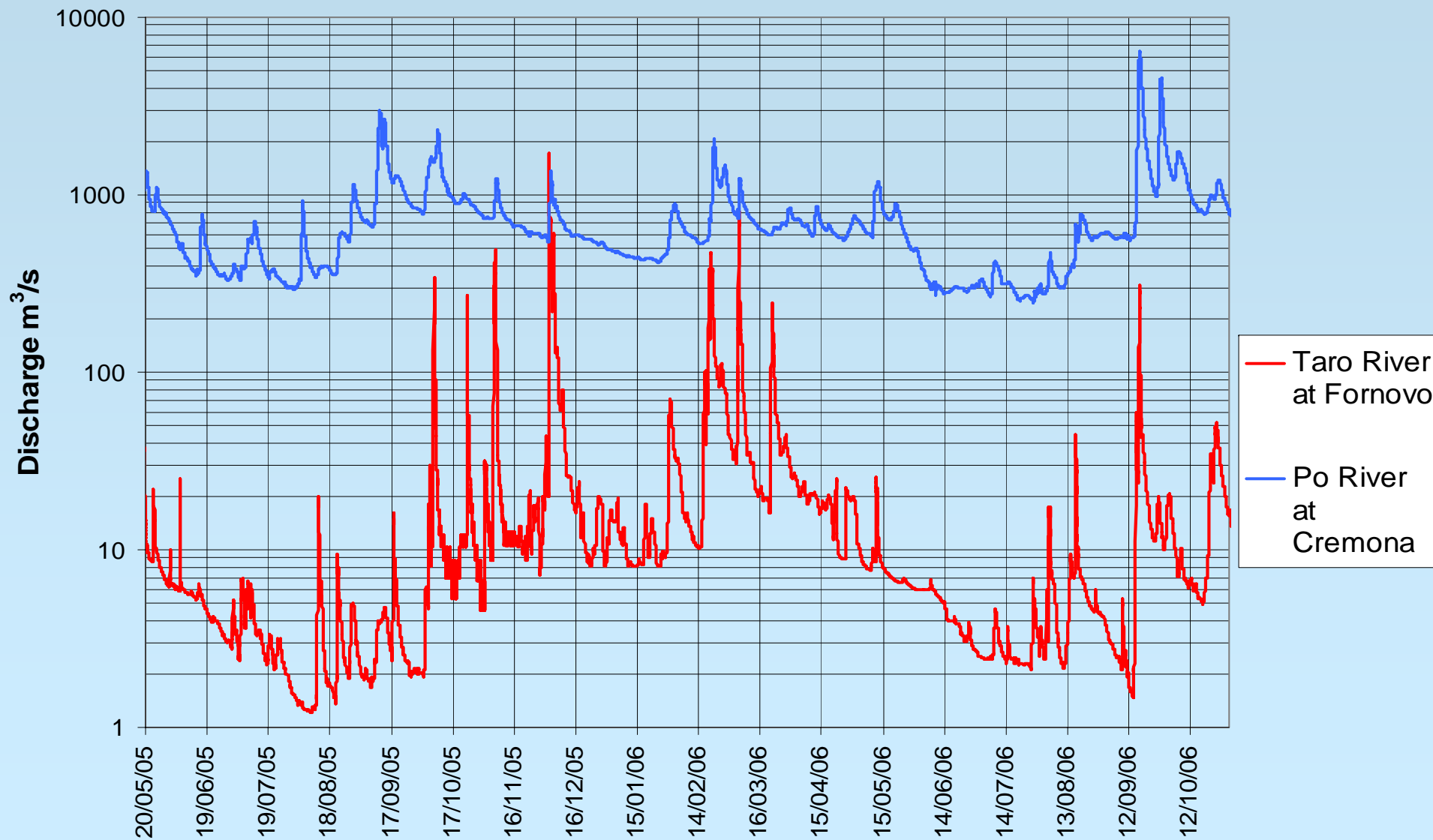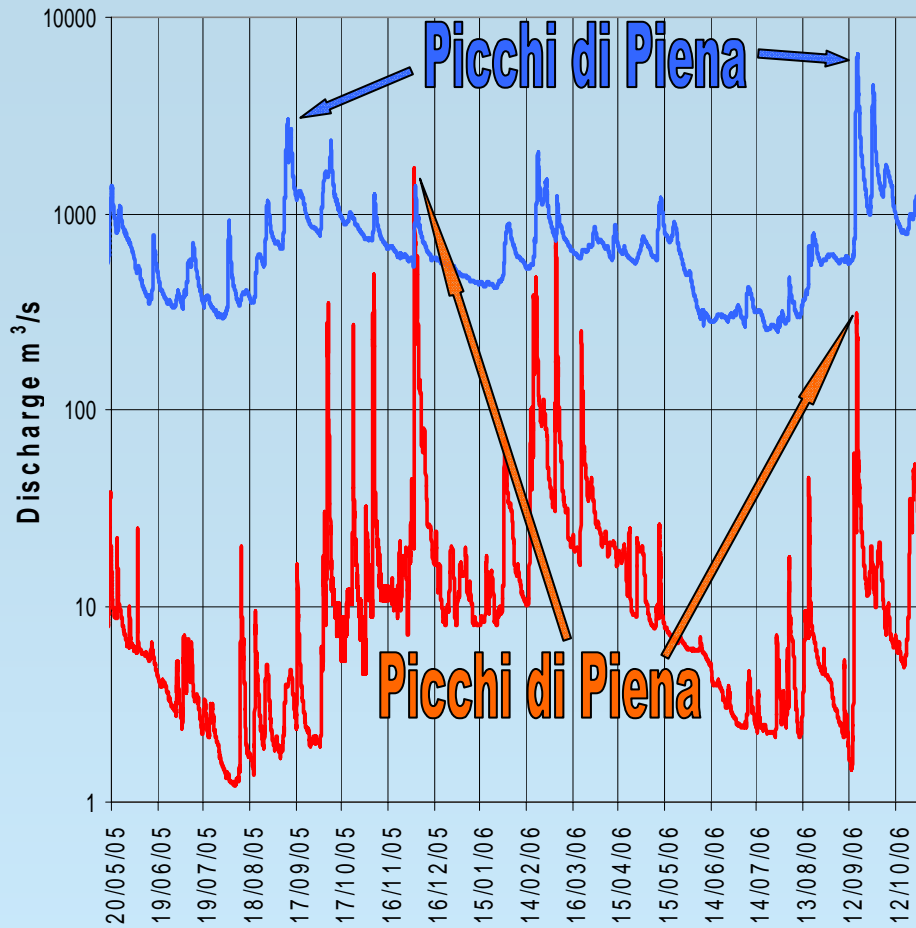**Studio della conoide alluvionale del Fiume Taro per la realizzazione di un modello idrogeologico per la gestione sostenibile delle risorse idriche**

IL MODELLO MATEMATICO DEL FLUSSO IDRICO NEGLI ACQUIFERI

9 – Valutazione degli Scambi Idrici Fiume - Acquiferi

IDROGRAMMI DEI FIUMI TARO E PO NEL PERIODO SIMULATO

During flood peaks the Taro River feeds his upper alluvial fan (encompassing a reach of ~17 km) at a daily mean rate between **0.32** and **0.35** m³/(s·km), the highest value corresponding to late summer flood peaks.

During late summer flood peaks the Po River feeds the southern connected aquifers along a front of almost 26 km at a daily mean rate between **0.16** and **0.26** m³/(s·km). The rate amount mainly depends on the peak water level.
