THE JUCAR PILOT RIVER BASIN IN SPAIN

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MINISTERIO DE MEDIO AMBIENTE

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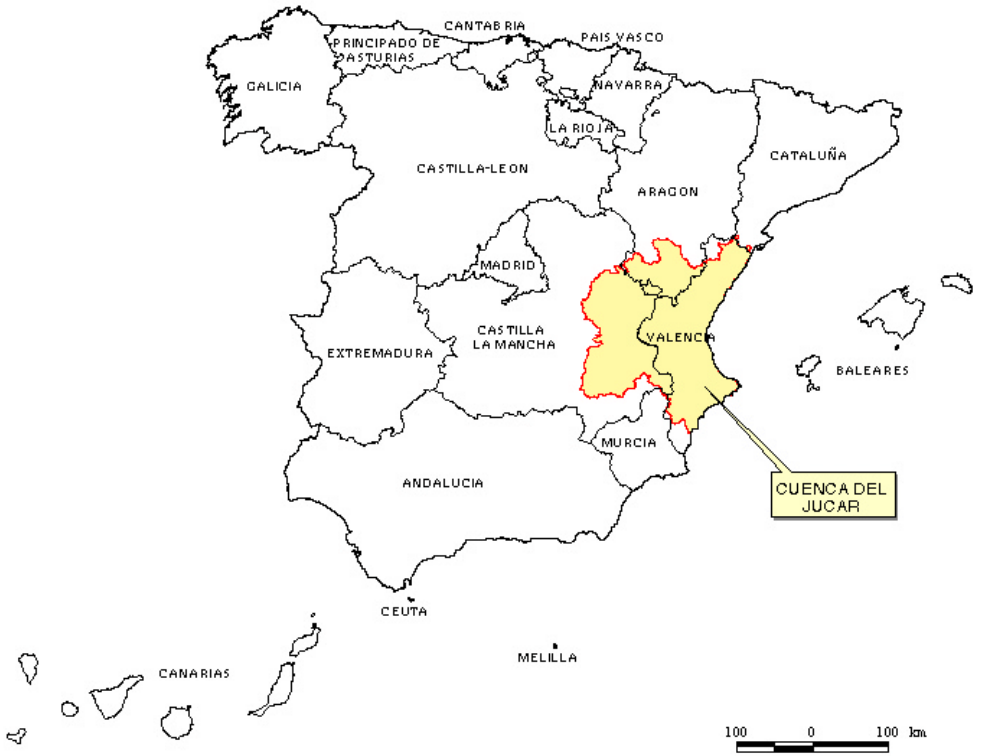
Location of Júcar River Basin



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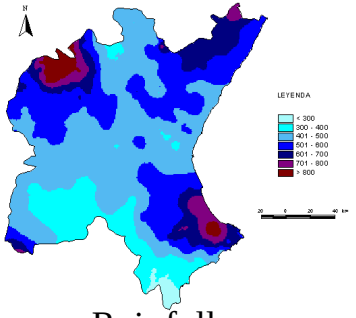
Main figures of Júcar River Basin



Rainfall

Area (km^2)	43.000
Population (inhabitants)	4.360.000
Equivalent Population due to Tourism (inhabitants)	1.400.000
Irrigated land (ha)	370.000
Water Resources (hm^3/year)	3.400
Water Demand (hm^3/year)	2.960

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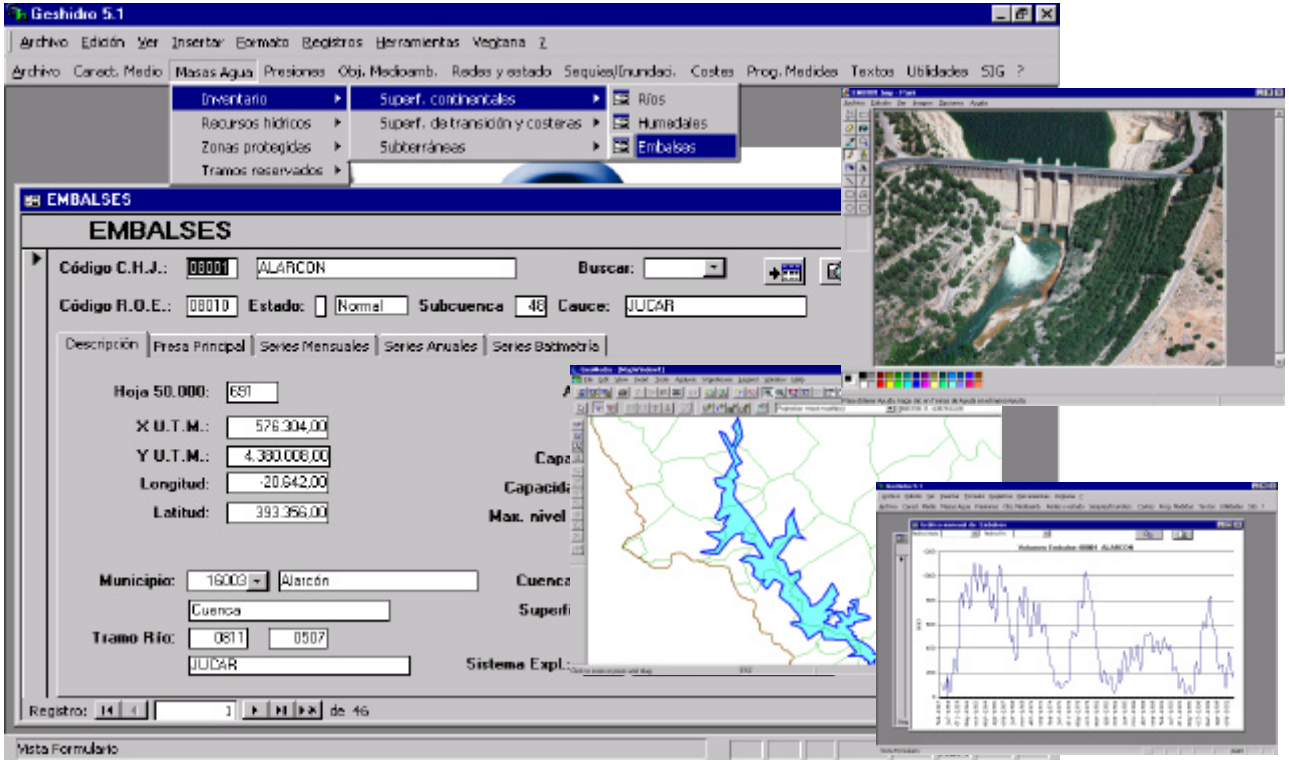
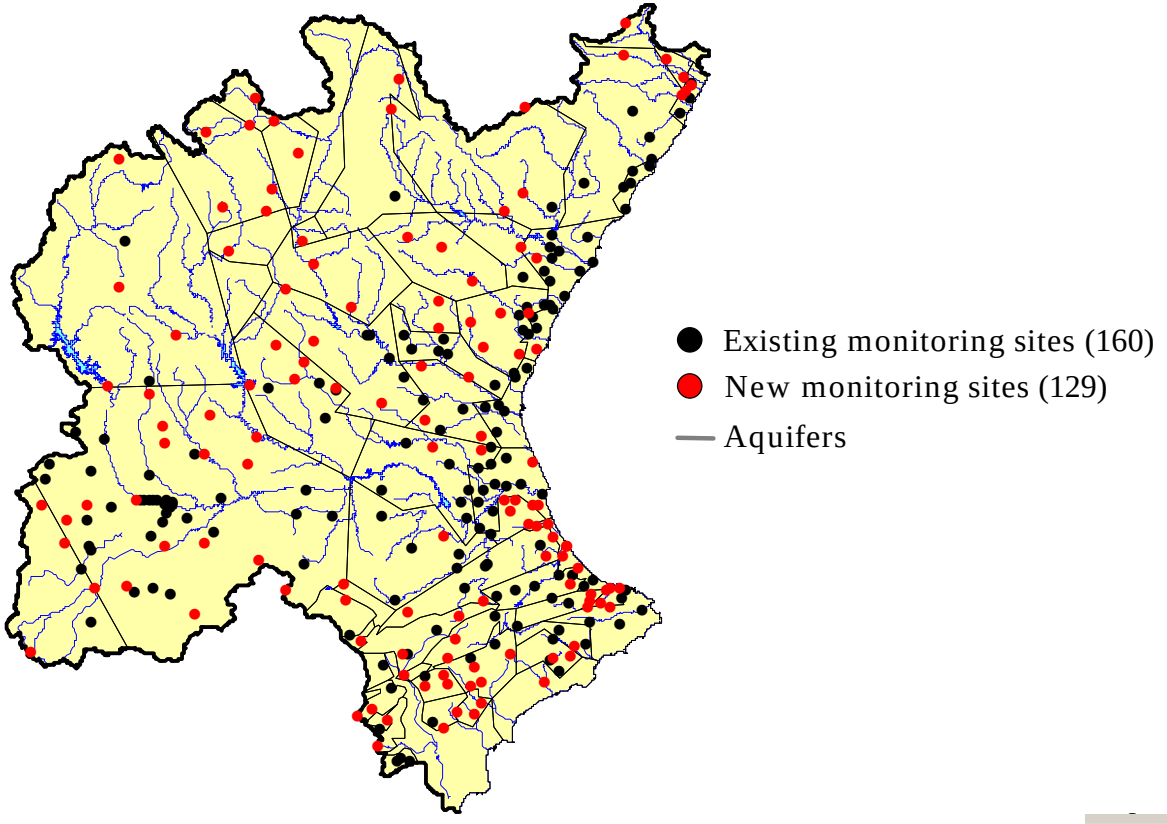
Main activities

