department of Interior Irrigation Drainage Program. The sampling sites (12 water, 15 bottom sediment, and 5 biota) were located in the Coachella and Imperial Valleys. The focus of sampling was to determine if contaminants in irrigation drainage from Department of the Interior-sponsored irrigation projects have caused or have the potential to cause substantial harmful effects to humans, fish, or wildlife, or to reduce the suitability of water for beneficial uses. Results indicate that selenium is the major element of concern. Elevated concentrations of selenium in water were restricted to tile-drain effluent. The maximum selenium concentration of 300 micrograms per liter was detected in tile drain 6, and the minimum concentration of 1 microgram per liter was detected in a composite sample of Salton Sea water. The median selenium concentration was 19 micrograms per liter. In contrast to the water, the highest bottom-sediment selenium concentration of 3.3 milligrams per kilogram was in a composite sample from the Salton Sea . Concentrations of boron, chromium, nickel, zinc, and organochlorine pesticide residues were detected. Water-resources investigation. Prepared in cooperation with Fish and Wildlife Service, Washington, DC., and Bureau of Reclamation, Washington, DC.

Setmire, James
19990200 ID: 8136
Selenium in Water, Sediment, and Transplanted Corbicula in Irrigation Drainage and Wildlife Use of Drains in the Imperial Valley, California 1994-1995 (revised ed.)
Volume: *Issue:* *Page(s):* ix, 92 p.
U.S. Department of the Interior, National Irrigation Water Quality Program
File Name:

Setmire, James G.
19790700 ID: 2179
Water Quality Conditions in the New River, Imperial County, California
U.S. Geological Survey Water-Resources Report
Volume: *Issue:* *Page(s):* 63 p.
U.S. Geological Survey
File Name:

The new river flows North from the Colorado River Delta, across the international boundary at calexico, Calif., through the Imperial Valley, and into the Salton sea . The major constituents degrading the Quality of water in the new river at calexico are identified. Existing water Quality conditions in the new river from calexico to the Salton sea are described. The effects of the water crossing the international boundary at calexico on the river Quality as it flows into the Salton sea are discussed. DEMAND; DISSOLVED OXYGEN; REAERATION; CALIFORNIA; TURBIDITY; ORGANIC WASTES; MEXICO; EUTROPHICATION; WATER CHEMISTRY

Setmire, James G., and Roy A. Schroeder
19980000 ID: 4887
Selenium and Salinity Concerns in the Salton Sea Area of California
Environmental Chemistry of Selenium. W. T. Frankenberger, Jr., and R. A. Engberg, eds.

Volume: *Issue:* *Page(s):* 205-221
New York, Basel, Hong Kong Marcel Dekker, Inc.
File Name: 19980000_setmire_c.pdf

Setmire, James G., Roy A. Schroeder, Jill N. Densmore, Steven L. Goodbred, Daniel J. Audet, and William R. Radke
19930000 ID: 2188
Detailed Study of Water Quality, Bottom Sediment, and Biota Associated with Irrigation Drainage in the Salton Sea Area, California, 1988-90.
U.S. Geological Survey Water-Resources Investigations Report
Volume: *Issue:* *Page(s):* 102
File Name: 19930000_setmire.pdf

Water, bottom sediment, algae, periphyton, aquatic invertebrates, small forage fish, bullfrogs, turtles, and migratory and resident birds were sampled in the Salton Sea, California's largest inland waterbody, and analyzed for chemical contamination resulting from irrigation drainage. The sampling protocol is described. To correlate the sources of contamination, monthly subsurface drainwater samples were also collected and analyzed. The median selenium concentrations in subsurface drainwater indicated that approximately three-fourths of the discharge to the Salton Sea is water that had very low Se and dissolved-solids concentrations. Drainwater and agriculture-related contaminants included Se, boron, and DDE. A strong relationship between higher Se concentrations and higher trophic levels was found. Resident birds were exposed to Se levels in food items as great as 12 (gr)mg/g dry weight, which were high enough to cause a risk of embryotoxicity in 5% of eggs. Boron was found to bioaccumulate at most trophic levels in aquatic ecosystems, with highest levels in resident birds. DDE was detected in 99% of all samples analyzed, and the concentrations in biota were also correlated with trophic level. Resident bird species have probably experienced reproductive impairment due to the DDE contamination. A total of 19 organochlorine pesticide residues were detected in biota in the region. All relevant data are tabulated.

Severson, R. C., S. A. Wilson, and J. M. McNeal
19870000 ID: 5909
Analyses of Bottom Material Collected at Nine Areas in the Western United States for the DOI Irrigation Drainage Task Group
U.S. Geological Survey Open File Report
Volume: *Issue:* *Page(s):* 24 p.
Denver, CO U.S. Geological Survey
File Name: 19870000_severson.pdf

Shannon, D. W.
19780100 ID: 1807
Brine chemistry and combined heat/mass transfer. Volume 1.
Volume: 1 *Issue:* *Page(s):* 248
File Name:

The objective of this program is to develop analytical tools and a supporting data base to predict effects of scaling and corrosion on the performance of geothermal power plants, and the subsequent plant degradation in electric output and maintenance expense. The program includes development of several computer programs, the geochemistry of scale formation, laboratory scaling kinetics studies, and analyses of the composition of several field scale samples. A computer code called EQUILIB was developed to calculate pH at temperature, gas pressures, concentrations of brine components, and the amount of potential mineral precipitates at temperatures of 25 to 300/sup 0/C. The code is supported by an extensive data base of chemical equilibrium constants and a tabulation of brine compositions from literature sources. A laboratory scaling kinetics program indicates CaCO/sub 3/ deposits almost instantaneously when brine flashing occurs, and data are presented on effects of temperature and salinity. Power plant computer models were developed for multistage flash or binary cycle type geothermal power. These codes permit the user to input mineral scale thicknesses at over 90 locations in the plant to calculate the effects of the scale on plant operating parameters and electric output.

Shapovalov, Leo, Almo J. Cordone, and William A. Dill
19810100 ID: 3540
A List of the Fresh Water and Anadramous Fishes of California.
California Fish and Game
Volume: 67 *Issue:* 1 *Page(s):* 4-38
File Name: 19810100_shapovalov_c.pdf

This list is the 2nd revision of the check list of the freshwater, anadromous and euryhaline fishes of California published by Shapovalov and Dill (1950) and first revised by Shapovalov, Dill and Cordone (1959). The present list consists of a main list of native and established exotic species and 5 supplementary lists: native species extinct in California; exotic species unsuccessfully introduced or of uncertain status; marine fishes successfully introduced into the Salton Sea ; forms and names new to the main list since 1959; and forms and names removed from the main list since 1959. The main list is composed of 124 full species, comprising 66 native

freshwater and anadromous species, 13 native euryhaline or marine species which occasionally penetrate into fresh water and 45 introduced species. The 124 spp. comprise 25 families and 64 genera.

Sheldon, A. L.
19690000 ID: 8028
Multivariate Techniques in Limnology
Modeling the Eutrophication Process: Proceedings of a Workshop at St. Petersburg, November 19-21, 1969
Volume: *Issue:* *Page(s):* 216-223
U.S. Federal Water Quality Administration
File Name: 19690000_sheldon.pdf

Sherwood, J. E., F. Stagnitti, M. J. Kokkinn, and W. D. Williams
19920000 ID: 7637
A standard table for predicting equilibrium dissolved oxygen concentrations in salt lakes dominated by sodium chloride
International Journal of Salt Lake Research
Volume: 1 *Issue:* *Page(s):* 1-6
File Name:

Shiba, H., H. Yamamoto, and K. Horikoshi
19890000 ID: 2547
Isolation of strictly anaerobic halophiles from the aerobic surface sediments of hypersaline environments in California and Nevada.
FEMS Microbiology Letters
Volume: *Issue:* *Page(s):*
File Name: 19890000_shiba_c.pdf

Four strictly anaerobic, chemoorganotrophic halophiles were isolated from the hypersaline surface sediments of the evaporating closed lagoon at the rim of Salton Sea, California, and of Big Soda Lake, Nevada, whose condition was not strictly anaerobic. All of the isolates were Gram-negative, motile, non-spore-forming, moderately halophilic eubacteria and required a minimum concentration of 3-10% NaCl in the growth medium. Among the four isolates, strain SS-21 could grow at > 30% NaCl concentration, and strain M-20 was an alkalophite. Isolation of these bacteria suggests that a variety of anaerobic halophiles is widely distributed in hypersaline environments.

Shinn, Joseph H., ed.
19761217 ID: 1799
Potential effects of geothermal energy conversion on Imperial Valley ecosystems.
Volume: *Issue:* *Page(s):* 83 77 p.
[Livermore, CA] University of California, Lawrence Livermore Laboratory
File Name: 19761217_shinn.pdf

This workshop on potential effcts of geothermal energy conversion on the ecology of Imperial Valley brought together personnel of Lawrence Livermore Laboratory and many collaborators under the sponsorship of the ERDA Imperial Valley Environmental Project (IVEP). The LLL Integrated Assessment Team identified the electric power potential and its associated effluents, discharges, subsidence, water requirements, land use, and noise. The Working Groups addressed the ecological problems. Water resource management problems include forces on water use, irrigation methods and water use for crops, water production, and water allocation. Agricultural problems are the contamination of edible crops and the reclamation of soil. A strategy is discussed for predevelopment baseline data and for identification of source term tracers. Wildlife resources might be threatened by habitat destruction, powerline impacts, noise and disturbance effects, gas emissions, and secondary impacts such as population pressure. Aquatic ecosystems in both the Salton Sea and fresh waters have potential hazards of salinity and trace metal effects, as well as existing stresses; baseline and bioassay studies are discussed. Problems from air pollution resulting from geothermal resource development might occur, particularly to vegetation and pollinator insects. Conversion of injury data to predicted economic damage isneeded. Finally, Imperial Valley desert ecosystems might be threatened by destruction of habitat and the possible effects on community structure such as those resulting from brine spills.|;

Shinn, Joseph H., Robert R. Ireland, James R. Kercher, John J . Koranda, and Gary A. Tompkins
19790000 ID: 1736
Investigations of ecosystems impacts from geothermal development in Imperial Valley, California
Expanding the geothermal frontier / Geothermal Resources Council Annual Meeting, 24-27 September 1979, Reno,
Volume: *Issue:* *Page(s):* 651-654
Davis, CA Geothermal Resources Council
File Name: 19790000_shinn_c.pdf

A summary of three years of field ecological investigation in Imperial Valley Environmental Program is presented. The potential terrestrial habitat impacts of geothermal development are discussed for shorebirds and waterfowl

habitat, the endangered clapper rail, powerline corridors, noise effects, animal trace element burdens, and the desert community. Aquatic habitats are discussed in terms of Salton Sea salinity, effects of geothermal brine discharges to the Salton Sea, trace element baselines, and potential toxicity of brine spills in freshwater. Studies of impacts on agriculture involved brine movement in soil, release of trace metals, trace element baselines in soil and plants, water requirements of crops, and H/sub 2/S effects on crop production in the presence of CO/sub 2/

