



## WATER RESOURCES RESEARCH GRANT PROPOSAL

**Project ID:** GU2121

**Title:** Inventory and Evaluation of Karst Features Relating to Past and Present Groundwater Flow in Saipan, in Terms of the Carbonate Island Karst Model

**Focus Categories:** Groundwater, Climatological Processes

**Keywords:** Carbonate Island Aquifers, Island Karst, Groundwater

**Start Date:** 03/01/2001

**End Date:** 02/28/2002

**Federal Funds:** \$28,119

**Non-Federal Matching Funds:** \$0

**Congressional District:** N/A

**Principal Investigator:**

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**Abstract**

Water resource managers and scientists lack a suitable conceptual model of coastal and island carbonate aquifers. Planning, design, and management of systems for groundwater development of groundwater on carbonate aquifers require a better understanding of their unique properties. Work begun on the relatively simple Atlantic-Caribbean islands has recently been extended to Guam, a geologically more complex island, in order to develop a truly general model for carbonate island karst aquifers. Saipan exhibits further complexities, which have not yet been systematically examined and incorporated into the general model. We therefore propose a systematic field investigation of the karst features of Saipan, directed at incorporating them into the framework of the emerging Carbonate Island Karst Model (CIKM). Groundwater developers and managers on Saipan will benefit directly from improved specific knowledge of the properties and more reliable explanations of the behavior of the aquifer. Specific work to be done includes mapping and cataloging karst surface features, caves, and coastal discharge features as we have on Guam, in preparation for eventually undertaking a long-term comprehensive hydrogeologic study of Saipan. The work will support an M.S. thesis as well as undergraduate research. Results will be presented in professional journals, international conferences, and website publications, and made accessible to local water resource professionals and educators through technical reports, local conferences, and outreach publications.