

Making it work: key success stories

Catalonia pilot region applying the heavy rainfall workflow

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DG Civil Protection,
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CLIMAAX
climate ready regions

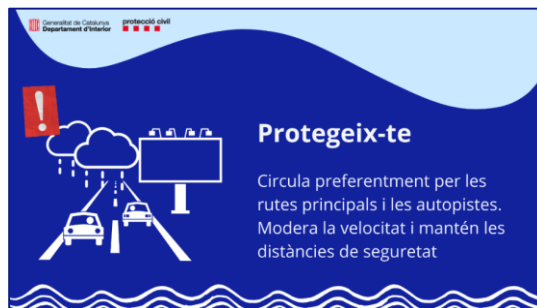
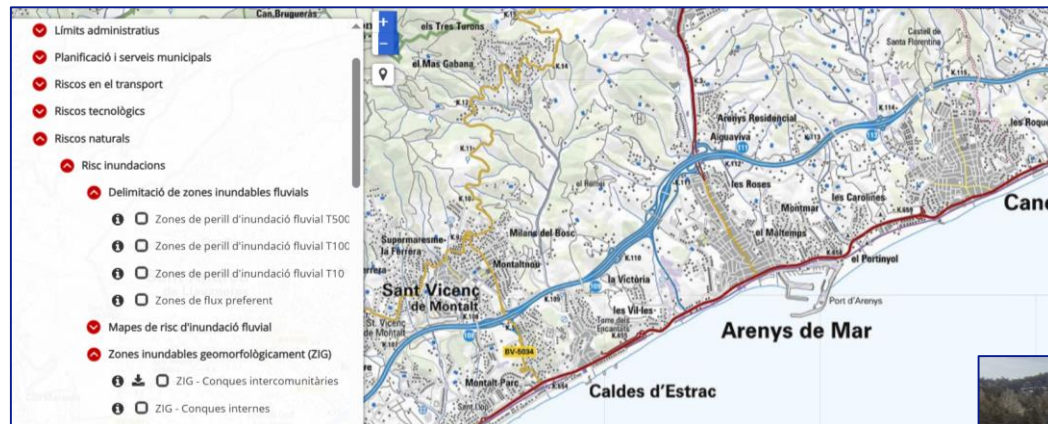
Catalonia pilot region



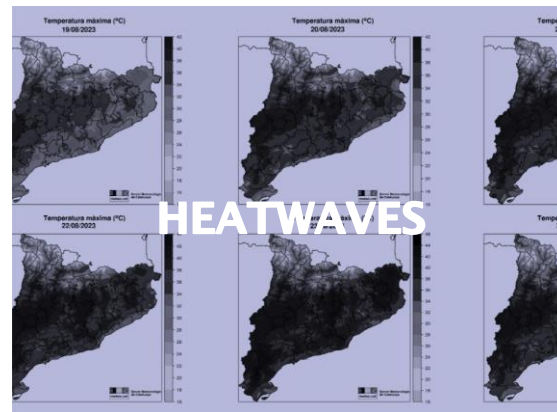
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Civil protection in Catalonia



Hazards of interest



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Hazards of interest



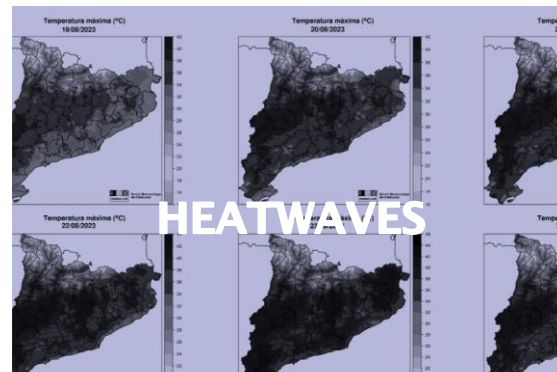
WILDFIRES

*New areas at risk?
Longer wildfire season?
Days of extreme danger?
Changes in the fire
behaviour?*



**TORRENTIAL
FLOODING**

*More frequent torrential
episodes? Reduction of the
return periods? New assets at
risk? Reduction of the time to
protect population?*