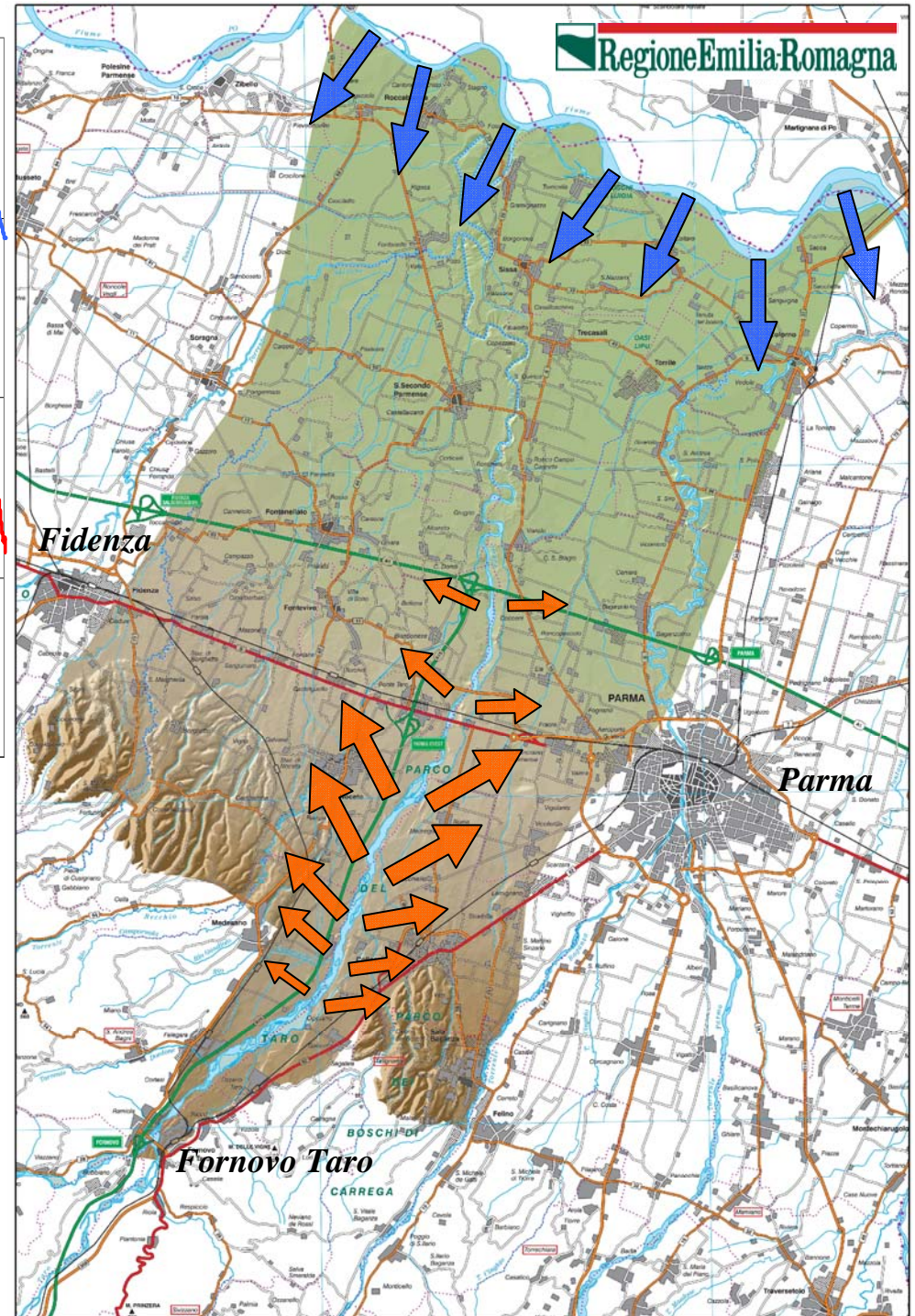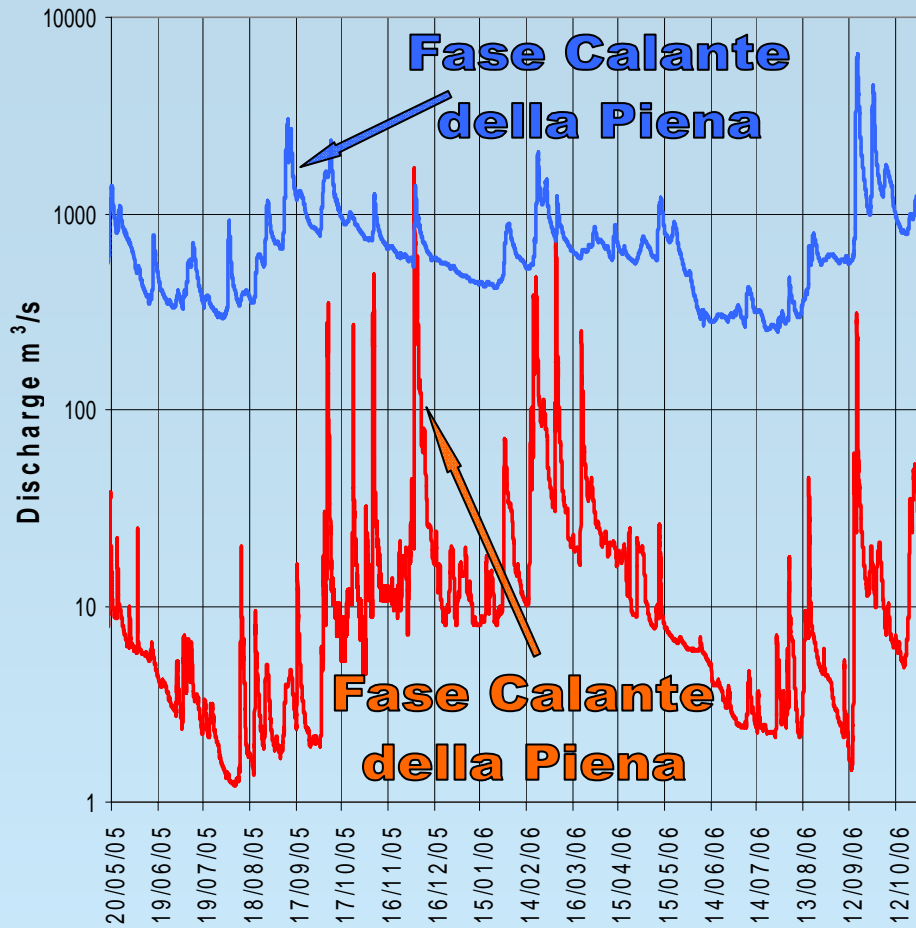
During flow depletion stage of the flood, in the upper alluvial fan of the Taro River only a minimum amount of the water previously entered the aquifer is returned to the stream at a daily mean rate never exceeding **0.005** m³/(s·km).

