

# **River Boundaries: the Influence of Changes in the Jordan and Yarmuk Rivers on the International and Cadastral Boundaries (part 2)**

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## **SUMMARY**

International and cadastral boundaries are important for ensuring stable legal territorial matters. As such, they should be accurately defined. In certain cases, boundaries are defined on physiographic features, such as rivers, glaciers and lakes that are influenced by climate change.

This article deals with the long-term location and management of boundaries in rivers. A few countries have agreed that the boundary will not follow changes in the river (like in the Mongolia-China Border Treaty), whereas most agree that the boundary will follow slow, natural and gradual changes in the river (like is stated in the Israel-Jordan Peace Treaty).

The international boundary under the British Mandate between Palestine and Trans-Jordan in the Jordan and Yarmuk Rivers was defined in 1922. The cadastral boundaries were defined in these rivers in the 1930s along the international boundary.

For more than 70 years, until the Israel-Jordan 1994 Peace Treaty, the rivers have changed their channels east and westward to distances up to hundreds of meters. During that period the mandatory boundaries in these rivers changed their political status to temporary armistice lines, and to international boundaries between sovereign states.

These lines were usually delineated on topographic maps in the rivers, drawn by cartographers following contemporary map revision. During that entire period the cadastral boundaries were not changed in order to adapt them to the actual position of the rivers and to the delineated international boundaries.

Owing to large water works on the Jordan and Yarmuk Rivers, including the construction of dams

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and diversion channels in order to meet the increasing needs of the population on both sides, the water flow of the rivers decreased dramatically to less than one tenth of the original natural flow. The population today is more than ten times than it used to be under the British Mandate. The changes in the water channels during the last 20 years since the 1994 peace treaty are in the magnitude of 10 meters versus hundreds of meters in the past. In addition, intensive land cultivation adjacent to the river banks has stabilized them.

In 2000, due to the construction of a dam on the Yarmuk River, both sides jointly fixed coordinates of the relevant river boundary line according to the delineation in the peace treaty.

The accumulated artificial changes along both rivers have cancelled their natural behavior and have influenced the changes in the river channels. This may justify an initiative to fix the border lines in both rivers by coordinates according to the peace treaty delimitation, enabling the cadastral boundaries to be fixed according to the fixed international boundary line.

Part 1 of the article analyzes the theory and practice of boundary line management in light of changes in rivers from the time of the Romans until today. Part 2 analyzes the special case of the boundary line in the Jordan and Yarmuk Rivers, and introduces a proposal for stabilizing this boundary line.

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