

The Llobregat aquifer in the water cycle management of Barcelona (Spain)

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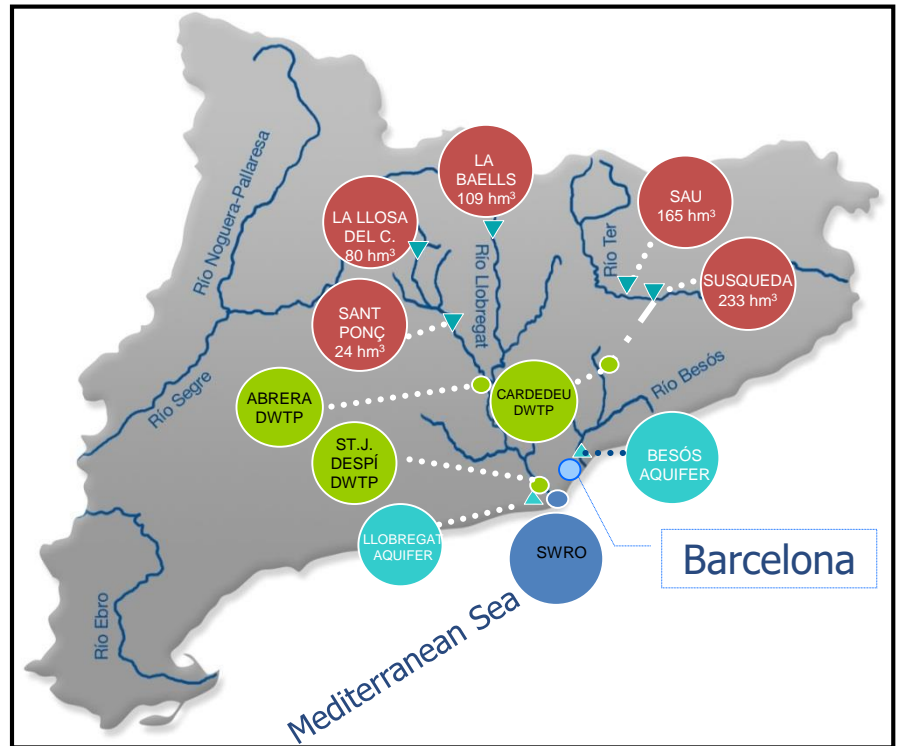


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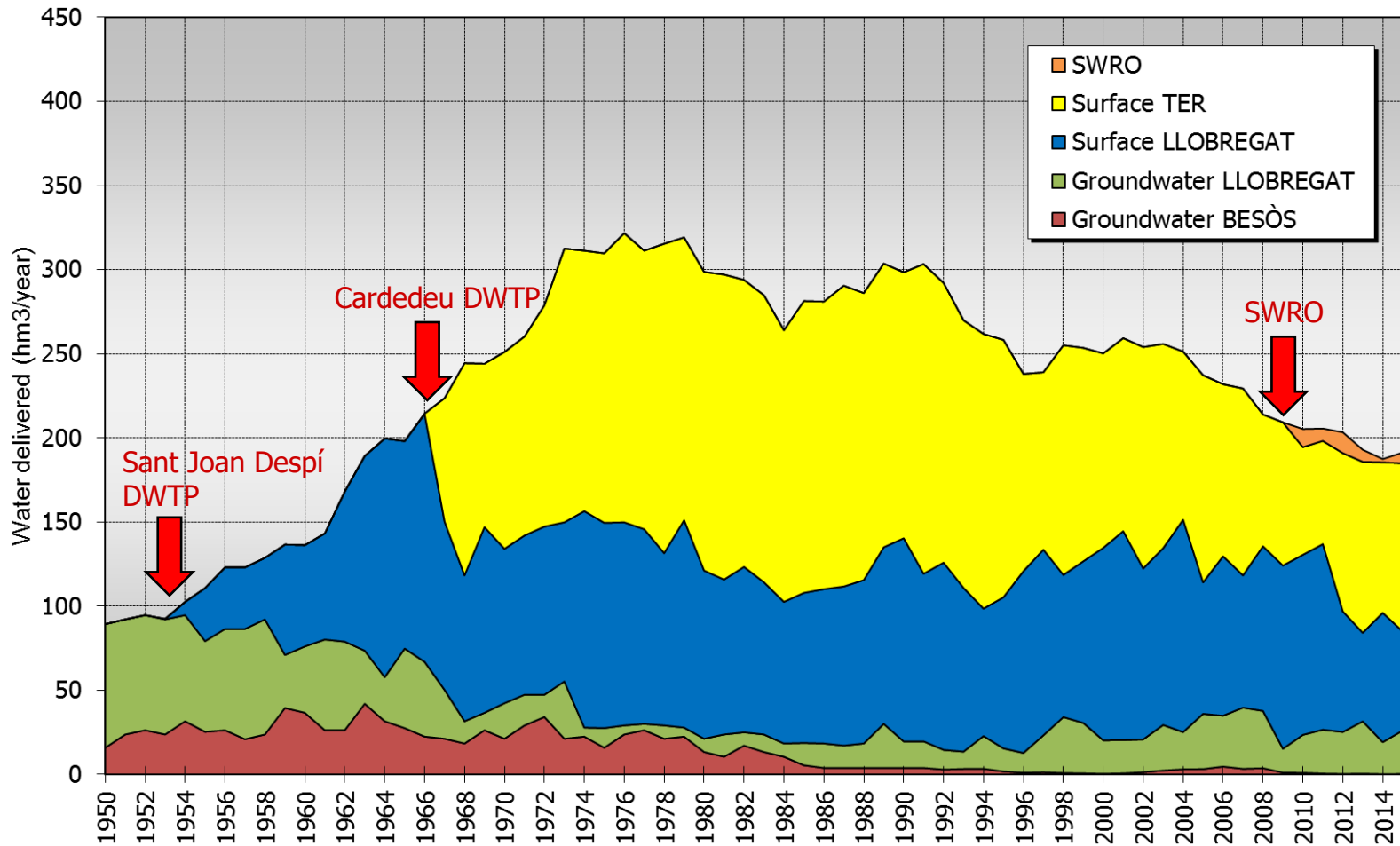


