

Using SEAWAT Code to simulate seawater intrusion in Gaza Strip

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Abstract. The Gaza coastal aquifer is the only natural source of drinking water for the population of the Gaza Strip. Groundwater is intensely overused due to the continuous growth of the population. Pumping from the coastal aquifer results in the formation of large depression cones under the city centers in the Gaza Strip. The continuous decrease of water level has invoked the seawater intrusion. This results in deterioration of water quality in the aquifer.

SEAWAT code, a three dimensional model of coupled density-dependent flow and miscible salt transport, is used to simulate the seawater intrusion in the Gaza Coastal Aquifer. The model was used to determine the extent seawater intrusion impact the pumped groundwater water quality within the next 10 years. The model was also used to determine the feasibility of different management scenarios in the future. The first scenario will be the no-action scenario that simulates the continuation of the current situation for the next 10 years. The second scenario is to investigate the impact of importing water from the West Bank via a pipeline. The third scenario will be the impact of the installation of injection wells line along the coast as barrier to the intrusion.

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