

IAH network on “Coastal aquifer dynamics and coastal zone management” QUESTIONNAIRE

IAH national committees, IAH members and non members from all around the world involved in SWI and SGD research and management are kindly asked to fill in the questionnaire in this page with as many details as possible.

A world database will be set up and made available, with basic coastal aquifer main characteristics.

We expect to gather standard and comparable information on the knowledge level and hopefully the state of the art of the research on SWI and SGD, and coastal aquifer management methods adopted around the world

1)	Location of aquifer (country, more specific location):	Southern Baldwin County, Alabama
2)	Reported by:	Dorina Murgulet and Geoffrey R. Tick
3)	Type of medium (karst, porous, fracture)	Porous
4)	Type of aquifer (phreatic or confined)	a) Aquifer zone A1, the upper unit, known as the Beach Sand aquifer an unconfined aquifer that is roughly 6 to 20 meters thick; b) Aquifer zone A2, the Miocene-shallow Pliocene aquifer varies from confined to unconfined (main source of public-water supply) ; c) Aquifer zone A3, the lower unit known as the Deep Miocene aquifer, extends from the upper confining unit that underlies aquifer zone A2 to the top of the Pensacola Clay (200 meters to more than 300 meters below sea level)
5)	Main lithology - (e.g. gravel, sand and clay)	Sands, silts, gravels and clays and sedimentary rocks
6)	Hydrochemistry: fresh or saline	Fresh and Saline
7)	Saltwater intrusion: lateral from sea or lakes - upconing	Saltwater intrusion (especially areas adjacent to the Gulf of Mexico)
8)	Aquifer geometry: hydraulic characteristics	Transmissivity ranged from 700 to 5,400 feet squared per day
9)	Aquifer parameters: storage - annual water pumping - (in MCMA - millions cubic meters, annually)	Groundwater pumping in the region increased from 2.7 x 10 ⁷ L/day to 1.6 x 10 ⁸ L/day between 1966 and 2000 (result of increasing population and tourism); Storage coefficient is about 1.5 x 10 ⁻³
10)	Depth of aquifer (water level and bottom) - water level 5-30 m - aquifer depth - 50-200 m	
11)	Major chemistry (anions - ?; Cations - ?):	Cl, Ca, Mg and Na
12)	Major salinity sources:	Seawater intrusion (main source) and surface contamination
13)	Population:	The population, tourism and development increased significantly from the year 2000 (more 150000). The major types of land use include ☐ agriculture, tourism, seafood industries, and urbanization
14)	Aquifer status: special features - e.g. thermal springs, major faults,...	
15)	Investigation methods - e.g. water level measurements, EC (electrical conductivity profiles), TDEM (geophysical),	Geologic and hydrogeologic information, geochemical measurements and water level measurements
16)	Numerical hydrological modeling, chemical and isotopic methods, age determination, IR survey, seepage meters (for Submarine Groundwater Discharge, SGD)	
17)	Monitoring methods applied and duration - water level measurements, EC (electrical conductivity profiles - seasonal)	Well surveys and groundwater analyses were conducted over a two year period (2006 and 2007) and integrated with existing data attained primarily from the Alabama Department of Environmental Management (ADEM), the Geological Survey of Alabama (GSA) well records, and GSA
18)	Management methods:	
19)	Aquifer management actions:	
20)	Identification of existing or potential problems:	
21)	Annexes:	
22)	Observations:	Elevated levels of salinity were observed only in the local aquifers A1 and A2 because aquifer zone A3 is less vulnerable to saltwater contamination