



Forest Fires in Former Yugoslav Republic of Macedonia in 2007

1. Statistical Data of the Fire Season 2007

At the end of the 2007 the extreme fire season was evaluated. The following provides a summary of the national assessment.

Table 1. Extent: Number, area and types of forests and other vegetation affected by fire. Source: P. E. "Macedonian forests"-Skopje (1999-2007).

Year	Number of Fires	Burned Area (ha)	Burned Timber Volume (m ³)	Suppression Costs (€)	Total Costs (€)
1999	69	2,414.80	1,950.00	32,512.00	372,921.00
2000	476	46,235.73	711,782.00	976,142.00	15,642,775.00
2001	161	6,263.30	88,260.00	66,810.81	9,851,849.00
2002	65	1,186.30	24,661.28	15,193.10	298,902.00
2003	144	1,068.88	10,987.00	44,607.87	251,527.00
2004	94	892.05	4,322.30	23,214.55	1,469,090.00
2005	182	1,368.00	1,063.00	42,018.11	411,181.10
2006	138	2,085.95	12,978.00	45,311.20	2,437,914.46
Total	1,329	61,515.01	856,003.58	1,245,809.56	30,736,159.56
<i>Average</i>	<i>166</i>	<i>7,689.38</i>	<i>107,000.44</i>	<i>155,726.2</i>	<i>3,842,019.95</i>
2007	652	35,248.60	617,678.67	386,852.46	21,494,700.40

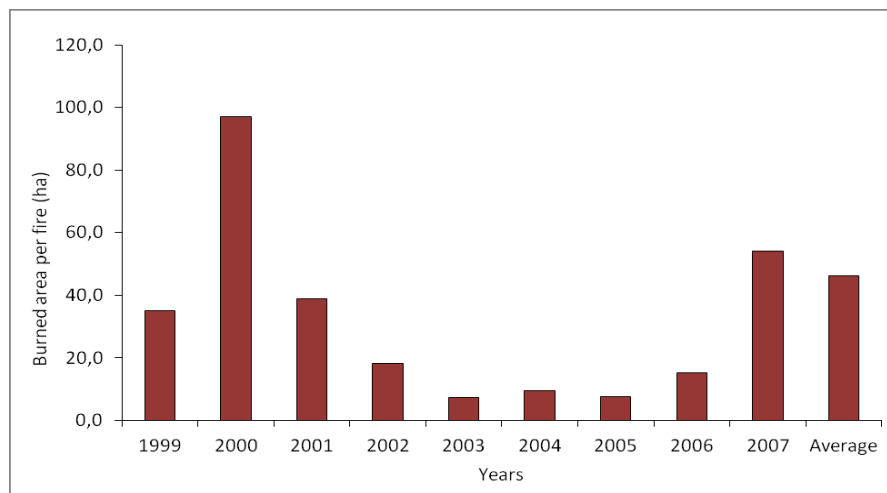


Figure 1. Average burned area per fire (1999-2007)

2. Causes of Wildfires

The most important causes of fires in the year 2007 were: burning of stable fields, burning of pasture lands and negligence-along to roads and railways. Special category is arson: due to illegal logging and politically motivated.

3. Selected Extreme Fires in 2007

Bitola fire: 23 to 26 July 2007

In the period of four days more than 5,000 ha of 45-50 years old pine afforestations were burned. *Comment:* Very bad organization of the fire suppression action even few airplanes and helicopters and about thousand fire-fighters had been engaged in the action.

Berovo fire: 24 to 28 July 2007

In the period of five days about 1,500 ha of high quality natural pine forests were burned. *Comment:* The burned area has very high potential of soil erosion. Reason of the fire (unofficially): Arson (illegal logging)



Figures 2 and 3. Extreme fire weather and behavior led significant environmental damages
Photos: GFMC

4. Fire Prevention Measures

On the beginning of the fire season TV spots and information on the local radio stations were broadcasted and information in newspapers regarding increased fire danger published. Apart of these measures, it was declared that during the fire season any access to the forest for all citizens except foresters was prohibited.

5. Crisis Management Structure at Local and National Level

The structure of the disaster management (responsible for fire suppression) at local and national level during forest fires in 2007 is shown in Figure 2. The main weakness of the organization was the lack of coordination and cooperation between Crisis Management Centre (CMC) and Directorate for Protection and Rescue (DPR). The result of that was disorganization during actions of suppression and very low efficiency although were engaged big number of fire-fighters, airplanes and helicopters.

It should to be emphasized the lack of hand tools and all kind of equipment needed for fire suppression, especially the lack of special off road vehicles for initial attack.