- Adaptation of Jucar River Basin Hydrologic Information System to WFD requirements
- Adaptation of monitoring networks to WFD requirements
- Characterization of surface water bodies
- Characterization of groundwater bodies
- Economic Analysis
- Analysis of pressures and impacts
- Public participation

Adaptation of Information System



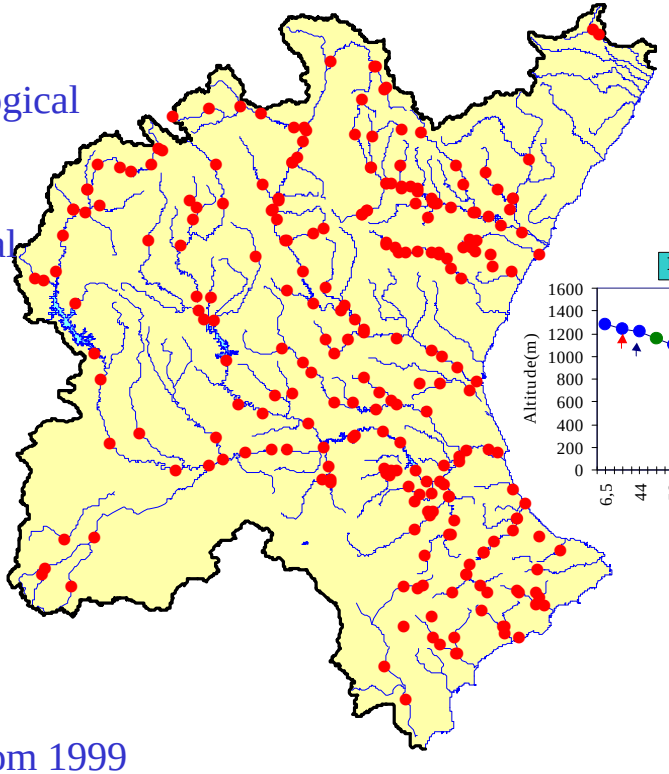
Improvements on groundwater water level monitoring network

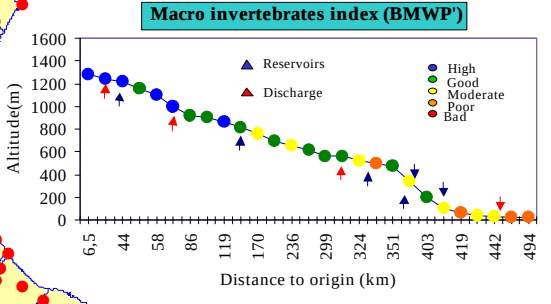


Biological monitoring network

PARAMETERS

- Hydromorphological
- Biological
- Physic-Chemical





- 254 points
- In operation from 1999

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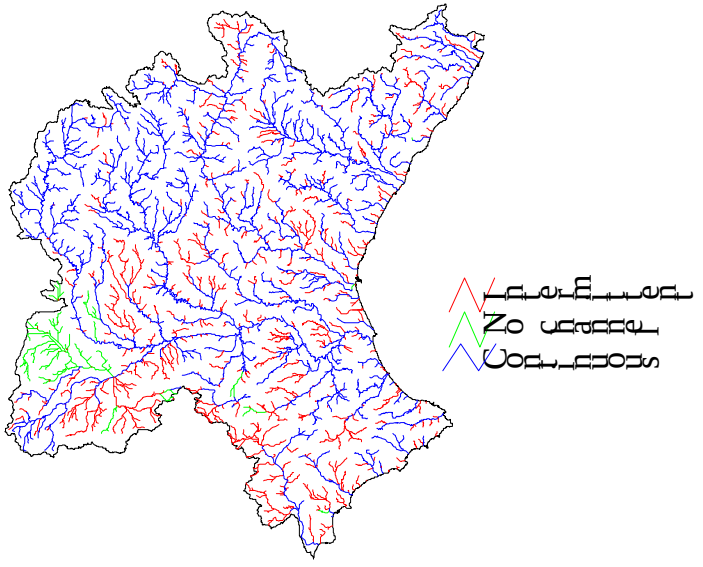
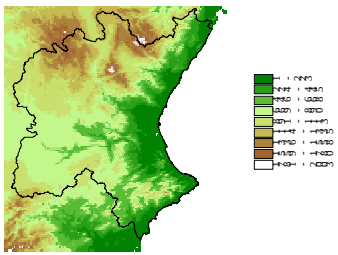
River typologies

Júcar river at Alzira

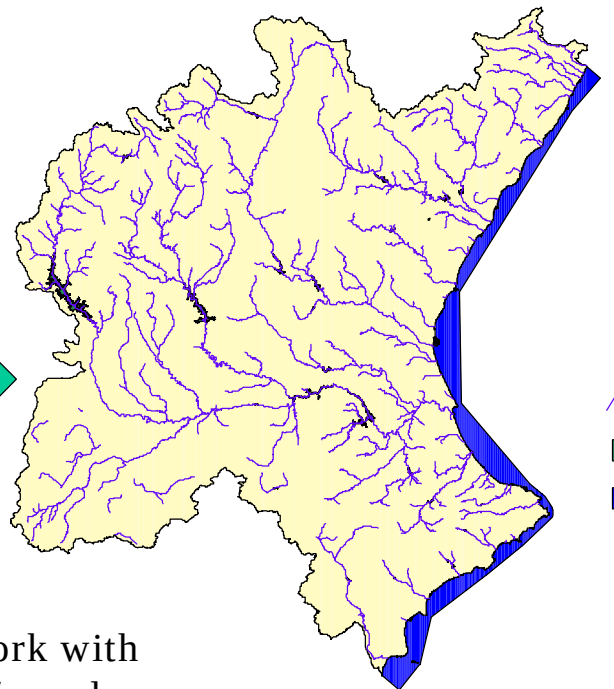
Rambla de Cervera del Mestre



Surface water bodies



Digital terrain model
(100 m x 100 m)