Shuford, W. D., G. W. Page, and J. E. Kjelmyr
19980000 ID: 7846
Patterns and dynamics of shorebird use of California's Central Valley.
Condor
Volume: 100 *Issue:* *Page(s):* 227-244
File Name: 19980000_shuford_c.pdf

Simpson, Everett Paul
19940000 ID: 8042
Salinity and Fish Effects on the Salton Sea Benthos [thesis]
Volume: *Issue:* *Page(s):* ix, 116 leaves
San diego, CA San Diego State University
File Name: 19940000_simpson_c.pdf

Simpson, P., S. Hurlbert, J. P. Grassle, A. Kelsey, E. Oates, and P. V. Snelgrove
19950000 ID: 1968
Salinity and Fish Effects on the Salton Sea Benthos
Twenty-Third Benthic Ecology Meeting
Volume: *Issue:* *Page(s):*
File Name:

A 15 month microcosm experiment determined the effects of salinity and tilapia on an assemblage of Salton Sea organisms. Microcosms were set up without tilapia at 30, 39, 48, 57, and 65 g/L and with tilapia at 39 and 57 g/L. Gammarus mucronatus dominated the benthos at the lower salinities and other macrofaunal and most meiofaunal species responding to salinity were most abundant at higher salinities. Tilapia reduced the macrofaunal species while smaller species increased. Salinity, Gammarus and tilapia structured the microcosm benthic community. Gammarus reduced the other species by predation and converted the sediment organic matter from algae to fecal pellets. Gammarus was reduced by tilapia and by reduced reproductive success above 39 g/L, allowing more species to compete under those conditions. Tilapia deposited loosely packaged fecal material which may support more meiofaunal species than either the robust Gammarus fecal pellets at 39 g/L or the algae-fecal pellet mix at

Sixtus, Michael E.
19780000 ID: 4833
Aspects of the Physiology and Biochemistry of Thermal Adaptation in Two Populations of Barnacles (Balanus Amphitrite Darwin)
Volume: *Issue:* *Page(s):*
File Name: 19780000_sixtus_c.pdf

Skogerboe, Gaylord V., and James P. Law, Jr.
19711100 ID: 2773
Research Needs for Irrigation Return Flow Quality Control
Volume: *Issue:* *Page(s):* 102
File Name:

There are a multitude of research needs regarding irrigation return flow quality, but only the specific research needs required to undertake an effective control program are described. These research needs include irrigation practices, soil-plant-salinity relationships, leaching requirements, prediction of subsurface return flow, cultural practices, irrigation scheduling, treatment of return flows, economic evaluations, and institutional control methods.

Skorupa, Joseph P.
19980000 ID: 4888
Selenium Poisoning of Fish and Wildlife in Nature: Lessons from Twelve Real-World Examples
Environmental Chemistry of Selenium
Volume: *Issue:* *Page(s):* 315-354
New York, Basel, Hong Kong Marcel Dekker, Inc
File Name: 19980000_skorupa_c.pdf

Sloan, Richard Charles, Jr.
19920600 ID: 2798
Development and application of a mass spectrometric system to study volatile components of fluid inclusions [M.S.
Volume: *Issue:* *Page(s):* 82 l.
Riverside, CA University of California
File Name:

A quadrupole mass spectrometric system coupled with mechanical decrepitation was constructed and calibrated to study fluid inclusions from an active geothermal system. Fluid inclusions in Salton Sea Scientific Drilling Project (SSSDP) well cores and ejecta from flow tests were analyzed. Ion currents from selected mass/charge ratio numbers were measured for gases from ruptured inclusions in epidote, calcite, and hematite vein minerals from different depths. Water, carbon dioxide, hydrogen sulfide, sulfur dioxide, and C1-C4+ hydrocarbons and free nitrogen were analyzed. Excess amounts of 32 AMU not attributable to hydrogen sulfide and sulfur dioxide were most probably due to oxygen from post-decrepitation surface reactions and sulfur from sulfides and mercaptans. Variations in gas compositions indicate single-phase trapping of a variable composition fluid. The differences between mass spectrometric analysis and direct flow test chemistry results can primarily be attributed to surface adsorptive effects during mass spectrometric analysis. If an amount of water 581 times that detected and an amount of carbon dioxide 57 times that detected are artificially added to the analysis results for an average hematite sample, reconciliation of ppm sulfur and carbon dioxide in the mass spectrometric analyses with flow test data is achieved, effectively calibrating the system for relative adsorption effects of water and carbon dioxide.

Slotta, L. S.
19730000 ID: 7959
Stratified Reservoir Density Flows Influenced by Entering Streamflows.
Man-made lakes: their problems and environmental effects. William C. Ackermann, Gilbert F. White [and] E. B. Worthington, editors. J. Loreena Ivens, associate editor.
Volume: *Issue:* *Page(s):* 311-315
Washington, DC American Geophysical Union
File Name: 19730000_slotta_c.pdf

Smayda, T. J.
19750100 ID: 8313
Net Phytoplankton and the Greater than 20-Micron Phytoplankton Size Fraction in Upwelling Waters Off Baja California
Fishery Bulletin
Volume: 73 *Issue:* 1 *Page(s):* 38-50
File Name:

Phytoplankton studies were carried out during the MESCAL II survey between 26 March and 6 April 1973 in an area centered off Baja California. Upwelling was then in its early stages. The composition of 22 collections of net phytoplankton (No. 20 net) and the composition and abundance of the non-setose size fraction greater than 20-micron collected at various depths at 13 stations are reported. The Coscinodiscus population and the non-setose component of the greater than 20-micron size fraction contributed only 1.2% and 4%, respectively, of the daily caloric ingestion estimated for the crab, Pleuroncodes planipes, previously reported to graze heavily on Coscinodiscus. The occurrence of the diatoms Coscinodiscus (Brenneckella) eccentricus and Planktoniella muriformis in these waters is apparently reported for the first time.

Snyder, J. Herbert, and Charles V. Moore
19740100 ID: 2184
Effect of Changing Water Quality and Supply on Imperial Valley,
NTIS Report
Volume: Pb-237 677 *Issue:* *Page(s):* 12
File Name: 19740100_snyder.pdf

Research was undertaken to investigate the short- and long-term effects of increased salinity and reduced water supply in the lower Colorado River on the economy of the Imperial Valley of California. The Imperial Valley irrigated agriculture phase investigated how agricultural production might be affected by change in quantity and Quality of irrigation water, including implications for farms of different sizes. A simulation model developed for the Salton sea area projected recreational use as a function of a large number of complex variables. A legal phase studied established laws and possible legislation and agreements to assess possible rights and remedies for California and lower basin water users regarding variation in water Quality. A Hydro-salinity model for an upper basin watershed was developed to evaluate contributions to salt loading from upland irrigated agriculture and from

Sokolov, A. A.
19730000 ID: 7956
Experience on Hydrologic Substantiation of Protected Reservoirs.
Man-made lakes: their problems and environmental effects. William C. Ackermann, Gilbert F. White [and] E. B. Worthington, editors. J. Loreena Ivens, associate editor.
Volume: *Issue:* *Page(s):* 264-271

Washington, DC American Geophysical Union
File Name: 19730000_sokolov_c.pdf

Solovov, V. P., and T. S. Studenikina
19930000 ID: 7638
Population dynamics of Artemia salina in lakes of the southern zone of west Siberia and prospects for utilization
Hydrobiological Journal
Volume: 29 *Issue:* 2 *Page(s):* 59-69
File Name:

Soule, John D.
19570100 ID: 5912
Two Species of Bryozoa Ctenostomata from the Salton Sea
Bulletin of the Southern California Academy of Sciences
Volume: 56 *Issue:* 1 *Page(s):* 21-30
File Name: 19570100_soule_c.pdf

Späth, Hans-Joachim
19740400 ID: 1985
Der Wasser- und Salzhaushalt des Salton Sea in Kalifornien.
Wasserwirtschaft
Volume: 64 *Issue:* 4 *Page(s):* 106-108
File Name: 19740400_späth_c.pdf

Spearman, M. G.
19930900 ID: 8277
Water Masses and the Thermohaline Circulation at the Entrance to the Gulf of California [Master's thesis]
Volume: *Issue:* *Page(s):* 233 p.
File Name:

CTD data obtained during the period 28 December 1992 to 08 January 1993 are used to examine the hydrography and water mass distributions at the entrance to the Gulf of California. Data were collected for one across- and one along-gulf transection that intersected near the Gulf's mouth. The circulation at the Gulfs entrance was generally cyclonic. In the upper 200 m, a narrow, high-salinity core of strong baroclinic outflow (max speed 72 cm/sec) traversed the western sector of the region. The high-salinity (S >/-34.9) component of the core correlates to Gulf Water that originates in the inner-Gulf. Partitioned at the mid-basin Alarcon Seamount, the mouth's eastern sector was characterized by numerous bands of reverse flow, including inflowing cores of fresher (S </- 34.6) water from the Pacific. The estimated net transport across this section was a 1.9 Sv inflow, with the majority of the flow occurring below 500 m. Comparison with data from an April 1992 cruise along the same across-gulf transection revealed greater transport and the notable absence of Gulf Water. The April circulation may represent simple recirculation of waters resident across the region. Water mass distribution, Thermohaline circulation, Geostrophy, Baroclinic flow, Volume transport.

Sposito, G.
19790700 ID: 1727
Trace metal speciation in saline waters affected by geothermal brines. Final technical report.
Volume: *Issue:* *Page(s):* 71
File Name:

The computer program GEOCHEM was developed and applied to calculate the speciation of trace elements, such as Li, B, Mn, Co, Ni, Cu, Zn, Pb, and As, in mixtures of geothermal brines with soil waters. A typical speciation calculation involved the simultaneous consideration of about 350 inorganic and organic complexes and about 80 possible solid phases that could form among the macro- and microconstituents in the mixtures. The four geothermal brines chosen for study were from the East Mesa, Heber, and Salton Sea KGRA's. Two examples of East Mesa brine were employed in order to illustrate the effect of brine variability within a given KGRA. The soil waters chosen for study were the Holtville, Rosita, and Vint soil solutions and the Vail 4 drain water. These waters were mixed with the four brines to produce 1%, 5%, and 10% brine combinations. The combinations then were analyzed with the help of GEOCHEM and were interpreted in the context of two proposed general contamination scenarios. The results of the speciation calculations pointed to the great importance, in brine, of sulfide as a precipitating agent for trace metals and of borate as a trace metal-complexing ligand. In general, precipitation and/or exchange adsorption in soil were found to reduce the levels of trace metals well below harmful concentrations. The principal exceptions were Li and B, which did not precipitate and which were at or very hear harmful levels in the soil water-brine mixtures.|;

Sposito, G., and A. L. Page

19771100 ID: 1817
Trace metal speciation in saline waters affected by geothermal brines.
Volume: *Issue:* *Page(s):* 121
File Name:

A description is given of the chemical equilibrium computer program GEOCHEM, which has been developed to calculate trace element speciation in soil, irrigation, drainage, or Salton Sea waters affected by geothermal brine. GEOCHEM is applied to irrigation water-brine mixtures and to Salton Sea water-brine mixtures in order to compute the chemical speciation of the elements Cd, Cu, Hg, Ni, Pb, and Zn, along with the oxyanions of As and B. The results suggest that the computer simulation can have an important effect on a program for managing brine spills. Appendices include published papers on related research.|;