On the contrary, most of the water that previously entered the southern aquifers along the Po River is drained during the flow depletion stage of the flood at almost the daily mean rate recorded during the flood peak.
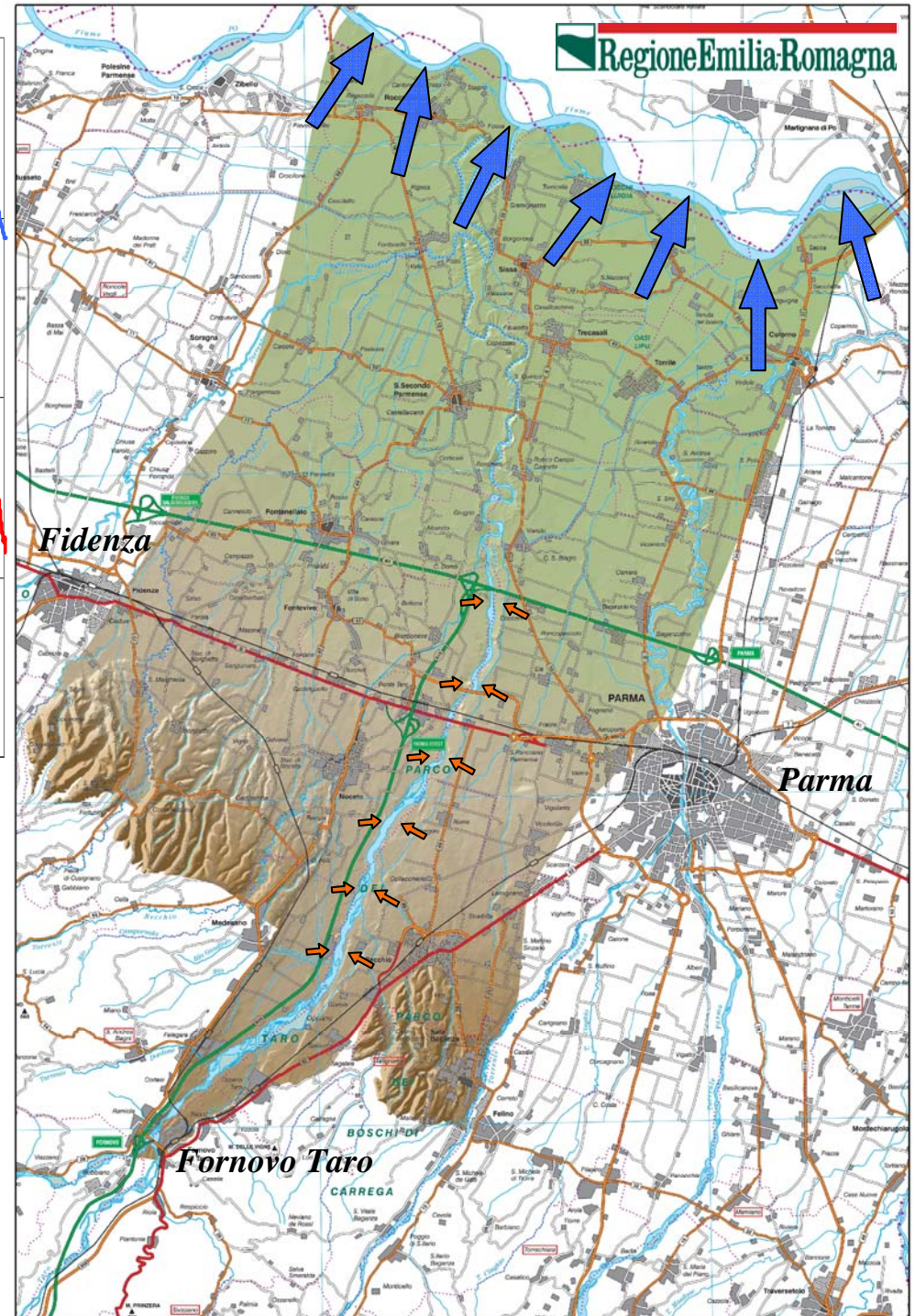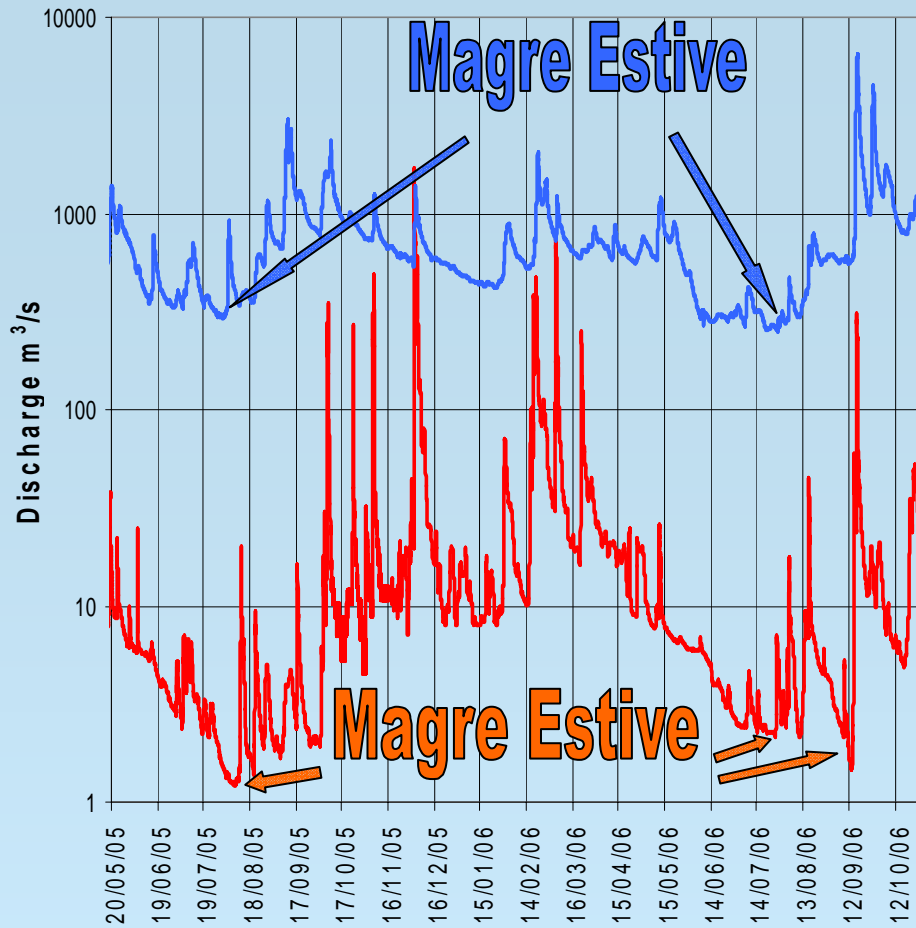
Even during summer and early autumn low flows the Taro River feeds his upper alluvial fan aquifers at a daily mean rate ranging fom **0.02** to **0.08** m³/(s·km). The highest values can be recorded in June and July, when the irrigation wells pump groundwater at their highest rate.

On the contrary, during summer and early autumn low flows the Po River drains the southern connected aquifers at a daily mean rate ranging fom **0.01** to **0.03** m³/(s·km).