Rivers
Reservoirs
Coastal waters

Drainage network with
basins > 100 l /s and
drainage area > 10 km2

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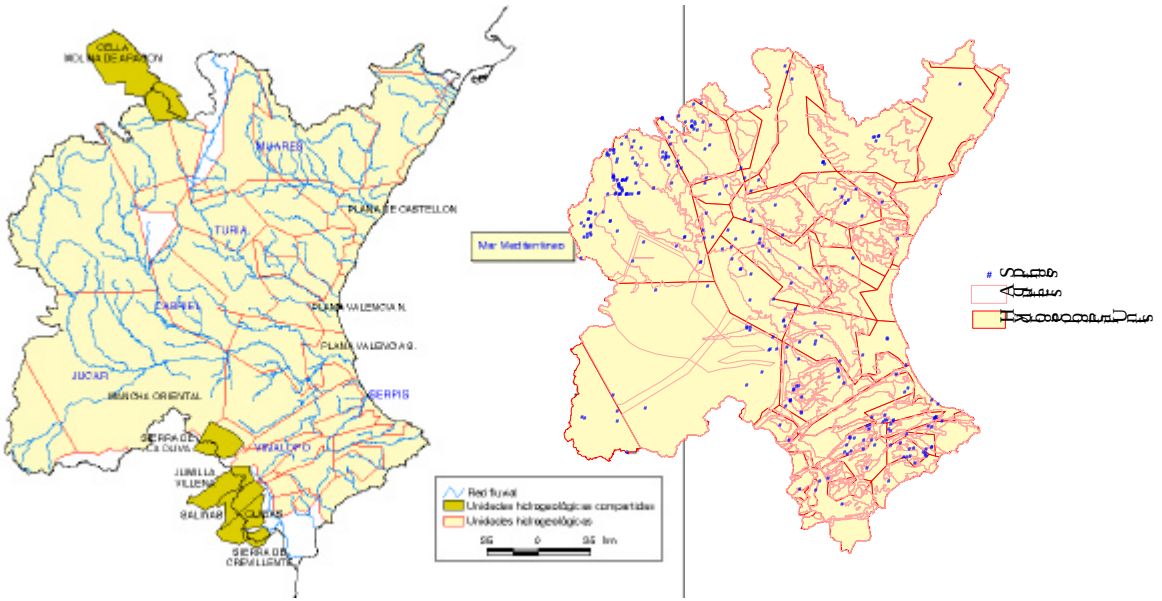
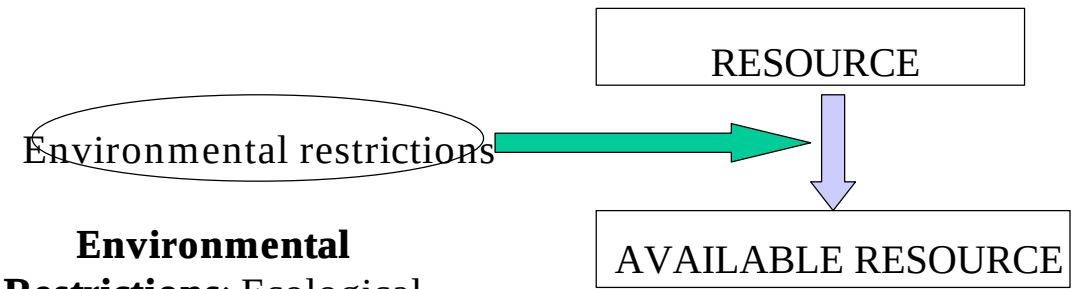
Characterization of Aquifers



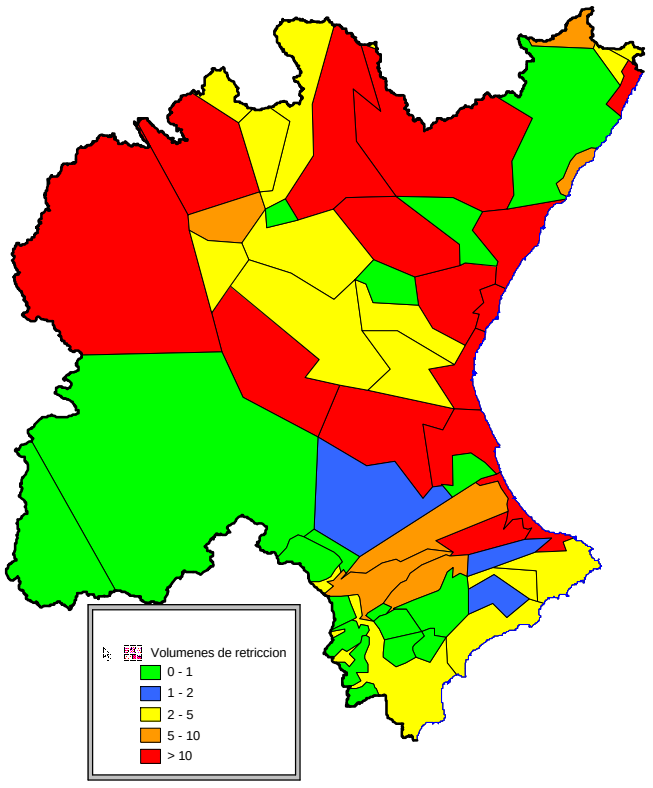
WFD introduces the concept of available groundwater resource

Rate of overall recharge of the body of groundwater less the long term annual rate of flow required to achieve the ecological quality objectives



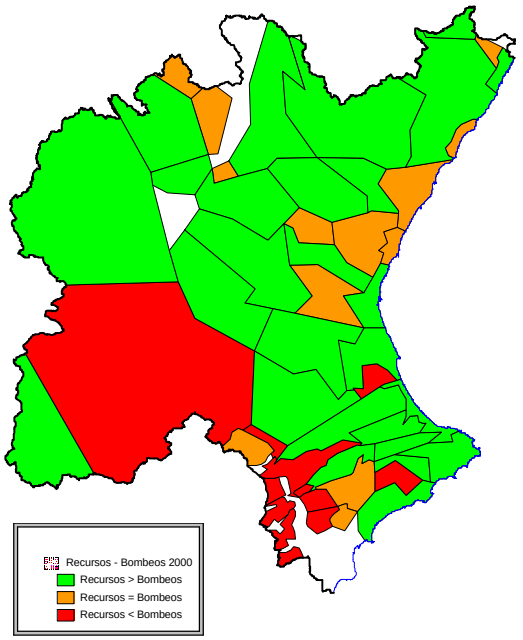
Environmental Restrictions: Ecological discharges, groundwater outflows to the sea

Environmental minimum flows associated to each aquifer

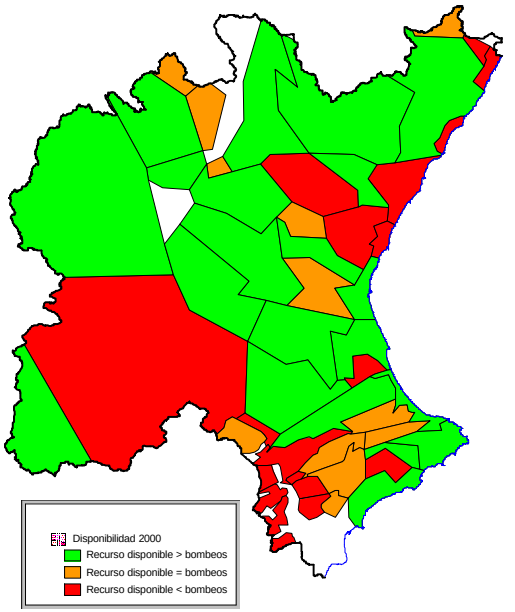


CODUHG	NOMBRE UHG	VOLUMEN (HM3)
8.01	CELLA-MOLINA DE ARAGON	4
8.02	MONTES UNIVERSALES	20
8.03	ARQUILLO-TRAMACASTIEL-VILLEL	5
8.04	VALLANCA	6
8.05	JAVALAMBRE	19.5
8.06	MOSQUERUELA	15.5
8.07	MAESTRAZGO	
8.08	PUERTOS DE BECEITE	10
8.09	PLANA DE CENIA-TORTOSA	5
8.10	PLANA DE VINAROZ-PENISCOLA	40
8.11	PLANA DE OROPESA-TORREBLANCA	8
8.12	PLANA DE CASTELLON	74
8.13	ONDA	
8.14	ALTO PALANCIA	20
8.15	ALPUENTE	3
8.16	OLMEDA	1
8.17	SERRANIA DE CUENCA	47
8.18	LAS SERRANIAS	3
8.19	ALCUBLAS	
8.20	MEDIO PALANCIA	11
8.21	PLANA DE SAGUNTO	25.5
8.22	LIRIA-CASINOS	5
8.23	BUÑOL-CHESTE	5
8.24	UTIEL-REQUENA	17
8.25	PLANA DE VALENCIA NORTE	35
8.26	PLANA DE VALENCIA SUR	127.5
8.27	CAROCH NORTE	13
8.28	CAROCH SUR	2
8.29	MANCHA ORIENTAL	
8.30	JARDIN-LEZUZA	
8.31	SIERRA DE LAS AGUJAS	
8.32	SIERRA GROSA	6
8.33	ALMANSA	
8.34	SIERRA OLIVA	
8.35	JUMILLA-VILLENA	
8.36	VILLENA-BENEJAMA	8
8.37	ALMIRANTE-MUSTALLA	18
8.38	PLANA GANDIA-DENIA	58
8.39	ALMUDAINA-ALFARO-SEGARIA	2
8.40	SIERRA MARIOLA	8
8.41	PENARRUBIA	
8.42	CARCHE-SALINAS	1
8.43	ARGUENA-MAIGMO	1
8.44	BARRANCONES-CARRASQUETA	
8.45	SIERRA AITANA	2
8.46	SERRELLA-AIXORTA-ALGAR	4
8.47	PEÑON-MONTGO-BERNIA	4
8.48	ORCHETA	3
8.49	AGOST-MONEGRE	
8.50	SIERRA DEL CID	1
8.51	QUIBAS	1
8.52	CREVILLENTE	
9.99	IMPERMEABLE O ACUIFEROS DE INTERES LOCAL	4
Total		671