Squires, R. L.
ID: 3522
Eocene macropaleontology of Northern Lockwood Valley Ventura County, California, USA
Volume: *Issue:* *Page(s):*
File Name:

The Juncal Formation?, composed mainly of muddy siltstone, crops out in northern Lockwood Valley just south of Mount Pinos, southern California. Forty-six taxa, represented by one solitary coral, one annelid, one scaphopod, 31 gastropods, and 12 bivalves have been recovered. Two new species are described and named: Coccodentalium emersoni new species, the first record of Coccodentalium in North America and the earliest known record anywhere in the world, and Arene mcleani new species, the first recognized Paleogene species of this genus on the West Coast. Macrofossils are scarce, usually fragmented, and found in lenses in the lower and uppermost parts of the 605-m-thick formation. The amount of postmortem transport was not great, and the macrofossils are inferred to have lived in warm-temperate to subtropical seas along a protected rocky coast that extended into transition-zone depths less than about 60 m. Deposition of the primarily transgressive sequence coincided with the early Eocene sea-level rise (TE1.2 of Vail and Hardenbol, 1979). The macrofossils indicate an early Eocene age ('Capay Stage') for the entire formation. The molluscan stage range of the following species and subspecies can now be extended to include the 'Capay Stage' based on the presence of these species in the formation: Homalopoma umpquaensis domenginensis, Turritella buwaldana, Turritella uvasana hendoni s.l., Xenophora stocki, Galeodea (Caliagaleodea) californica, Trypanotoma stocki, Olequahia domenginica, Conus caleocius, and Glyptoactis (Claibornicardia) domenginica. Geochronologically, the Juncal Formation? in the northern Lockwood Valley area is the same age as the lower Juncal Formation in the Pine Mountain and Whitaker Peak areas; the lower part of the Llajas Formation in the Simi Valley area; and the Maniobra Formation in the Salton Sea area, all in southern California. The Juncal Formation? in the study area is most similar lithostratigraphically to the lower Juncal Formation in the Pine Mountain and Whitaker Peak areas.

St. Amant, J. A.
19660000 ID: 5900
Addition of Tilapia mossambica Peters to the California fauna
California Fish and Game
Volume: 52 *Issue:* *Page(s):* 545
File Name:

St. Amant, J. A.
19660000 ID: 5901
Progress Report of the Culture of Tilapia mossambica (Peters) Hybrids in Southern California
Inland Fisheries Administrative Report
Volume: 66-9 *Issue:* *Page(s):* 25 p.
California Department of Fish and Game
File Name:

St. Amant, J. A., and J. S. Day
19720000 ID: 7485
Range extension of Palaemonetes paludosus (Gibbes) in Califonia
California Fish and Game
Volume: 58 *Issue:* *Page(s):* 154-5
File Name:

Stearns, R. E. C.
19020000 ID: 7487
The fossil freshwater shells of the Colorado Desert, their distribution, environment, and variation
U.S. Nat. Mus. Proc.
Volume: 24 *Issue:* *Page(s):* 271-99
File Name:

Stephen, Michael F.
19730000 ID: 3208
Sedimentary aspects of the New River Delta, Salton Sea, Imperial County, California
Volume: *Issue:* *Page(s):*
LA, CA University of Southern California
File Name: 19730000_stephen_c.pdf

Stephen, Michael F., and Donn S. Gorsline
19750000 ID: 3201
Sedimentary aspects of the New River Delta, Salton Sea, Imperial County, California.
Deltas, models for exploration. Broussard, Martha Lou, ed.
Volume: *Issue:* *Page(s):* 267-282 555
[Houston] Houston Geological Society
File Name: 19750000_stephen_c.pdf

Stephens, D. W., and D. M. Gillespie
19760000 ID: 7667
Phytoplankton production in the Great Salt Lake, Utah, and a laboratory study of algal response to enrichment
Limnology and Oceanography
Volume: 21 *Issue:* 1 *Page(s):* 74-87
File Name:

Stephens, Doyle
19740000 ID: 7668
A summary of biological investigations concerning the Great Salt Lake, Utah (1861-1973)
Great Basin Naturalist
Volume: 34 *Issue:* 3 *Page(s):* 221-9
File Name:

Stephens, Doyle, and Ted Arnow
19870000 ID: 7669
Fluctuations of water level, water quality, and biota of Great Salt Lake, Utah 1847-1986
Cenozoic Geology of Western Utah: Sites for Precious Metal and Hydrocarbon Accumulations, Utah Geological Association Publication
Volume: 16 *Issue:* *Page(s):* 182-94
File Name:

Stewart, K. C., D. L. Fey, P. L. Hageman, K. R. Kennedy, A. H. Love, R. E. McGregor, C. S. E. Papp, T. R. Peacock, J. D. Sharkey, R. B. Vaughn, and E. P. Welsch
19920000 ID: 2852
Results of chemical analysis for sediments from Department of the Interior National Irrigation Water Quality Program studies, 1988-1990
U.S. Geological Survey Open File Report
Volume: *Issue:* *Page(s):* 38 p.
File Name: 19920000_stewart.pdf

Stickney, R. R.
19860700 ID: 7754
Tilapia Tolerance of Saline Waters: A Review
Progressive Fish-Culturist
Volume: 48 *Issue:* 3 *Page(s):* 161-167
File Name: 19860700_stickney_c.pdf

Stickney, Robert R.
19970000 ID: 7906
Tilapia Nutrition, Feeds and Feeding
Tilapia Aquaculture in the Americas, Volume One, Barry A. Costa-Pierce and James E. Rakocy, eds.
Volume: *Issue:* *Page(s):* 34-54
Baton Rouge, LA World Aquaculture Society
File Name:

Stoeckenius, W.
19760600 ID: 7640
The purple membrane of salt-loving bacteria
Scientific American
Volume: *Issue:* June *Page(s):* 38-47
File Name:

Straškraba, Milan
19730000 ID: 7969
Limnological Basis for Modeling Reservoir Ecosystems.
Man-made lakes: their problems and environmental effects. William C. Ackermann, Gilbert F. White [and] E. B. Worthington, editors. J. Loreena Ivens, associate editor.
Volume: *Issue:* *Page(s):* 517-535
Washington, DC American Geophysical Union
File Name: 19730000_straskraba_c.pdf

Studemeister, P. A.
19850000 ID: 3377
A hypothesis for base and noble metal deposits.
Geologische Rundschau
Volume: *Issue:* *Page(s):* 51-59
File Name:

Chemical deposits in the Red Sea, Salton Sea and Cheleken Peninsula have concentrations of Cu, Zn, Pb, Ag and some Au. Brines emanating from these base-metal systems have >10% Cl and have chalcophile metals in excess of sulphide in solution. Siliceous sinters laden with Au, Ag, Hg and Sb exists around vents and wells in California, western Nevada, and New Zealand. Hot CO'SUB 2'-H'SUB 2'O fluids that exhale from these noble-metal systems have <2% Cl and sulphide in excess of chalcophile metals. Some geothermal systems around the world have features intermediate between these two end-members. Cu-Fe and Ag-Au concentrations occur around the margin of an Archaean felsic stock in the Wawa greenstone belt in Ontario, Canada. The interpretation is that an initial sea-water-dominated system concentrated exhalites rich in base metals. This culminated with regional metamorphism and the concentration of precious-metal-bearing veins from low salinity

Sturm, Ken
19970205 ID: 4886
Biologically Sensitive Areas of Salton Sea (memorandum)
Volume: *Issue:* *Page(s):* 3 p.
File Name: 19970205_sturm.pdf

Sturrock, Alex M., Jr.
19770300 ID: 2247
Evaporation and Radiation Measurements at Salton Sea, California
U.S. Geological Survey Open File Report
Volume: *Issue:* *Page(s):* 42 p.
Bay St. Louis, MO U.S. Geological Survey
File Name:

Evaporation from the Salton Sea, Calif., was computed for a 539-day period between July 14, 1967, and January 2, 1969, by use of energy-budget, mass-transfer, and water budget methods. The total evaporation computed by the three methods agreed within 5 percent. The values of heat transfer to and from the bed were used in the energy-budget computations. Monthly evaporation computed by the energy-budget method for 1968 showed that the Salton Sea exhibited a double wave evaporation similar to that of oceans in the same latitude. Weekly and montly comparisons were made to determine if radiation measured by the flat-plate radiometer is seasonally biased. These comparisons indicate that the measurements of radiation by the flat-plate radiometer are not seasonally biased, and that the Cummings Radiation Integrator gives reliable measurements of radiation for periods as short as 1 week. An empirical mass-transfer coefficient, N, as determined from energy-budget measurements. The value of this coefficient to give evaporation in inches per day is 0.00245 when the windspeed is expressed in miles per hour and the vapor pressure expressed in millibars. (Woodard-USGS)

Sturrock, Alex M., Jr.
19780000 ID: 3513
Evaporation and Radiation Measurements at Salton Sea, California.
U.S. Geological Survey Water-Supply Paper
Volume: *Issue:* *Page(s):* iv, 26 p.

Washington, DC U.S. Government Printing Office
File Name: 19780000_sturrock.pdf

Evaporation from the Salton Sea , California, USA, was computed for a 539-day period between 14 July 1967 and 2 January 1969 by use of energy-budget, mass-transfer, and water-budget methods. The total evaporation computed by the three methods agreed within 5 percent. Comparisons of weekly and monthly values of radiation measured by a radiation integrator and three flat-plane radiometers indicate that radiation measured by these instruments is not seasonally biased. An empirical mass-transfer coefficient, n, was determined from

Summers, W. K., and G. E. Schwab
19700000 ID: 2259
A Survey of Saline Ground Water as a Mineral Resource
Saline Water, Mattox, R. B, ed. AAAS, Committee on Desert and Arid Zone Research, Contribution
Volume: 13 *Issue:* *Page(s):* 31-45
File Name:

SALINE GROUND WATER HAS OFTEN BEEN EXPLOITED AS A SOURCE OF FRESH WATER WITH WASTE MINERAL BYPRODUCTS, BUT THIS CONCEPT HAS GRADUALLY CHANGED INTO ONE OF MINING FOR MINERAL VALUE WITH POTABLE WATER AS A BONUS. VARIOUS DEFINITIONS AND CLASSIFICATIONS OF SALINE WATER ARE REVIEWED. IN GENERAL, SALINE GROUND WATERS OCCUR IN ONLY A FEW GEOLOGIC SETTINGS: SEDIMENTARY BASINS, STRUCTURAL TROUGHS, THERMAL AREAS AND MISCELLANEOUS ISOLATED AREAS. WATERS CURRENTLY USED FOR THEIR MINERAL CONTENT ARE BRINES (35,000 PPM DISSOLVED SOLIDS), BUT IMPROVED TECHNOLOGY SHOULD FACILITATE THE EXPLOITATION OF SALINE WATERS OF LOWER CONCENTRATIONS. BECAUSE HOT WATER IS A MORE EFFECTIVE SOLID THAN COLD WATER AND HAS HIGHER SATURATION LEVELS, SOME OF THE MOST CONCENTRATED BRINES ARE THERMAL WATERS. THE MINERAL CONSTITUENTS THAT COULD BE UTILIZED AND WHERE THEY MIGHT BE FOUND, ARE CONSIDERED. PARTICULAR ATTENTION IS PAID TO THE SALTON SEA GEOTHERMAL AREA AND TO THE PERMIAN BASIN OF SOUTHEASTERN NEW MEXICO. THE LACK OF DETAILED DATA COMBINED WITH INADEQUATE HYDROMETALLURGICAL PROCEDURES ARE PROBLEMS THAT WILL SOON BE OVERCOME. (SEE ALSO W72-01749) (CASEY-ARIZONA)

