



Photograph: Wildfire of Mont-roig del Camp (RET) on 04/07/07. This image shows the column of the wildfire completely inclined to the houses.

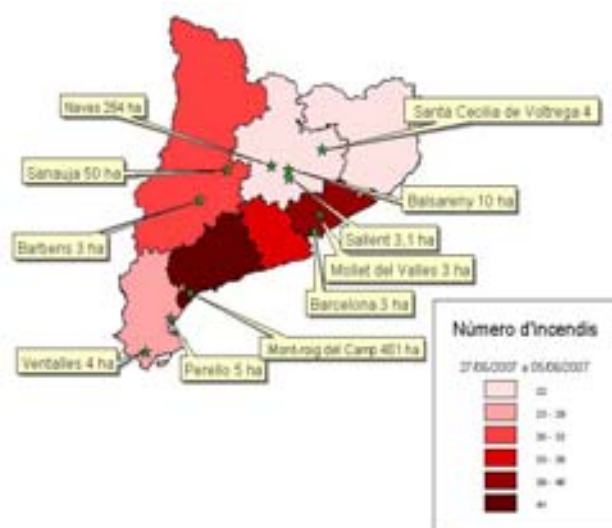
## What we had

Compared trend from the beginning of the year until:

	05/07/2006	05/07/2007
Num. fires (VA+VU+VF) <sup>1</sup>	3343	3182
Area (ha)	2233	1139.8 (*)

<sup>1</sup> VA: AGRICULTURAL VEGETATION  
 VU: URBAN VEGETATION  
 VF: FOREST VEGETATION

(\*\*) PROVISIONAL AREA WAITING FOR VALIDATION



Number of fires (VA+VU+VF) from 27/06/07 to 05/07/07, larger than 2 ha.

## Description of the situation

### Drought evolution (live fuels and coarse dead fuels availability)

We continue having a drought index under the registered in 2006, but the landscape it's being dried little by little. The rain amount and lighting from the 1<sup>st</sup> of July and the wind episodes had shown us that we can have a large wildfire. The dynamics of these days have been characterized by a lighting episode, a northwest wind episode and a wave of south winds, but not too much intense.



**Fig. 3.** Accumulated drought (Drought Code index) of 04/07/06.



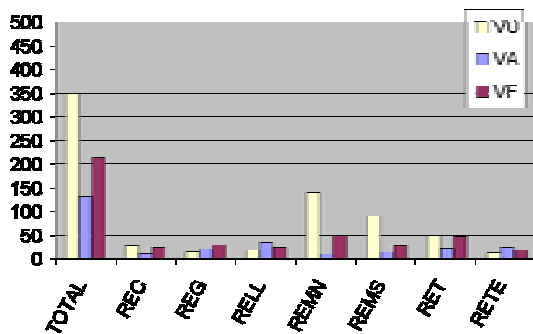
**Fig. 4.** Accumulated drought (Drought Code index) of 04/07/07



**Fig. 5.** Rain amount map of the 01/07/2007.

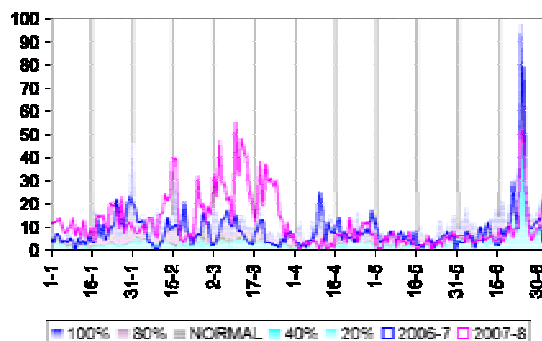
### Fire services trend (VA, VU and VF)

This period had been marked by the increase on the fire services in the RETE region associated to the last lighting fires. By number and type of services we have to outstanding the two metropolitan regions, where the urban vegetation services had been in a high level of activity.



**Graph 1.** Total services and region services according to the type of vegetation involved, for the last fortnight (from 18/06/07 to 04/07/07).

**Graphic 2.** Fire index Mbs13 (services in forest vegetation) from 01/01/07 until 04/07/07 (magenta), compared to last year Mbs13 for the same period in 2006 (blue). Trends over time of number of normal services (grey, 50% percentile), less than normal services (cyan) and maximum services (lilac) for the last 5 years.





## By region

REG

It's maintaining a low level of activity for the period because the risk episodes like winds from the west and from the northwest don't affect to the region.

**What's forecasted** The vegetation is increasing its drought and in the period that we expect to have winds from the north from the 9<sup>th</sup> to the 10<sup>th</sup> of July. Be careful with the change in the fire behaviour when its spread has maximum alignment.

REMN

It's maintaining a normal level of activity, where the urban and agricultural wildfire associated to winds from the west had been the protagonist.