The water supply system of Barcelona Metropolitan Area

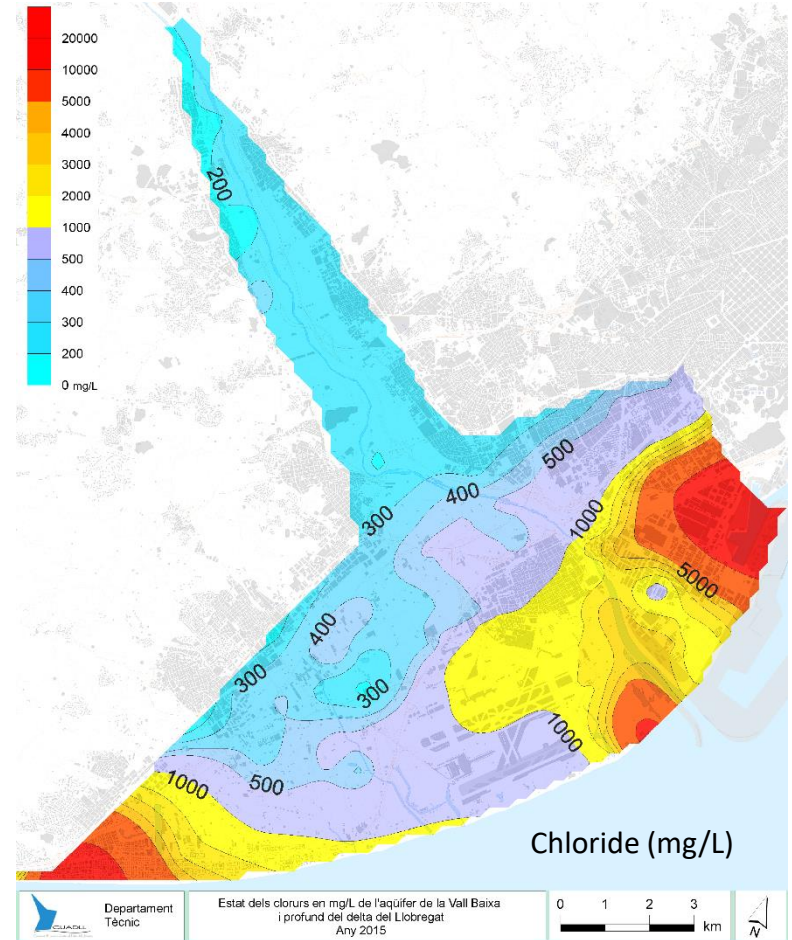
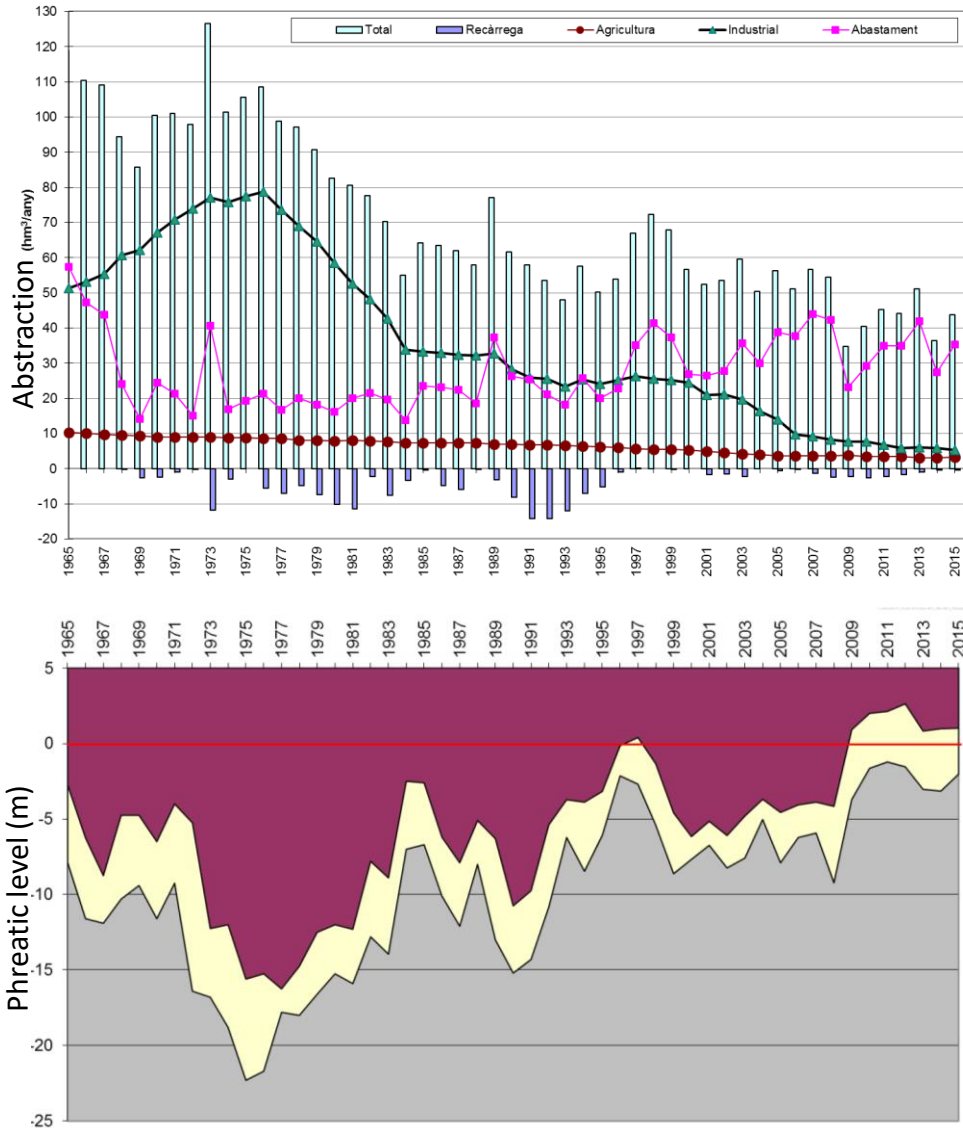
No. of inhabitants supplied	2,815,000
No. of municipalities supplied	23
Length of distribution network	4,521 km
Average daily consumption	425,000 m ³
Annual demand	155 hm ³
River Llobregat	60-90 hm ³
River Ter	50-80 hm ³
Llobregat Aquifer	15-35 hm³
Besós Aquifer	1-3 hm ³
Desalination	(6-50 hm ³)