SUN Utility Network Inc. Los Angeles
19970600 ID: 7587
Proposal For The Salton Sea Restoration Pilot Demonstration Projects: A Salinity Reduction and Wastewater Treatment Strategy and an Economic Development Incentive Program
Volume: *Issue:* *Page(s):*
Imperial, CA Salton Sea Authority
File Name:

Swajian, Arthur
19860000 ID: 3424
Salton Sea: Its Problems and Competing Uses
Toxic substances in agricultural water supply and drainage: defining the problems. Proceedings. 1986 Regional Meetings. U.S. Committee on Irrigation and Drainage. Summers, J. B., and S. S. Anderson, eds.
Volume: *Issue:* *Page(s):* 245-250
Denver, CO U.S. Committee on Irrigation and Drainage
File Name: 19860000_swajian_c.pdf

Szesztay, K.
19730000 ID: 7955
Summary: Hydrology and Man-Made Lakes
Man-made lakes: their problems and environmental effects. William C. Ackermann, Gilbert F. White [and] E. B. Worthington, editors. J. Loreena Ivens, associate editor.
Volume: *Issue:* *Page(s):* 259-263
Washington, DC American Geophysical Union
File Name: 19730000_szesztay_c.pdf

Takashima, Isao
19890331 ID: 5829
Session 1988 of GRC and geothermal development in the Imperial Valley and cerro Prieto district
Chinetsu Gijutsu (Japan)
Volume: *Issue:* *Page(s):* 15-27
File Name:

This paper describes some noticeable points of the session 1988 of GRC, held at San Diego, and the impression gained during the author's visit to the Imperial Valley and Cerro Prieto geothermal districts. Giving a brief account

of the session, the author confines himself chiefly to those subjects which are related to the geothermal exploration and development in the Imperial Valley district as follows; the chronology of sedimentary layers, the sulfur content of geothermal waters and the effect of high salinity fluids on geothermal convection system. Visiting the three geothermal power stations, Ormesa II, Magma Vulcan and Unocal/Desert, in the Imperial Valley district and the Cerro Prieto district, the author takes special interest in the apparatus of the Magma Vulcan power plant which separates saline solutes from high salinity thermal water and in the big evaporation pond of the Cerro Prieto power station which disposes of thermal water discharged from the plant. 6 figs., 1 tab.

Talling, J. F., and Wood. R.B.
19730000 ID: 7641
The upper limit of photosynthetic productivity by phytoplankton: evidence from Ethiopian soda lakes
Freshwater Biology
Volume: 3 *Issue:* *Page(s):* 53-76
File Name:

Tanji, K. K.
19930500 ID: 3711
Prognosis on managing Trace Elements
Journal of Irrigation and Drainage Engineering
Volume: 119 *Issue:* 3 *Page(s):* 577-583
File Name:

Concern over the potentially toxic effects of trace elements in agricultural drainage waters has been aroused by the discovery of selenium poisoning of wildlife at Kesterson Reservoir, California, and was heightened further through discovery of elevated levels of selenium in shallow ground water underlying extensive areas of San Joaquin Valley's west side. Recent investigations by the U.S. Department of the Interior's National Irrigation Water Quality Program (NIWQP) revealed that similar trace-element problems exist in several other western states including Nevada, Utah, Wyoming, and Colorado, as well as the Tulare Lake Bed and Salton Sea in California. Management options assessed for trace elements discharged from irrigated lands include source control, drain-water reuse, drain-water treatment, and removal of contaminants. disposal, and institutional and jurisdictional control measures. A combination of source control and other drainage-water-management options has the potential to reduce the toxic-element problem. An initial prognosis indicates that a status quo scenario will be unacceptable to the public. Agriculture will be increasingly challenged in its use of water and land resources and the perceived impacts on the quality of the environment. The effect of drainage reduction and other management options on reducing the discharge of trace elements is, to some extent. influenced by site-specific conditions. The economic viability of agriculture will be severely tested in the most severely trace-element-impacted lands, water. and biota, and this may lead to changes in land use.

Tardiff, G. E.
19770000 ID: 1804
Using Salton Sea Geothermal brines for electrical power: a review of progress in chemistry and materials technology, 1976 status.
Proceedings of the 12th intersociety energy conversion engineering conference. Vol. II
Volume: 2 *Issue:* *Page(s):* 1723-1732
12th intersociety energy conversion engineering co
File Name:

Geothermal energy development research at the Lawrence Livermore Laboratory through 1976 has been aimed at solving the problems associated with the use of high-temperature, high-salinity brines found in the Salton Sea Geothermal Field for their practical conversion to electrical energy. Specifically, part of the program has been oriented toward solving the problems of scale and solids deposition and corrosion of system components that are exposed to the highly mineralized brines. Brine acidification was found to be a promising method for controlling scale and solids deposition. Titanium, zirconium, and chromium-molybdenum alloys were found to be of the best economical corrosion-resistant materials for use in various parts of a total-flow turbine system. Scale and solids control and materials tests for conversion systems based on brine flashing are currently being evaluated. Some initial results and test plans are discussed.

Tardiff, G. E., and E. O. Snell
19790729 ID: 1733
Failure analysis of a Hastelloy C-276 geothermal injection pump shaft
Volume: *Issue:* *Page(s):* 7
File Name:

A metallurgical analysis of a fractured Hastelloy C-276 brine injection pump shaft was carried out to determine the cause of failure. Loss of load carrying cross section due to intergranular corrosion by molten bronze bearing alloy followed by torsional overload of the remaining section was the cause of failure. Lack of evidence for brine induced corrosion or stress corrosion of the Hastelloy C-276 alloy is consistent with prior successful experience with this material in contact with high temperature, high salinity Salton Sea Geothermal Field brines.|;

Teichert-Coddington, David R., and Bartholomew W. Green
19970000 ID: 7907
Experimental and Commercial Culture of Tilapia in Honduras.
Tilapia Aquaculture in the Americas, Volume One, Barry A. Costa-Pierce and James E. Rakocy, eds.
Volume: *Issue:* *Page(s):* 142-162
Baton Rouge, LA World Aquaculture Society
File Name:

Thiery, Richard
ID: 7687
The Aquatic Ecosystem of the Salton Sea
Volume: *Issue:* *Page(s):* 7 p.
File Name: 00000000_thiery_c.pdf

[Thiery, Richard]
19981019 ID: 8170
The Potential Impact of Rising Salinity on the Salton Sea Ecosystem [draft]
Volume: *Issue:* *Page(s):* 12 p.
Salton Sea Science Subcommittee
File Name: 19981019_thiery.pdf

Thomas, Robert G.
19630000 ID: 3252
The late Pleistocene 150 foot fresh water beach line of the Salton Sea area
Bulletin of the Southern California Academy of Sciences
Volume: 62 *Issue:* *Page(s):* 9-18
File Name:

Thomson, D. A., A. R. Mead, and J. R. Schrieber
19690300 ID: 8323
Environmental Impact of Brine Effluents on Gulf of California
Volume: *Issue:* *Page(s):* 207 p.
File Name:

Available literature has been reviewed for the purpose of determining the possible effect of introducing large volumes of brine effluent from large size desalting plants on the marine ecology of the Gulf of California. Data on the climatology of the northern gulf region, the temperature, salinity and dissolved oxygen content of the gulf waters, and the tides and tidal currents were summarized from existing reports. Heat budget calculations were made to show annual mean temperature increases above ambient values resulting from the mixing of effluent with sea water. The extent of the biological effect on the environment was assessed from assumed degree of mixing with respect to diffusing the effluent in sea water to mining thermal and salinity gradients.

Thompson, W. F., and E. Higgins
19200000 ID: 5920
Notes from the state fisheries laboratory, investigation of the Salton Sea
California Fish and Game
Volume: 6 *Issue:* *Page(s):* 83-4
File Name:

Thompson, Will F., and Harold C. Bryant
19200400 ID: 4863
The Mullet Fisheries of Salton Sea
California Fish and Game
Volume: 6 *Issue:* 2 *Page(s):* 60-3
File Name: 19200400_thompson_c.pdf

Thornton, E. C., and W. E. Seyfried, Jr.
19850000 ID: 3394
Sediment-sea-water interaction at 200 and 300'SUP o'C, 500 bars pressure: the role of sediment composition in diagenesis and low-grade metamorphism of marine clay.
Geological Society of America Bulletin

Volume: *Issue:* *Page(s):* 1287-1295
File Name: 19850000_thornton_c.pdf

The development of acidity is attributed to the formation of smectite, whereas the oxidation state of the fluids was dependent on the relative proportions of ferromanganese oxide phase, ferrous-rich silicate phases, and organic carbon. Silica concentrations in the experimental fluids ranged from cristobalite to amorphous silica saturation levels in response to the dissolution of amorphous silica. Comparison of fluid data and mineralogical assemblages from the Gulf Coast and Salton Sea regions with experimental results suggests that alteration processes in sedimentary basins can, in large part, be attributed to water-rock interaction. -from Authors

Tickle, Ronald, et al.
19930900 ID: 7952
Final Preliminary Assessment Report, Salton Sea Test Base, Imperial County, California.
Volume: *Issue:* *Page(s):* 1 v.
File Name:

Timms, B. V.
19720000 ID: 7642
A meromictic lake in Australia
Limnology and Oceanography
Volume: 17 *Issue:* 6 *Page(s):* 918-22
File Name:

Treseder, R. S., and R. Wieland
19770000 ID: 1775
Down-hole corrosion in a Salton Sea geothermal well. Paper No. SPE 6613.
Proceedings of the international symposium on oilfield and geothermal chemistry
Volume: *Issue:* *Page(s):* 241-248
International symposium on oilfield and geothermal
File Name:

Corrosion data were obtained in a well in the Salton Sea Geothermal Field. These data were obtained from inspection of steel tubing removed from the 4200-foot well and from specimens of various alloys exposed at the bottom of the well. Analyses were made of scale on the tubing surface at five locations of varying depth. Corrosion data were obtained also from specimens exposed in surface equipment handling the steam and high salinity brine produced by the well. Corrosion of the API Grade J-55 tubing was characterized by extensive pitting. The maximum localized corrosion rate varied from 2000 mils/yr at the bottom of the well to about 100 mils/yr at the top. The principal composition difference among the five scale samples was in the silica content, which varied from 3% at the bottom to 27% at the top. Thus, it is possible that silica deposition is a factor in the reduced corrosion observed at the top of the well. Of the alloys exposed at the bottom of the well, the least corrosion was observed with Type 316L stainless steel and Inconel 600 (2 mils/yr or less). Cracking was observed with stressed specimens of Type 410 stainless steel, Monel 400, Monel K-500, and Inconel X-750, but not with Type 316L stainless steel and Inconel 600.|;

Tullis, R. E.
19770000 ID: 1784
Salton Sea sampling program: baseline and toxicity studies
Volume: *Issue:* *Page(s):* 33
File Name:

Baseline data on several of the Salton Sea fishes are reported. Morphometric (dimensions) and meristic (counting elements) data are presented as a baseline to evaluate any accumulation and physiological stresses that the fishes may experience as a result of geothermal development. Trace elements were analyzed in selected tissues or whole fish. The trace elements evaluated were K, Cu, Fe, Cu, Zn, Br, Rb, Sr, and Pb. The major fishes studied were corvina (Cynoscion xanthulus), gulf coaker (Bairdiella icistius, and molly (Poecilia latapinna). Other fishes occasionally tested were Tilapia sp. and sargo (Anisotremus davidsonii).