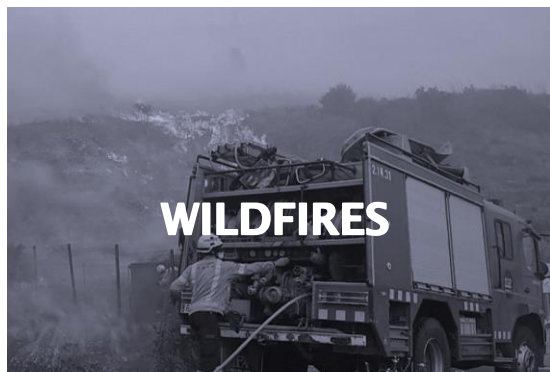


HEATWAVES

*More frequent and longer
episodes?
Need to discuss thresholds?*



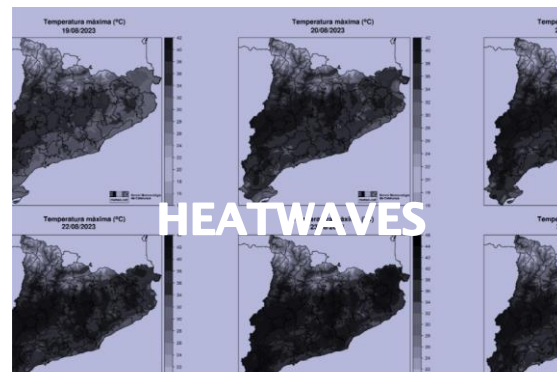
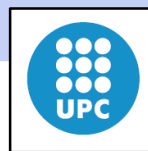
Hazards of interest



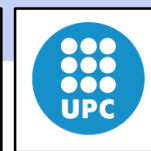
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Information of interest



- *Reduction of the time available to prepare for intense rainfall episode (changes in intensity).*
- *Maximum accumulated precipitation in 24 hours.*
- *Maximum precipitation in 0.5 h, 1 h, 3 h. Frequency of torrential episodes.*
- *Frequency of maximum flows due to extreme floods (rivers).*
- *Frequency of sea storms.*
- *Area of coastline becoming (very) vulnerable to the effects of storms.*
- *Reduction of return periods in floodable areas (rivers and coast).*
- *Increase in flood level.*
- *Increase of the flood zone (500 years).*



INUNCAT - Flooding Regional Plan

- **Study of the risk**

Study of the hazard, vulnerability, zoning the territory, municipalities that should plan for flooding

- **Structure and organisation**

- **Operability**

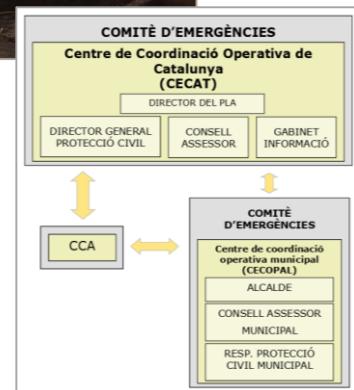
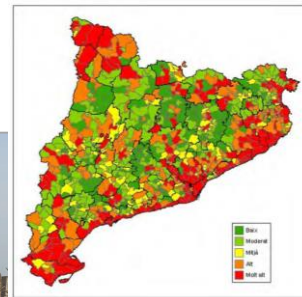
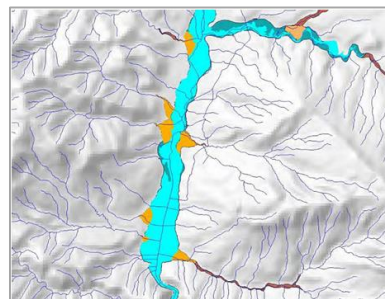
Pre-alert; alert and emergency phases. Alerting and coordination.

