

Groundwater in Palestine and its Vulnerability to Contamination

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Groundwater is the most valuable natural (and national) resource of the occupied and isolated territories of both the West Bank and Gaza Strip of Palestine. Water is a basic need.

Worldwide, the geological and hydrological environment of each and every groundwater resource system is unique, and in general far more complex and slower reacting than surface water systems.

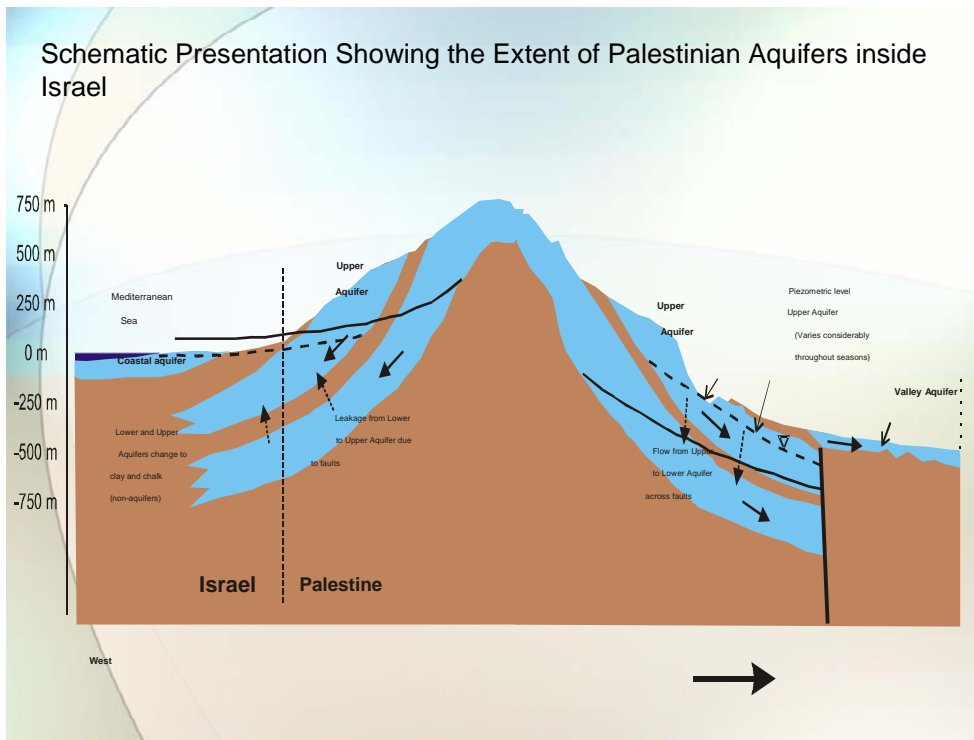
Therefore, the groundwater hydrology of the West Bank of Palestine is determined by the existing geological structure of the area – it is not man-made. The mountain ranges of the West Bank constitute the natural replenishment system for a number of groundwater basins flowing both westward and eastward. Rainwater flowing over rocky surfaces in the hilly regions of the Palestinian West Bank penetrates through the various soil and rock formations into the stored water in the aquifers of the groundwater basins.

The existing geological structure determines the various aspects of any groundwater basin:

- The occurrence and distribution of the groundwater
- The amount of groundwater in storage
- The direction and rate of groundwater flow
- The sources and locations of natural recharge, and
- The locations of natural discharge, i.e., springs.

Groundwater is, of course, a part of the hydrological cycle. It originates as precipitation or surface water (wadi flow) before it penetrates below the ground surface. Groundwater moves underground toward a natural discharge point such as a wadi/stream, a spring, a lake (whether permanent or seasonal), or towards an artificial outlet constructed by man – such as a well.

The mountain aquifer in Palestine (most of whose waters are thus derived from rainfall over the West Bank) flows naturally from the hilly regions of the West Bank to the west and northeast, and eventually it flows into Israeli territory (see Map 1) where it is being utilized within the present boundaries of Israel through a dense system of well extraction along the West Bank's so-called Green Line. To the east of the hydrogeological divide of the West Bank, the groundwater flows toward the Jordan Valley where again Israel controls and extracts these waters through a strategically planned line of deep wells along the Eastern slopes of the Mountain Aquifer.



Map 1: Schematic Presentation Showing the Extent of Palestinian Aquifers. The dotted perpendicular line is the 1967 Armistice Line called “The Green Line”



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