Water Update

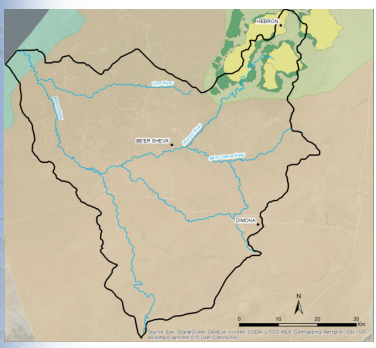
RESTORATION OF THE BESOR-HEBRON-BE'ER SHEVA STREAM

By Clive Lipchin

In a time of ever-decreasing global water supply, Israel is working to ensure that its future water needs are secure. Responding to this mandate, the JNF Parsons Water Fund has partnered with the Center for Transboundary Water Management (CTWM) at the Arava Institute for Environmental Studies to restore the Besor-Hebron-Be'er Sheva watershed, whose untreated wastewater directly affects JNF's Be'er Sheva River Park project.

A little earth science lesson: Watersheds are the areas of land where all of the water that runs under it or drains off it collects at the same place. The Besor-Hebron-Be'er Sheva watershed includes areas of Israel, the West Bank, and Gaza (Sde Boker in the south, Hebron in the northeast, and Gaza in the west), ultimately draining into the Mediterranean Sea. Because it includes both Israel and the Palestinian Authority, it is considered a transboundary watershed.

The watershed's problem stems from untreated sewage discharges from domestic and industrial sources, including leather tanning, stone cutting, and olive-pressing facilities in the West Bank due to the region's limited wastewater treatment infrastructure. Pollution generated by the Palestinians then crosses into Israel downstream. At the Green Line, Israel partially treats the wastewater, but because the water belongs to the Palestinians, according to international water law, all Israel can do is release the wastewater back into the stream. By the time the water reaches Be'er Sheva it has picked up additional untreated wastewater from surrounding Bedouin communities that also lack adequate sewage infrastructure. In addition, research suggests that the surface wastewater infiltrates groundwater, posing a serious threat to drinking water resources in the Western Mountain aquifer.



Map of Besor-Hebron-Be'er Sheva watershed

This project brings together parties from Israel, the Palestinian Authority and the Bedouin community with the primary objective of laying the foundation for effective stream restoration. The JNF Parsons Water Fund is a principal funder of the three-year project, which is managed by CTWM.

To understand the broader picture, water quality in Negev communities must be evaluated together with the water from the Bedouin and Palestinian communities upstream. To address the causes of pollution at a watershed level, CTWM is using state-of-the-art hydrological monitoring stations and Geographic Information Systems (GIS) to collect and analyze watershed data. The first of three advanced hydrologic monitoring stations has been installed and will collect continuous water quality and quantity data. Extensive information has been compiled on water, environmental conditions, socio-economics, land use, and sources of pollution from throughout the watershed. Additionally, CTWM has developed a geodatabase using GIS to analyze and visualize watershed data spatially on a series of maps.

CTWM, which has a history of seeking practical solutions to environmental problems with diverse voices and a regional focus, recently engaged Israeli, Palestinian and Bedouin stakeholders in a cross-border workshop. The compiled data was used as a platform for transboundary dialogue about effective restoration strategies and discussions about water quality and wastewater management. The GIS visualization and analysis helped communicate a scientific understanding of the watershed conditions and foster a better working relationship with all involved.

CTWM's research will ensure a sustainable and beneficial watershed for not only Be'er Sheva and the Be'er Sheva River Park, but also the entire Negev region. By framing the project at a watershed level, the approach fulfills the goals of restoring the entire system from its point of origin in the southern West Bank to its terminus at the Mediterranean Sea, including the establishment of a viable and flourishing Be'er Sheva River Park.

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