Comparison between resources and abstractions

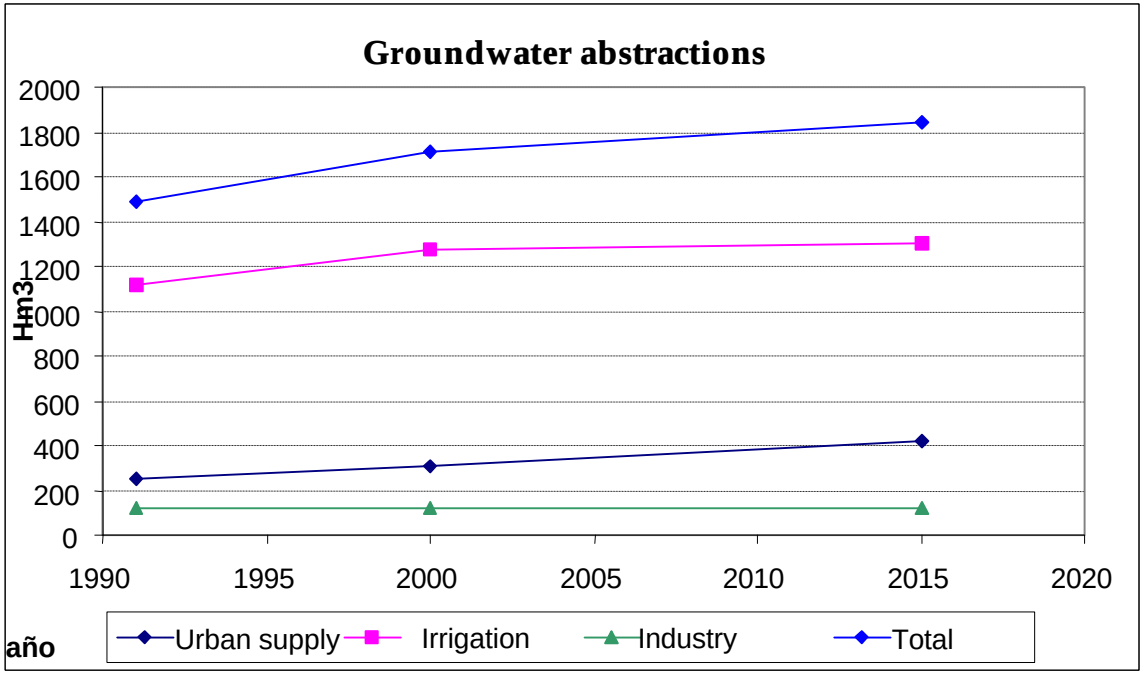


Differences between resources and abstractions (year 2000)

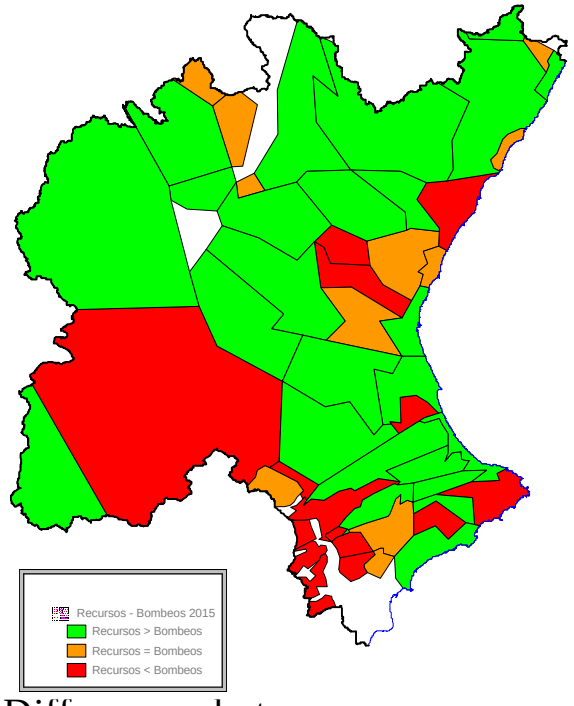


Differences between available resources and abstractions (year 2000)

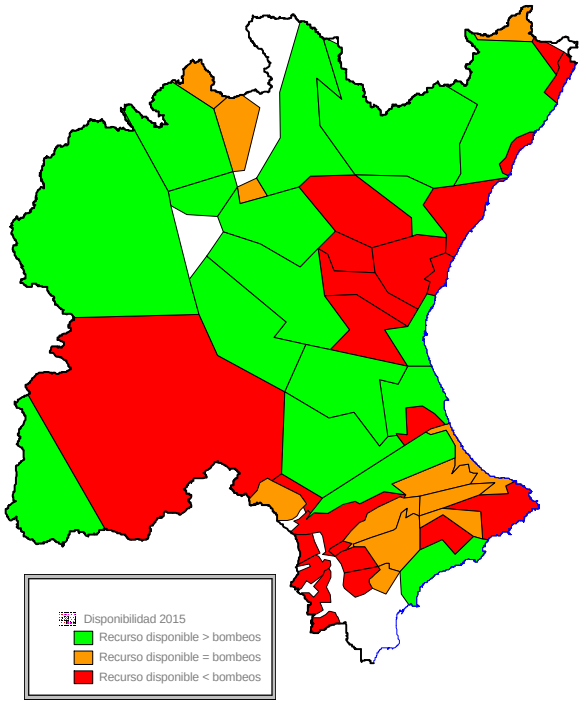
Groundwater abstraction projections for 2015



Resources and abstractions for year 2015

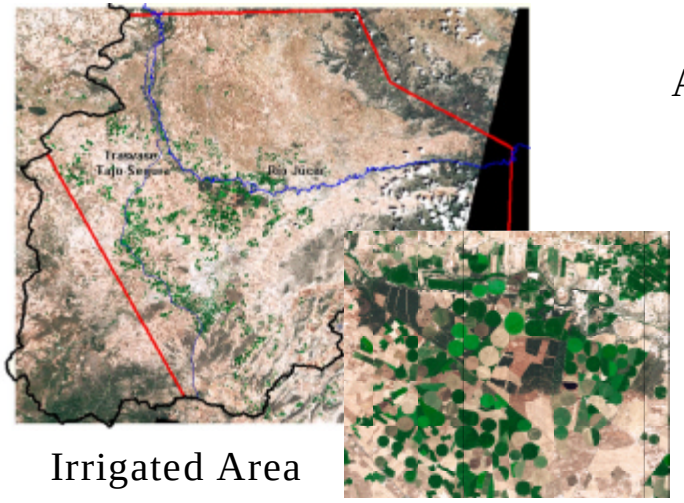


Differences between resources and abstractions (year 2015)



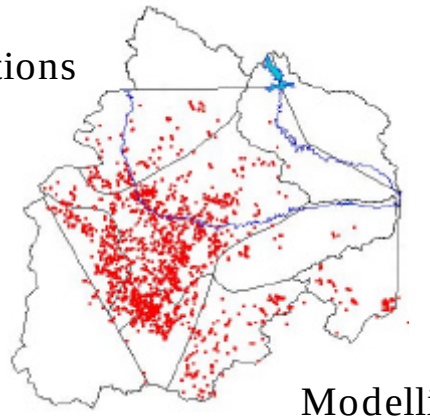
Differences between available resources and abstractions (year 2015)

