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):	Italy, Sardinia NW, Nurra Region
2)	Reported by:	Giorgio GHIGLIERI
3)	Type of medium (karst, porous, fracture)	Karst, Fracture
4)	Type of aquifer (phreatic or confined)	phereatic and confined
5)	Main lithology - (e.g. gravel, sand and clay)	Mesozoic Hydrogeologic Unit: limestone sequences aquifer system (Cretaceous); limestone aquifer system (Jurassic); limestone, dolomite, and gypsum aquifer system (Triassic). Terziary Volcanic Hydrogeological Unit: Pyroclastic aquifer system (Oligo-Miocene).
6)	Hydrochemistry: fresh or saline	Fresh and saline
7)	Saltwater intrusion: lateral from sea or lakes - upconing	no
8)	Aquifer geometry: hydraulic characteristics	K=1x10-4 - 1x10 -6 m/s
9)	Aquifer parameters: storage - annual water pumping - (in MCMA - millions cubic meters, annually)	Mean annual natural recharge: 32,5 MCMA
10)	Depth of aquifer (water level and bottom) - water level 5- 30 m - aquifer depth - 50-200 m	water level 3-30m; aquifer depth 10-600m
11)	Major chemistry (anions - ?; Cations - ?):	Ca or Na-HCO3 type, which evolve to Ca or Mg–Cl2 and Na–Cl; CaSO4
12)	Major salinity sources:	Consideration of the water compositions indicates that salinization in the Nurra Basin derives from various sources, even though most of the acquired salinity derives from sodium and chloride input.
13)	Population:	
14)	Aquifer status: special features - e.g. thermal springs, major faults,...	Geological structures and lithology exert the main control on recharge and groundwater circulation, as well as its availability and quality.The Tertiary volcanic complex is affected by strike-slip faults along which deep circuits can develop giving rise to hypothermal waters The watershed divides do not fit the groundwater divide; the latter is conditioned by open folds and by faults.
15)	Investigation methods - e.g. water level measurements, EC (electrical conductivity profiles), TDEM (geophysical),	water level mesasurement; aerial photo interpretation and geophysical prospecting (gravimetric profiles); hydrogeochemic; isotopes
16)	Numerical hydrological modeling, chemical and isotopic methods, age determination, IR survey, seepage meters (for Submarine Groundwater Discharge, SGD)	chemical and isotopic methods
17)	Monitoring methods applied and duration - water level measurements, EC (electrical conductivity profiles - seasonal)	Water level measurement, spring dscharge, water collection for chemical analysis
18)	Management methods:	
19)	Aquifer management actions:	
20)	Identification of existing or potential problems:	Medium aquifer vulnerability; Nitrate pollution; overexploitation (exploited mainly for agricultural uses, but also for industrial and civil ones); high vulnerabilty to saltwater intrusion
21)	Annexes:	(2009) Hydrogeology of the Nurra Region, Sardinia (Italy): basement–cover influences on groundwater occurrence and hydrogeochemistry. Hydrogelogy Journal Springer Verlag ISSN 1431-2174, vol. 17 Issue 2, 447-466 GHIGLIERI G., BARBIERI G., VERNIER A. CARLETTI A., DORE M., DEMURTAS N.,
22)	Observations:	concentrations which, along with other hydrogeochemical evidence, rules out sea-water intrusion as the cause of high salinity. The high chloride and sulphate concentrations can be related to deep hydrothermal circuits and to Triassic evaporites, respectively.