**What's forecasted** Be careful with the fire behaviour that we expect for the next week in the entire region, especially in fires that spread in maximum alignment. The lack of references could take to deceit.

REMS

It's maintaining the dynamics of the last week with a low level of activity even during the episode of winds from the west.

**What's forecasted** Continues increasing the vegetation's drought. The first symptoms of stress in the vegetation have been detected in forested areas, especially in the fire spreads in maximum alignment.

REC

This week have been marked by the activity in forest fires associated to the winds from the west. The wildfire of Navàs (254 hectares) showed in some areas a pattern of behaviour of passive crown fire.

**What's forecasted** Continues increasing the vegetation's drought. The first symptoms of stress have appeared in forested areas. It will suppose a change in fire behaviour in maximum alignment.

RETE

Activity associated to fires in agricultural areas in episodes of winds from the northwest at the south end of the region. It was registered a lighting fire with frontal pass later in Perelló.

**What's forecasted** The vegetation continues its increasing process of drought. For the next days we expect synoptical instability and after that episode, winds from the northwest. These episodes will start to be more critical each day. Be careful with the fire behaviour from now.

RET

This region has entered completely in fire season with the wildfire of Mont-roig (401 hectares). This situation was announced last week because of the behaviour of its fires.

**What's forecasted** For the next week we expect instability and a new episode of winds from the northwest that could affect the entire Region. The process of the increase of the vegetation's drought continues and starts the symptom of stress to the forested areas.

RELL

Activity in strubble areas like fires as Montfalcó (28 hectares) and Sanaüja (54 hectares), but inside the normal range for an episode of winds from the west.

**What's forecasted** New episode of instability and winds later that could increase the fires in strubble areas and wildfires in inaccessible zones. The vegetation increases in drought is marked and start the symptoms of stress in forested areas.

### Activity Levels

 Low
  Normal
  Medium
  High
  Critical
  Large Wildfire





## Important Information

### 3.1. - Feared 4<sup>th</sup> of July

The 4<sup>th</sup> of July of the 1994 passed to the historical memory of all the firefighters in Catalonia like an extraordinary day in the world of the wildfires in Catalonia. Since then, this date represents an inflexion point in the disquiet of the firefighters. But this year 2007, with an undefined beginning of our fire season, it helped us to wait this date with some optimistic point of view.

In the morning of the 4<sup>th</sup> of July started some wildfires. One of these small fires in the area known as Torre Baró, just near Barcelona. Its localization in an interface area was the reason of the high number of phone calls that the center of emergencies received.

As the wind from the west and the temperature were increasing its values and the humidity was decreasing, the fire alarms to the emergencies center were activated quickly.

All start with two wildfires in Ulldecona (RETE) that quickly started the suppression activities. We didn't have all the necessary resources in this fire, when the emergency center received a new fire alarm in the area known as Mont-Roig del Camp (RET).

We had three fires at the same time, and one of them was affecting inhabited houses, camping, infrastructures like the highway AP7, the N340 national road and the railway of the Mediterranean.

We couldn't stop the engine of the wildfire before be sure that we could guarantee the people safety and their properties. When we have the two fires of Ulldecona under control and the one of Mont-Roig spreading, it started a new wildfire in a strubble area in Sanaüja (RELL). It burned around 40 hectares. When a high number of aerial and terrestrial resources were working, the emergencies center received new phone calls from the REC region. There were two different columns in Sant Salvador de Torroella, near the road called C55 in direction towards Cardona.

Some times it seems that the afternoon of the 4<sup>th</sup> of July wanted to remember the fire simultaneity activity of the afternoon of the 1994. On the other hand the weather conditions were better.

All the resources of Bombers and other organisms of the Generalitat de Catalunya that participated in the suppression activities solved successfully the different wildfires. When the night arrived, the situation became quiet, although the complex scenario.

The afternoon of the 4<sup>th</sup> of July of 2007 showed us that our main problem is the simultaneity of wildfires. If we have simultaneity with large fires (wildfires that have fire behaviour out of suppression capabilities) the result will be undesired.

In order to fight this problem, we only have one way: **forest management** of the present fuels in the sensible areas in our landscape. This goal has to be completed with a study of the dynamics of wildfires and analyzing the utilized tactics and maneuvers. As a summary, all that we can do in winter against forest fires will give us good results in summer.



### 3.2. - OUTSTANDING WILDFIRES

#### MONT-ROIG DEL CAMP 04/07/2007



Wildfire type P1 with winds from the northwest in flat areas and with little presence of significant topography. The pattern of behaviour is the same that the one in the fires in 1981 and 1988.

The wildfire spreads in an urban interface area affecting the existing fuel in the parcels.

The wildfire showed a crown fire activity with high intensity and generated spot fires to a distance of 100m approximately, that increase the growth and the acceleration of the wildfire.