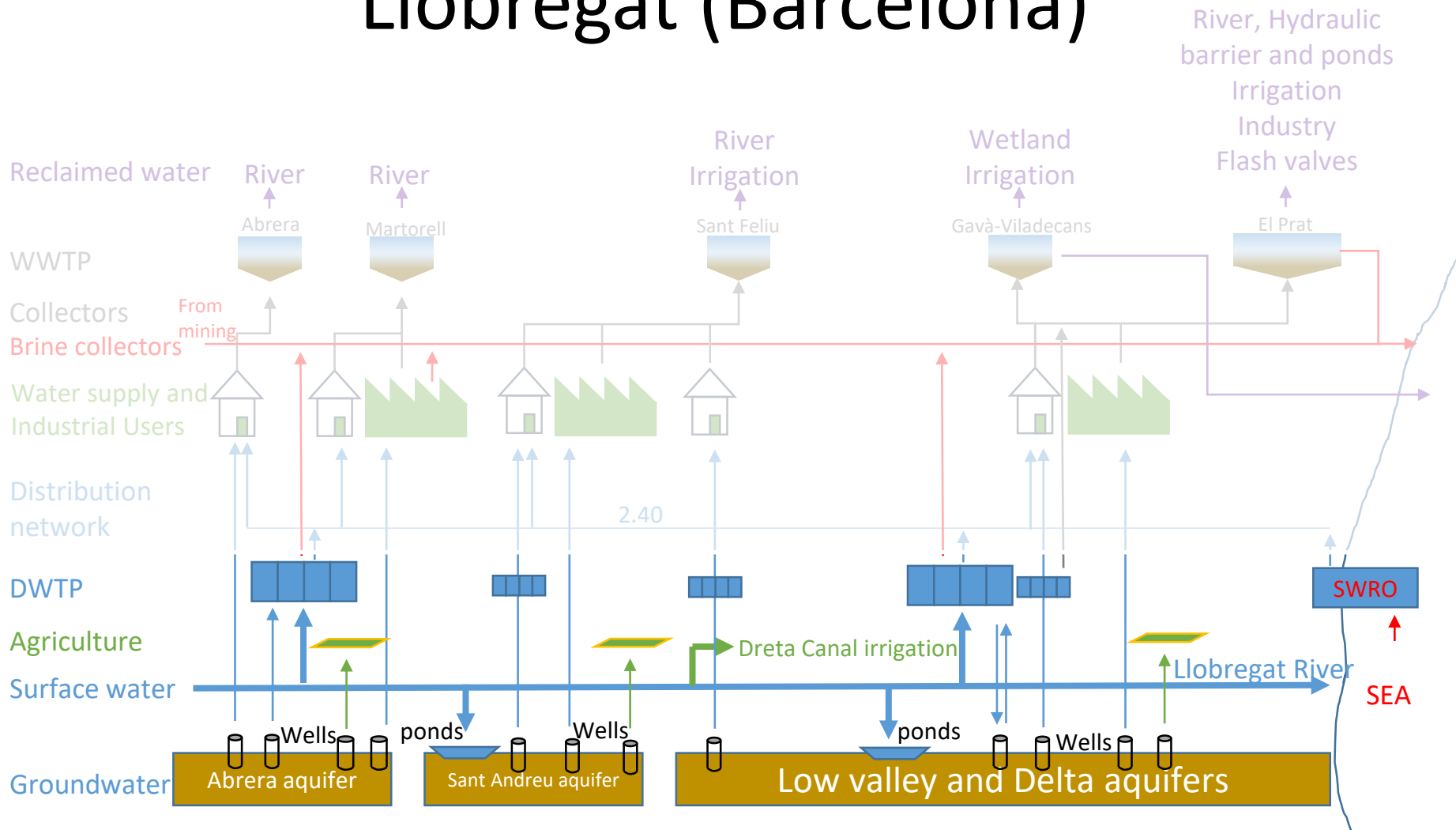
Evolution of the water delivered to the network in the sphere of Barcelona



