

# Mediterranean Sea dried up five million years ago

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(PhysOrg.com) -- Upward movement of the Earth's crust transformed the Straits of Gibraltar into a dam. Approximately five million years ago, the Mediterranean Sea dried up after it was sealed off from the Atlantic Ocean. According to earth scientist Rob Govers of Utrecht University, Netherlands, a reduction in the weight on the Earth's crust led to the Straits of Gibraltar moving upwards.

Govers will publish his conclusions in the February issue of the earth sciences journal *Geology*.

Much like a mattress springs back into shape after you get off it, the Earth's crust moves upwards when sea levels fall. Known as isostasy, this phenomenon explains how the Mediterranean Sea was sealed off from the Atlantic Ocean five million years ago. This 'dam' would remain in place for 170,000 years. Much like today, the rate of evaporation in the Mediterranean Sea five million years ago greatly exceeded the incoming flow of water. As no more water was introduced via the Straits of Gibraltar, the water evaporated and the Mediterranean Sea dried up completely.

After being separated for 170,000 years, the Mediterranean Sea and the Atlantic Ocean were once again connected. Govers believes that the movement of the Earth's crust played a crucial role. The African Plate subducts under the Eurasian Plate beneath Gibraltar and the weight of the subducting edge of the African Plate may have pulled the entire region downwards. Govers submits CT scans of the inner layers of the

Earth's crust and measurements of gravitational forces as evidence: both the scans and the measurements indicate the presence of a heavy mass up to 400 kilometres beneath the area.

More information: Choking the Mediterranean to dehydration: the Messinian Salinity Crisis, Dr. Rob Govers, *Geology* (February 2009).

Provided by Utrecht University, Netherlands

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