Dead and live coarse fuel availability because of the dry winds.



- ..... Machinery
  - Hose line
  - ..... MAER, Aerial Resources
  - ..... Indirect attack
  - ..... Parallel attack
  - Hand tools
- ➔ Main spreads      ➔ Flank's movements      ● Spot fires

#### MANEUVERS

The maneuvers had been marked by the presence of interface zones, with an important affectation to the population. The protection to the houses implies to destine less resource to the suppression activities.

We had to prioritize the suppression tasks in the flanks to avoid new fire spreads from these to the front of the fire. The rear part of the left flank generated different problems during all the afternoon.

The lack of aerial resources in different moments implied that the progression of the water line was slower than the fire's rate of spread.

The spot fires in the parcels were suppressed by discharges of aerial resources and hand tools (chainsaw)

#### WEATHER

**Humidities over 65%  
the night before**

- 13:45 (start)**  
HR%: 20%  
T: 29°C  
Wind: NW, 10 km/h
- 16:00**  
HR%: 18%  
T: 30°C  
Wind: NW, 8 km/h
- 18:00**  
HR%: 47%  
T: 25°C  
Wind: NW, 6km/h
- 20:00**  
HR%: 72%  
T: 21°C  
Wind: NW, 4 km/h
- 22:00(stabilized)**  
HR%: 75%  
T: 19°C  
Wind: NW, 2 km/h



Generalitat de Catalunya  
Departament d'Interior  
Relacions Institucionals i Participació  
**Direcció General de Prevenció,  
Extinció d'Incendis i Salvaments**  
Divisió Operativa  
**GRAF**



Fire spread inside the parcels affecting inflammable fuels (palms, cypress).



Problems of the fire: 3000 persons evacuated, burned vehicles and bungalows from the camping known as Mont-roig and serious traffic jams in the main highways.

### **FIRE SUPPRESSION RESOURCES**

35 BRP  
42 UPC/UPCL  
6 GRAF Units  
8 different chiefs bosses  
6 AVAS  
2 Hydroplanes  
7 Helicopters  
1 Commandment helicopter

### **Burned area: 390ha**


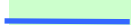

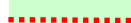

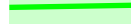
It burned 17 bungalows, 2 buildings and 3 vehicles

### **ANALYSIS**

Wind driven fire by winds from the northwest (mistral) with generation of spot fires and affecting urban interface areas. The affectation to the population forced us to send fire suppression resources to guarantee the safety of people and their properties. This situation prevents us to do any tactic with technical fire.

**Sant Salvador de Torroella (REC) 04/07/07**



	<b>Machinery</b>
	<b>Hose line</b>
	<b>MAER, Aerial resources</b>
	<b>Indirect attack</b>
	<b>Parallel attack</b>
	<b>Hand tools</b>

• **Weather:**

Even we had humidities at night over 65%, the winds from the west had caused than de humidity values fallen down at midday under 30%.

• **Behaviour:**

Two ignitions points in the highway C-55. These two points were in a distance of 2 kilometres approximately. The Fire showed a pattern of behaviour of surface with high intensity and torching. On the other hand, the wildfire showed us a passive crown fire in some areas with maximum alignment forces. Out of alignment, the fire decreased its intensity and speed and it spreads under the suppression capabilities. It could generate spots fires with potential to growth.

• **Maneuvers and strategy**

The front of the fire had spread towards the area burned in 2005 (Cardona wildfire) where it stopped. The wildfire (although it had two columns), had two different behaviours marked by the wind from the west.

At first, the fast spread to the east (because of the winds from the west) was stopped by a parallel attack, using the lost of alignment forces in this area and the coordinated work with hose lines. The left flank was delimited by the highway. But with the predicted decrease of the winds from the west, the potential of the fire was restricted to the front/left flank were threw some spots fire to the west side of the highway that were suppressed by hose lines.

• **SUPPESSION RESOURCES:**

- 59 BRP
- 6 GRAF Units
- 6 Commandments (CG, CR, 3CS, 2 CGRAF)
- 2 AVAS
- 6 Helicopters
- 2 Commandment helicopter
- 2 BRIF (unit transported by helicopter, based in Daroca, Zaragoza)

• **Burned area: 254 ha**



The photograph on the left shows the area where the fire behaviour changed because it arrived to the area burned in the wildfire of the 2005, losing forces' alignment and fuel load.

### 3.3.- CROWN FUEL AVAILABILITY



Usually, in this period the pines change their passed years' leaves. This fact causes the presence of dead fine fuel on the crowns until it falls down to the ground. This situation could generate patterns of fire behaviour of crown fire that we have to take account.

In general, we can observe that process in Catalonia in forested areas of *Pinus halepensis*, *Pinus nigra*, *Pinus sylvestris* and *Pinus pinaster*, except the fresher zones situated in higher altitudes.