

# Dead Sea

The Dead Sea is the terminal lake of the Jordan Rift Valley. It is the lowest point on the surface of the earth, and the waters have the highest density and salinity of any sea in the world. The east and west shores of the Dead Sea are bounded by towering fault escarpments that form part of the African-Syrian rift system. The valley slopes gently upward to the north along the Jordan River, and to the south along the Wadi Araba. Historically, the Dead Sea is composed of two basins: the principal northern one that is about 320 m deep (in 1997), and the shallow southern one from which the Dead Sea has retreated since 1978. The two basins are divided by the Lisan (or Lashon) Peninsula and the Lynch Straits, which has a sill elevation of about 400 m below sea level.



Water from the Dead Sea currently is pumped into large evaporation ponds constructed in the shallow southern basin for the extraction of potash, magnesium, bromine, and industrial and table salts.

The closed watershed of the Dead Sea is 40,650 km<sup>2</sup>. Most of the water flowing to the Dead Sea comes from the relatively high rainfall areas of the Jordan River watershed to the north, and the rift valley escarpments to the east and west of the Dead Sea. To the south, the Wadi Araba watershed covers the arid regions of the Negev and South Jordan Desert. The climate in the watershed varies from snow capped Mount Hermon (Jabel El Sheik), with annual precipitation in excess of 1,200 mm, to the arid regions of the southern Negev, where annual rainfall averages less than 50 mm. Over the Dead Sea itself, average annual rainfall is about 90 mm and the annual potential evapotranspiration is about 2,000 mm. Actual evaporation ranges from about 1,300 to 1,600 mm and varies with the salinity at the surface of the Dead Sea, which is affected by the annual volume of freshwater inflow. The average temperature is about 40 °C in summer and about 15 °C in winter.

The water level of the Dead Sea has a seasonal cycle. Prior to development of water resources in the watershed, the peak water level occurred in May and

Located near the center of the region, the Dead Sea lies at the terminus of the Jordan River, flowing in from the north, and the Wadi Araba to the south. The shallow southern basin has been separated from the main water body by declining water levels and now contains manmade evaporation ponds.



the low occurred in December, as shown for the period 1935–55 in the bottom graph on the next page. Within-year variation ranges from 0.3 to 1.2 m for most of the period of record. Intensive development of freshwater in the Dead Sea watershed has altered the seasonal variation in water level, typically increasing the decline and decreasing the rise.