

Fluvial environment planning in Catalonia

**Harmonizing river and floodplain
restoration with human developing**

Toronto 6-9 may 2008

Contents

CATALONIA

Who we are

4'

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PLANNING

Which are our issues

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CONCLUSION

What we have learn

3'

CATALONIA - 31,896 Km²

- Catalan Internal Basins
16,000 Km² - 52% of Catalonia territory
- Interregional Basins
14,000 Km² - 48% of Catalonia territory



1985

WATER SPANISH LAW

Organizes the spanish territory in accordance to the main basins. It includes the groundwater as public

2000

CATALONIAN WATER AGENCY

Administration of the cycle of the water in Catalonia with competences also in the environment aspects

2000

WATER FRAMEWORK DIRECTIVE

It obligates a good ecological state of the water bodies (2015)

2006

CATALAN URBANISM LAW

Define the fluvial space and the uses allowed

2007

FLOOD DIRECTIVE

Reducing the impacts of the floods and risk managment (2015)

WORKS DEVELOPING

REGIONAL

INUNCAT

E1:50.000 i
E1:5.000

Elaboration of the Flood
front contingency Plan in
Catalonia

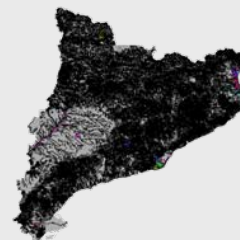


MUNICIPAL

GEOMORFOLOGY DETAIL

E1:5.000

Is not expected to have
information of hydraulics
models in the short-term

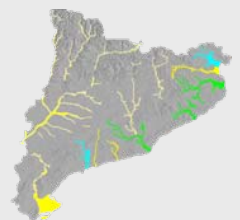


LOCAL

FLUVIAL SPACE PLANNING

E1:1.000

Planning of river spaces
**PARTICIPATORY
PLANNING**



FLUVIAL SPACE

Prevention

RISK MANAGEMENT

Planning

Quantification and definition of risk

■ Singular points



RISK MANAGEMENT

Classification information

Tipology

Phenomena

RISK MANAGEMENT

Structures



Hydraulic



Infrastructure



Morphodynamics



Others



Environmental



Criteria for diagnosis and management

FLUVIAL SPACE

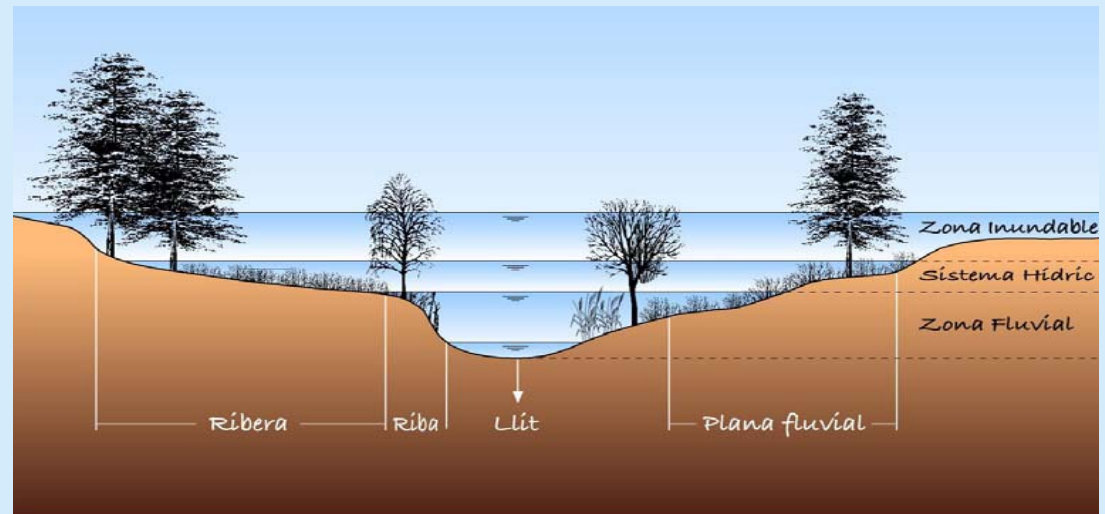
Flood areas

Risk management

PLANNING

Decrease flood risk

- Measures
- Zoning
- Results



MEASURES

NON
STRUCTURED

Information and consciousness raising
General and specific measures
Zoning

STRUCTURED

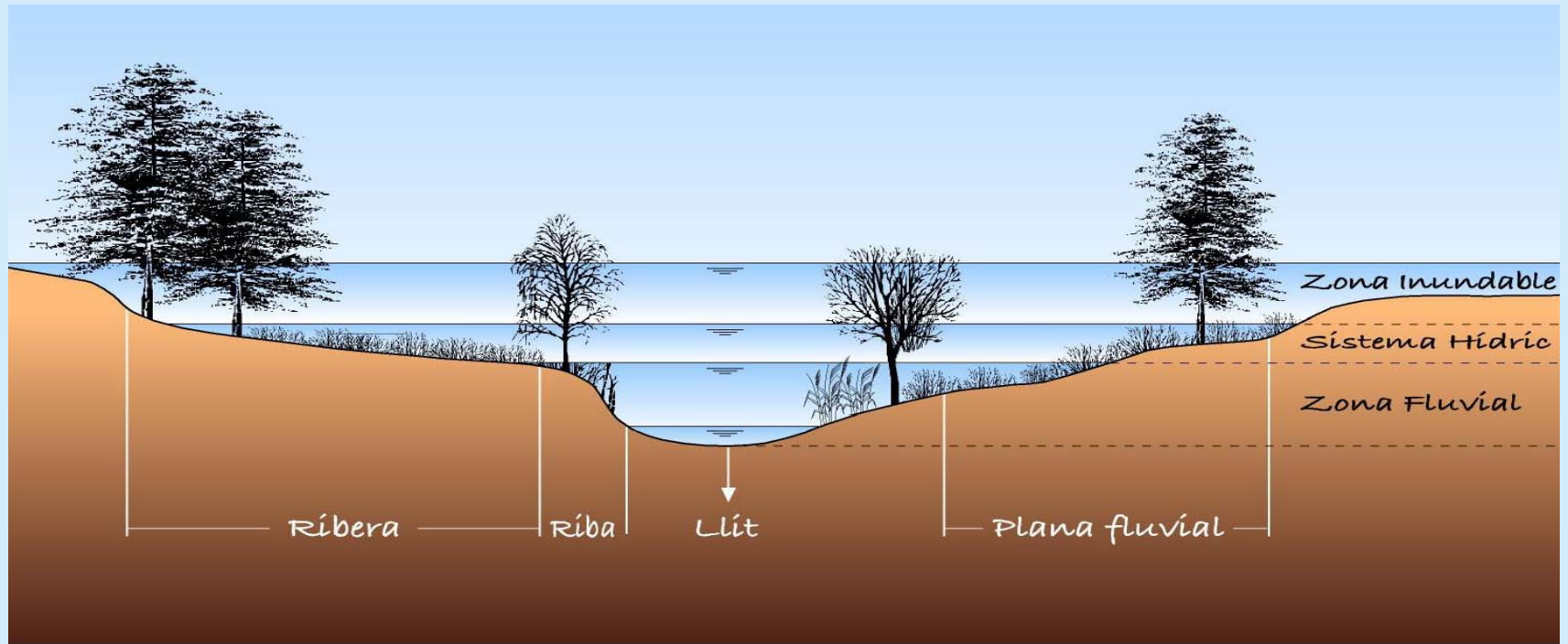
Environmental recovery
Reduction of flood risk
Rebuilding structures

Goals

Good ecological state

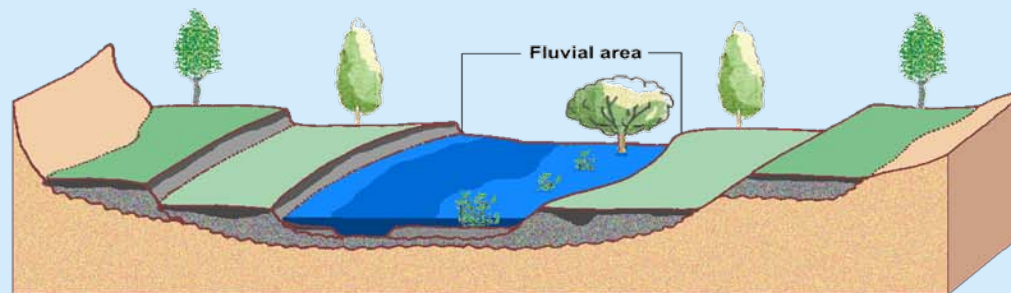
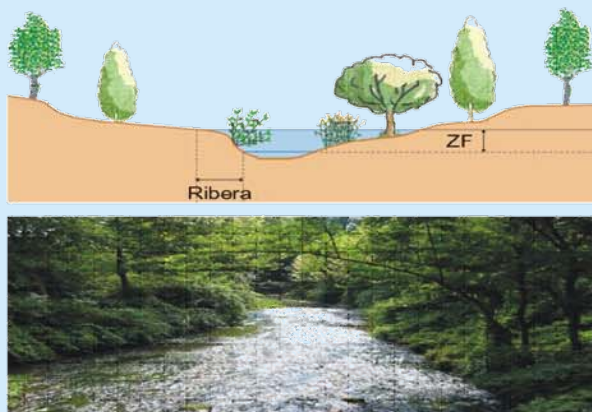
Reduce flood risk

CORRECT USE OF FLUVIAL SPACE



CATALAN URBANIS LAW

Racional use of territory respecting the environment



Zoning

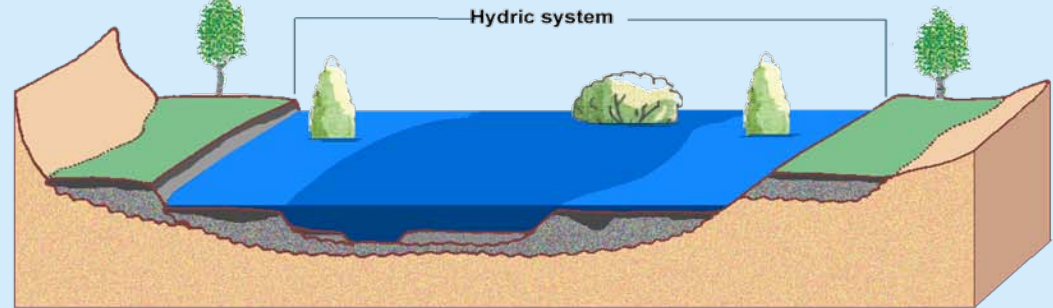
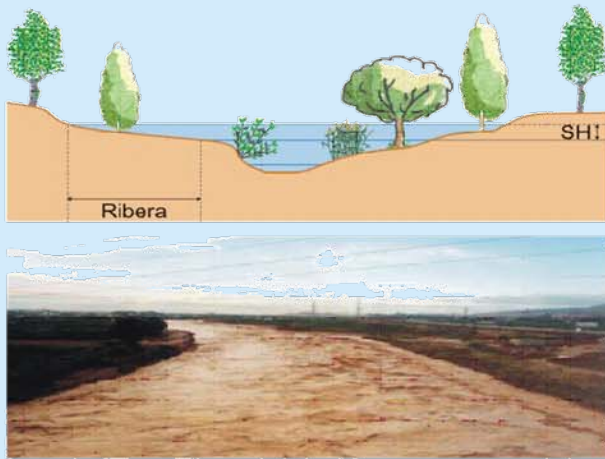
**FLUVIAL
AREA**