Tullis, R. E., J. L. Carter, and G. W. Langlois
19810413 ID: 1656
Salton Sea sampling program: baseline studies
Volume: *Issue:* *Page(s):* 32
File Name:

Baseline data are provided on three species of fish from the Salton Sea, California. The fishes considered were the orange mouth corvina (Cynoscion xanthulus), gulf croaker (Bairdiella icistius) and sargo (Anisotremus davidsonii). Morphometric and meristic data are presented as a baseline to aid in the evaluation of any physiological stress the fish may experience as a result of geothermal development. Analyses were made on

muscle, liver, and bone of the fishes sampled to provide baseline data on elemental tissue burdens. The elements measured were: As, Br, Ca, Cu, Fe, Ga, K, Mn, Mi, Pb, Rb, Se, Sr, Zn, and Zr. These data are important if an environmentally sound progression of geothermal power production is to occur at the Salton Sea.

Turner, B. J.
19830000 ID: 3402
Genic variation and differentiation of remnant natural populations of the desert pupfish, Cyprinodon macularius.
Evolution
Volume: 37 *Issue:* *Page(s):* 690-700
File Name: 19830000_turner_c.pdf

Six remnant natural populations of Cyprinodon macularius, a formerly broadly distributed Colorado Basin species, were surveyed for allozyme variation at the products of 38-39 structural gene loci. The samples included 4 populations from the Salton Sea area (including one from an adjacent relatively pristine natural desert spring habitat), one from the Sonoyta (Quitobaquito Springs), and one ultimately from near the delta of the Colorado River. Mean heterozygosity values are within the range reported by others for ecologically comparable Aphanius populations, and are not strikingly low. Eight loci display statistically significant differences in gene frequency. Differences are detectable among Salton Sea populations, and among all 3 geographic areas. The general pattern of the differentiation is temporally (and geographically) hierarchical, and is consistent with previous perceptions of the relationships of the populations based on morphology. The overall level of differentiation is low. The effect of geographic isolation on the divergence of pupfish populations has almost certainly been overestimated.-from

Turner, B. J.
19840000 ID: 5007
Evolutionary genetics of artificial refugium populations of an endangered species, the desert pupfish
Copeia
Volume: *Issue:* *Page(s):* 364-9
File Name:

Turner, Frederick B., and Philip A. Medica
19820000 ID: 7702
Distribution and Abundance of the Flat-tailed Horned Lizard (Phrynosoma mcallii)
Copeia
Volume: *Issue:* 4 *Page(s):* 815-823
File Name: 19820000_turner_c.pdf

Twiss, R., J. Sidener, G. Bingham, and J. E. Burke
19780400 ID: 1771
Outdoor recreational use of the Salton Sea with reference to potential impacts of geothermal development
Volume: *Issue:* *Page(s):* 97
File Name:

The objectives of this study were to describe the types, levels, and locations of outdoor recreation uses in the Salton Sea area, the number and principal activities of visitors, and to estimate the consequences upon outdoor recreation of geothermal development and other activities that might affect the Salton Sea. It is concluded that since the Salton Sea is considered legally to be a sump for agricultural, municipal, and presumably geothermal waste waters, recreational use of the Sea for fishing and boating (from present marinas) will undoubtedly continue to decline, unless there is a major policy change. Use of the shoreline for camping, the surrounding roads and lands for scenic viewing, ORV events, and retirement or recreation communities will not decline, and will probably increase, assuming control of hydrogen sulfide odors. Two ways in which the fishing and present boating facilities could be returned to a wholly usable steady state are discussed. One is by construction of a diked evaporation pond system at the south end of the Sea. This would allow a means of control over both water level and salinity. Another means, less costly but more difficult to effectively control, would be to budget geothermal plant use of, and disposal of wastes in, Salton Sea water. (JGB)

U.S. Bureau of Land Management, and California Department of Fish & Game
19860000 ID: 4957
San Sebastian Marsh Area of Critical Environmental Concern Management Plan
Sikes Act Project
Volume: *Issue:* *Page(s):* 51+ p.
U.S. Bureau of Land Management; California Dep.
File Name:

U.S. Bureau of Reclamation, Lower Colorado Region
19970900 ID: 4882

Salton Sea Area Study Alternative Evaluation Appraisal Report Final Draft
Volume: *Issue:* *Page(s):*
Salton Sea Authority; California Department of Water Resources; Bureau of
File Name: 19970900_bureau_of_reclamation.pdf

U.S. Department of the Interior and the Resources Agency of California
19691000 ID: 4826
Salton Sea Project California - Federal-State Reconnaissance Report
Volume: *Issue:* *Page(s):*
File Name: 19691000_usdi.pdf

U.S. Department of the Interior and the Resources Agency of California
19740400 ID: 4827
Salton Sea Project California Federal-State Feasibility Report
Volume: *Issue:* *Page(s):*
File Name: 19740400_usdi.pdf

U.S. Department of the Interior and the Resources Agency of California
19740400 ID: 4829
Salton Sea Project California Volume II
Volume: *Issue:* *Page(s):*
File Name: 19740400_usdi_appd-e.pdf

United States. Federal Water Quality Administration. Southwest Regional Office.
19700700 ID: 4879
Salton Sea California Water Quality and Ecological Management Considerations
Volume: *Issue:* *Page(s):* 54 p.
[San Francisco] U.S. Department of the Interior, Federal Water Quality Administration, Pacific Southwest Region
File Name: 19700700_fwqa.pdf

The Salton Sea is an inland sink in a low lying desert area south and east of Los Angeles, California. The 230,000 acre sea is threatened with rapidly rising salinity levels which, if uncontrolled, are expected to eliminate the currently valuable sport fishery within the next decade. Studies were conducted in the Salton Sea area, to determine the present water quality of the Salton Sea, its tributaries and major waste discharges in the basin. Water quality studies emphasized the nutrient and biological aspects of the eutrophic Salton Sea but also included some work on mineral salts, sediments and bacteriological indicators.

U.S. Fish and Wildlife Service
19840000 ID: 4018
Wildlife of Salton Sea National Wildlife Refuge, California
Volume: *Issue:* *Page(s):* 10
[Calipatria, CA] U.S. Department of the Interior, Fish and Wildlife Service
File Name: 19840000_usfws.pdf

U.S. Fish and Wildlife Service
19860331 ID: 5008
Determination of endangered status and critical habitat for the desert pupfish
Federal Register
Volume: 51 *Issue:* (March 31) *Page(s):* 10842-51
File Name: 19860331_usfws.pdf

U.S. Fish and Wildlife Service
19930900 ID: 4004
Wildlife of Salton Sea National Wildlife Refuge, California
Volume: *Issue:* *Page(s):* 15
[Washington] U.S. Department of the Interior, Fish and Wildlife Service
File Name: 19930900_usfws.pdf

U.S. Fish and Wildlife Service
19940000 ID: 7460
Endangered and Threatened wildlife and plants

50 CFR 17.11 and 17.12. August
Volume: *Issue:* *Page(s):*
File Name:

U.S. Fish and Wildlife Service
19941115 ID: 7461
Endangered and Threatened wildlife and plants: animal candidate review for listing as endangered and threatened species, proposed rule
Federal Register
Volume: 59 *Issue:* 17 *Page(s):* 58982-59033
File Name:

U.S. Fish and Wildlife Service
19970000 ID: 4913
U.S. Federal Lab Confirms Newcastle Disease in Salton Sea Cormorants; Additional Tests Under Way To Determine
Volume: *Issue:* *Page(s):*
File Name: http://www.emtc.nbs.gov/http_data/whip/salton.html

U.S. Fish and Wildlife Service
19971000 ID: 7676
Saving the Salton Sea: A Research Needs Assessment
Volume: *Issue:* *Page(s):*
U.S. Fish and Wildlife Service
File Name: 19971000_usfws.pdf

U.S. Fish and Wildlife Service. Pacific Region.
19980000 ID: 7812
Wildlife mortality estimates, 1987-1996, Salton Sea. [website]
U.S. Fish and Wildlife service web page
Volume: *Issue:* *Page(s):*
U.S. Fish and Wildlife Service
File Name: http://www.r1.fws.gov/news/saltmort.htm

U.S. Fish and Wildlife Service. Pacific Region. Salton Sea National Wildlife Refuge.
19980000 ID: 7814
Summary of 1996 Avian Botulism Events [website]
U.S. Fish and Wildlife service web page
Volume: *Issue:* *Page(s):*
U.S. Fish and Wildlife Service
File Name: http://www.r1.fws.gov/news/saltn96.htm

U.S. Geological Survey, Biological Resources Division
19970910 ID: 8018
Lethal Parasite Prime Suspect in Fish Kills at Salton Sea [webpage]
Volume: *Issue:* *Page(s):*
The Division
File Name: http://biology.usgs.gov/pr/newsrelease/1997/9-10.html

U.S. Geological Survey, National Wildlife Health Center
19970000 ID: 4912
Salton Sea Cormorant Mortality [webpage]
Volume: *Issue:* *Page(s):*
Madison, WI U.S. Geological Survey, National Wildlife Health Center
File Name: http://www.emtc.nbs.gov/http_data/nwhc/news/salton97.html

Valdés Casillas, Carlos, et al.
19981100 ID: 7986
Wetland Management in the Colorado River Delta: The First Steps
Volume: *Issue:* *Page(s):* v, 27 p.
[Guaymas], México CECARENA-ITESM Campus Guaymas