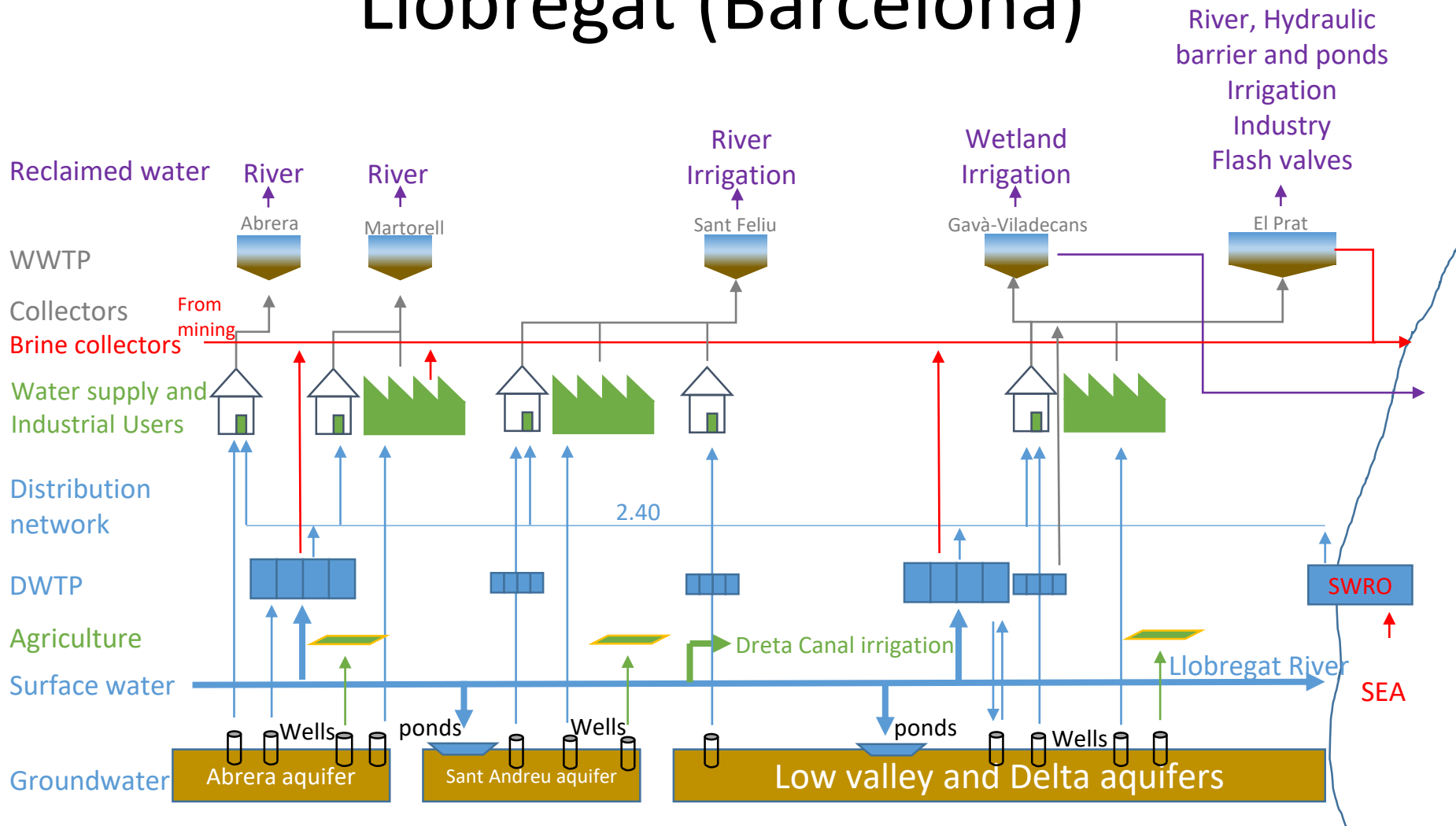
History of Llobregat groundwater