Objective and delimitation

Preservation of quality of water and the associated ecosystems of the river bed. It is delimited by the 10 - year event and of the bank minimum

Use

Use is not permitted, excepts for enviromental preservation and flood stream



Zoning

Objective and delimitation

Use

FLUVIAL AREA

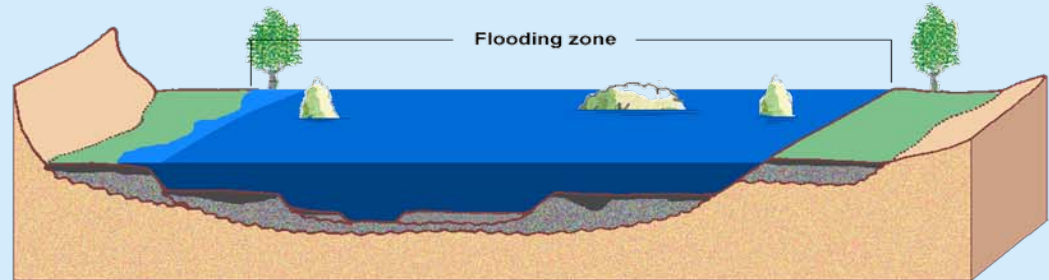
Preservation of quality of water and the associated ecosystems of the river bed. It is delimited by the 10 - year event and of the bank minimum

Use is not permitted, excepts for enviromental preservation and flood stream

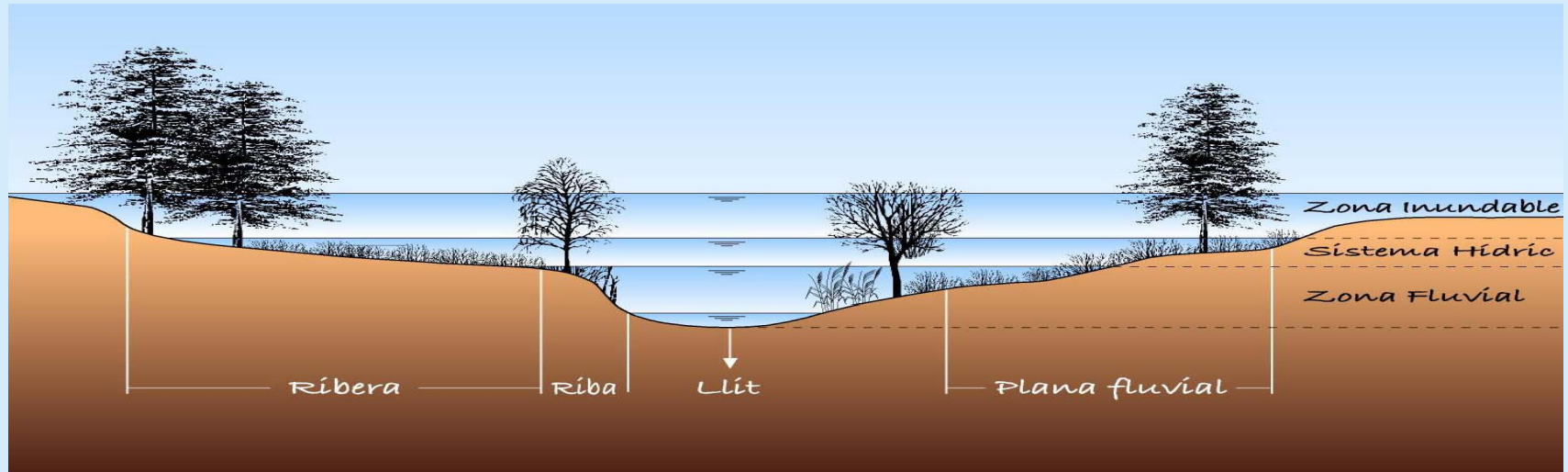
HIDRIC SISTEM

It is delimited by preferential way of drainage in avenue. It is delimited by 100 - year event

Any construction is permitted to be able to preserve the currents state



Zoning	Objective and delimitation	Use
FLUVIAL AREA	Preservation of quality of water and the associated ecosystems of the river bed. It is delimited by the 10 - year event and of the bank minimum	Use is not permitted, excepts for enviromental preservation and flood stream
HIDRIC SISTEM	It is delimited by preferential way of drainage in avenue. It is delimited by 100- year event	Any construction is permitted to be able to preserve the currents state
FLOOD AREA	According to the definition of the Law of water; flood area is delimited from the 500 - year event	Possible construction and building under conditions.



Zoning	Objective and delimitation	Use
FLUVIAL AREA	Preservation of quality of water and the associated ecosystems of the river bed. It is delimited by the Q10 and of the bank minimum	Use is not permitted, excepts for enviromental preservation and flood stream
HIDRIC SISTEM	It is delimited by preferential way of drainage in avenue. It is delimited by Q100	Any construction is permitted to be able to preserve the currents state
FLOOD AREA	According to the definition of the Law of water; flood area is delimited from the Q500	Possible construction and building under conditions.

FLUVIAL SPACE PLANNING

KNOWLEDGE

Integrated and
global vision

Environmental
Morphodynamics
Hydraulic

PROPOSALS

Good ecological state of water bodies
Decreased flood risk

CRITERIA

Intervention criteria in river spaces
Criteria for elaborating studies and projects
Coordination with other plans and programs

Main objective

Preserve and improve the functionality of hydraulics,
morphodynamics and environment

http://oslo.geodata.es - CDAM - Espais Fluvials - Microsoft Internet Explorer

Agència Catalana de l'Aigua **Consulta de dades de l'aigua i el medi** **► Espais Fluvials**

Floodable zones | Zoning | Singular points | Flows | Performances | Habitats | Advanced user

SEARCH ENGINE

Search:

Type:

☐ ☒ **FLOODABLE ZONE**

- ☒ Potentially flooded zones
- ☒ Zonas inundables para un periodo de retorno de 500 años
- ☒ Floodable zones for a return period of 100 years flooding
- ☒ Floodable zones for a return period of 50 years flooding
- ☒ Floodable zones for a return period of 10 years flooding
- ☒ Floodable zone

☐ ☐ **DANGER**

- ☐ Floodable zones for a return period of 500 years flooding

☐ **CARTOGRAPHY**

FLOODABLE ZONES

[Glossary of concepts](#)

[Help to the navigation](#)

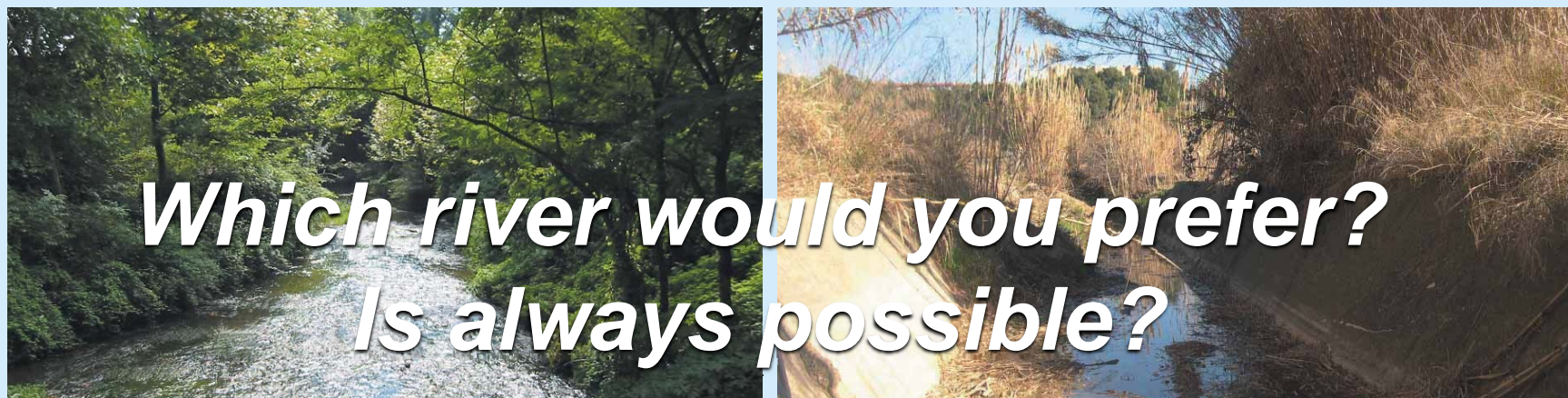
[Application manual](#)

[Terminologic vocabulary](#)

[Questions and suggestions mailbox](#)

scale: 1:1610000, easting: 286509 www.geodata.es

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Thank you for your attention

More information in our web site

<http://mediambient.gencat.net/aca/en/inici.jsp>

Alex Gracia
agracia@gencat.cat

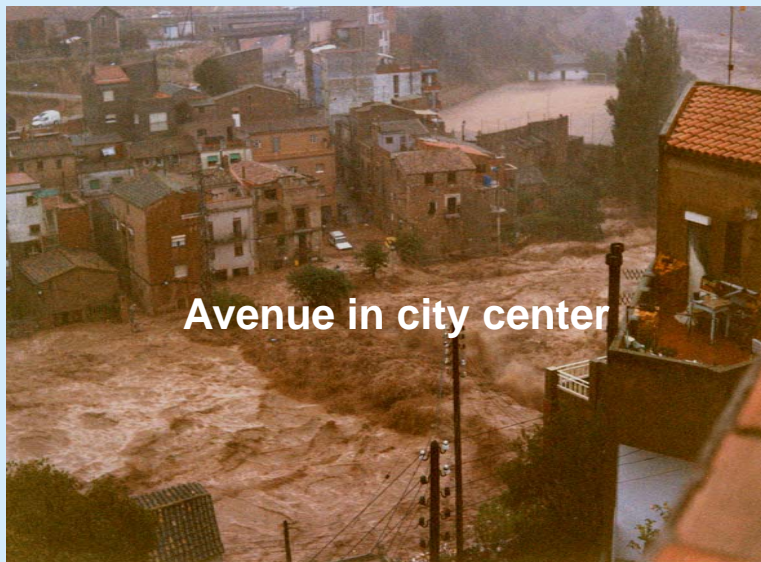
PHENOMENON OF THE DYNAMICS OF THE RIVER SPACES



