Generalitat de Catalunya
Departament d'Interior
Direcció General d'Emergències i Seguretat Civil
Divisió Operativa
GRAF

Lo Forestalillo

Nº 86 26-06-2006

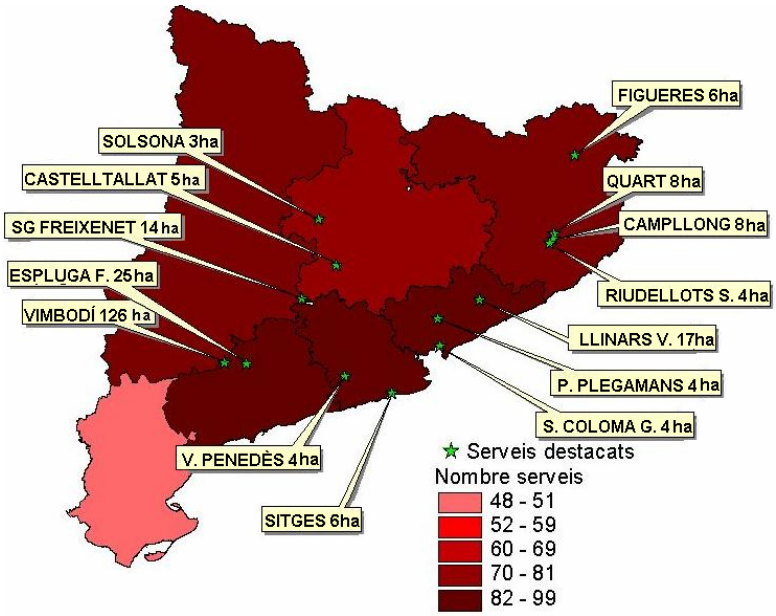
Situation of Forest Fires in Catalonia

Image of the smoke column, of the forest fire of l' Espluga de Francolí. inclined smoothly by the wind of the sea. And the small column of the spot sent 1000m of distance..

What we had

Compared tendency from :

	26/06/2005	26/06/2006
Nº Services (VA+VU+VF)	5108	2994
Surface (ha)	3124	2012



Number of services (VA+VU+VF) from 19/06 until 30/06/06, and services larger than >2 ha.

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Description of the situation

Evolution of drought (availability of live fuels, and large dead fuels)

The drought points (index DC) are evident (Pallars, axis of the Ebro and zones of contact RELL-RET and REC-REMS), where the alive and the died heavy fuels are available. The winter and autumn rain has allowed the fine fuel accumulation, like pine needles and grass.

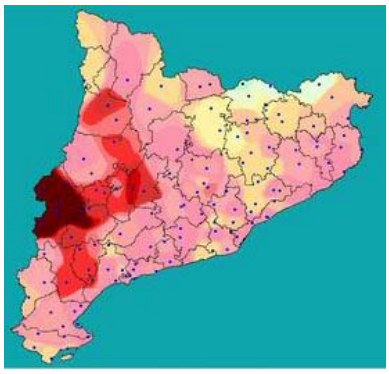


***Fig. 3**. Accumulated drought (Drought Code) in 25/06/06.*

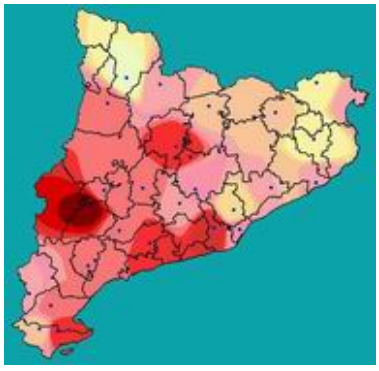


***Fig. 4**. Accumulated drought (Drought Code) in 30/06/05*

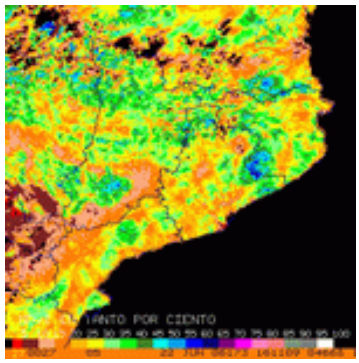
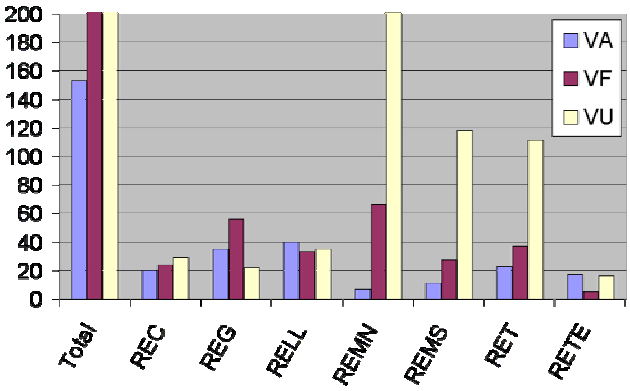


