

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):	Northern and Central Poland
2)	Reported by:	Dorota Kaczor-Kurzawa
3)	Type of medium (karst, porous, fracture)	Porous medium
4)	Type of aquifer (phreatic or confined)	Cenozoic and locally Tertiary, Cretaceous and Jurassic aquifers (phreatic and confined)
5)	Main lithology - (e.g. gravel, sand and clay)	Water-bearing deposits, represented largely by sand stones with interbedding mudstone-claystone series, and by Middle Triassic, Jurassic and Cretaceous carbonate rocks
6)	Hydrochemistry: fresh or saline	Fresh and Saline
7)	Saltwater intrusion: lateral from sea or lakes - upconing	Lateral intrusion by the sea and upconing: ascent of diluted brines from Mesozoic formations
8)	Aquifer geometry: hydraulic characteristics	Porous aquifers= (coefficient hydraulic conductivity 0,01-8 m/h, conductivity 0,1-12 m ² /h), carbonate rocks=(coefficient hydraulic conductivity 0,03-3 m/h, conductivity 0,3-17 m ² /h)
9)	Aquifer parameters: storage - annual water pumping - (in MCMA - millions cubic meters, annually)	Several -50 m ³ /h, only in the buried valley deposits >100 m ³ /h
10)	Depth of aquifer (water level and bottom) - water level 5-30 m - aquifer depth - 50-200 m	Groundwater level (unconfined and confined) 5-30 m, depth of aquifer usually 15-50 m, below 100 m there are saline water and brines
11)	Major chemistry (anions - ?; Cations - ?):	Cl ⁻ , SO ₄ ²⁻ , HCO ₃ ⁻ , Na ⁺ , Ca ²⁺ and Mg ²⁺
12)	Major salinity sources:	Water salinity was caused either by Baltic seawater ingressions or by anthropogenic pollution(dissolution of Zechstein and Triassic salts)
13)	Population:	0,5 - 1 well/ km ²
14)	Aquifer status: special features - e.g. thermal springs, major faults,...	The saline waters within the Mesozoic formation are under pressure, which enables their upward migration through a system of fractures and faults towards the Cenozoic aquifers
15)	Investigation methods - e.g. water level measurements, EC (electrical conductivity profiles), TDEM (geophysical),	Hydrochemical analysis,corcening more 12000 analysis of: pH, conductivity,temperature,alkalinity,chemical and isotopic analysis
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)	Quantitative and qualitative monitoring, by Polig Hydrogeological Survey measurements of qualitative 2xyears, and quantitative (groundwater level) 1xweek
18)	Management methods:	Limitation of exploitation
19)	Aquifer management actions:	
20)	Identification of existing or potential problems:	Groundwater salinization is a real threat to groundwater quality and disposable reserves on substantial areas in northwestern and central Poland that were used for agricultural,industrial and civil uses
21)	Annexes:	
22)	Observations:	