Erosion of margins



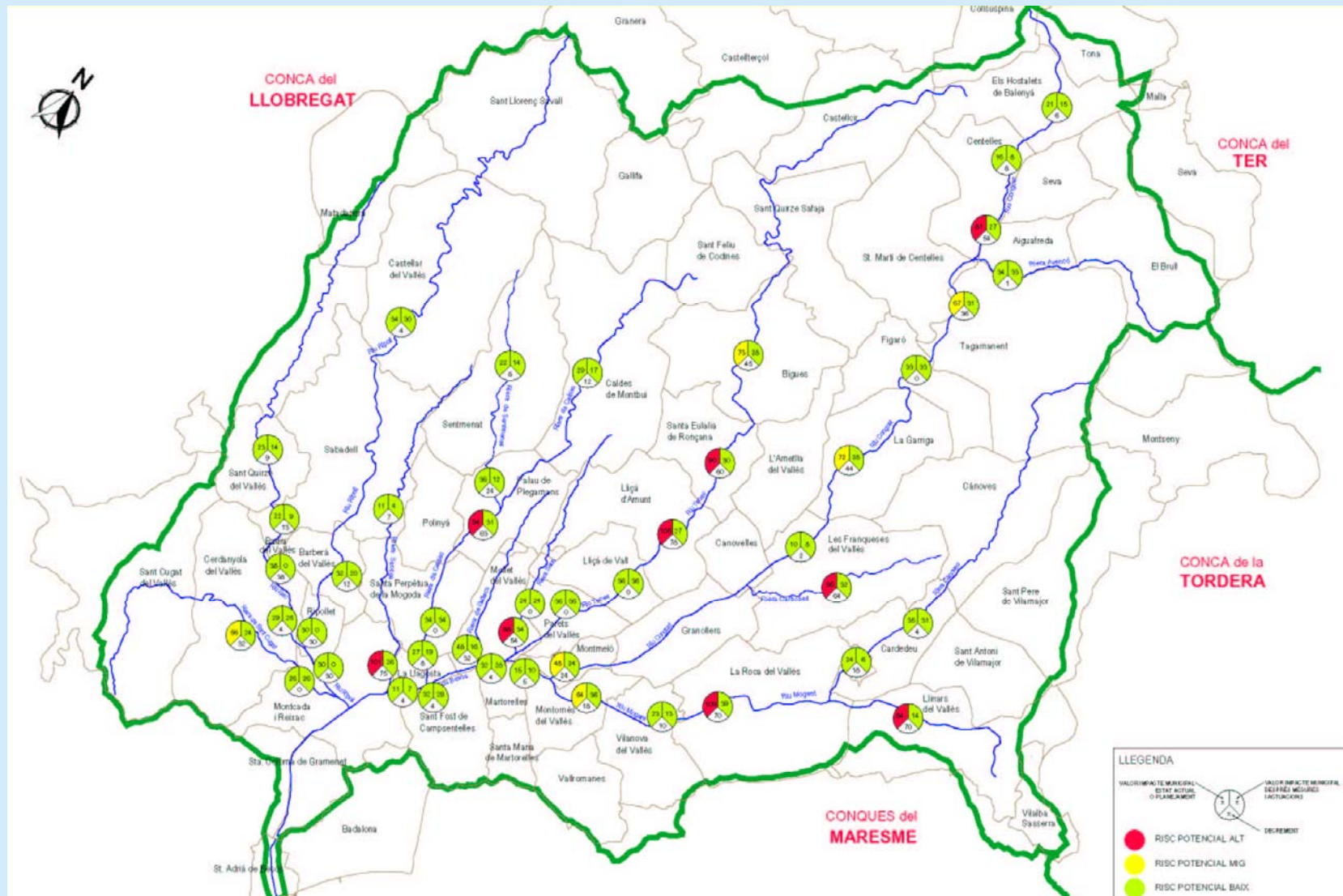
Affection to the bank and volumes

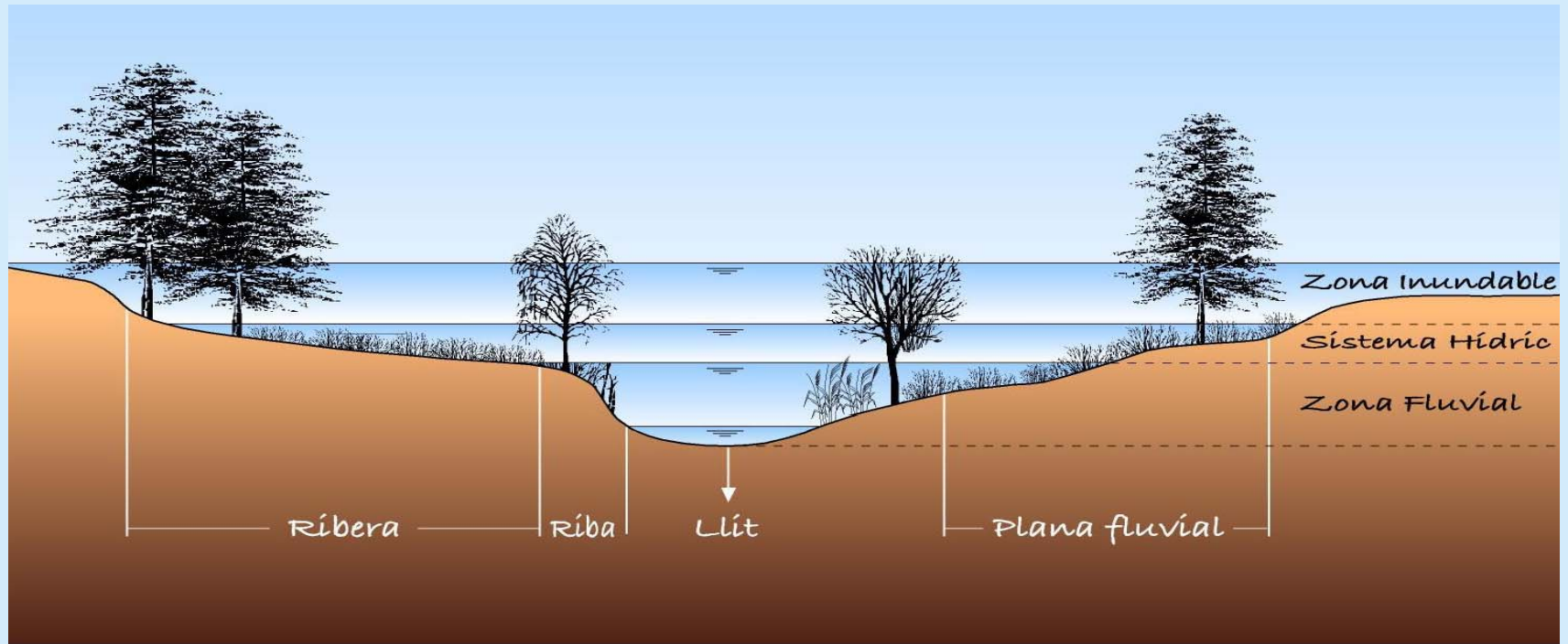


Avenue in city center



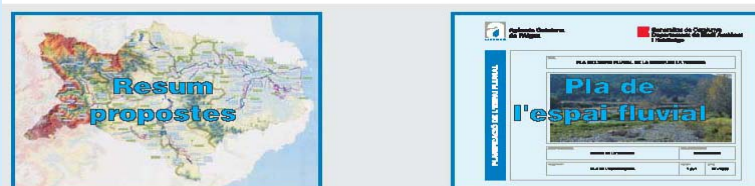
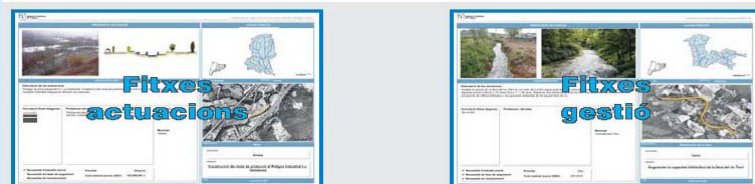
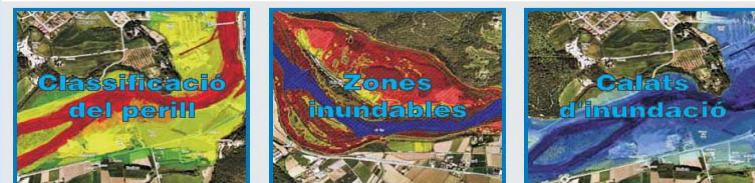
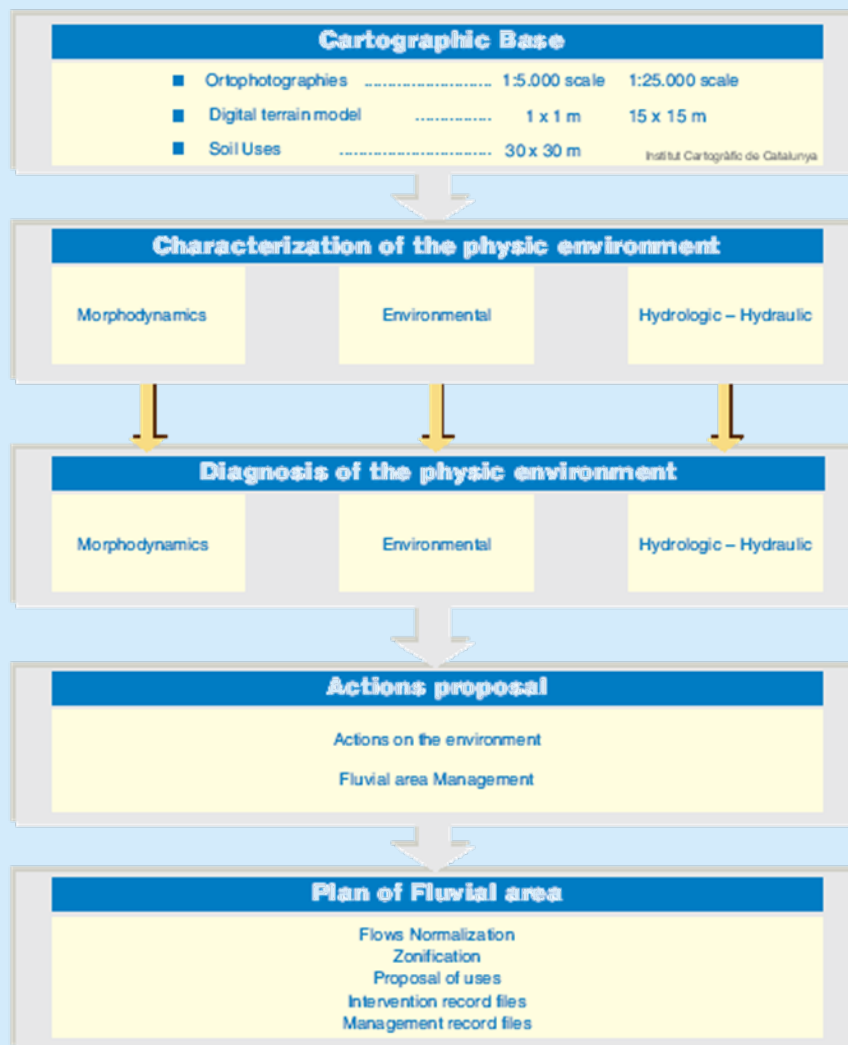
Connection route
flooded