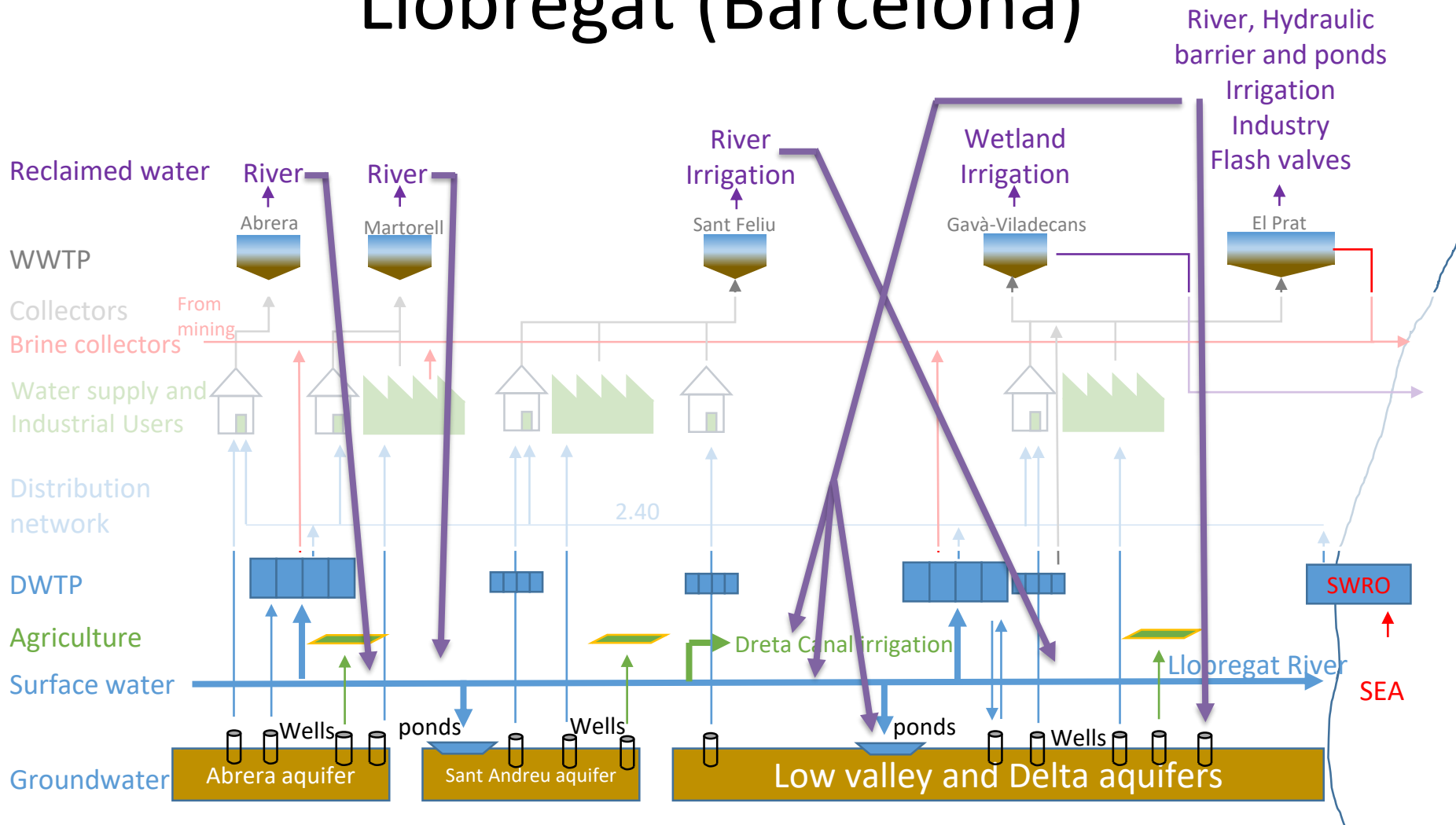
Integral water cycle in the Low Llobregat (Barcelona)