Mancha Oriental Aquifer

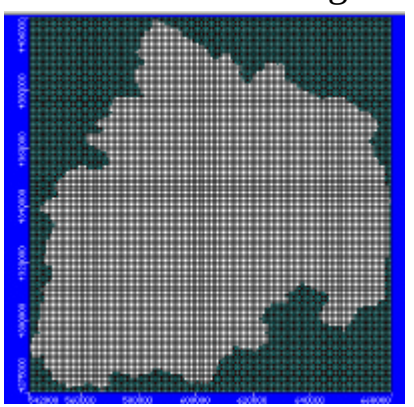


Irrigated Area

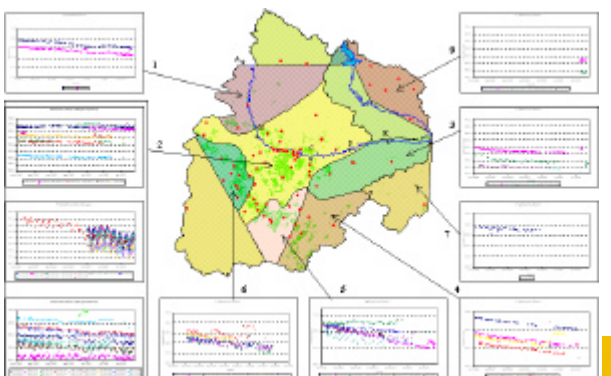
Abstractions



Modelling



Water levels



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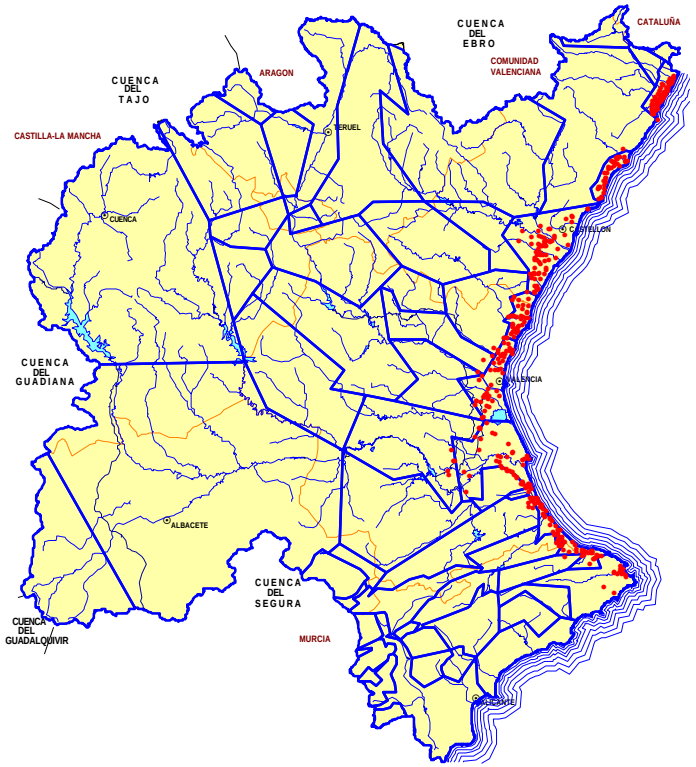
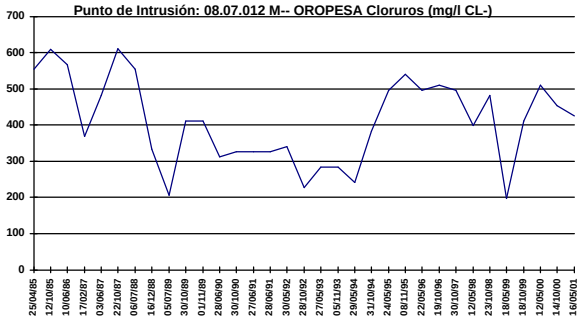
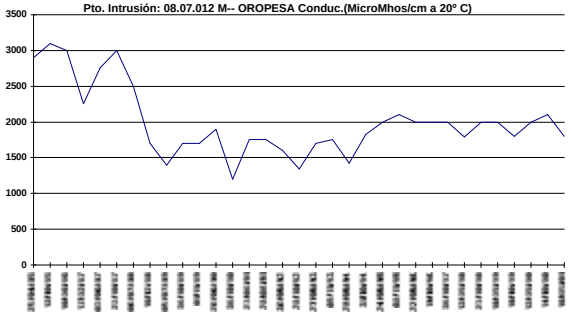
Marine Intrusion







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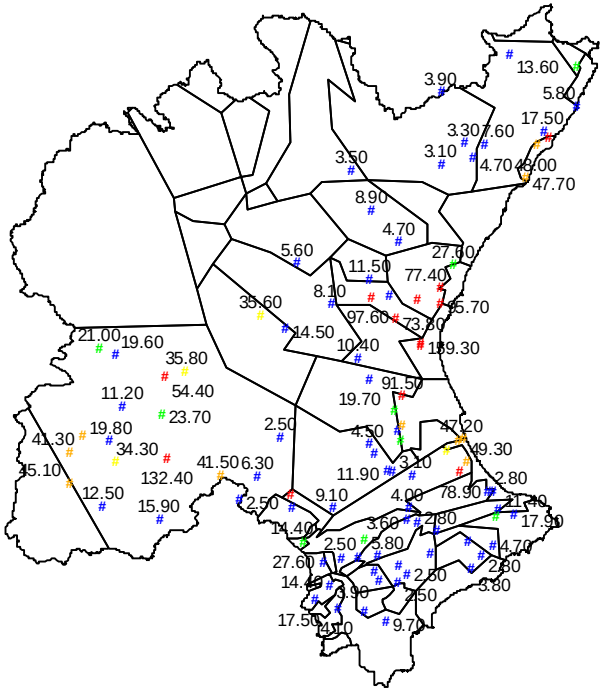
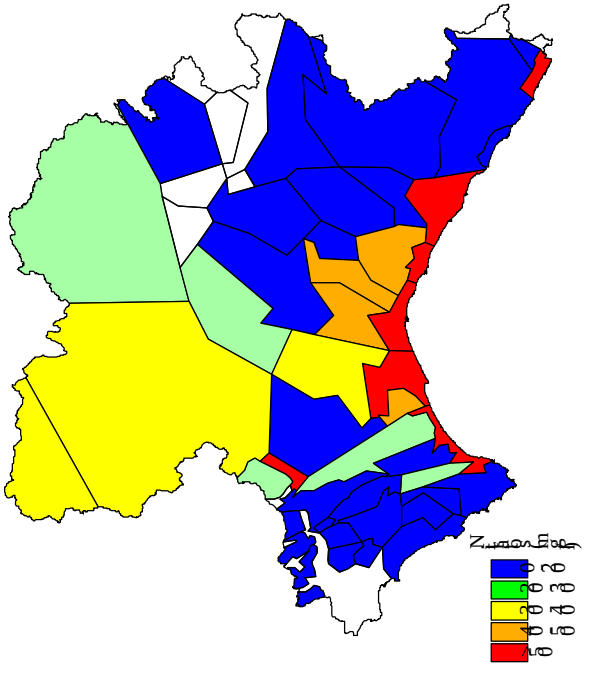
Nitrates





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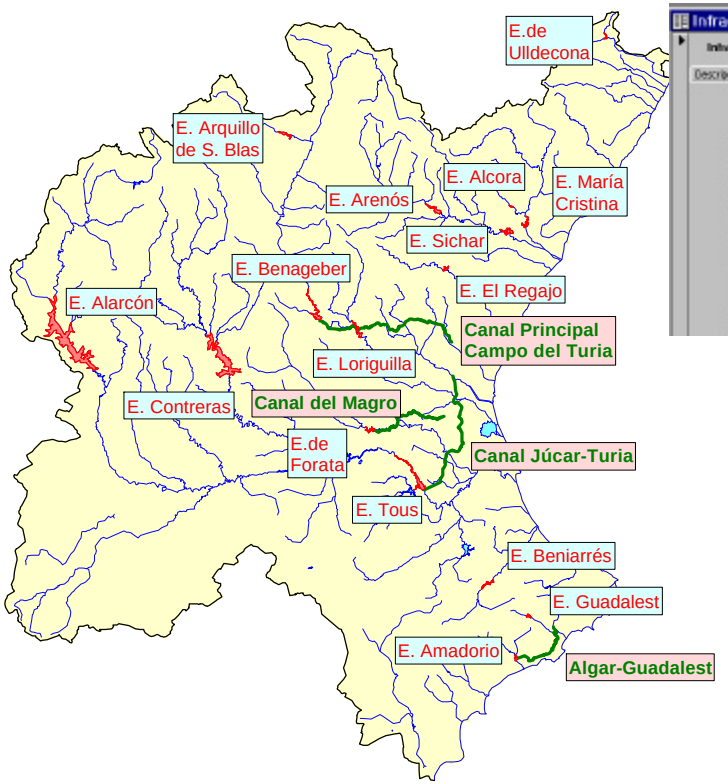
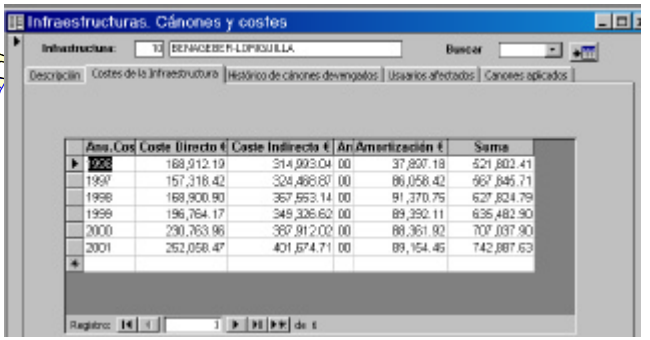
Spanish financial and economical regime for water use