The biological corridor is composed by public and private lands. It includes the river bed, the fluvial habitat and the flood areas

Knowledge of river territory to establish a dialogue
(citizens+authorities) to set up the future evolution of this space



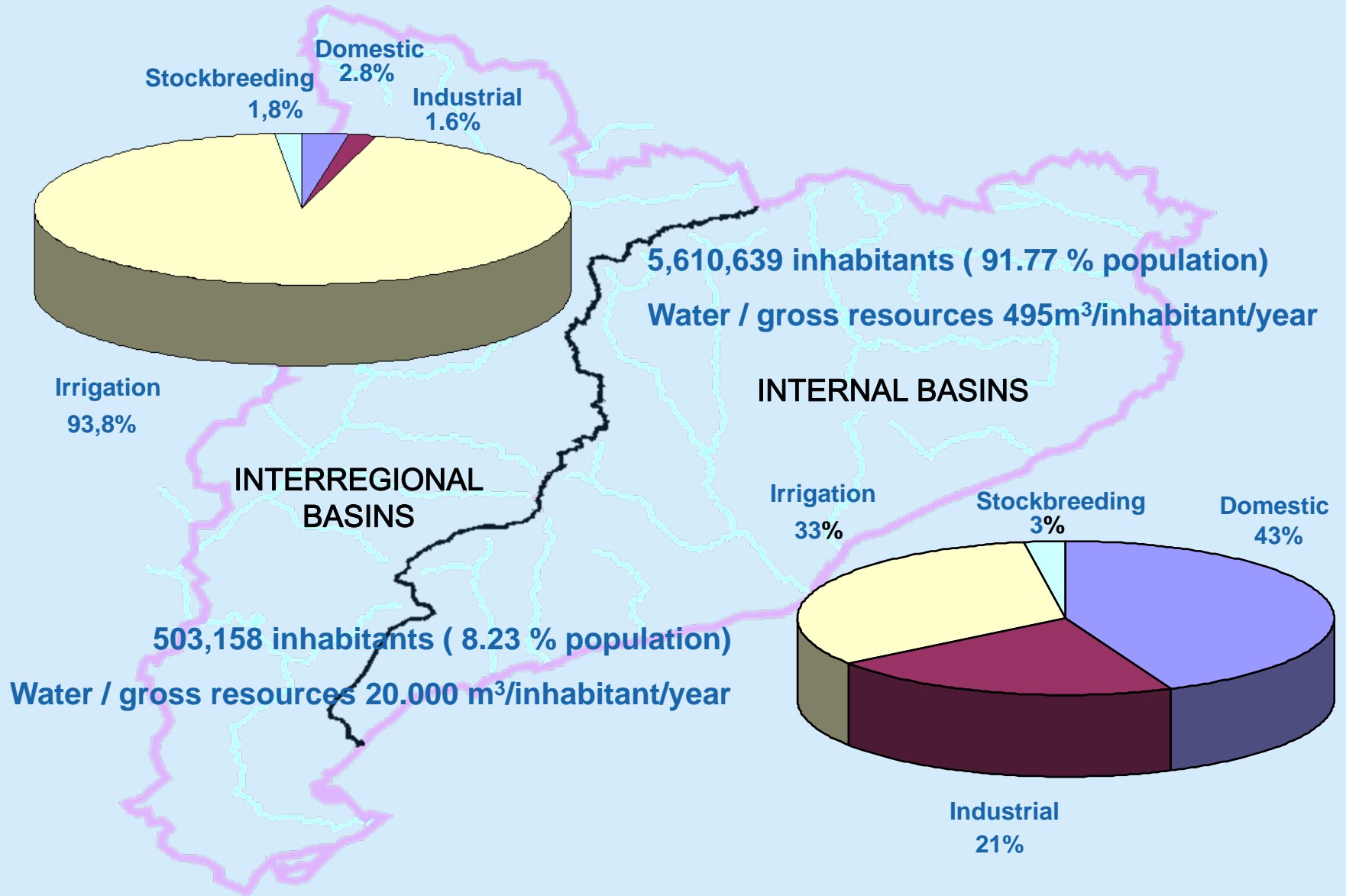
- Water in Catalonia, as in all Mediterranean countries, is a rare and precious resource.
- The combination of landscape, climate, and the water cycle along with the needs of the local population, tourism and industrial demand, come together to ensure too careful strategic management of this most essential of nature resources.
- Established in 2000, the Catalan Water Agency is an organization set under public law statutes by the Catalan Regional Government whose principal objective is the protection of this crucial resource.

- Planning the needs of water resources in Catalunya
- Administration, management and control of the Public water system, promoting and rationalising the use of the water resources.
- Promotion and monitoring the relevant infrastructures and important hydro locations.
- Inspection and overseeing the correct use of the administrative permits.

Two main water areas

CATALONIA - 31,896 Km²

- Catalan Internal Basins
16,000 Km² - 52% of Catalonia territory
- Interregional Basins
14,000 Km² - 48% of Catalonia territory



The management of the integral water cycle

The Catalan hydraulic administration establishes a framework of protection of continental waters (surface, ground and coastal) to guarantee a balanced and integrated management of the public hydric domain to alleviate deficits and imbalances and prevent deterioration, promoting sustainable use of water resources respectful with the environment.

The competencies in hydraulic matters of the Government of Catalonia are exercised by the Catalan Water Agency, a public law entity that is part of the Ministry of the Environment of Catalonia whose objective is the comprehensive management of the water cycle.

Competencies of the Catalan Water Agency

- ☐ The promotion, construction, exploitation and maintenance of hydraulic works competency of the Government of Catalonia.
- ☐ The control, vigilance and inspection of the Ter-Llobregat basic network and other hydraulic facilities entrusted to it.
- ☐ Administrative intervention and census of the uses of existing surface and ground waters and those dumpings which could affect surface, ground and maritime waters.
- ☐ Quality control of beaches and waters in general.

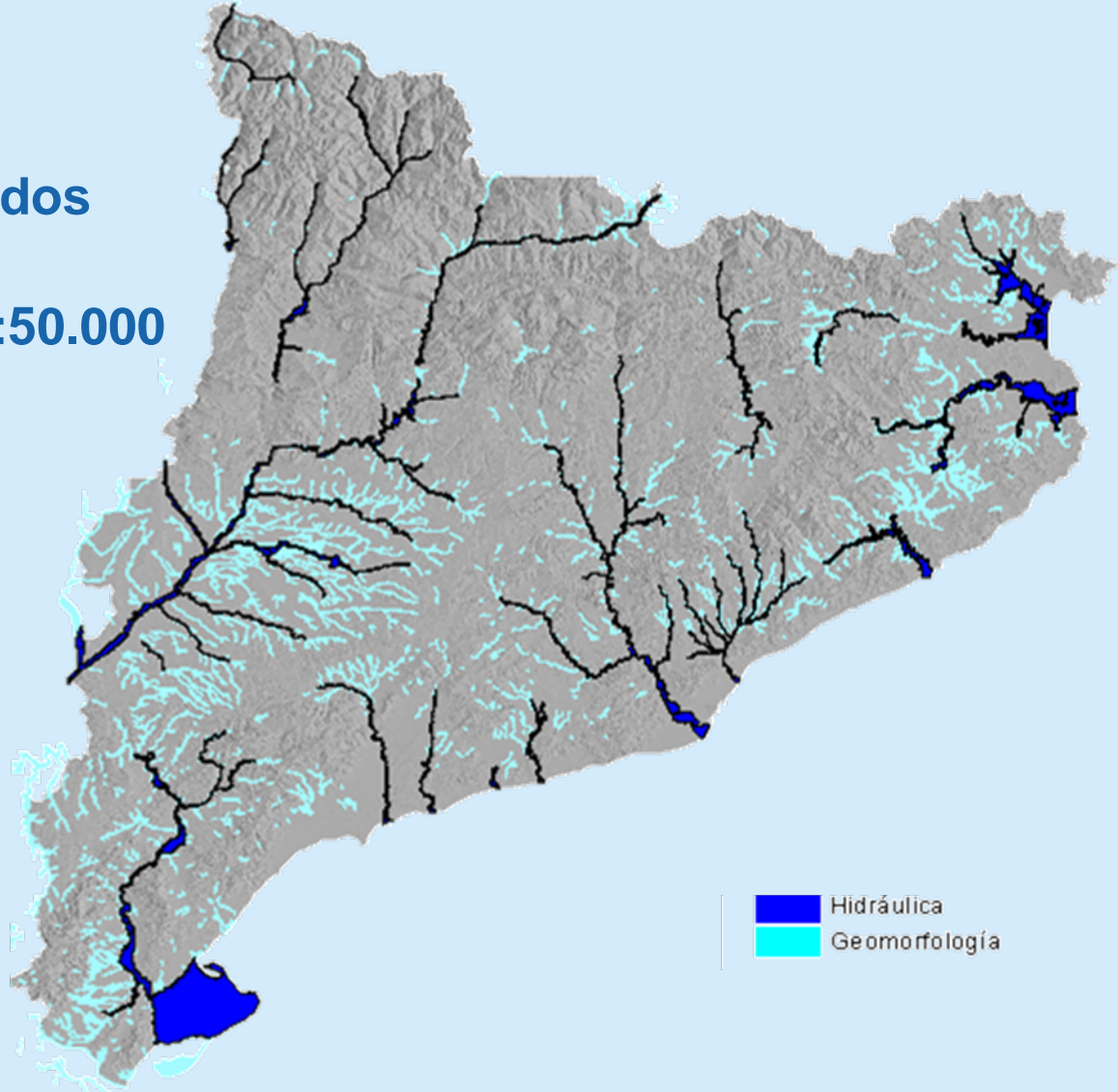
Competencies of the Catalan Water Agency

- ❑ The control of water pollution by the application of a combined focus, utilizing pollution control at source by setting emission value limits and quality objectives for the receiving medium.
- ❑ The management, collection, administration and distribution of economic resources attributed to it by this Law and drawing up the budget.
- ❑ Concerted action and, if called for, the coordination of measures by the competent administrations in matters of supply and treatment in the territory of Catalonia.
- ❑ The promotion of entities and associations having to do with water and the encouragement of their activities.