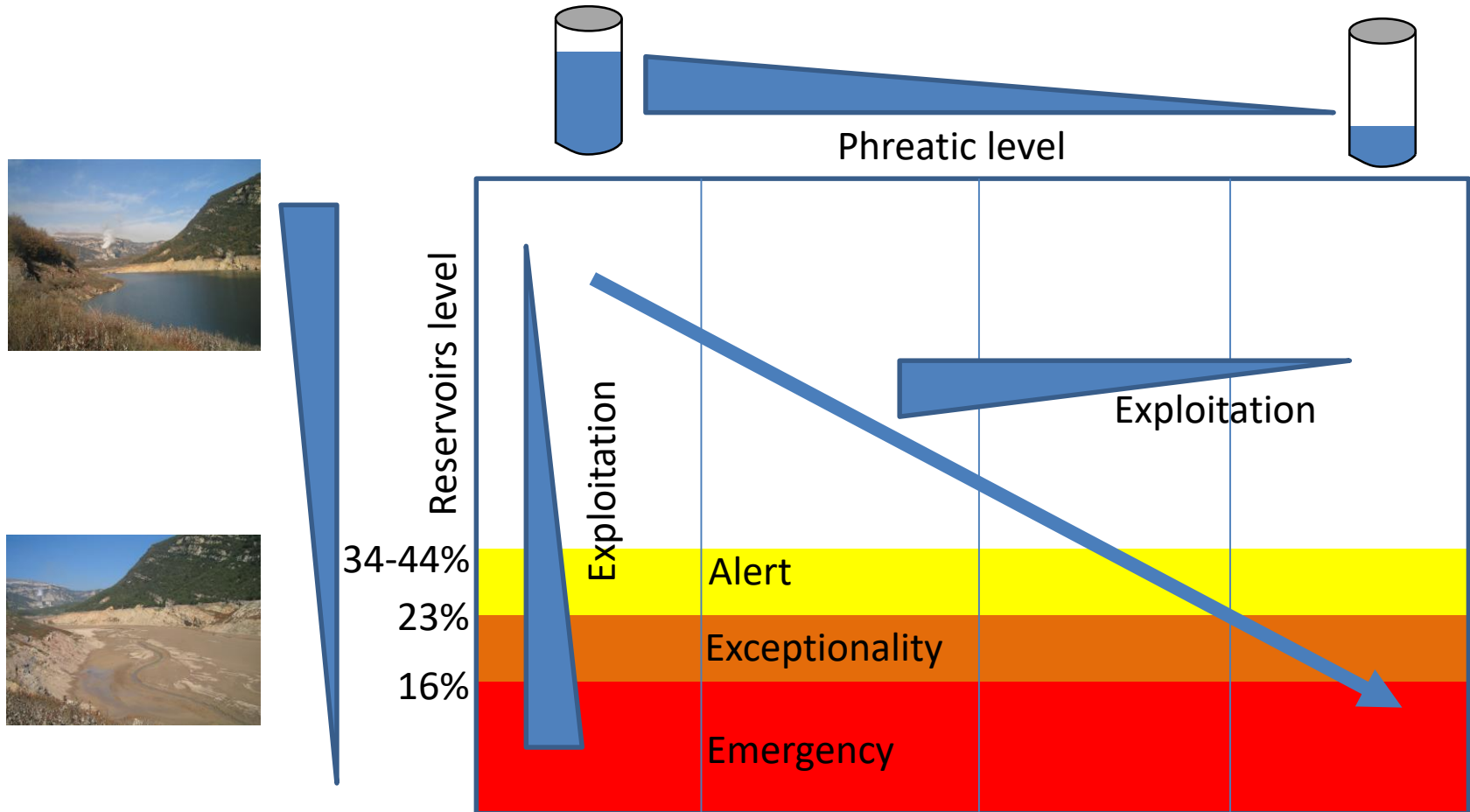
Integral water cycle in the Low Llobregat (Barcelona)



