



## **Forest Fires in Croatia 2007**

### **The 2007 Fire Season in Comparison to the last Decade**

During the past decade Croatia experienced a number of extreme fire years, notably in 1998, 2000 and 2003 with record burned areas of more than 100,000 ha of all types of wildlands (high forest, other forested lands, agricultural lands, other wildlands) affected by fire. The preliminary data of 2007 reveal that the total burned area was less (Table 1). However, the fire season in Croatia in 2007 was extraordinarily severe. The Fire Weather Index (FWI) was high or very high on 92% of the days in the period between 20 June and 20 September 2007. Between 20 July and 5 August a minimum of 45 fires occurred per day simultaneously, with a maximum of 85 fires on 29 July.

In neighboring Bosnia and Herzegovina the situation was also severe and resulted in 33 wildfires passing the borderline near the towns of Vrgorac, Metković and in the Dubrovnik-Cavtat Region.

On 30 August 2007 an extremely intense wildfire overrun a crew of firefighters on Kornati Islands resulting in 12 fatalities and one severely injured. At the time of writing this report the detailed circumstances that lead to this tragic disaster are not yet known.

Table 1 shows the causes of the fires during the last decade. The data of 2007 will be completed in the 2008 report (see following contribution in this issue of IFFN).

The economic fire damages are shown in Table 2. The data of 2007 are preliminary. More details will be given in the 2008 report (see following contribution in this issue of IFFN).

### **Fire Prevention and Preparedness Measures**

After a warm winter season with abundant vegetation growth and high fire hazard in all vegetation types it was anticipated that the fire season 2007 would become severe. After late winter / spring fires an extremely hot summer made public awareness raising necessary, especially during the summer.

At the same time the numbers of operational forces were increased from 5,000 firemen to 6,200 firemen, including reinforcements by special police forces; the Army was prepared to intervene. The Government of the Republic of Croatia increased the average annual fire fighting budget of € 2 Million by additional € 1 Million.

### **Fire Response in 2007**

With more than 3,600 operational firemen activated (including the reinforcements of 2400 Army and Police forces distributed in 45 locations in the Mediterranean areas of Croatia and 250-350 firemen on stand-by in the continental units, the following aerial firefighting assets were activated:

- 4 CL-415
- 1 AT 805F
- 4 to 6 helicopters (Mi-8)

Special emphasis was given to inter-agency cooperation between local fire service units, local and regional Government and the National Protection and Rescue Directorate, Ministry of Interior, Ministry of Defense and the Croatian Forest Service. Local communities were involved in providing logistical support for dislocated fire units, surveillance and patrolling.

## International cooperation

### Receiving assistance

- No assistance was requested and received in by Croatia 2007

### Providing assistance

- Bosnia and Herzegovina 12 September 2007 2 CL 415 and 34 firemen/8 vehicles
- FYR Macedonia 24-26 July 2007 1 CL 415
- Greece 29 August - 3 September 2007 1 CL 415

## Analysis and recommendations

- The warm winter did not stop vegetation growth, resulting in high fuel loads and in a large number of fires during last winter/spring season.
- The numbers of fires in summer 2007 were similar to the average number of fires during the summers from 1998 to 2006, but the burned area was 26% higher

## References / Sources

- National Protection and Rescue Directorate – Fire Season Analysis 2007 (Report to the Government of the Republic of Croatia)
- Ministry of Interior – Fire Statistical Data

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**Table 1.** Causes of wildfires in Croatia 1997-2007: Number of wildfires, area burned and damages.

