TROPICAL HYDROLOGY and CARIBBEAN WATER RESOURCES

Edited By:
J. Hari Krishna, Vicente Quiñones-Aponte, Fernando Gómez-Gómez and Gregory Morris
TROPICAL HYDROLOGY AND
CARIBBEAN WATER RESOURCES

PROCEEDINGS OF THE
INTERNATIONAL SYMPOSIUM ON TROPICAL HYDROLOGY AND
FOURTH CARIBBEAN ISLANDS WATER RESOURCES CONGRESS

Edited by
J. Hari Krishna,
Vicente Quiñones-Aponte,
Fernando Gómez-Gómez, and
Gregory L. Morris

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AMERICAN WATER RESOURCES ASSOCIATION
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The tropics give rise to the world’s largest and longest rivers, and span a diversity of climates ranging from the snow cloud Andean peaks to the coastal mangrove forests. Insular areas in the tropics include some of the highest population densities in the world.

Unfortunately, there is a relative paucity of research on water resources in tropical areas. This contrasts with the level of research undertaken in temperate zones, as well as with the urgent economic and environmental concerns of tropical regions of the world. In the absence of adequate research, there is a tendency to make development decisions based on inadequate information, and to extrapolate temperate zone approaches to tropical zone problems where they may not necessarily be applicable. When these concerns are viewed in the context of the absolute size and high growth rate of the human population in tropical areas, their socio-economic needs, and the types and magnitudes of water resource management decisions being made, the need for a substantial increase in research as well as a major effort to disseminate knowledge becomes clear.

The difficulties facing decision makers, researchers, and environmentalists within the tropics and in particular within insular areas are many. Working toward an improvement of the general well being, a symposium was organized to bring together an interdisciplinary group of scientists and managers devoted to the water resources sciences. The “International Symposium on Tropical Hydrology” was organized in conjunction with the Fourth Caribbean Islands Water Resources Congress to: 1) promote technology transfer between the various disciplines; 2) provide a forum for professionals to exchange experiences, ideas, and potential development of new research studies; 3) provide a source for communication with those who are not water scientists; and 4) provide a forum for the discussion of common water resources management problems.

Authors presented studies from about 19 different countries. Over 80 papers were presented orally or by poster. Sixty-six (56) papers were accepted for publication in the Proceedings and are arranged in four major sections: 1) Water Resources Management, 2) Surface Water Hydrology, 3) Ground Water Hydrology, and 4) Water Quality. Papers within all four sections range from conceptual descriptive papers to very complex research experiments. These included papers describing: water management problems, strategies, and new techniques for the management of water resources; rainfall runoff modeling in tropical environments; extreme flow forecasting; reservoir operation; erosion, sedimentation, and landslide problems; ground water problems on small tropical islands; geophysical techniques for the study of fresh water lenses; application of numerical techniques to ground water problems; computer developments for the handling of ground water data; baseline water quality data and stable isotopic studies; effects of land development on water quality; tracer techniques, drinking and waste water treatment; and bacteriological water quality studies. Papers included in the Proceedings have been reviewed by at least one of the editors and an outside referee.

It is our hope that these Proceedings will serve as an impetus to promote further research and better understanding of the water resources of tropical and insular areas, and that this knowledge can be translated into better water management for the benefit of all.

J. Hari Krishna  
Vicente Quiñones-Aponte,  
Fernando Gómez-Gómez, and  
Gregory L. Morris  
Editors
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