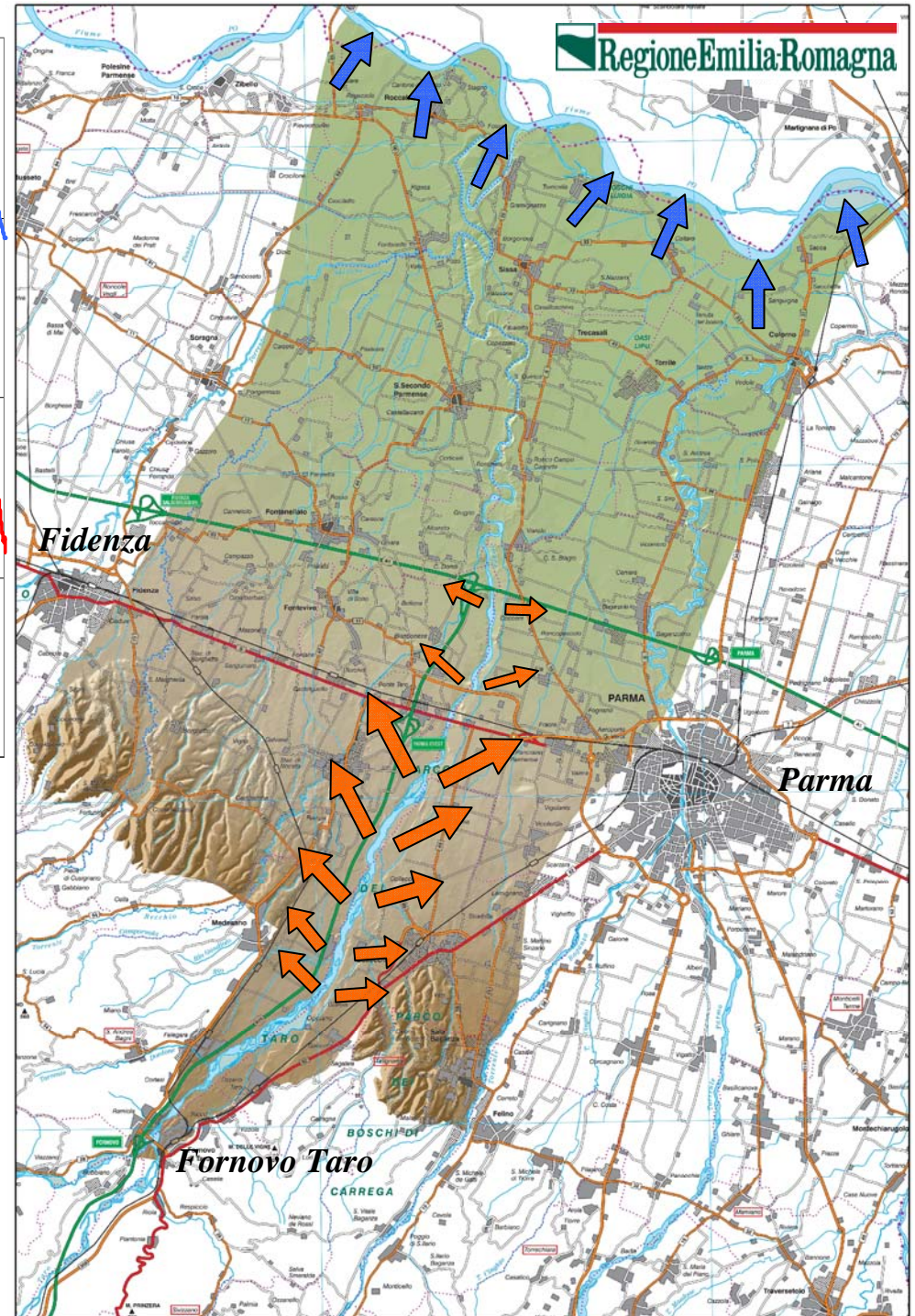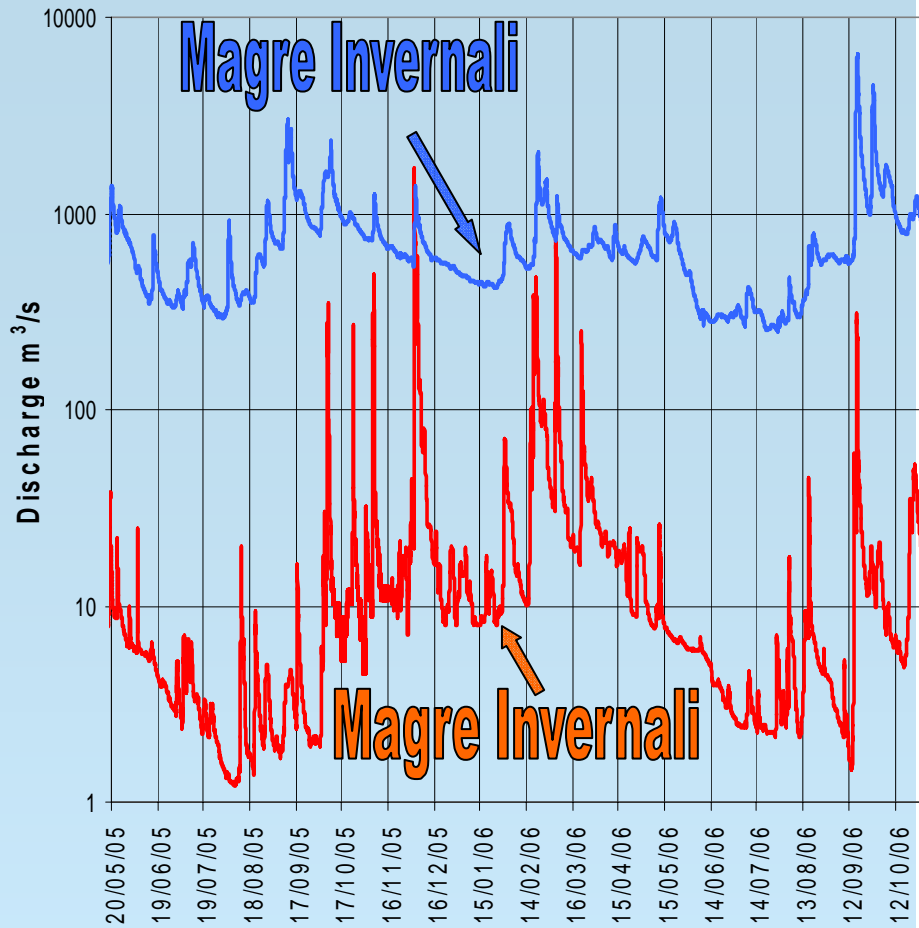
During Summer 2002 some stream flow measurements were performed near the edges of the Taro River upper alluvial fan to evaluate the main infiltration losses toward the aquifers.

