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# Salinity And Drainage In San Joaquin Valley California Science Technology And Policy Global Issues In Water Policy

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San Joaquin Valley Drainage Program

Agricultural Drainage and Salt Management in the San Joaquin Valley

Progress Report, Selenium and Agricultural Drainage Studies in California

Prospectus

Water Quality for Agriculture

The Economics and Management of Water and Drainage in Agriculture

Water Salinity Study for the Southern San Pitch Drainage System in Sanpete County, Utah

An Agricultural Dilemma

Total Maximum Daily Load for Salinity and Boron in the Lower San Joaquin River

Function Analysis Report

Farm-level and Regional Considerations

Salinity Management Strategies for the Lower San Luis Rey River Basin

Effect of Soil Salinity and Nitrates on Tile Drainage in San Joaquin Valley, California

Economic Aspects of Salinity Management in California's San Joaquin Valley

Final Report, Including Recommended Plan and First-stage Environmental Impact Report

Resources at Risk in the San Joaquin Valley

The Inter-Relationship Between Irrigation, Drainage and the Environment in the Aral Sea Basin

Visions of Salt

Selenium, Human Health, and Irrigated Agriculture

An Introductory Source Book

Preliminary Conceptual Plan

Agricultural Salinity and Drainage  
Selenium and Agricultural Drainage Studies in California  
Information on Drainage and Salt Disposal  
San Luis Unit Drainage Program, Central Valley Project, Fresno County  
Salinity and Drainage in San Joaquin Valley, California  
Selenium, Human Health, and Irrigated Agriculture  
Resources at Risk in the San Joaquin Valley  
Drainage Source Control on the Farm  
Salinity and Drainage in the San Joaquin Valley, California, 1870-1970  
Study of Innovative Techniques to Reduce Subsurface Drainage Flows  
Irrigation, Drainage and Salinity  
Environmental Impact Statement  
The Effects of Salinity on Seed Quality and Fiber Quality of Cotton  
Staff Report of the California Environmental Protection Agency, Regional Water Quality Control Board, Central Valley Region  
Agricultural Drainage and Salt Management in the San Joaquin Valley  
Total Maximum Daily Load for Selenium in the Lower San Joaquin River  
San Luis Unit Drainage Feature Re-evaluation  
Saline Drainage Water Reuse in the San Joaquin Valley

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San Joaquin Valley Drainage Program  
Springer Science & Business Media  
Richtlijnen voor de werker in het veld om

problemen te ondervangen ten aanzien van de waterkwaliteit voor irrigatie-doeleinden. Tenslotte worden praktijkervaringen uit diverse gebieden vermeld

**Agricultural Drainage and Salt Management in the San Joaquin Valley** Springer Science & Business Media  
The irrigated area in the Aral Sea basin totals about 7.5 million hectare. Part of

the water supplied to this area is consumed by the irrigated crop; the remainder of the supplied water drains to the groundwater basin, to downstream depressions, or back to the rivers. During its use, however, this drained part of the water accumulates salts and chemicals. The disposal of this polluted water causes a variety of (environmental) problems. If the percentage consumed water of the

total water supply to an irrigated area (the so-called overall consumed ratio) can be increased, less water needs to be drained. This alleviates part of the related (environmental) problems. Further, if the overall consumed ratio for the above 7.5 million hectare is improved, less water needs to be diverted from the rivers. Hence, more water can flow towards the Aral Sea. As mentioned above, part of the non-consumed irrigation water drains to the groundwater basin. Commonly, the natural discharge capacity of this basin is insufficient to handle this imported water. As a result, the groundwater table rises towards the land surface causing waterlogging. In (semi-)arid zones this waterlogging triggers a soil salinity problem resulting to a significant reduction in crop yields. The artificial increase of the discharge capacity, and lowering of the groundwater table, solves the soil salinity problem.

**Progress Report, Selenium and Agricultural Drainage Studies in California** Salinity and Drainage in San Joaquin Valley, California Science, Technology, and Policy  
This book documents the history of

irrigated agriculture and drainage in the San Joaquin Valley, and describes the hydrology and biogeochemical processes of salts and selenium, remediation technologies for salts and trace elements and policy and management options. The contents are comprised of fourteen chapter-length independent treatises, each depicting with fresh perspective a distinctive salinity drainage topic. The opening chapters detail the evolution of irrigated agriculture, and depict the geochemical and hydrological processes that define the San Joaquin Valley, including the physics, chemistry, and biology attributes that impact water management policies and strategies. Next, the contributors address the biogeochemistry of selenium, the role of plants in absorbing it from soils, and the processes involved in retaining and concentrating dissolved salts in drainage water. Further chapters describe on-farm and plot-level irrigation provisions to reduce agricultural drainage outputs and examine their effects on plant performance. This volume offers realistic policy analysis of water management options for irrigated agriculture in the

Valley and assesses their respective outcomes, if implemented. Also included is an international perspective on the sustainability of irrigated agriculture there.

**Prospectus** Springer Science & Business Media

This handbook has been developed to bridge the gap between the advanced salinity literature and practical information on salinity intended for lay audiences. A user-friendly resource for agricultural consultants and advisors, as well as for local, state and federal agricultural and water agency management staff. Includes thirty-eight chapters covering a broad spectrum of salinity and drainage topics, written so as to be easily understood by anyone with a general agricultural background. Also includes appendices presented as a shorthand guide to assessing soil salinity and to determining the suitability of a given water for irrigation. Illustrated with 27 tables and 44 figures. One of a series of water management handbooks prepared by the UC Irrigation Program.

*Water Quality for Agriculture*

Jan van Schilfhaarde, USDA Agricultural Research Service and National Research

Council Committee on Irrigation-Induced Water Quality Problems In 1982, a startling discovery was made. Many waterbirds in Kesterson National Wildlife Refuge were dying or suffering reproductive failure. Located in the San Joaquin Valley (Valley) of California, the Kesterson Reservoir (Kesterson) was used to store agricultural drainage water and it was soon determined that the probable cause of the damage to wildlife was high concentrations of selenium, derived from the water and water organisms in the reservoir. This discovery drastically changed numerous aspects of water management in California, and especially affected irrigated agriculture. In fact, the repercussions spilled over to much of the Western United States. For a century,

water development for irrigation has been a religiously pursued means for economic development of the West. The primary objective of the Reclamation Act of 1902 was, purportedly, the development of irrigation water to support family farms which, in turn, would enhance the regional economy (Worster, 1985).

**The Economics and Management of Water and Drainage in Agriculture**  
Salinity and Drainage in San Joaquin Valley, California  
Science, Technology, and Policy  
Springer Science & Business Media

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