File Name: 19981100_valdés_casillas_english_c.pdf

This document is one of the results of a bi-national, multi-institutional effort for the restoration of wetlands in the Colorado River delta. The project included the integration of a Geographic Information System (GIS), vegetation and habitat value analysis, water quality analysis, and a local outreach program with the delat communities. This region is one of the richest ecosystems and with higher ecological importance in the Lower Colorado River, the Sonoran Desert, and the Upper Gulf of California region, since it provides critical habitat for migratory and resident waterbirds, and several fisheries with high economic value. Because of the construction of the dam system that controls and distribute Colorado water in the U.S.A. and México, fresh water flows to the delta are scarce and to the Gulf of California are almost inexistent. This situation has caused severe ecological damages, including the reduction of the wetland area, the invasion of non-native species, and the reduction of critical areas for endangered species. By these reasons, the Colorado River delta was considered a lost ecosystem for several decades. ¶However, the results of the project show that the Colorado River delta in México currently present a richer and more diverse set of ecosystems than the stretch of river below Grand Canyon in the United States, even though that stretch is 5 times longer and has a perennial flow of water. These results also show that important ecosystem functions in the Colorado River delta can be protected and maintained with only a small amount of the native river flow, supplemented with "poor" quality water unsuited for human use, such as agricultural return flows. Water analysis results show that selenium concentration represent a threat at several areas in the delts, suggesting the need of specific management strategies to solve this problem. ¶Conservation of the dleta ecosystem is threatened by several actions proposed in the United States, which would impact the flow of water across the border. Also, the treaties governing water allocation between the United States and México did not inocrporate environmental considerations, hence water management and environmental agencies in the United States take the position that their responsibility for ecosystem protection essentially ends at the international border. Since the functions and values of these wetlands provide benefits to both sides of the border, ignoring political boundaries, their management and restoration should be a shared responsibility among the two countries. Therefore, support from international, national, state, and local environmental laws, programs, and agreements need to be adapted under a comprehensive regional approach. [authors]

Valdez-Holguín, José Eduardo
19940601 ID: 8158
Variaciones Diarias de Temperatura, Salinidad, Oxigeno Disuelto y Clorofila a, en una Laguna Hipersalina del Golfo de California/Daily Variations of Temperature, Salinity, Dissolved Oxygen and Chlorophyll A, in a Hypersaline Lagoon of the Gulf of Calif…
Ciencias Marinas
Volume: 20 *Issue:* 2 *Page(s):* 123-137
File Name:

Valentine, Vernon E.
19810600 ID: 3650
Water quality controls on Imperial Valley drainage
Journal of Irrigation and Drainage Engineering
Volume: *Issue:* *Page(s):* 233-237
File Name:

Valette-Silver, N. J., F. Tera, and M. Pavich
19920000 ID: 1405
sup 10]Be and [sup 9]Be in the Salton Sea (USA) and other geothermal systems.
Water-Rock Interaction: Proceedings. Y .K. Kharaka, and A. S. Maest, eds.
Volume: *Issue:* *Page(s):* 983-986 843 p.
File Name:

sup 10]Be and [sup 9]Be were analyzed in rocks and fluids from the Salton Sea geothermal system. The [sup 10]Be inventory reveals that the sediments hosting the geothermal field are younger than a few million years. [sup 10]Be/[sup 9]Be in rocks decreases near the 1837 and 2956 m aquifers. A reverse trend exists in the fluids. [sup 10]Be and [sup 10]Be K[sub d]s decrease from the surface to the bottom of the well. Occupying adsorption sites, [sup 10]Be is more easily removed than [sup 9]Be from the metamorphic rocks. Comparison of Salton Sea with other marine and continental natural systems, shows that Be solubility is strongly influenced by pH and salinity.

Valette-Silver, J. N., F. Tera, M. J. Pavich, L. Brown, J. Klein, and R. Middleton
19850430 ID: 7559
^{10}Be Content of Natural Waters [abstract]
Eos, Transactions, American Geophysical Union, 1985 spring meeting
Volume: 66 *Issue:* 18 *Page(s):* 423
Washington, DC American Geophysical Union
File Name: 19850430_valette-silver_c.pdf

Villwock, Wolfgang
19820900 ID: 3535
Aphanius (Nardo, 1827) and Cyprinodon (Lac., 1803) (Pisces: Cyprinodontidae), an Attempt for a Genetic Interpretation of Speciation
Zeitschrift für Zoologische Systematik und Evolutionsforschung
Volume: 20 *Issue:* 3 *Page(s):* 187-197
File Name: 19820900_villwock_c.pdf

Old World cyprinodontids (Pisces: Cyprinodontidae) of the genus Aphanius and New World representatives of the genus Cyprinodon inhabit corresponding remains of different abiotic factors (i.e., composition and degree of salinity, temperature), produced by arid climates, for instance in barren plains or similar regions. Old World species of Aphanius are widely distributed around ancient as well as recent outlines of the Mediterranean Sea, along the Arabian Peninsula as far as Iran and Karachi/Pakistan. Within these distribution patterns they are not only common to marine waters but are also found in salt-pans or other closed coastal lagoons with hypersaline conditions. Cyprinodon with its different species is found today from the West-Indies and the eastern Atlantic and Gulf Coast throughout the desert drainage of the southern USA, and northern Mexico to the very ancient and the recent coasts of the Gulf of California in the west (i.e., Salton Sea). The regions mentioned, both in the Old and in the New World, derived their present characters from comparable geomorphologic changes since the Miocene. The more or less continuous distribution along the ancient Thetys slowly disintegrated into independent larger and smaller areas, until the present situation was reached within post-glacial times. Through this, old panmictic populations of the ancestors of recent Cyprinodon or Aphanius, respectively, fell into smaller ones as well. Crossbreeding experiments show that speciation took place in both cyprinodont units by way of microevolution corresponding to the historic development of their habitats; this interdependency is shown. The idea of substitution-genes and transfer of gene function put foreward by Kosswig (1947) et al. is discussed as an interpretation of the different degrees in species formation which is detectable in both groups of cyprinodont fishes in question.

Vittor, B. A.
19680000 ID: 5925
The Effects of Oxygen Tension, Salinity, Temperature and Crowding on the Distribution, Growth and Survival of Balanus amphitrite Darwin in the Salton Sea, California
M.S. Thesis
Volume: *Issue:* *Page(s):* 151 p.
San Diego San Diego State College
File Name:

Vonder Haar, S. P., and D. S. Gorsline
19760400 ID: 8307
Hypersaline Lagoonal Deposits and Processes in Baja California, Mexico
Volume: *Issue:* *Page(s):* 49 p.
File Name:

Hypersaline marshes and coastal salt flat environments are characterized by a myriad of complex meteorological, biological, chemical and geological interactions. Variability of processes is high; fluxes are visually perceived, yet difficult to quantify. This paper synthesizes available data for two coastal salt ponds and reflects on the implications as to cyclic or rhythmic patterns in paleoclimates and sealevel fluctuations. Emphasis is placed on the Mormona area of the Pacific Coast of Baja California with comparison to the intriguing, but difficult of access, Salina Grande ponds of the Sonoran coast. A few comments are also included on the Ometepec Salina on the Gulf of California Coast of northern Baja California.

Waddell, K. M., and J. D. Barton
19800000 ID: 7670
Estimated inflow and evaporation for Great Salt Lake, Utah 1931-76, with revised model for evaluating the effects of dikes on the water and salt balance of the lake
Comprehensive Water Planning Program Cooperative Investigation Report
Volume: 20 *Issue:* *Page(s):* 57
File Name:

Waddell, K. M, and E. L. Bolke.
19750000 ID: 7671
Computer program to simulate the salt balance between the north and south parts of Great Salt Lake, Utah
U.S. Geological Survey Open-File Report
Volume: *Issue:* *Page(s):* 18
File Name:

Waddell, K. M., and F. K. Fields

19770000 ID: 7673
Model for evaluating the effects of dikes on the water and salt balance of Great Salt Lake, Utah
Utah Geological and Mineralogical Survey Water-Resources Bulletin
Volume: 21 *Issue:* *Page(s):* 54
File Name:

Walker, B. W., R. R. Whitney, and G. W. Barlow
19610000 ID: 5935
The fishes of the Salton Sea
The Ecology of the Salton Sea, California, in Relation to the Sportfishery. Fish Bulletin No. 113. B. W. Walker, ed.
Volume: *Issue:* *Page(s):* 77-91
California Department of Fish and Game
File Name: 19610000_walker_2.pdf

Walker, Boyd W.
19610000 ID: 4540
The ecology of the Salton Sea, California, in relation to the sportfishery
California Fish and Game. Fish. Bull.
Volume: 113 *Issue:* *Page(s):* 204
File Name: 19610000_walker.pdf

Walker, James Joseph
19960000 ID: 7941
Fresh-water inflow and distribution of laminated sediments in the Salton Sea, California. [M.S. thesis]
Volume: *Issue:* *Page(s):* 2, vi, 31 l.
Loma Linda, CA Loma Linda University
File Name: 19960000_walker_c.pdf

Walker, K. F.
19730200 ID: 7643
Studies on a saline lake ecosystem
Australian Journal of Marine and Freshwater Research
Volume: 24 *Issue:* *Page(s):* 21-71
File Name: 19730200_walker_c.pdf

Walker, K. F., W. D. Williams, and U. T. Hammer
19700000 ID: 7644
The Miller method for oxygen determination applied to saline lakes (Notes and Comments)
Limnology and Oceanography
Volume: 15 *Issue:* 5 *Page(s):* 814-5
File Name: 19700000_walker_c.pdf

Walker, L. W.
19430000 ID: 5927
Pelican profiles
National Geographic
Volume: 84 *Issue:* *Page(s):* 589-98
File Name:

Walters, L. L., and E. F. Legner
19802000 ID: 5928
Impact of the Desert Pupfish, Cyprinodon Macularius, and Gambusia Affinis Affinis on Fauna in Pond Ecosystems
Hilgardia
Volume: 48 *Issue:* 3 *Page(s):* 1-18
File Name:

Warnock, N.
19960000 ID: 7855
Local and regional differences in habitat utilization by Dunlins (Calidris alpina) as revealed by radiotelemetry; conservation implications.
Shorebird ecology and conservation in the Western Hemisphere. P. Hicklin, et al., eds. International Wader Studies

Volume: 8 *Issue:* *Page(s):* 35-38
File Name:

Warnock, N., J. M. Reed, and L. W. Oring
19970000 ID: 7859
Synthesis: shorebirds in the arid western Great Basin of North America.
International Wader Studies
Volume: 9 *Issue:* *Page(s):* 80-81
File Name:

Warnock, N., S. M. Haig, and L. W. Oring
ID: 7863
Monitoring species richness and abundance of shorebirds in the western Great Basin.
Condor. In press.
Volume: *Issue:* *Page(s):*
File Name:

Watanabe, Wade O., Robert I. Wicklund, Bori L. Olla, and William D. Head
19970000 ID: 7783
Saltwater Culture of the Florida Red and Other Saline-Tolerant Tilapias: A Review
Tilapia Aquaculture in the Americas, Volume One, Barry A. Costa-Pierce and James E. Rakocy, eds.
Volume: *Issue:* *Page(s):* 55-141
Baton Rouge, LA World Aquaculture Society ; American Tilapia Association
File Name: 19970000_watanabe_c.pdf

Wei, Michael S.
19820000 ID: 1952
Potential For Recovery of By-Products From Spent Geothermal Fluids
Volume: *Issue:* *Page(s):* 483 3
Geothermal Resources Council Annual Meeting, San Diego
File Name:

The feasibility of recovering chemicals from geothermal fluids is investigated, taking into consideration mineral values, market demand, technology readiness, resource uncertainties and competition from other supply sources. The most promising materials are Lithium, Boron, Carbon Dioxide, Ammonia, Bromine, Iodine, Heavy Metals, and Strontium. Other materials were classified as marginally promising, speculative, an not promising. The analysis was done using a hypothetical 'best case' 50 MWE Geothermal Power Plant with salinity fluids with dissolved solids contents equivalent to those found in the Salton Sea. (2 references, 2 tables)