***Fig. 5**.Vegetative activity (NDVI index) in 22/06/06*

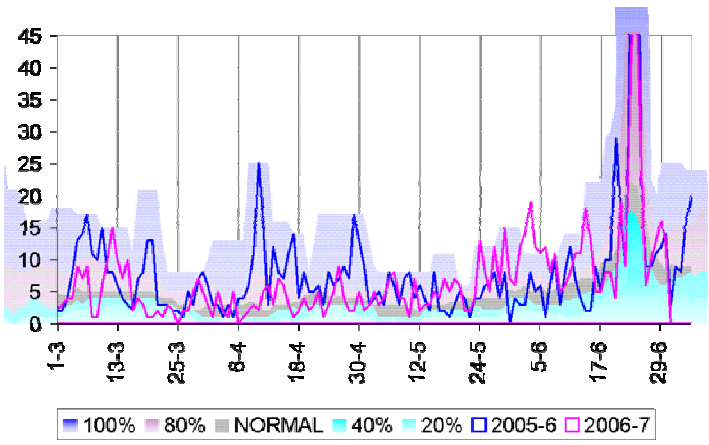
Evolution of services (VA, VU i VF)

The propagation of fires by forest area (Vimbodí and l'Espluga de Francolí) generates spots, which make difficult how to attack the fires' head. The vertical fuel continuity and the availability of heavy fuels induce the launching of the spots to more than 100 meters. This allows the ignition in days with fine dead fuel available. Probably the lightning fires will occur where the precipitation hasn't fall.



***Graphic 1.** Total number of services by region and type. VA= agricultural, VU= Urban,VF=forestal*

***Graphic 2.** Mbs13 (services of forest fires) from 01/03/06 until 30/06/06, compared with the same period of the 2005/6.* ***Compared to the normal number of fires (in grey 50 % percentil), lower than normal (en blue) higher than normal (in rose) for the last 5 years.**.*



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By regions

REG

The stubbles low humidities have been as expected. The fires are fast, with a short distance spots. the humidities Nocturnal recoveries are expected, except in the windy zones.

What is Forecasted The south waves can begin to facilitate the propagation to the driest places within forest mass, the fires dominated by fine fuel, will continue.

REMN

The died fine fuel continues being the factor of the services, the winds of the sea are not important yet. The harvesters are the cause of first fires; the cereals are ready to burn.

What is Forecasted The services of urban and agricultural vegetation will be increased; the forest fires can begin to propagate with average intensity, mainly to zones with much fine propellant charge.

REMS

The coast this at he same moment that the North region, the interior presents fast fire characteristics propagated by fine fuel. Kind but to the opened forest structures (regenerated of white pine, scrub, etc).

What is Forecasted The south waves can begin to facilitate the propagation in the driest places within forest mass, will continue the fires dominated by fine fuel.

REC

Small fires dominated by fine fuel, rays by episodes of instability with fires to the zone of the pre-pirineu.

What is Forecasted The south waves continue facilitating the propagation on the driest places (South of the region) and that can occur inside the forest areas. To end of the period possible new fires by rays. Be aware with the west wind channels of way out, especially when the dry air mass exits.

RETE

Although the drought levels are high, the number of services has been reduced. There are episodes of rays with little precipitation in the Ports.

What is Forecasted Low humidities in the interior, with the possibility of no recoveries of nocturnal humidities. Fires dominated by fine fuels with capacity of spotting to 200 – 500 m.

RET

Far potential fires conduced by winds of the west in height or influenced by local winds, fast fires, with spots to distances superior to the 500 m.

What is Forecasted Low humidities in the interior, with possibility of nocturnal nonrecoveries. Fires dominated by fine fuels with capacity of spots to about 200 - 500 m, being increased in the interiors regions

RELL

The Region display low activity, only broken by stubble fires. Episodes of instability with rays to the North zone of the region.

What is Forecasted Possibility of low humidities in all the plain terrain and be careful with the west wind channels of way out (when retiring the south wave). Possibility of nocturnal nonrecoveries that can give fires in forest area, be aware with the spots. Ray possibility in the end of the period.