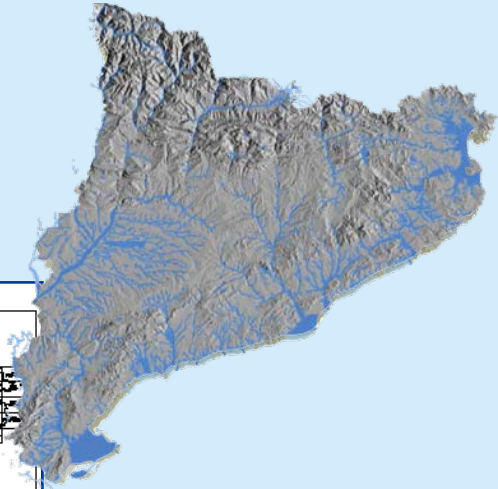
Información

DTM 15*15
2.000 km modelizados

Geomorfología E1:50.000
Uns 15.000 km

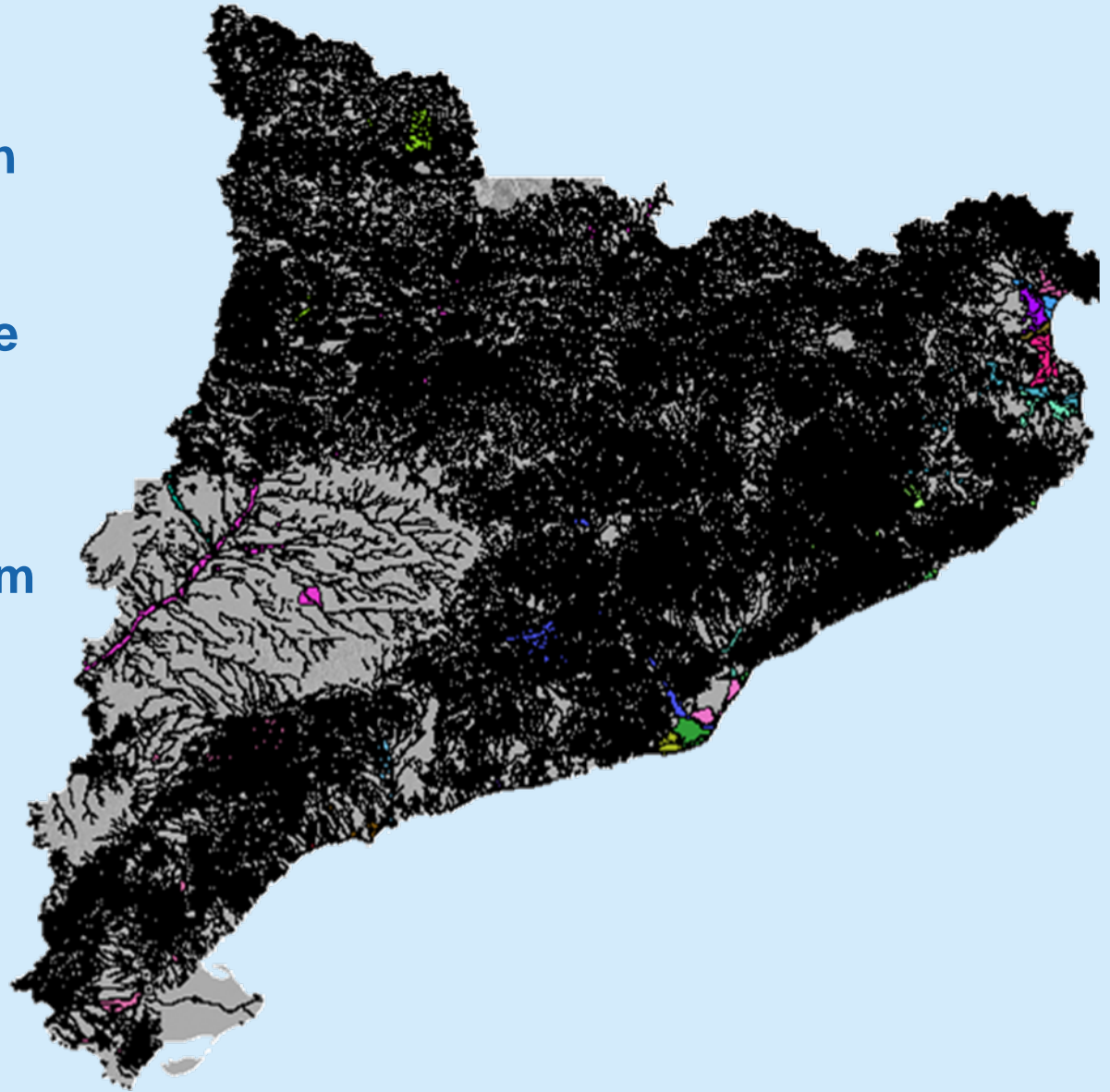


DELIMITACIÓN GEOMORFOLÓGICA E1:50.000

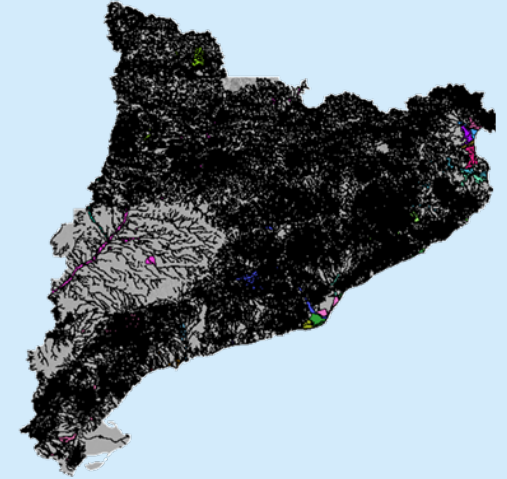
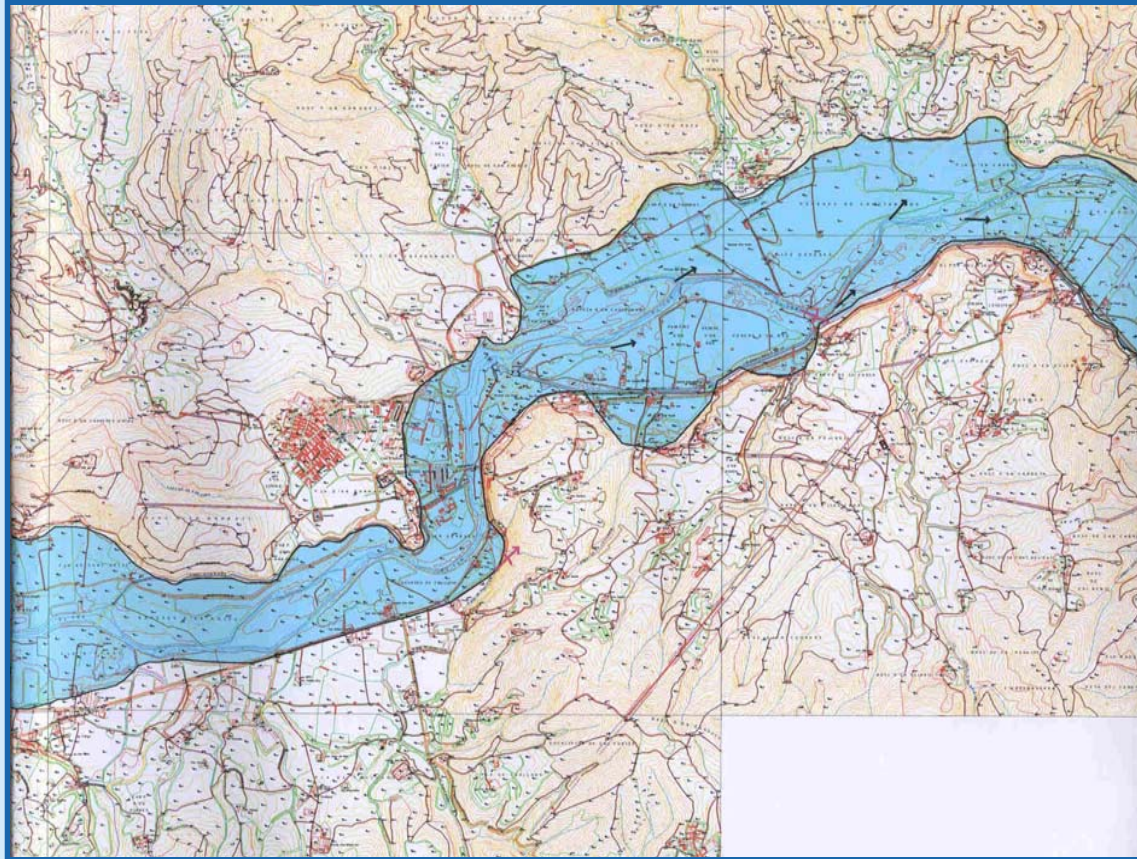


Primera aproximación
se está trabajando en
colaboración con el
Instituto Geológico de
Cataluña

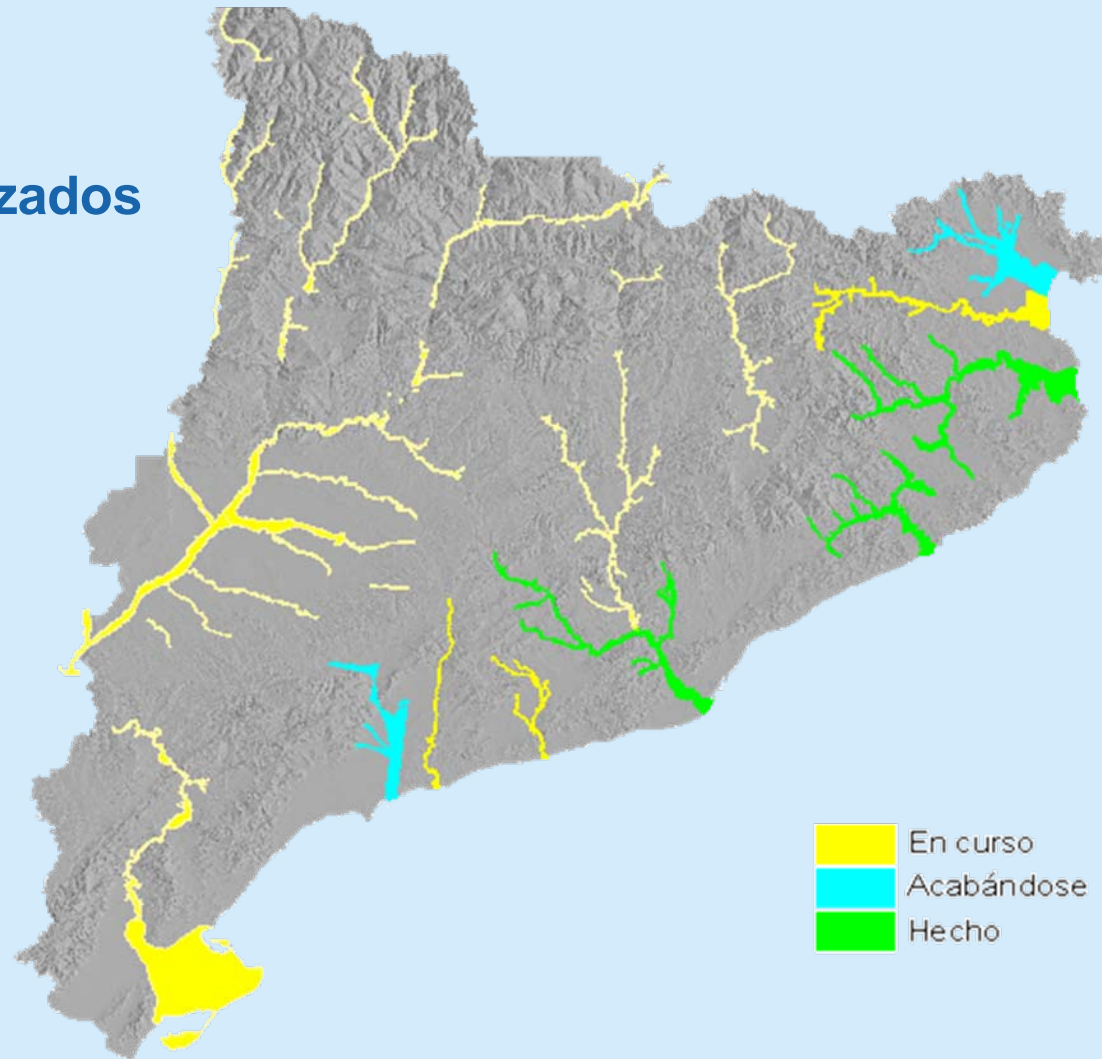
Unos 75.000 km, con
detalle unos 30.000 km