Werner, Sanford L., and Larry J. Olson
19700200 ID: 1941
Geothermal wastes and the water resources of the Salton Sea area.
California Department of Water Resources Bulletin
Volume: 143-7 *Issue:* *Page(s):* 148 p.
Sacramento California Department of Water Resources
File Name: 19700200_werner_c.pdf

White, D. E., J. M. Thompson, and R. O. Fournier
19760000 ID: 1842
Lithium contents of thermal and mineral waters.
Lithium Resources and Requirements by the Year 2000. Vine, J. D., ed.
Volume: *Issue:* *Page(s):* 58-60
File Name:

Reported lithium contents of natural waters range from less than 0.01 ppM to more than 500 ppM. Although absolute contents are of major interest in commercial recovery, the ratios of Li to other major constituents are more significant in evaluating origin and diverse effects of evaporation, dilution, and waterrock interaction. The most useful single ratio is Li/Cl, which is emphasized in this text, but Li/Na has nearly equal usefulness. Lithium/chlorine (by weight) is lowest in ocean water (0.00001) and becomes progressively higher in major North American rivers (0.00004) and in small streams and meteoric springs (variable and unreliable values because so dilute, but ranging from 0.001 to 0.1). For comparison, the ratios in major crustal types are granite, 0.15; basalt, 0.17; and shale, 0.38. Thermal and mineral waters of high salinity tend to have intermediate Li/Cl ratios, generally ranging from about 0.0001 to 0.001 (table 19). The median ratio for oil-field waters is probably near 0.0003, but a few ratios attain 0.001 and even higher; one notable example is brine from the Jurassic Smackover Formation of Texas and Arkansas, which averages 0.001. Individual analyses are greater than 0.002 and Li contents are as

much as 500 ppM. Nearly all saline waters of high temperature geothermal systems are much enriched in Li. The Salton Sea brine (350/sup 0/C and 26 percent salinity) has 215 ppM of Li (Li/Cl ratio of 0.0014 and an estimated 1.0 million tonnes of Li in 5 km/sup 3/ of brine). Moderately saline geothermal waters exceeding 200/sup 0/C and closely associated with young silicic volcanism range from about 1 to 50 ppM of Li and have the highest Li/Cl ratios of any major group of thermal and mineral waters, ranging from less than 0.001 to more than 0.02. Li contents of various rocks and waters, including ocean and river, oilfield brines, evaporate brines, and waters of Yellowstone National Park, are tabulated. (JGB)|;

White, James R., et al., prep.
19880000 ID: 8091
Selenium verification study, 1986-1987 : a Report to the California State Water Resources Control Board from the California Department. of Fish and Game.
Volume: *Issue:* *Page(s):* viii, 60, [51] p.
[Sacramento?] California Department of Fish and Game
File Name:

Whitfield, Alan K., and Stephen J. M. Blaber
19790000 ID: 7760
The Distribution of the Freshwater Cichlid Sarotherodon Mossambicus in Estuarine Systems
Environmental Biology of Fishes
Volume: 4 *Issue:* 1 *Page(s):* 77-81
File Name: 19790000_whitfield_c.pdf

Whitlock, Charles, H.
ID: 2641
Marine sediment tolerances for remote sensing of atmospheric aerosols over water.
Volume: *Issue:* *Page(s):*
File Name:

Considerable research has been conducted on the problem of quantifying aerosol optical depth from satellite remote sensing measurements over water. The usual assumption is that all radiance observed by the satellite is from atmospheric effects, and only a negligible amount is caused by backscatter from the water column. This assumption appears to be essentially correct for measurements over clear water. Griggs has shown that aerosol optical depth empirically correlates with LANDSAT radiances at 550, 650, and 750 nm over clear oceans and the Salton Sea. Gordon and Clark assume negligible water signal at 670 nm for removal of atmospheric effects to obtain phytoplankton values by using the coastal zone color scanner (CZCS) on Nimbus-7. It is noted that their algorithm is not applicable for turbid waters, which may have a strong signal at 670 nm. Bukata et al. have shown experimentally that subsurface water reflectance is not always zero at 670 nm, even for lake water, which would be considered relatively clear by most standards. For regions of high phytoplankton or sediment, Morel and Gordon indicate that bands near 745, 880, and 1060 nm are required to assess aerosol optical depth and its dependency with wavelength. More recently, Griggs has attempted an empirical correlation of aerosol optical depth with LANDSAT band 7 (800-1100 nm) over continental lakes and obtained poor results. Possible causes were attributed to 1) nonzero reflectance for various turbid waters, and 2) some contribution from adjacency effects of nearby land. From these experiences, it is clear that there is a need to quantify the turbidity below which reflectance from the water column is negligible, in comparison with atmospheric effects, to permit the monitoring of aerosol optical depth over water bodies. Laboratory measurements of reflectance upwelled from the water column are presented for mixtures with various types of sediment at wavelengths between 400 and 1600 nm.

Whitney, R. R.
19610000 ID: 5934
The orangemouth corvina, Cynoscion xanthulus Jordan and Gilbert
The Ecology of the Salton Sea, California, in Relation to the Sportfishery. Fish Bulletin No. 113. B. W. Walker, ed.
Volume: *Issue:* *Page(s):* 165-83
California Department of Fish and Game
File Name: 19610000_whitney_2.pdf

Williams, A. E.
19970100 ID: 3680
Fluid density distribution in a high temperature, stratified thermohaline system: Implications for saline hydrothermal circulation
Earth and Planetary Science Letters
Volume: 146 *Issue:* 1-2 *Page(s):* 121-136
File Name:

Density distribution within the Salton Sea geothermal system, of fluids ranging from 20 degrees C to 325 degrees C, has been computed using chemical and thermal data from geothermal production well tests and

curve-fit models of Na-Ca-K chloride solution properties. Density corrections can easily be made to +/-0.01 g/cm(3) for solute effects of each of the dominant chloride salts as well as pressure above vapor saturation. Field data on dissolved CO2 is too sparse to routinely compute a correction, however this moderately, but variably abundant component can be shown to produce only minor(<0.01 g/cm(3)) errors in density estimates. Fluid density within the shallow, cool (<250 degrees C), low salinity portions of the system decreases markedly with increasing depth and temperature, from approximate to 1.0 to approximate to 0.85 g/cm(3). A sharp interface separates these relatively dilute fluids from hypersaline brines with TDS >20 wt%. The density of brine climbs rapidly to near 1.0 g/cm(3) as the salinity increase across this interface overwhelms the thermal effect on fluid density. This steep density gradient precludes all but diffusional-conductive or perhaps double diffusive-convective mass and heat transfer in this transitional regime. Measurement uncertainties for reservoir depths, temperatures and salinities commonly exceed errors of our density model, limiting the accuracy of details in our modeled density distribution. Gross scale relationships of this salinity stratified geothermal system are, however apparent, permitting rational discussion of extrapolations to conditions beneath the presently explored reservoir and inference of dynamics during the systems' evolution.

Williams, A. E., M. A. McKibben, and W. A. Elders
19890000 ID: 3743
Solubility and transport in a saline geothermal system: a natural analog study
Radioactive Waste Management and the Nuclear Fuel Cycle
Volume: *Issue:* *Page(s):* 379-92
File Name:

Chemical and transport processes in active geothermal circulation systems are closely analogous to those which could occur near localized heat sources, such as high level nuclear waste repositories. The Salton Sea Geothermal System (SSGS) in particular, serves as an analog for the near field environment of a salt repository. SSGS fluid transport data indicate fluid path-lines may be useful for the validation of transport computer codes involving fluid migration dependent on temperature and salinity. The SSGS geochemical data-base aids in predicting speciation and solubility in complex, hot saline solutions. For many elements, current data-bases from theoretical or experimental work are inadequate for the necessary modeling. SSGS data on solubility, transport and water-rock reaction provide benchmarks, under high temperature, saline conditions, for validation of geochemical

Williams, A. E., M. A. McKibben, C. S. Eldridge, J. P. Dauphin, and B. R. T. Simoneit
19910000 ID: 1434
An overview of fluid geochemistry and ore genesis in the Salton Sea geothermal system, and comparison with the Gulf of California hydrothermal systems.
The gulf and peninsular province of the Californias
Volume: *Issue:* *Page(s):* 781-792 834 p.
File Name:

This paper reports on the Salton Sea geothermal system (SSGS) of the Salton Trough which is the northernmost of a series of active hydrothermal systems found along the East Pacific Rise-San Andreas fault zone plate boundary transition. The sediment-smothered, saline nature of the SSGS is a consequence of deposition of the Colorado River delta over the fragmented rift system and creation of a saline lake environment in the northern Salton trough. Intrusion of rift-related magma into the base of this saline sediment pile induces brine diapirism and localized sulfide and oxide mineral deposition at a stable, density-controlled interface between rising brines and shallower lower-salinity basin fluids.The heated brines interact with the abundant lacustrine sediments, pervasively altering them to greenschist facies assemblages at depths of 2 to 3 km. Reaction with evaporitic sulfates in the host sediments keeps the brines relatively oxidized and provides a source of H{sub 2}S via hydrothermal SO{sub 4}{sup {minus}2} reduction. The high salinity, moderately high oxidation state, and near-neutral pH of the fluids keeps the dissolved metal content high and the sulfur content low. Compared with the East Pacific Rise and Guaymas Basin systems, the SSGS reflects the progressive influence of continental sediments and tectonics on an oceanic ridge system as it impinges upon a continental margin.

Williams, Alan E.
19880000 ID: 2920
Fluid density distribution in a stratified geothermal reservoir; Salton Sea geothermal system, California.
Geological Society of America 1988 centennial celebration
Volume: *Issue:* *Page(s):* 98
File Name

Williams, Alan E., Michael A. McKibben, and William R. Dickinson
19870000 ID: 2894
A brine interface in the Salton Sea geothermal system, California; mechanism for active ore formation.
Geological Society of America, 1987 annual meeting and exposition
Volume: *Issue:* *Page(s):* 890
File Name:

Williams, Alan E., Charles S. Oakes, and Brian Hitchon
19860000 ID: 2972
Isotopic and chemical variations in hydrothermal brines from the Salton Sea geothermal field, California.
Fifth international symposium on water-rock interaction
Volume: *Issue:* *Page(s):* 633-636
File Name:

Williams, Alan E., and Robert Tuckert
19880000 ID: 2912
Delineation of a brine interface in the Salton Sea Geothermal System, California.
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Volume: *Issue:* *Page(s):* 151-157
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Williams, W. D.
19910000 ID: 7646
Chinese and Mongolian saline lakes: a limnological overview
Hydrobiologia
Volume: 210 *Issue:* *Page(s):* 39-66
File Name:

Williams, W. D., A. J. Boulton, and R. G. Taaffe.
19900000 ID: 7648
Salinity as a determinant of salt lake fauna: a question of scale
Hydrobiologia
Volume: 197 *Issue:* *Page(s):* 257-66
File Name:

Wilson, Mark E., and Spencer H. Wood
19780400 ID: 2034
Salton Sea Water-Level Records (1952-1977) and the Southern California Uplift (Abstract)
Eos, Transactions, American Geophysical Union
Volume: 59 *Issue:* 4 *Page(s):* 242
File Name: 19780400_wilson_c.pdf

Windingstad, R. M., F. X. Karch, R. K. Stroud, and M. R. Smith
19870000 ID: 7649
Salt toxicosis in waterfowl in North Dakota
Journal of Wildlife Diseases
Volume: 23 *Issue:* 3 *Page(s):* 443-6
File Name:

Winsberg, S.
19800000 ID: 2107
Solar perspectives - Solar pond power, the Israel-California connection
Volume: *Issue:* *Page(s):*
File Name:

The performance to date, and the future potential, of solar saline pond electrical generation systems on the Israeli shores of the Dead Sea, and the Salton Sea in California, are assessed. The environmental cleanliness and low capital costs of saline pond solar energy collection (and inherent thermal storage) is stressed, as well as the near-term impact of such projects due to their use of existing, natural bodies of water. The possibility of incorporating water desalination operations is mentioned as a crucial consideration in many potential areas of use, such as Israel and the American Southwest. A rough estimate suggests that the Great Salt Lake in Utah could yield a maximum 10,000 MW of electrical power (O.C.)