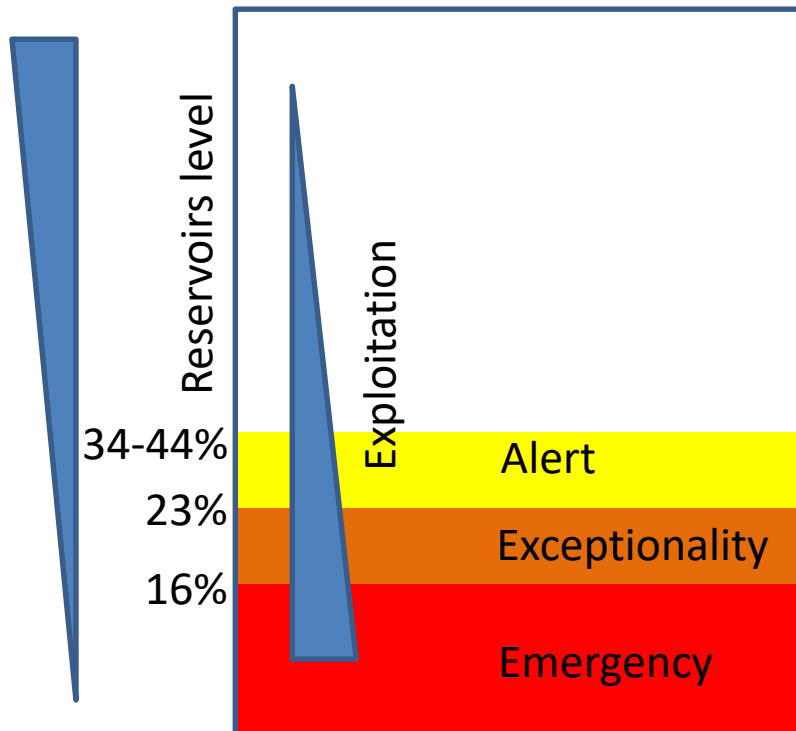
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Conjunctive water uses: aquifer contributions