Activity level

Low **Normal** **Medium** **Important** **Crítical** **Big fire**

Aspects to highlight

3.1.- Fires with instability. The first GIF behaviours.

This last week conditions of instability with some storms have originated lightning fires, like Pui de la Bonaigua, Astells, Salics, Coll de Nargó, Cercs, Gaià…
This instability helps propagating forest fires. The determining factor is that the instability allows the vertical movement between the different layers from the troposphere. This fact facilitates the vertical growth of the smoke column, and allows a greater movement of convection generated by the heated air (Fig.6). As it produces a movement of important convection the ignited particles can obtain more height and generate spots to greater distance (Fig.7).

Fig 6. *Left flank of the fire of Vimbodí 21/06/06. The atmospheric instability is the cause of vertical flames, increasing the torching, and with the possibility of producing spots*

Fig 7. *Spots (red points) in the fire of l'Espluga de Francolí 24/06/2006. Approximate distance 1000 meters. The instability permit the vertical movement of the air, facilitating that the ignited material holds more and arrives farther.*

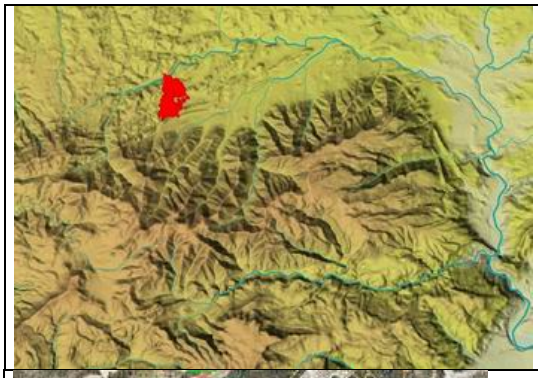
Fig 8. *Ignition by lightning to the Pui de la Bonaigua, 22/6/06. The storms not only turn aside the direction of near fires and announce possibility of long distance spots, but it increases the possibilities of synchronized lightning fires.*

Fig 9. Column of smoke with vertical and inclined growth, fire of Vimbodí day 21/06/2006.

In instability conditions, unlike the anticyclone situations, the fresh and humid air is not suspended, but that moves upwards. Instability indicators are the cumulus clouds, with a great vertical formation, and a good visibility

3.2.- Fires in detach.

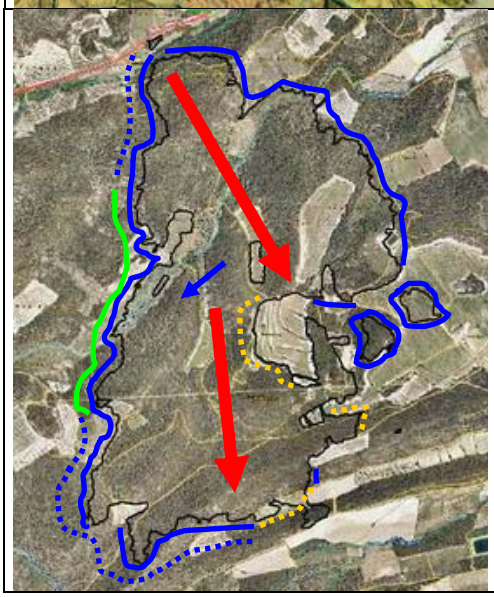
VIMBODI 21/6/2006



Coast topographic fire. Affected by the slope and the land breeze. Fire of surface of high intensity with torching, affecting the crowns, because of the radiation, and the fuel of the underbrush

Fine fuel available due to low HR

Low availability of medium size fuels and non existence of instability that is translated in few spots and to short distances < 20 meters.



MANEVERS

First priority occurred to restrain the head, to avoid the entrance of the fire to the mountain by means of the fields (spots) with parallel attack. The lines of water propagated from the tail, harnessing the right flank by their length, where manual units with were destined, to contain and to give time to the arrival of the line.