Geomorfologia detallada

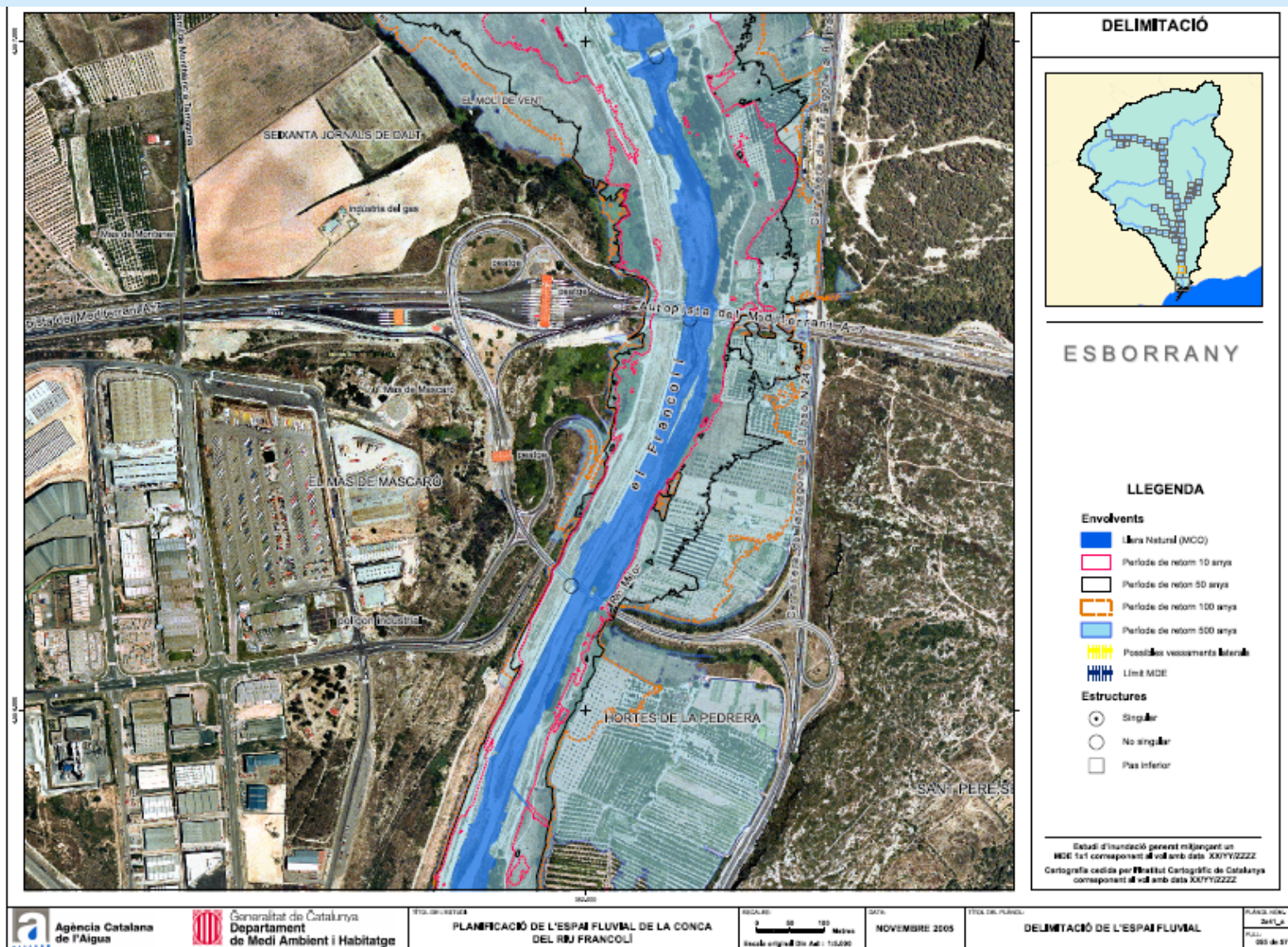


DTM 1*1
3.000 km modelizados

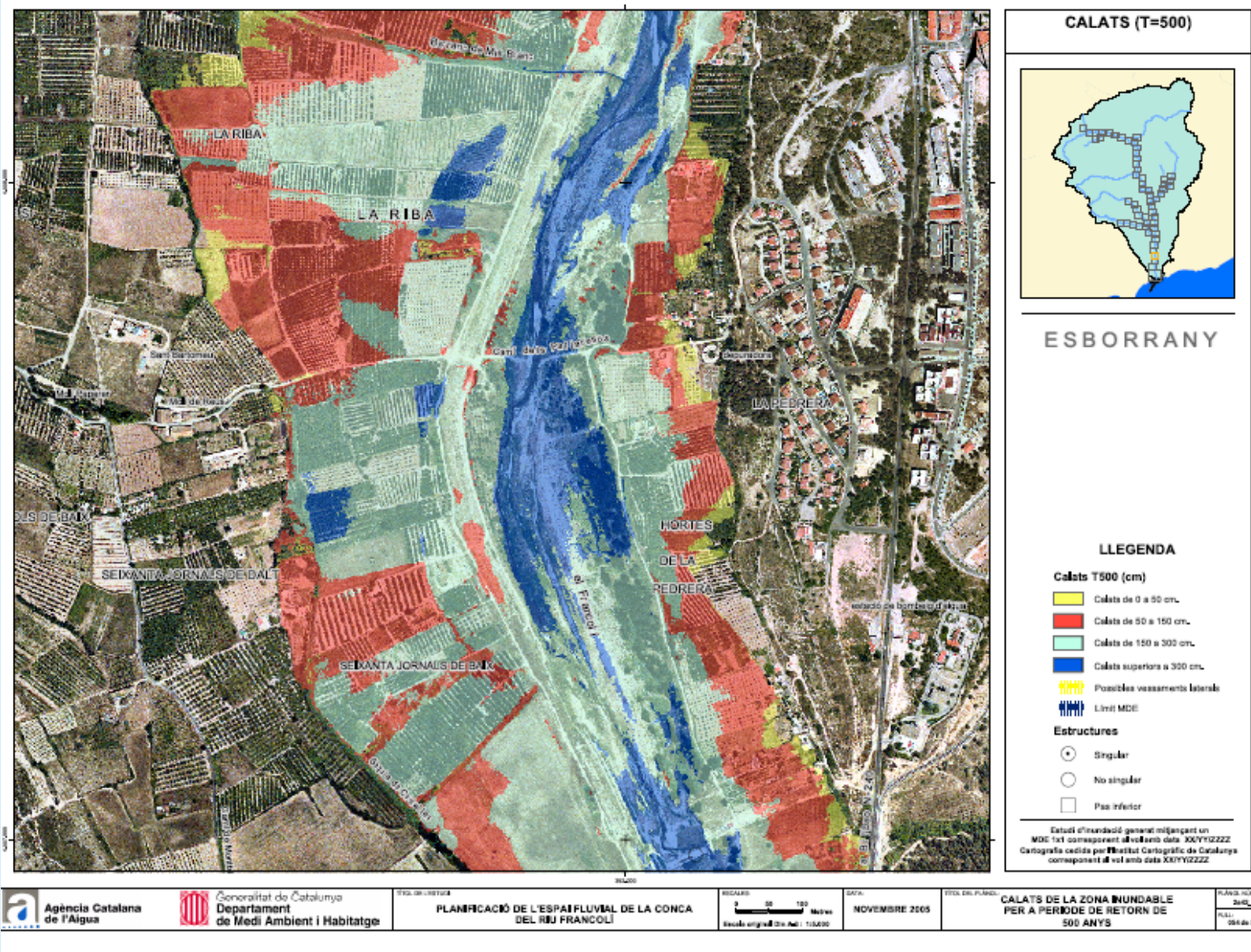


-  En curso
-  Acabándose
-  Hecho

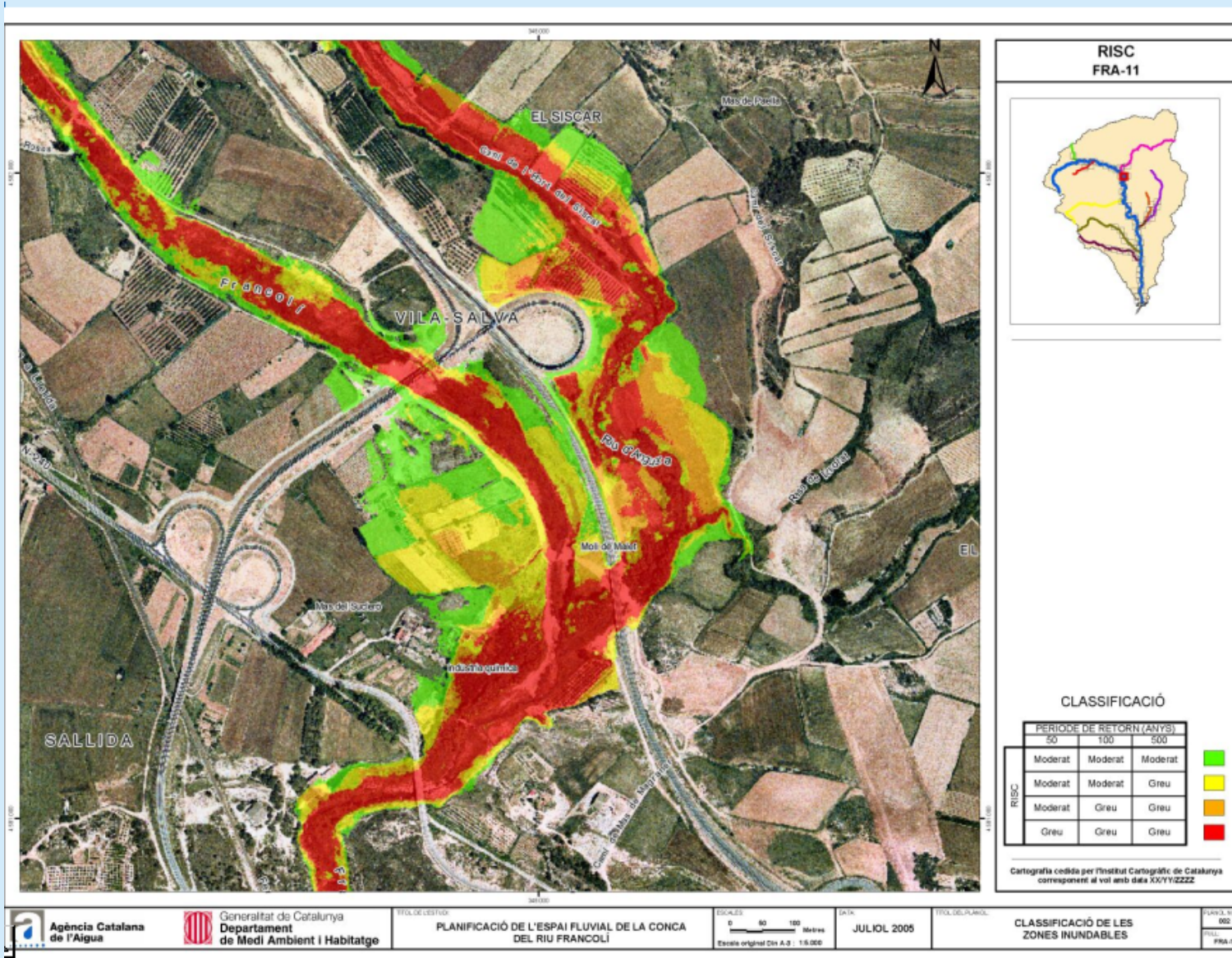
2000

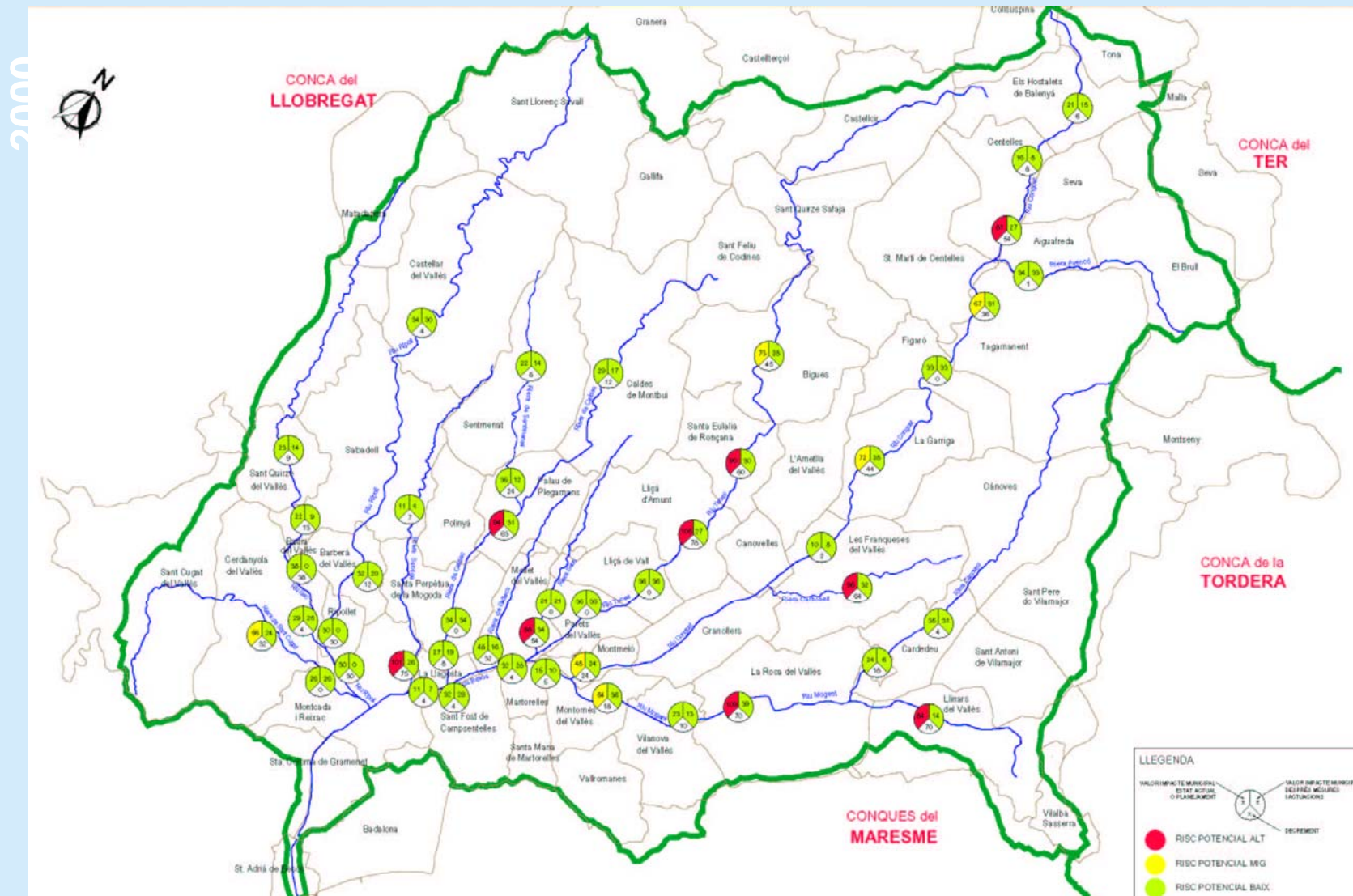


2000

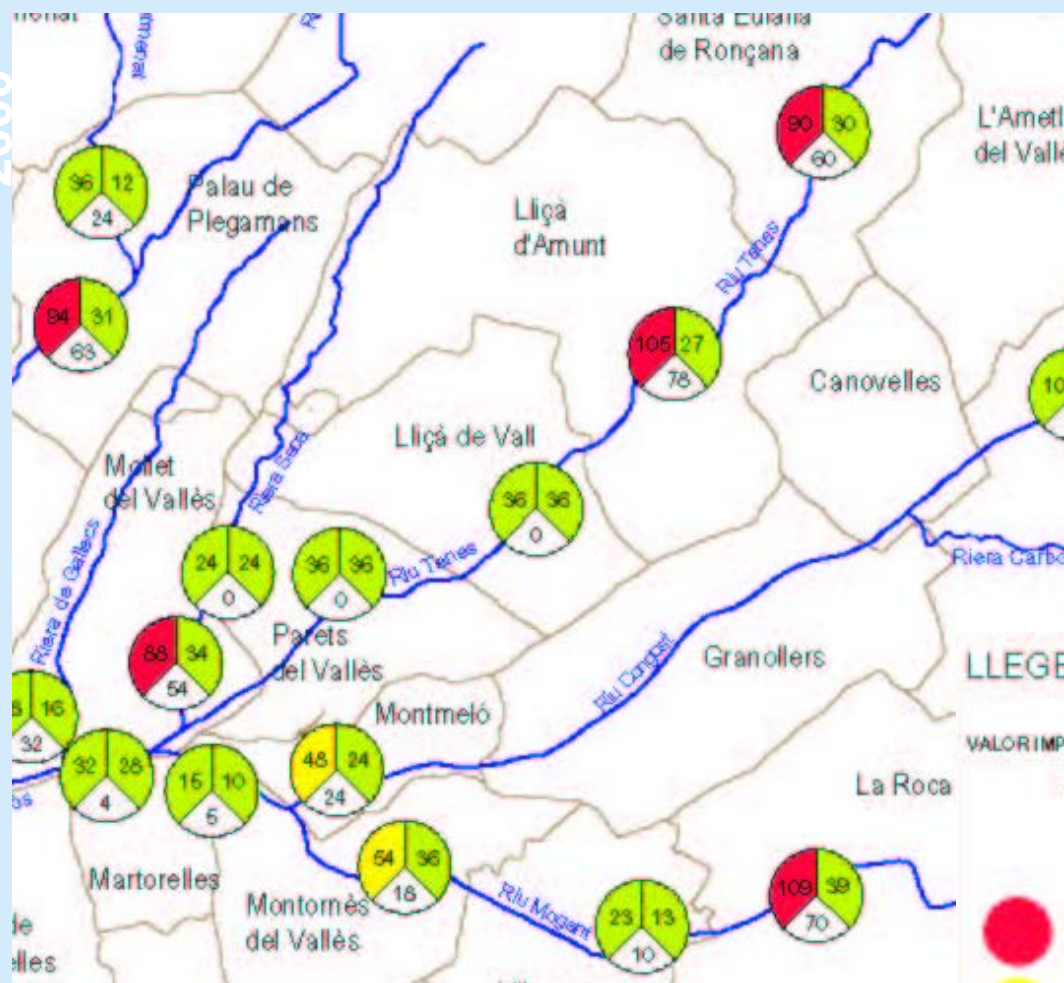


2000





2000



LLEGENDA

VALOR IMPACTE MUNICIPAL
ESTAT ACTUAL
O PLANEJAMENT

VALOR IMPACTE MUNICIPAL