Table 2. Engaged trucks and machines in the period 18 July to 5 August 2007 (Source: CMC)

Date	Fire Trucks	Off-road Vehicles	Bulldozers	Tankers
18 July	18	15	0	0
19 July	21	19	2	0
20 July	34	27	0	0
21 July	21	31	2	3
22 July	44	40	3	0
23 July	32	85	7	0
24 July	55	65	9	4
25 July	49	76	14	5
26 July	37	61	13	2
27 July	29	48	16	1
28 July	18	21	6	0
29 July	9	14	2	0
30 July	12	40	3	1
31 July	6	39	13	1
01 August	1	0	2	0
02 August	4	0	0	0
03 August	1	0	2	1
04 August	6	0	0	0
05 August	0	0	0	0

Table 3. Engaged human resources in the period 18 July to 5 August 2007 (Source: CMC)

Date	DPR	Army	Fire Brigades	Public Enterprises	P.E. Macedonian Forests	Local Citizens	Total
18 July	50	30	46	0	62	73	261
19 July	0	0	69	0	154	37	260
20 July	0	32	144	5	142	197	520
21 July	21	236	80	24	131	131	623
22 July	55	376	171	31	154	336	1.123
23 July	25	400	174	176	400	511	1.686
24 July	886	380	238	92	582	930	3.108
25 July	749	296	178	129	428	660	2.440
26 July	672	147	148	81	390	621	2.059
27 July	455	88	93	65	446	579	1.726
28 July	132	237	103	21	151	264	908
29 July	183	301	32	9	101	245	871
30 July	117	298	47	84	138	86	770
31 July	237	208	35	51	127	132	790
01 August	155	217	11	47	65	18	513
02 August	70	120	27	65	5	10	297
03 August	43	180	144	77	0	17	461
04 August	50	180	24	59	28	53	394
05 August	0	0	0	18	0	0	18

Table 4. Engaged airplanes (Source: CMC)

Type of Aircraft	Days
Fire Suppression Tasks	
2 Helicopters Mi – 17	9
3 Airplanes AN – 2	11
Fire Monitoring	
Helicopter – Bel	7
Airplane – Zlin 242 L	6

6. National Cooperation in Responding to the 2007 Fires

Generally, local citizens were included in the actions of fires suppression (cf. Tab. 3). However, their involvement was very bad organized and without proper equipment and tools.

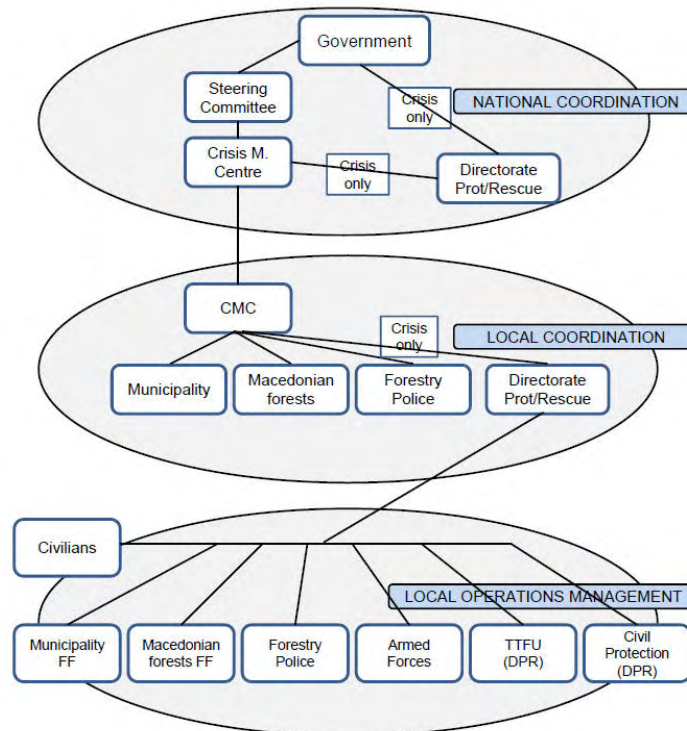


Figure 2. Disaster management structure in Macedonia (2007)

7. International Cooperation

Receiving assistance

Table 5. Assistance received in 2007 (Source: CMC)

Type of Aircraft	Assistance Provided by	Days
Canadair CL-415	Croatia	3
Canadair 32	Turkey	6
Helicopter – Bell 412	Slovenia	6
Helicopter – UH 1D	Germany	6

Providing assistance

Although the situation in the Republic of Macedonia was extremely bad, tree fire trucks with crews were provided to help Greece. Unfortunately, due to political reasons, after 12 hours waiting on the Greek border the offered assistance was denied.

IFFN contribution by

Nikola Nikolov
 Ss. Cyril and Methodius University in Skopje
 Faculty of Forestry in Skopje
 Department of Forest and Wood Protection
 bul. Aleksandar Makedonski bb
 MK-1000 Skopje