Wittenberg, L. J.
19800000 ID: 2702
Salt-Gradient Solar Ponds: Design, Construction and Power Production
Volume: *Issue:* *Page(s):* 19 p.
File Name:

CONF-800871-1. Salt-gradient solar ponds are combined solar energy collectors and thermal storage systems. The ponds are made non-convective by the formation of a density-gradient composed of salt solutions whose concentrations increase with depth. The depth of the various layers of the pond determine the efficiency and thermal storage capacity of the system. The construction of the largest such pond in the US, 2000 m exp 2 , was completed in 1978 for approximately $35/m exp 2 . The pond is estimated to produce 1015 GJ/y of low-temperature heat at a cost of $8.95/GJ, when the installation costs are amortized over 15 y. Construction changes are suggested to improve the reliability of the system. Electrical power generation by the use of Rankine cycle turbogenerators connected to solar ponds has been demonstrated in Israel. Feasibility studies are in progress to propose electricity production of up to 2000 MW for projects near the Dead Sea in Israel, and 600 MW in a proposed project at the California Salton Sea. (ERA citation 05:037903)

Wittenberg, L. J.
19810000 ID: 1442
Salt-gradient solar ponds: Design, construction and power production.
Solar energy conversion II: selected lectures from the 1980 International Symposium on Solar Energy Utilization, London, Ontario, Canada, August 10- 24, 1980. A. F. Janzen, and R. K. Swartman, eds.
Volume: *Issue:* *Page(s):* 411-429 658 p.
Toronto, New York Pergamon
File Name:

Salt-gradient solar ponds are combined solar energy collectors and thermal storage systems. The ponds are made nonconvective by the formation of a density gradient composed of salt solutions whose concentrations increase with depth. The depth of the various layers of the pond determines the efficiency and thermal storage capacity of the system. The hydrodynamics of solar ponds and the calculation of their thermal performance is discussed. The construction and operation of a solar pond demonstration project in Ohio is then described. This pond was built during 1977 and was designed to supply thermal energy to an outdoor swimming pool in the summer and to a recreational building in the winter. The pond water depth was 2.4 m and its surface area was 2,000 m{sup 2} and is estimated to produce 1,015 GJ/y of low-temperature heat at a cost of $8.95/GJ. This compares favorably with the $9.50/GJ cost of fuel oil at the site. Efficiency of solar utilization is estimated at 13%. Construction changes, mainly related to preparation of the foundation and the liner, are recommended for improved performance. Future projects in power generation using solar ponds are outlined. Electric power has been generated by the use of Rankine cycle turbogenerators connected to solar ponds in Israel, and feasibility studies are in progress to propose electricity production from sites in the Dead Sea (Israel) and the Salton Sea (California). 23 refs., 10 figs.

Wixson, Bobby G., William J. Clark, and William B. Davis
19730000 ID: 7977
Ecological Effects of Evaporation Retardation Monolayers on Reservoirs.
Man-made lakes: their problems and environmental effects. William C. Ackermann, Gilbert F. White [and] E. B. Worthington, editors. J. Loreena Ivens, associate editor.
Volume: *Issue:* *Page(s):* 612-616
Washington, DC American Geophysical Union
File Name: 19730000_wixson_c.pdf

Wold, S. R., B. E. Thomas, and K. M. Waddell
19960000 ID: 7674
Water and salt balance of Great Salt Lake, Utah, and simulation of water and salt movement through the causeway
U.S. Geological Survey Open-File Report
Volume: *Issue:* *Page(s):* 66
File Name:

Wone, Bernard
19920500 ID: 7698
Habitat Requirements of the Horned Lizard Phrynosoma Mcallii in a Disturbed Desert Environment [master's thesis]
Volume: *Issue:* *Page(s):* 34
San Jose, CA San Jose State University
File Name: 19920500_wone_c.pdf

Wong, D. M.
19970000 ID: 5937
Ecoregion report for southern California and eastern Sierra as reported by responsible agencies
Proceedings of the Desert Fishes Council
Volume: 28 *Issue:* *Page(s):* 93-6
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Woolcock, P.
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An outbreak of Newcastle disease in double-crested cormorants at the National Wildlife Refuge at the Salton sea in southern California.
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Wright, Gavin R.
19930900 ID: 7697
Flat-tailed Horned Lizard Status Report: September 1993.
Volume: *Issue:* *Page(s):* 68
El Centro, CA Bureau of Land Management
File Name: 19930900_wright.pdf

Wunderlich, Walter O., and Rex A. Elder
19730000 ID: 7958
Mechanics of Flow through Man-Made Lakes.
Man-made lakes: their problems and environmental effects. William C. Ackermann, Gilbert F. White [and] E. B. Worthington, editors. J. Loreena Ivens, associate editor.
Volume: *Issue:* *Page(s):* 300-310
Washington, DC American Geophysical Union
File Name: 19730000_wunderlich_c.pdf

Wurtsbaugh, W. A.
19920000 ID: 7650
Food-web modification by an invertebrate predator in the Great Salt Lake (USA)
Oecologia
Volume: 89 *Issue:* *Page(s):* 169-75
File Name:

Yashima, Toshiaki, and Tomiya Nitta
19920228 ID: 1423
Study mission report on geothermal development in Mexico and Guatemala. Mexicoter dot Guatemala chinetsu chosadan hokokusho
Chinetsu - Journal of the Japan Geothermal Energy Association
Volume: 28 *Issue:* 5 *Page(s):* 101
Tokyo Nihon Chinetsu Chosakai
File Name:

This paper reports the site surveys performed by the 10th overseas Survey Mission of Japan for twelve days in early November 1991. The surveys were made on the Imperial Valley area in California, U.S.A. (Salton Sea and J. M. Leathers power plants), the Cerro Prieto and Los Azufres geothermal power plants in Mexico, and the Zunil geothermal field in Guatemala. The mission was composed of 35 members sent from geothermal and resources development companies, heavy chemical industry companies, electric power companies, trading companies, and environmental research institutes. The mission surveyed mainly on the general circumstances (summary of the countries, energy environments, power demand and supply, and power supply structures), geological features and reservoir beds, well drilling, steam production, power generation facilities, their operation, and environment protective measures. Technical survey included matters related to high-salt geothermal fluids, a forest of wells standing in wide areas, and power generation at back-pressure shaft openings. Geothermal development is governed largely by the structure of energy resources, the amount of geothermal resource deposits, the necessity of the development, and social environments according to the conditions of individual countries. No direct comparison should be made with the conditions existing in Japan.

Young, D. R., A. Mearns, R. P. Eganhouse, M. D. Moore, G. P. Hershelman, and R. W. Gossett
19800000 ID: 1982
Trophic Structure and Pollutant Concentrations in Marine Ecosystems of Southern California
California Cooperative Oceanic Fisheries Investigations Reports
Volume: *Issue:* *Page(s):*
File Name:

The relationship between trace chemical concentrations and trophic level of fish and several invertebrates was investigated in four southern California marine ecosystems: the Salton Sea, a saline lake; Newport Bay, a back-bay area; the Palos Verdes shelf, a waste-water contaminated coastal zone; and the San Pedro Channel,

which contains a coastal pelagic food web. Feeding habits were investigated and used to assign assumed trophic levels to each species. These assignments were directly related to the cesium-potassium ratio (Cs/K), a possible chemical trophic step indicator. Trophic structure amenable to food web increases of pollutant concentrations was relatively strong in the Salton Sea and coastal pelagic ecosystems and was weaker in the nearshore ecosystems.

Young, David R.
19860000 ID: 4837
The Cesium: Potassium Ratio -- A Chemical Indicator of Trophic Level Differences in Marine Organisms
Volume: *Issue:* *Page(s):* 37
File Name: 19860000_young_c.pdf

Young, David R., Alan J. Mearns, Tsu-Kai Jan, and Robert P. Eganhouse
19810000 ID: 1976
The Cesium-Potassium Ratio and Trace Metal Biomagnification in Two Contaminated Marine Food Webs
The Ocean - An International Workplace.
Volume: *Issue:* *Page(s):* 570-574
Oceans 81 Conference Record - Boston, Massachusetts
File Name: 19810000_young_c.pdf

Muscle tissue concentration ratios of cesium (Cs) to potassium (K) appear to be useful indicators of the biomagnification potential of marine food webs. Application of this technique indicated that two metals-rich ecosystems in southern California, the Salton Sea and the municipal wastewater discharge zone off Palos Verdes Peninsula, are sufficiently 'structured' to permit food web magnification. Despite this, with the possible exception of mercury no significant biomagnification of the contaminant trace metals was observed.

Young, David R., and Alan J. Mearns
19800220 ID: 2694
Pollutant Flow Through the Marine Food Web. Progress rept.
Volume: *Issue:* *Page(s):* 137
File Name: 19800220_young_c.pdf

The relationship between trace chemical concentrations and trophic level of fishes and several invertebrates was investigated in four southern California marine ecosystems: the Salton Sea, a saline lake; Newport Bay, a backbay area; the Palos Verdes Shelf, a wastewater-contaminated coastal zone; and the San Pedro Channel, which contains a coastal pelagic food web. Feeding habits were investigated and used to assign assumed trophic levels to each species. These assignments were directly related to the cesium/potassium ratio, a possible chemical trophic step indicator.

Young, David Ross
19700000 ID: 4455
The Distribution of Cesium, Rubidium, and Potassium in the Quasi-Marine Ecosystem of the Salton Sea. [PhD dissertation - abstract, list of tables, app. X]
Volume: *Issue:* *Page(s):* 15
San Diego University of California, San Diego
File Name: 19700000_young_c.pdf

Young, David Ross
19700000 ID: 7944
Pesticides in the Salton Sea Biota [appendix from author's dissertation, inc. abstract and list of tables - see ID 4455]
The Distribution of Cesium, Rubidium, and Potassium in the Quasi-Marine Ecosystem of the Salton Sea. [PhD dissertation - Abstract, Index of Tables, Appendix X - Pesticides in the Salton Sea Biota]
Volume: *Issue:* *Page(s):*
San Diego University of California, San Diego
File Name: 19700000_young_c.pdf