The mean value obtained is **0.08** m³/(s·km), that matches very well the results of the numerical model of the Taro River Hydrogeological Basin.
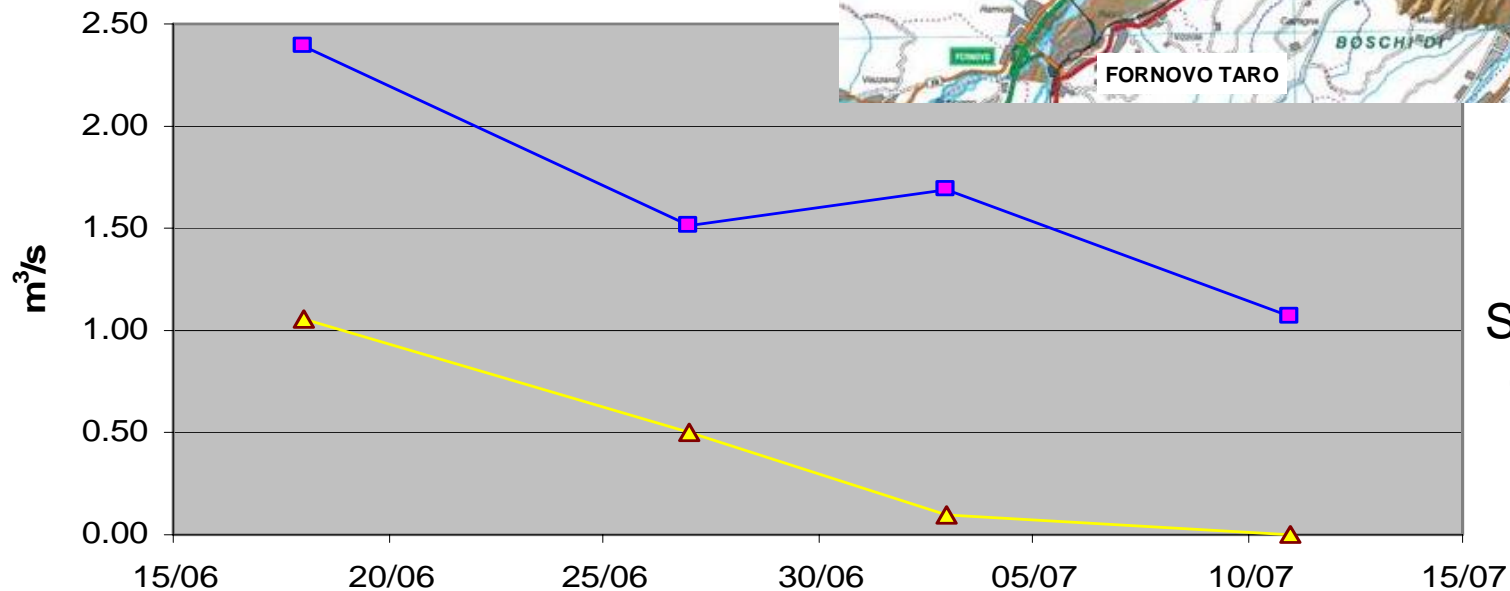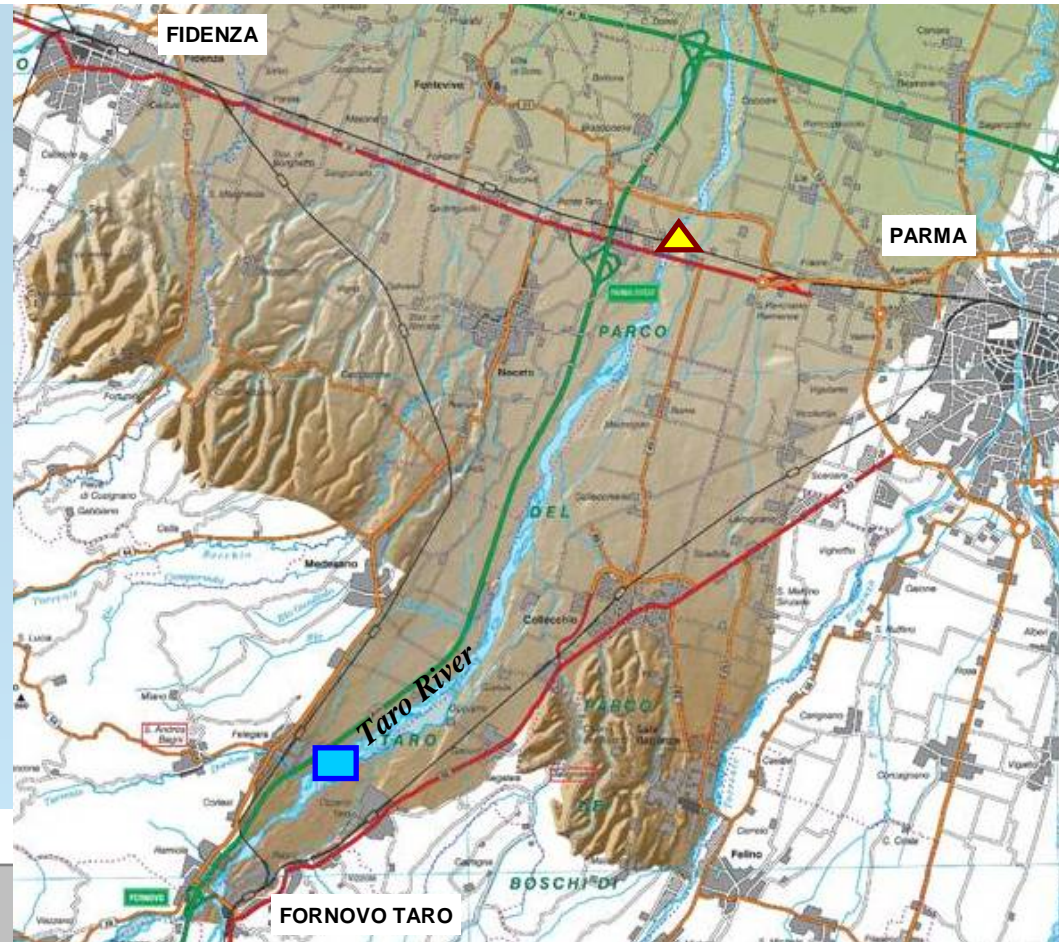
Stazioni di Misura del flusso idrico

Only during winter low flows equilibrium between feeding and draining prevail in the upper alluvial fan of the Taro River.

On the contrary, even during winter low flows the Po River drains the southern connected aquifers at a daily mean rate of about **0.02** m³/(s·km).