Phases depend on dams, weather forecasts (SMP), hydrological forecasts, and coastal flooding possibilities

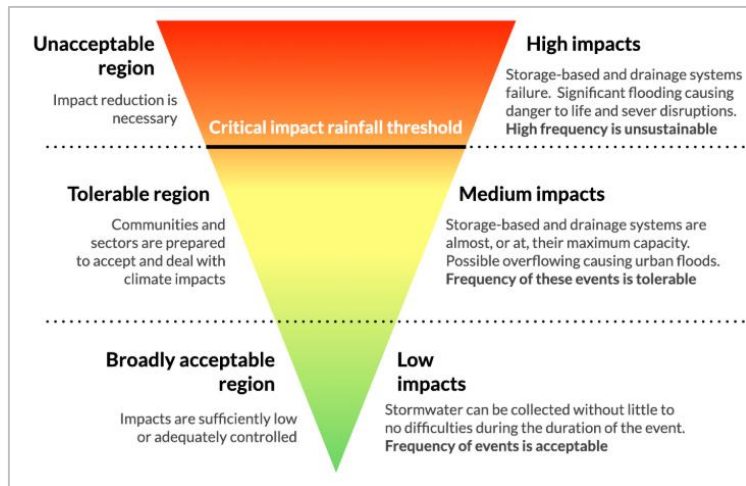
- **Resources and means**

- **Implementation and updating of the plan**

https://interior.gencat.cat/ca/arees_dactuacio/proteccio_civil/plans-proteccio-civil/plans-especials/inuncat/



Heavy rainfall workflow



SMP grau 1, 2 i 3

Accumulated rainfall > 100mm/24hours

SMP de grau 4, 5 i 6

Accumulated rainfall > 200mm/24hours

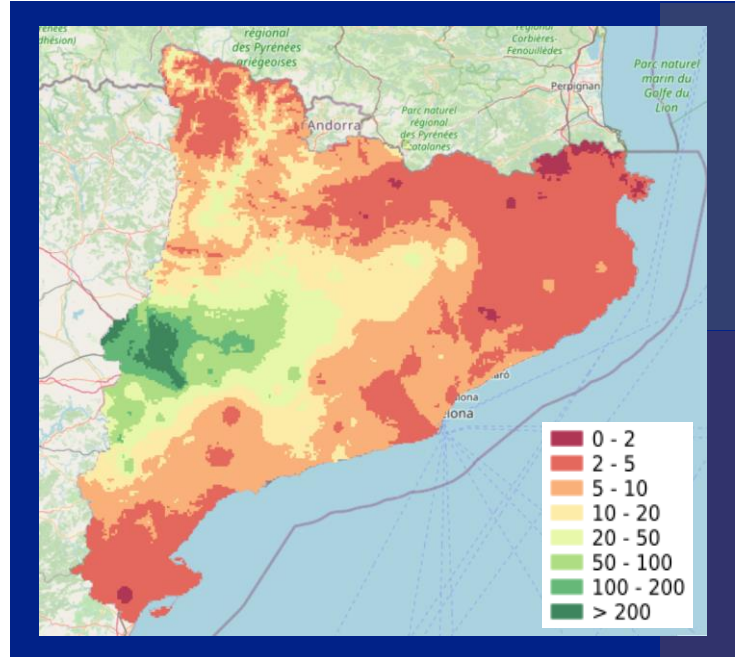
Phases of INUNCAT Plan based on weather forecast

Pre-alert	<ul style="list-style-type: none"> - SMP for intensity/accumulation of hazard at level 2 at short term and with the situation becoming worse* - SMP for intensity/accumulation of hazard at level 3 at short and very short term.
Alert	<ul style="list-style-type: none"> - SMP for intensity/accumulation of hazard at level 3 at short term and with the situation becoming worse* - SMP for intensity/accumulation of hazard at level 4, 5 or 6 at short and very short term.
Emergency	n.a

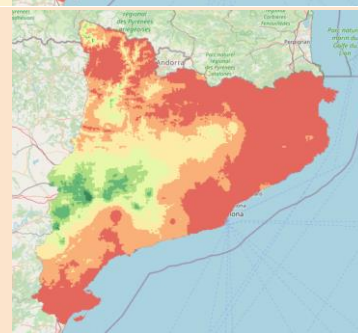
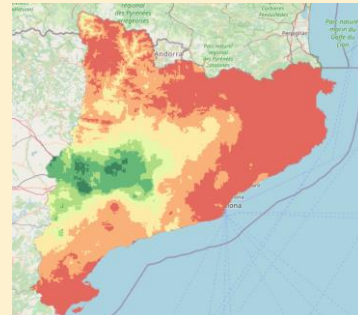
*Conditions that can worsen the situation such as the saturation of the terrain, snow melt, state of riverbeds, etc.