| Year | No. of Fires | Deliberate or Arson | Accidental or Negligence | Other and Unknown |
|------|--------------|---------------------|--------------------------|-------------------|
| 1997 | 3.775        | 115                 | 2697                     | 963               |
| 1998 | 5.408        | 83                  | 3892                     | 1433              |
| 1999 | 3.832        | 142                 | 2816                     | 874               |
| 2000 | 7.797        | 123                 | 6654                     | 1020              |
| 2001 | 4.024        | 63                  | 2859                     | 1102              |
| 2002 | 4.692        | 56                  | 3364                     | 1272              |
| 2003 | 6.924        | 93                  | 4723                     | 2108              |
| 2004 | 2.855        | 41                  | 1886                     | 928               |
| 2005 | 3.368        | 35                  | 2328                     | 1005              |
| 2006 | 3.574        | 217                 | 2596                     | 761               |
| 2007 | 5.206        | n/a                 | n/a                      | n/a               |

**Table 2.** Landscape fires in Croatia 1997-2007: Number of wildfires, area burned and damages.

| Year | Total        |           |            | Agriculture  |           |            | Forest Lands |           |            | Forests      |           |            | Other Wildlands |           |            |
|------|--------------|-----------|------------|--------------|-----------|------------|--------------|-----------|------------|--------------|-----------|------------|-----------------|-----------|------------|
|      | No. of Fires | Area (ha) | Damage (€) | No. of Fires | Area (ha) | Damage (€) | No. of Fires | Area (ha) | Damage (€) | No. of Fires | Area (ha) | Damage (€) | No. of Fires    | Area (ha) | Damage (€) |
| 1997 | 3.775        | 42.10     | n/a        | 1,305        | 11.376    | 3,763,288  | 1,084        | 13,526    | 74,219,041 | 683          | 6,819     | 72,503,562 | 1,386           | 3,675     | N/a        |
| 1998 | 5.408        | 123.63    | n/a        | 2,561        | 52.695    | 13,736,301 | 1,181        | 29,131    | 35,644,110 | 711          | 17,691    | 26,471,781 | 1,666           | 12,676    | 19,470,274 |
| 1999 | 3.832        | 20.03     | 19,518,356 | 1,363        | 7.276     | 3,443,014  | 846          | 4,225     | 5,522,329  | 386          | 1,659     | 3,467,671  | 1,623           | 4,304     | 5,030,685  |
| 2000 | 7.797        | 176.13    | n/a        | 3,119        | 42.357    | 27,986,986 | 1,620        | 46,255    | n/a        | 730          | 27,407    | 91,391,096 | 3,058           | 41,271    | n/a        |
| 2001 | 4.024        | 38.04     | 74,382,055 | 1,360        | 7.046     | 3,084,247  | 856          | 10,790    | 18,046,301 | 358          | 1,818     | 2,767,671  | 1,808           | 9,415     | 35,205,205 |
| 2002 | 4.692        | 85.44     | 34,249,589 | 2,383        | 61.846    | 11,009,041 | 843          | 10,499    | 8,050,959  | 329          | 5,997     | 6,627,534  | 1,466           | 2,600     | 7,138,630  |
| 2003 | 6.924        | 104.95    | n/a        | 2,345        | 36.961    | 7,193,973  | 2,160        | 29,212    | n/a        | 560          | 13,305    | n/a        | 2,419           | 9,567     | 74,689,863 |
| 2004 | 2.855        | 12.22     | 14,027,671 | 772          | 3.016     | 1,727,808  | 760          | 3,237     | 4,789,863  | 198          | 1,466     | 3,106,438  | 1,323           | 2,735     | 2,720,137  |
| 2005 | 3.368        | 27.07     | 12,883,836 | 1,082        | 13.321    | 3,011,507  | 936          | 5,653     | 3,791,781  | 185          | 1,044     | 2,540,548  | 1,350           | 2,449     | 2,288,767  |
| 2006 | 3.574        | 24.71     | 15,163,836 | 1,114        | 10.862    | 2,382,466  | 887          | 5,930     | 3,476,438  | 250          | 1,694     | 1,365,068  | 1,573           | 1,993     | 5,828,493  |
| 2007 | 5.206        | 67.68     | n/a        |              |           |            |              |           |            | 565          | 19,110    |            |                 |           |            |