Ppal race — Flank movement

- Farming implements
- Line of water
- MAER
- Backfire
- Burn out operation
- Manual tools

METEOROLOGY

The nocturnal humidity recovers the night before

16:00 (beginning)
HR%: 27%
Wind: W, 9 km/h

18:00
HR%: 36%
Wind: N, 6 km/h

20:00
HR%: 54%
Wind: N, 7 km/h

24:00(stabilization)
HR%: 76%
Wind: SW, 4.68 km/h

Photography of the front part of the left flank, arriving at the cereal fields

MEANS OF EXTINCTION

55 BRP
4 GRAF Units
5 Commands
(CG, CR, 2C. Sector, 2GRAF)
2 Amphibians
2 Air tractor
1 Hydroplane
7 Bombarders
1 Command Helicopter

Burned area: 126ha

EVALUATION

Fire raced by local wind with launching of spots to short distances (20-50 m)

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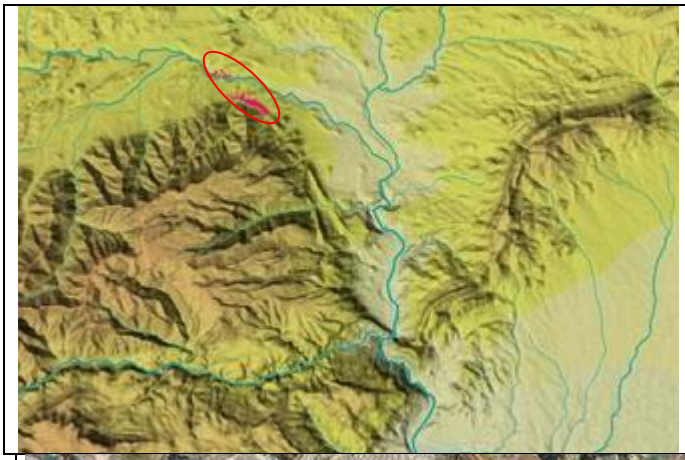
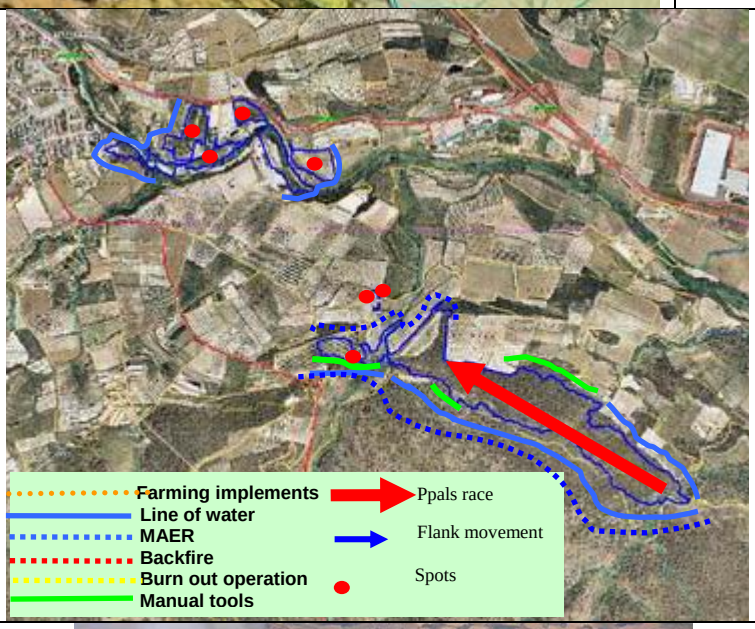
ESPLUGA DE FRANCOLÍ 24/6/2006



Fire (it stains red) next to the Straits of the Riba. Narrow and long due to passage of the sea wind by the Straits. The left flank has potential to burn the mountain of Prades.

Storms and atmospheric instability that allow vertical growth, and increase distance of spots up to 1 km

Fuel of 1 hour available for low HR (27%)
Fuel of 10 hour available for by not having nocturnal relative humidity recoveries



MANEVERS

To prioritize left flank to avoid the entrance to the mountain of Prades, anchoring the attack in a way. Manual tools and later water lines to refresh. Once finished, attack to the right flank, to control spots.

METEOROLOGY

Without nocturnal humidity recovery the previous night

16:00 (beginning)
HR%: 27%
Wind: SE, 23 km/h
18:00
HR%: 39%
Wind: E-SE 16km/h
20:00
HR%: 51%
Wind: E 15 km/h
22:00
HR%: 58%
Wind: E-NE12 km/h

Photography of the front part of the left flank, arriving at the cereal fields

MEANS OF EXTINCTION

20 BRP
3 GRAF units
6 Commands
(CG, CR, 2C. Sector, 2 GRAF)
2 Amfibis
2 AVAS
1 Hydroplane
5 Bombarders
1 Personnel transport helicopter
1 Command helicopter

Burned area: 25ha

Fire lead by the suction of a straits; spots launching to distances of more than 800 m.