COST	RESPONSABILITY	TARIFFS
Water availability (dams and main channels)	River Basin Authority	*Canon de regulación* (dams) and *Tarifa de utilización* (channels)
Water Distribution	Municipalities and Regional government	*Tarifa de abastecimiento* (Urban) *Cuota de distribución* (Irrigation)
Wastewater collection and treatment	Municipalities and Regional government	*Canon de Saneamiento* (only urban and industrial uses)
Control discharges	River Basin Authority	*Canon de Control de Vertidos* (only urban and industrial uses)

Cost recovery analysis: Main river basin hydraulic infrastructures





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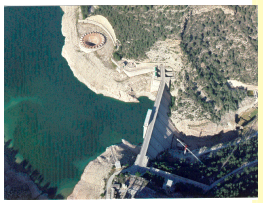
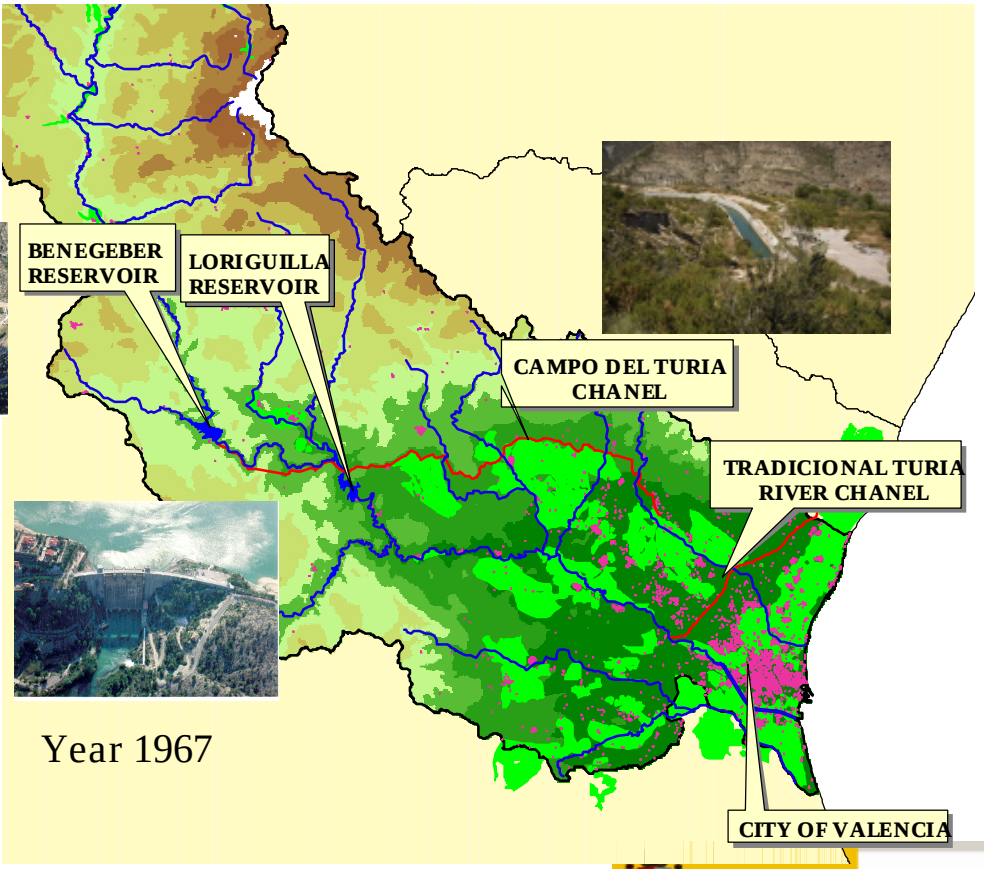
Main hydraulic infrastructure at Benageber-Loriguilla System

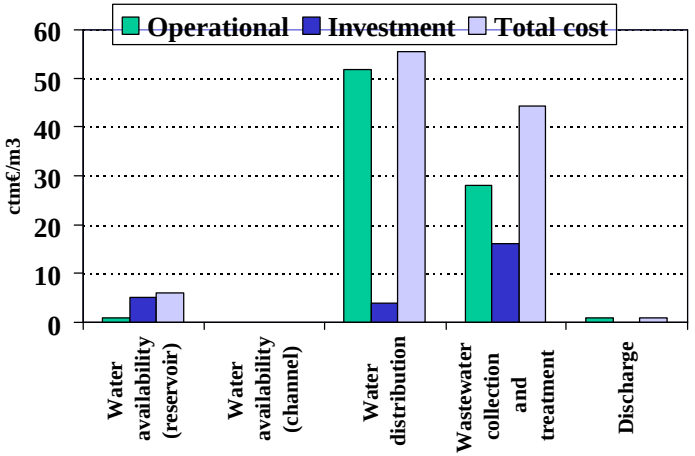


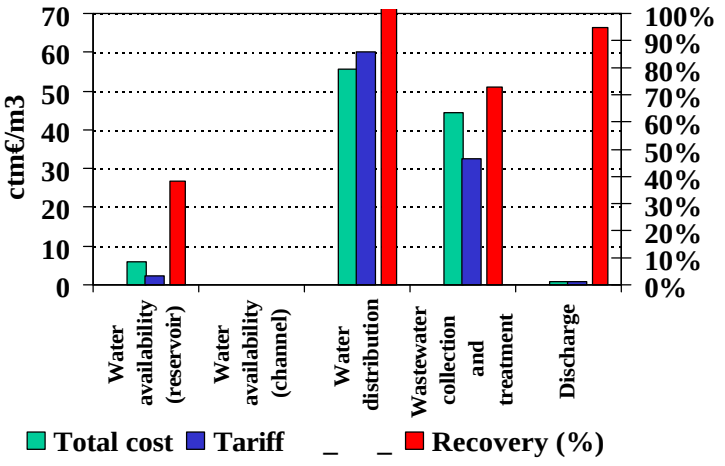
Year 1955



Year 1967

Costs and tariffs for urban users of Valencia city





Replace cost for dams have been assumed

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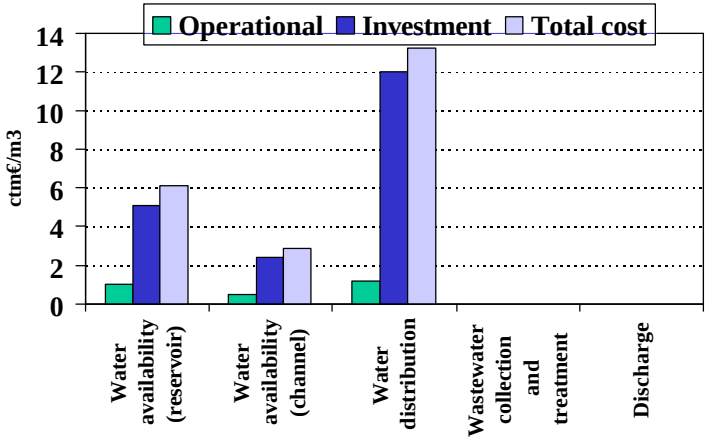
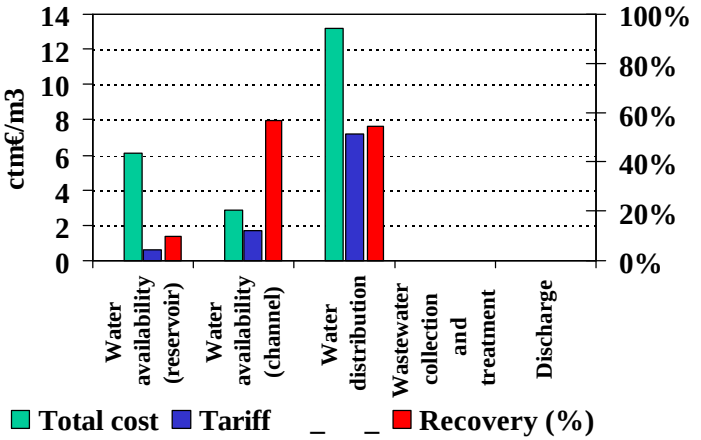
Costs and tariffs for irrigation users of *Campo del Turia* channel





