



Requiem for the Santa Cruz

An Environmental History of an Arizona River

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R. ROY JOHNSON, and RAYMOND M. TURNER
Foreword by BERNARD L. FONTANA

River systems and the consequences of change

In prehistoric times, the Santa Cruz River in what is now southern Arizona saw many ebbs, flows, and floods. It flowed on the surface, meandered across the floodplain, and occasionally carved deep channels or arroyos into valley fill. Groundwater was never far from the surface, in places outcropping to feed marshlands or cienegas. In these wet places, arroyos would heal quickly as the river channel revegetated, the thriving vegetation trapped sediment, and the channel refilled. As readers of *Requiem for the Santa Cruz* learn, these aridland geomorphic processes also took place in the valley as Tucson grew from mud-walled village to modern metropolis, with one exception: historical water development and channel changes proceeded glove in hand, each taking turns reacting to the other, eventually lowering the water table and killing a unique habitat that can no longer recover or be restored.

Authored by an esteemed group of scientists, *Requiem for the Santa Cruz* thoroughly documents this river—the premier example of historic arroyo cutting during the late nineteenth and early twentieth centuries, when large floodflows cut down through unconsolidated valley fill to form deep channels in the major valleys of the American Southwest. Each chapter provides a unique opportunity to chronicle the arroyo legacy, evaluate its causes, and consider its aftermath. Using more than a century of observations and collections, the authors reconstruct the circumstances of the river's entrenchment and the groundwater mining that ultimately killed the marshlands, a veritable mesquite forest, and a birdwatcher's paradise.

Today, communities everywhere face this conundrum: do we manage ephemeral rivers through urban areas for flood control, or do we attempt to restore them to some previous state of naturalness? *Requiem for the Santa Cruz* carefully explores the legacies of channel change, groundwater depletion, flood control, and nascent attempts at river restoration to give a long-term perspective on management of rivers in arid lands. Tied together by authors who have committed their life's work to the study of aridland rivers, this book offers a touching and scientifically grounded requiem for the Santa Cruz and every southwestern river.

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REGIONAL/ ENVIRONMENTAL STUDIES

June

296 pp.

8.5 x 11

140 photos and 3 tables

ISBN 978-0-8165-3072-4 **\$80.00** cloth

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