DES PRÉS MESURES
D'ACTUACIONS

DECREMENT



RISC POTENCIAL ALT

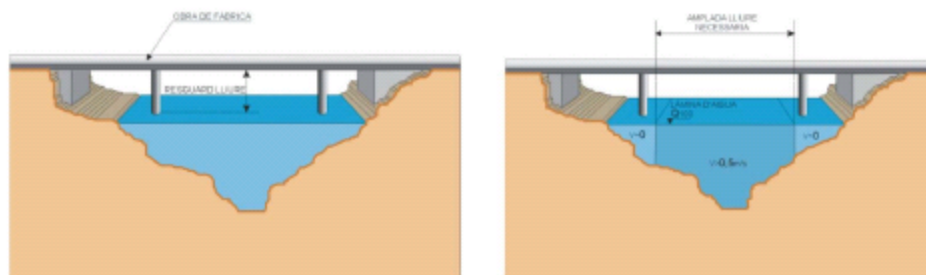


RISC POTENCIAL MIG



RISC POTENCIAL BAIX

RECOMANACIÓ D'ACTUACIÓ



LOCALITZACIÓ



Tipus actuació

Remodelació d'estructures - Ponts

Síntesi: Remodelació del pont 010402 a la Riera de Pertegàs

Descripció de l'actuació

Remodelació de l'estructura 010402 per manca de capacitat hidràulica.