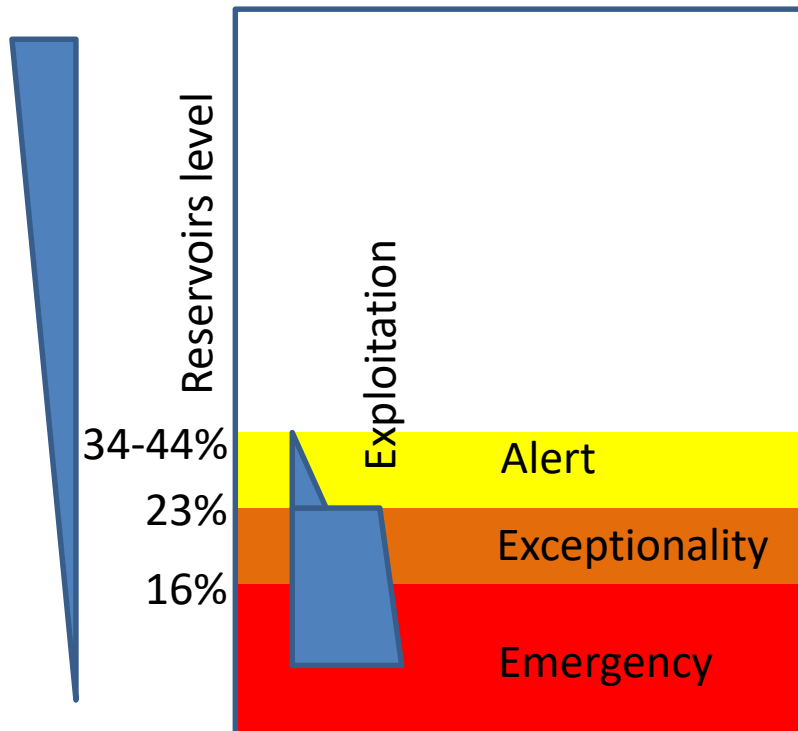


Conjunctive water uses: contribution of SWRO



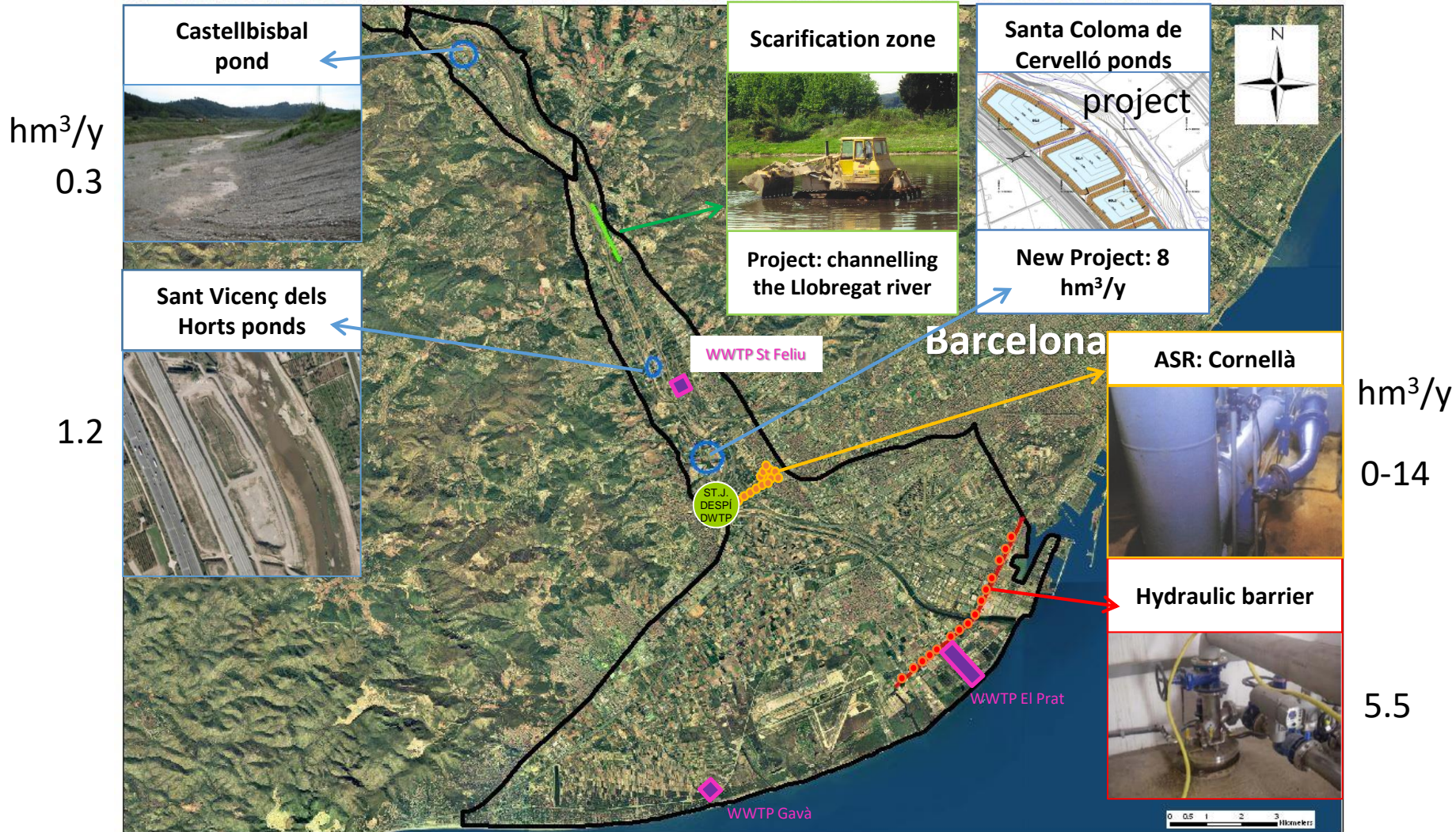
Capacity: 2 m³/s
60 hm³/y

Conjunctive water uses: contribution of reclaimed waste water

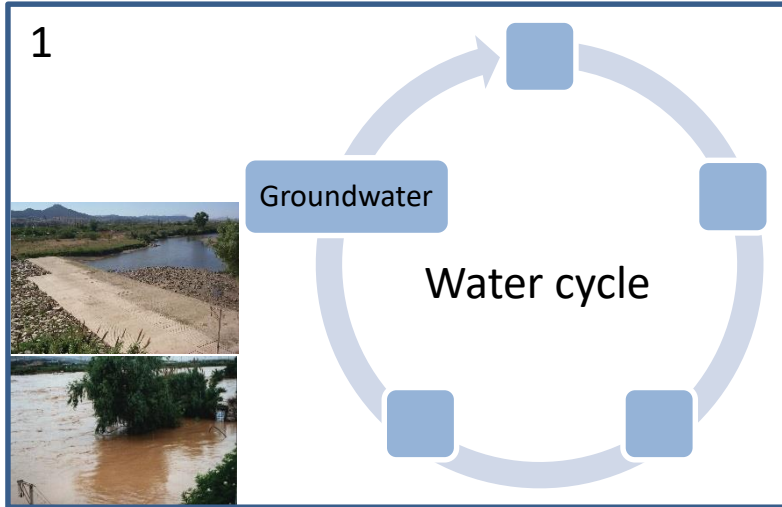


Capacity: $3.5 \text{ m}^3/\text{s}$
 $100 \text{ hm}^3/\text{y}$

Managed aquifer recharge



Conclusions



2 Bad quantitative and chemical status



To increase measures
in not only drought
situation