Replace cost for dams have been assumed

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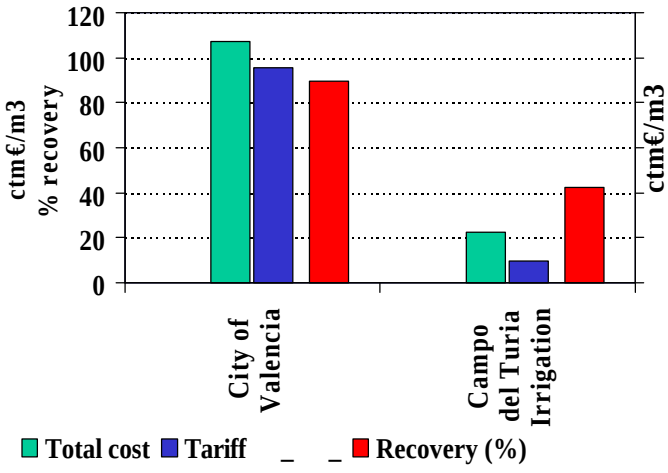
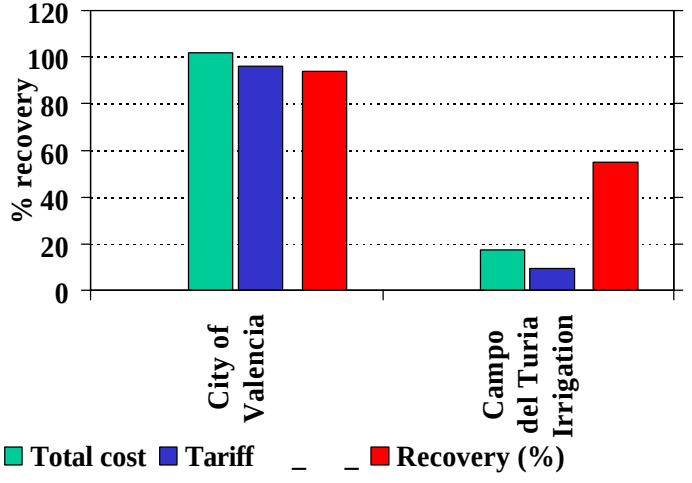
Total costs and tariffs for main users

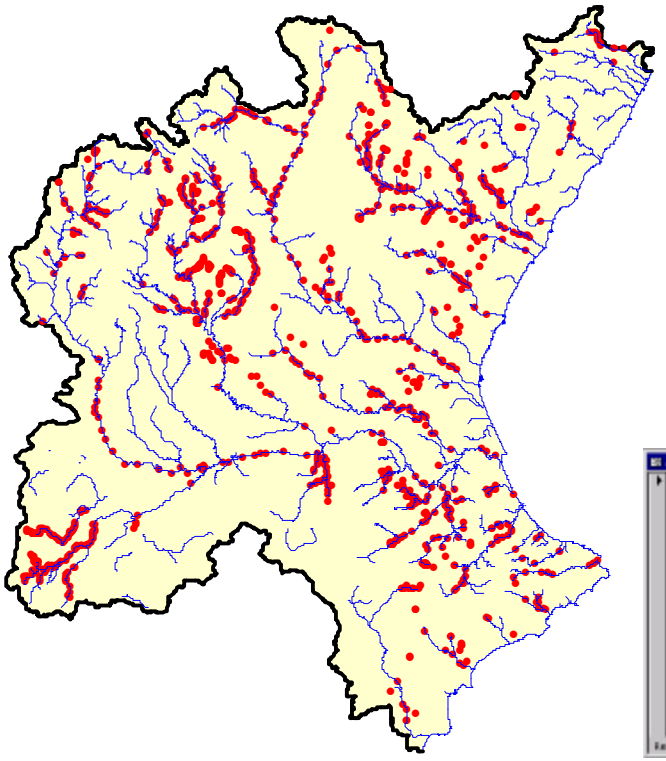


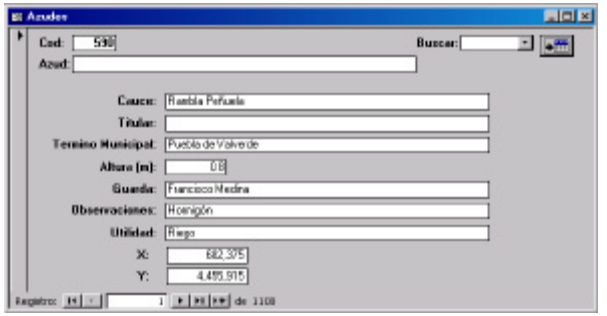
Cost considering new dams



Cost considering dams have been paid

Morphological alterations (small dams)





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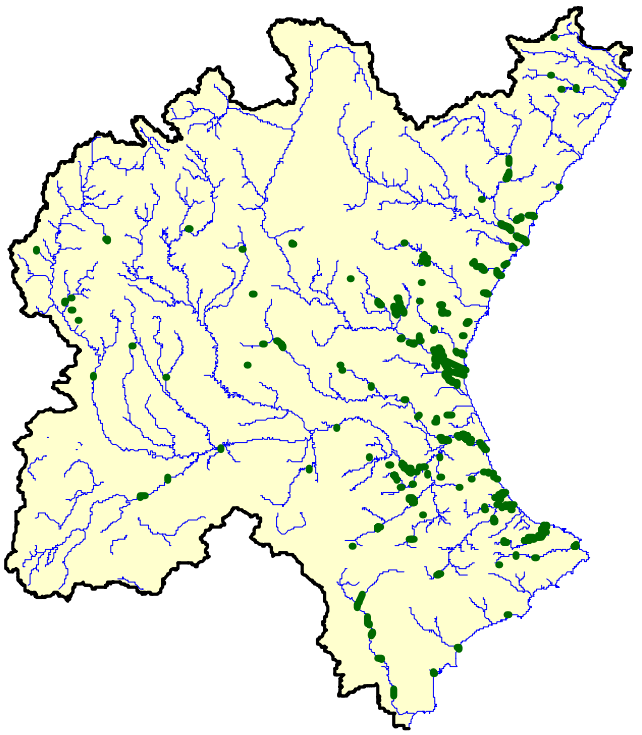
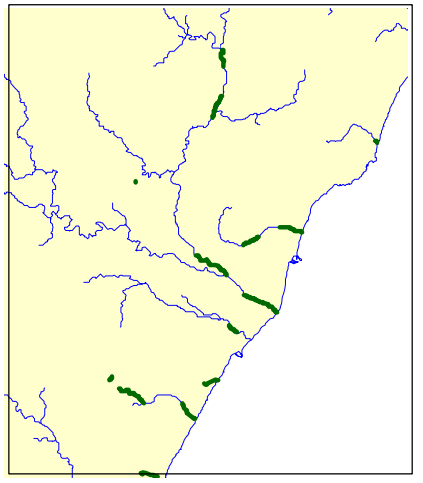
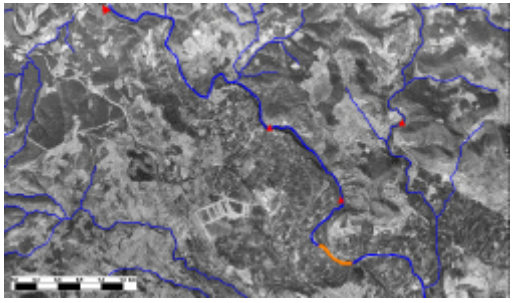
Morphological alterations (channelling)