La nova estructura ha de presentar un major gal·lís i major distància de separació de piles.

Responsables

Títular

Fitxes relacionades

050E048 050G029

Observacions

Fins que no s'executi aquesta actuació, cal tenir en compte la necessitat d'incloure en el Pla d'emergència front avingudes del municipi aquest tram. El Pla haurà de ser desenvolupat, aprovat i executat per l'Ajuntament, prèvia l'obtenció dels informes favorables dels organismes i administracions competents.

Municipis

Sant Celoni

☒ Necessitat d'estudis previs

Prioritat

Baixa

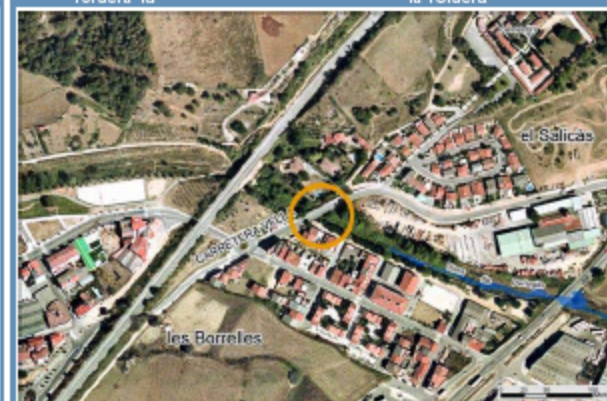
☐ Necessitat de manteniment

Cost estimat

345.321 €

Conca Tordera la

Subconca la Tordera



Coordenades UTM

458621

4616194

Curs fluvial

Riera de Pertegàs

Localització

Pont de la carretera Vella a la Riera de Pertegàs ubicat entre els ponts del ferrocarril BCN- Portbou i la carretera C-251

Codi

0500015

Competencies of the Catalan Water Agency

- ☐ Obtaining the necessary information about natural persons and bodies corporate, public or private, for the exercise of the competencies attributed to it.
- ☐ The ordering of upstream supply and treatment services.
- ☐ Proposal to the Government of the establishment of limitations on use in areas subject to flooding that are considered necessary to guarantee the safety of persons and property.
- ☐ The functions and attributions that the general legislation grants basin organisms in the terms established by law.

Àrea Cuenca: 785 km²

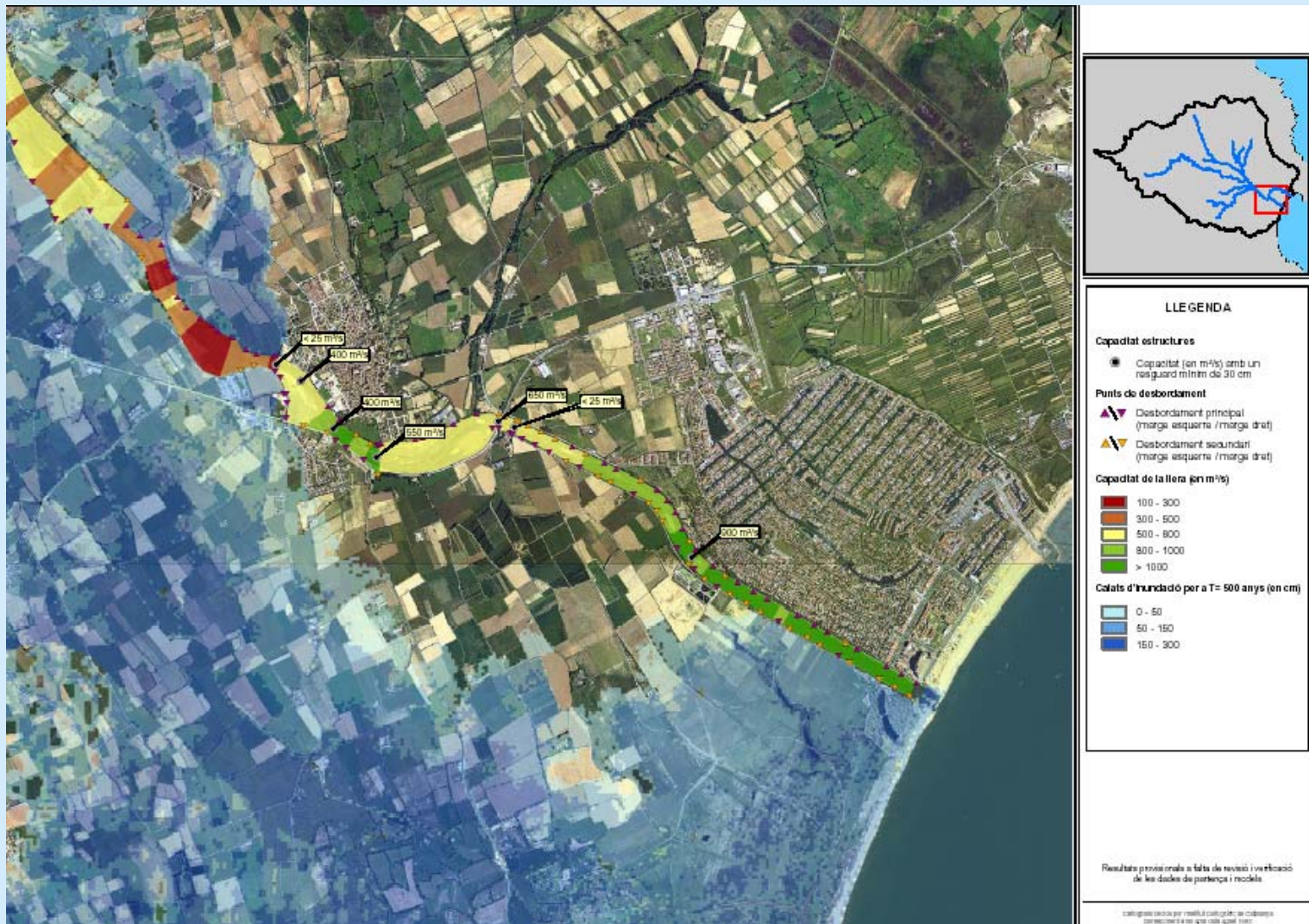
Superfície llanura modelizada (2D): 150 km²

Longitud de cursos modelizados: 131 km

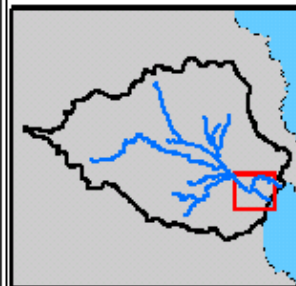
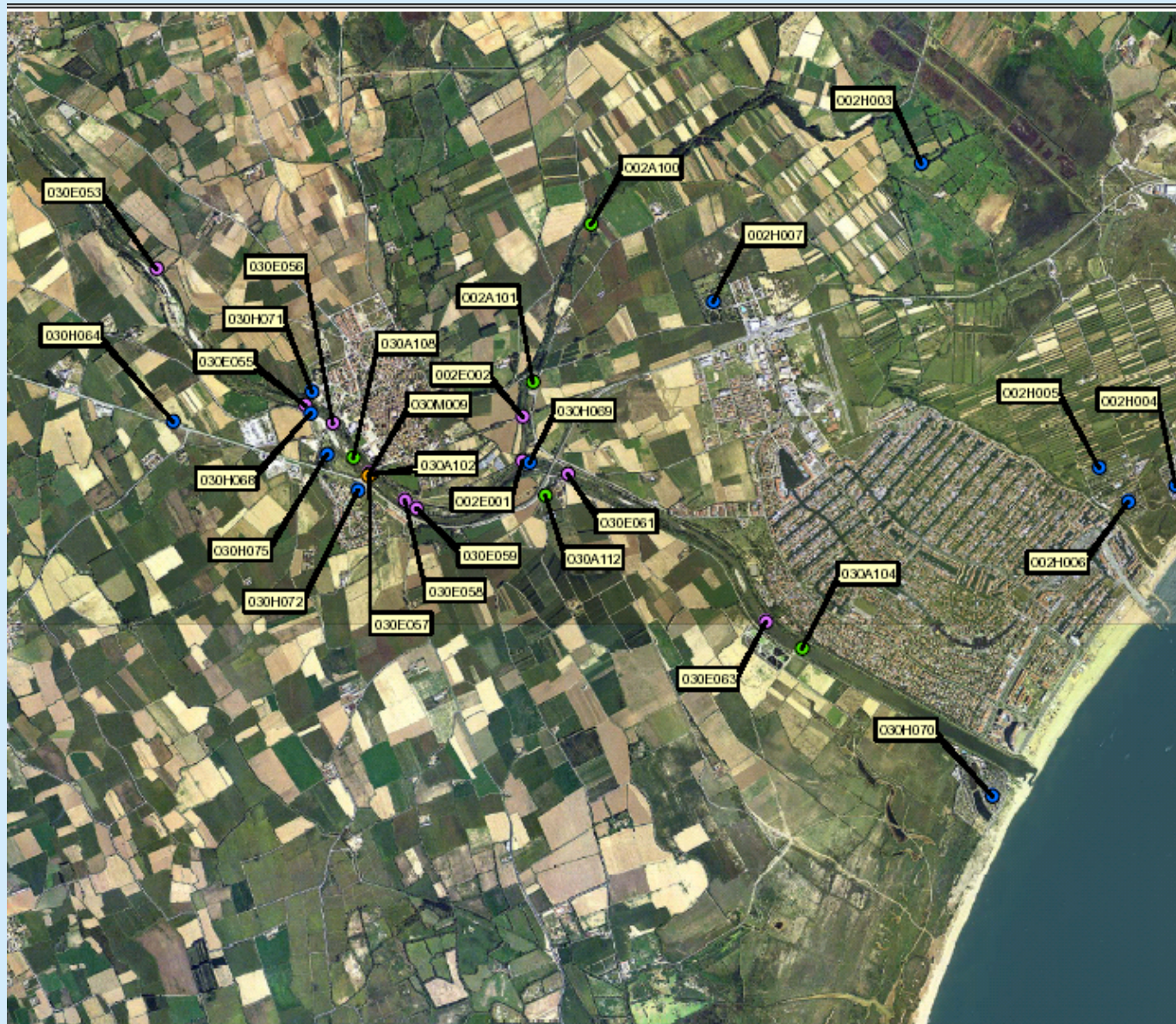
Puntos críticos detectados:

390

2000



Inventario puntos singulares



LLEGENDA

Punts singulars

- Ambiental
- Estructural
- Hidràulic
- Morfològic

Resultats provisionals a falta de revisió i verificació
de les dades de pertinença i models

Cartografia basada en imatges de satèl·lit i cartografia de l'Agència Catalana de l'Aigua