Episodes of 100mm/24h. Return period

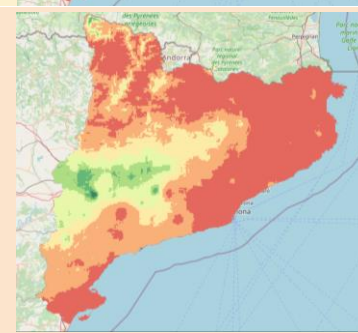
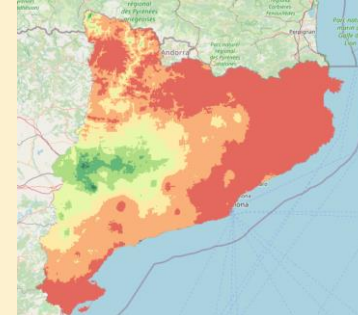
Historical reference



2041 - 2070



2071 - 2100

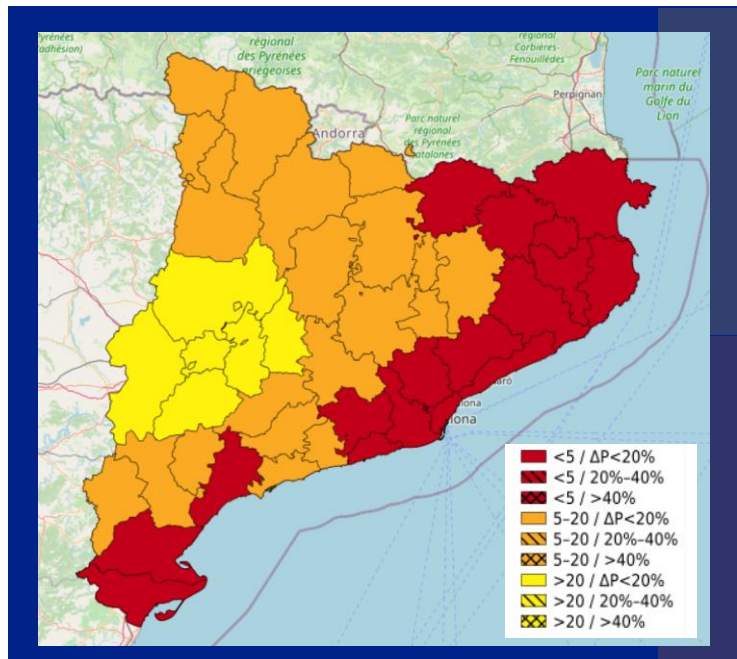


RCP 4.5

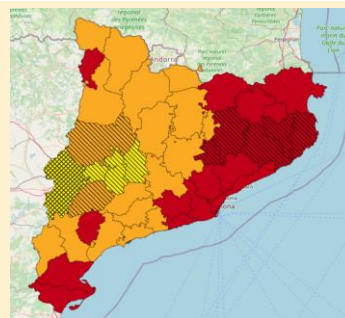
RCP 8.5

Episodes of 60mm/3h. Return period and change of intensity

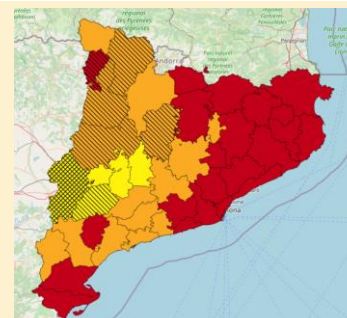
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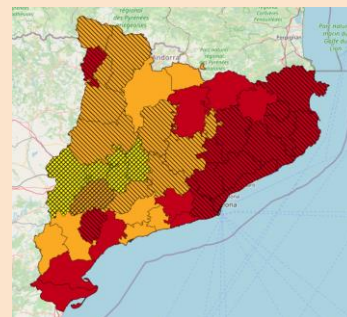
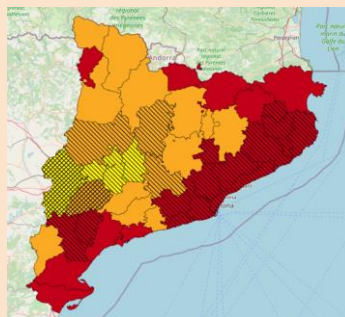
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Thanks



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