

**HYDROLOGICAL ASPECTS OF A TROPICAL KARSTIC AQUIFER,
NORTHEAST YUCATAN PENINSULA**

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The Yucatan Peninsula is a low relief carbonate platform with well developed karst features. The hydrology is characterised by a lack of surface drainage and precipitation rapidly infiltrates the ground recharging the shallow aquifer. Due to differential water densities, a distinct layer of meteoric water floats above intruding dense marine water. An extensive flooded conduit system called Nohoch Nah Chich exists 150 km south of Cancun on the Caribbean Coast. Over 60 km of conduit have been explored by cave diving including a connection to the coast. Seven quantitative fluorescent dye traces were performed during July of 1997, to determine velocity and discharge of fresh water in conduit sections. Significant spatial variation in groundwater velocities are related to conduit geometry, and distance to the coast. Surface water level monitoring reveals significant tidal influence at distances up to 5 km from the coast. The relative tidal influence on the aquifer is measured by the time lag in progression of water level maxima and minima through the system, and by the decreasing percentage of tidal range in groundwater levels with increasing distance from the coast. Published research in the same geological area refute the significance of tidal influence on this aquifer. As the field component of this research has at this time been recently completed, it is too early draw conclusions from the raw data. Keywords: Yucatan, groundwater, karst