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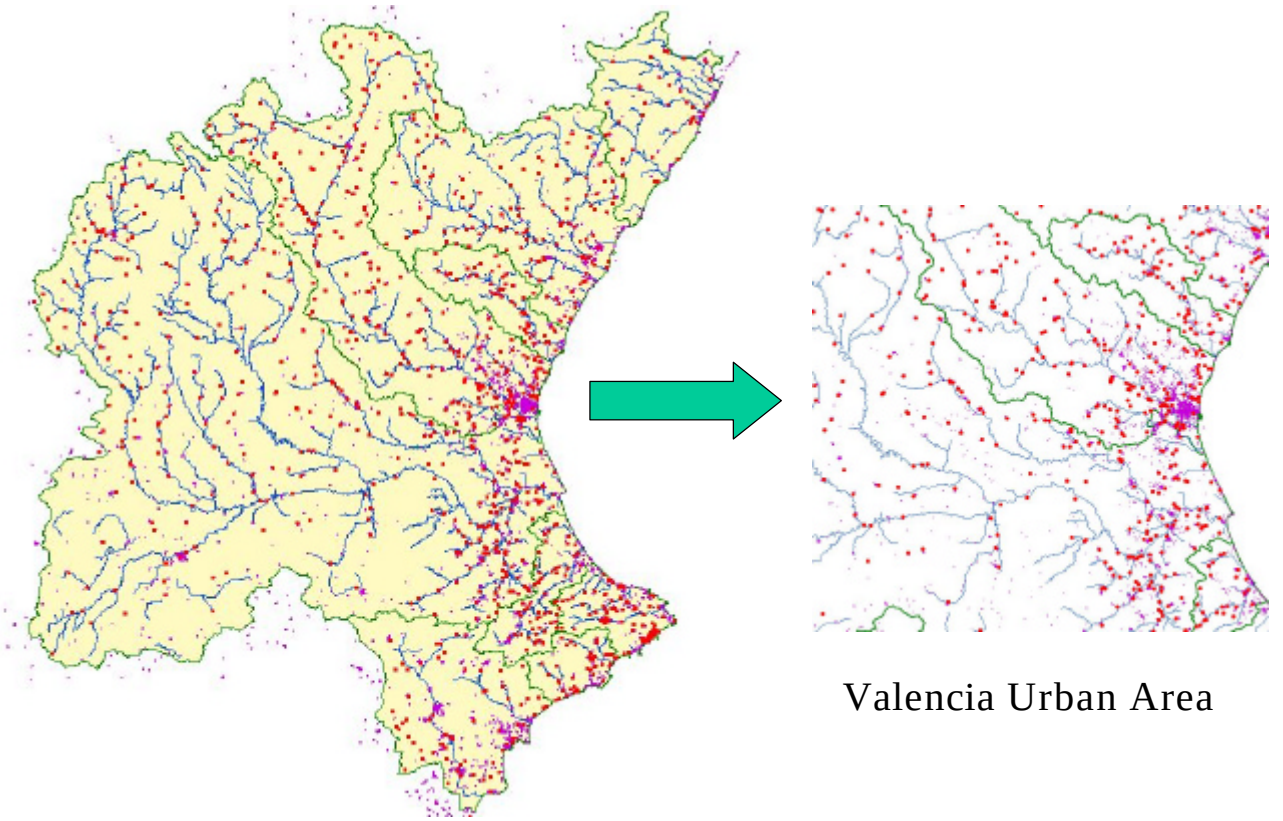
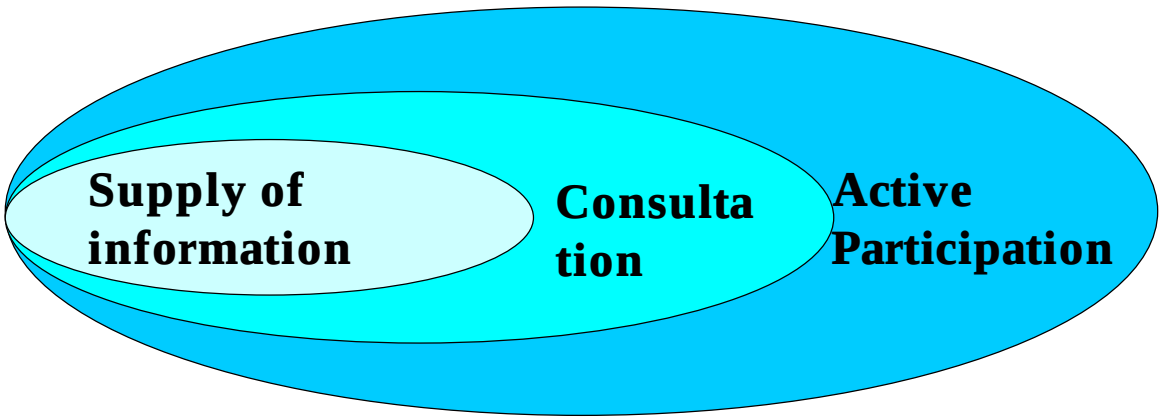
Discharge points and urban areas

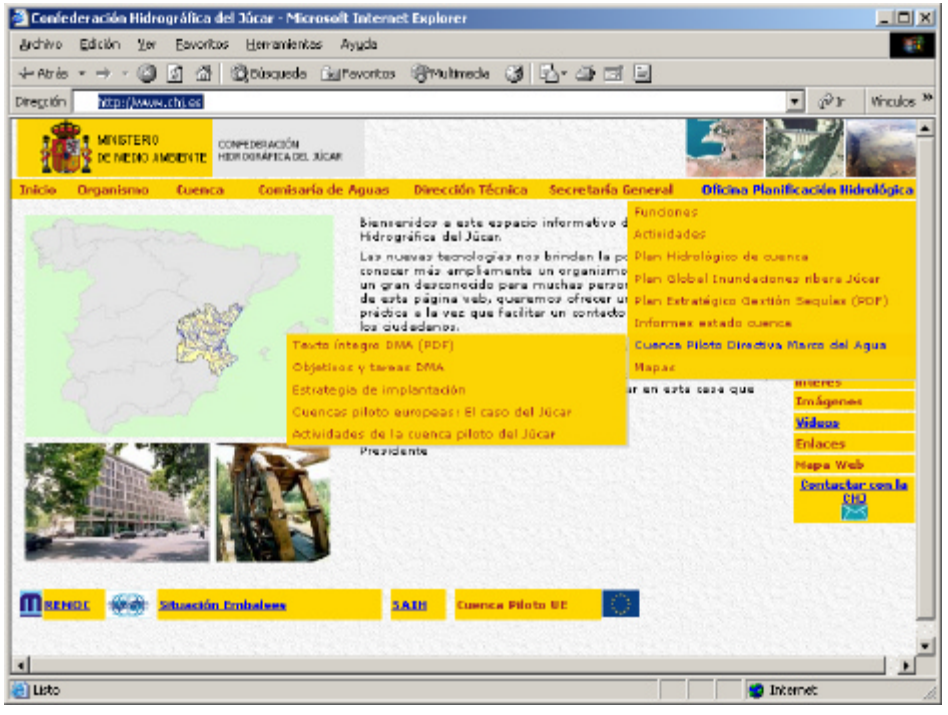


Valencia Urban Area

Public Participation



Supply of information: WEB page



Web Page http : //www.chj.es/

Supply of information (I)

- Presentations in Meetings, Workshops, etc.
  - *Droughts within the European Water Framework Directive and implications on river basin districts.* Seminario Internacional sobre gestión de recursos hídricos en situaciones de sequía, Universidad Politécnica de Valencia, marzo 2003.
  - Reunión de coordinadores europeos de cuencas piloto en el Joint Research Centre, ISPRA, Italia, *Presentación del avance de los trabajos en la cuenca del Júcar*. Abril 2003.

Supply of information (II)

- *La Directiva Marco del Agua.* Sala de Juntas de la Confederación Hidrográfica del Júcar. Abril 2003.

- *La Directiva Marco del Agua y la cuenca piloto del Júcar*. Escuela de Caminos de la UPV. 15 mayo 2003, Valencia

- *Análisis económicos en la cuenca piloto del Júcar*. Sala de reuniones de la DGOHCA, 4 junio 2003. Ministerio de Medio Ambiente. Madrid.

Supply of information (III)

- *The jucar river basin - First results*, Seminar organised by EC on Integrated management -The river basin perspective, 2003, Athens, Greece.
- *Meeting with ONGs (Organizaciones No Gubernamentales). Septiembre 2003*
- *Presentación The pilot Jucar River Basin. Economical analysis of water uses and cost recovery. Paris, ocubre 2003.*
- *Presentación del artículo La Directiva Marco del Agua y la cuenca piloto del Júcar*. Congreso Mundial de la IWRA celebrado en octubre, Madrid.

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