

# Forest fire situation in Hungary

**2007.**

(Reported by: Central Agricultural Office, Forestry Directorate)



## New fire data gathering system

The system of the fire data collection has modernized in 2007. The forest authority's fire database has merged to Disaster Management's database with help of data change file. The data change occurs biweekly apart from the fire season. During fire season it occurs some days or daily. After the fire data uploading database application sends in e-mail automatic to forest inspectorates with the data of fire events.

## Fire danger in 2007 fire season

In this period of the year more big fire happened. During the month of April and the first week of May the fire danger increased unusually, reaching a moderate level in Hungary. A similar condition was reported in Hungary towards the end of June and even more during the month of July when fire weather conditions were quite high. In this period there were some large forest fires in Hungary.

The previous winter was the warmest winter of the past century in Hungary. The spring and the summer were warmths unusually in 2007. that of the 2003 summer outstripped the average temperature of the summer only though. Beside this an other ended record in August of 2007. Between September of 2006 and August of 2007 through a full year without an interruption the average temperature of all months was taller the average of many years. This more, than in 100 year meteorological data lines without an example standing.

In July and August it was warmth than average. The distribution of precipitation was an equivalent for the average of many years, but it was dryness in July and start of August. It was a little moisture in April yet.

April proved to be extraordinary only in 2007 considering the moisture relations. The driest month of the past century was April. Appearing in the summer months many times fell a big quantity local moisture. 75 mm of rain fell in Budapest in 19 th august.

The least moisture fell on the flatland in the middle of Hungary and there were the largest fires here.

## Fire occurrences and affected surfaces

The number of the forest fires is in a tight context with the number of the other vegetation fires in Hungary. In many cases the fires spreads from handled stubble into the forest or fire arises in forests handled intensively.

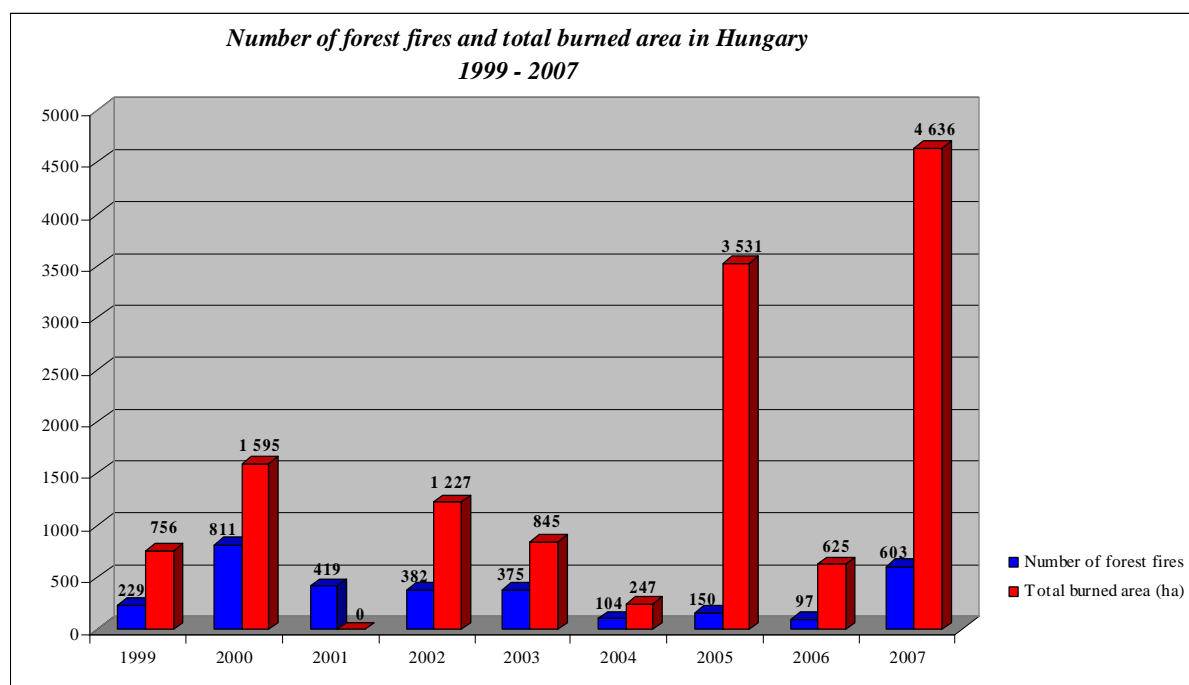
Number of wildfires	Forest fires in Hungary		Fires in other land
	Number of fires	Total burned area (ha)	Number of fires
6691	603	4636	6088

9-10 percentages of the vegetation fire are forest fires only. The few fire case compared to all of the vegetation fire lot of nature value were destroyed in the course of the forest fires, than in stubble fire with low intensity of burning.

The number of the forest fires did not increase significantly compared to the past years, but the destruction of the large fires are measurable very well. The unification of data collecting plays a role in increasing of number of fires.

The burnt area has increased compared to the past years, because fire brigades supplied GPS devices. After filed checking it is expected correcting of the burnt area by forest inspectors.

The fire datas show the tendency manifested in the earlier years character. During the year, there are two well separating forest fire danger period in Hungary.



The part of the traditional lawn usage is the meadow and stubble burning in the early vernal period. The fire ignited carelessly may spread onto the forests easily as a result of this.

Month	Forest fires in Hungary	
	Number of fires	Burned area (ha)
January	20	92
Februíry	14	410
March	98	1 047
April	132	574
Mai	28	171
June	38	55
July	202	2 127
August	56	128
September	1	4
October	12	28
November	2	0
December	0	0
<b>Mindösszesen:</b>	<b>603</b>	<b>4 636</b>

The branches, sylvan leaf mould and pine-needle on the soil become dry as a result of the longer precipitation-free, boiling weather conditions though in the summer time and these may burst into flame due to the fires ignited irresponsibly.

39 percentages of forest fires in 2007 burned in a vernal March-April period and 43 percentages of fires burnt in period of July-august. In both of period there were 488 forest fires altogether.

This means that 82% of all forest fire burnt in two lifted fire danger period!

44% of vernal fires burned in north region of Hungary. Fires in this region signals his emphasized endangerment. On this neighbourhood, the number of the forest fires can be leaded back onto social-economic problems.

As opposed to the vernal period considerable part of the summer fires burnt on the Plain region and west of Hungary.. There were 105 fire events in Plain region in july and August. It means that 17% of fires in 2007 burnt on the time of the boiling dryness lasting until the cca. 6 weeks in the plain pinewoods. 1368 hectares of vegetation suffered a loss in the mentioned 105 forest fires, or was destroyed.

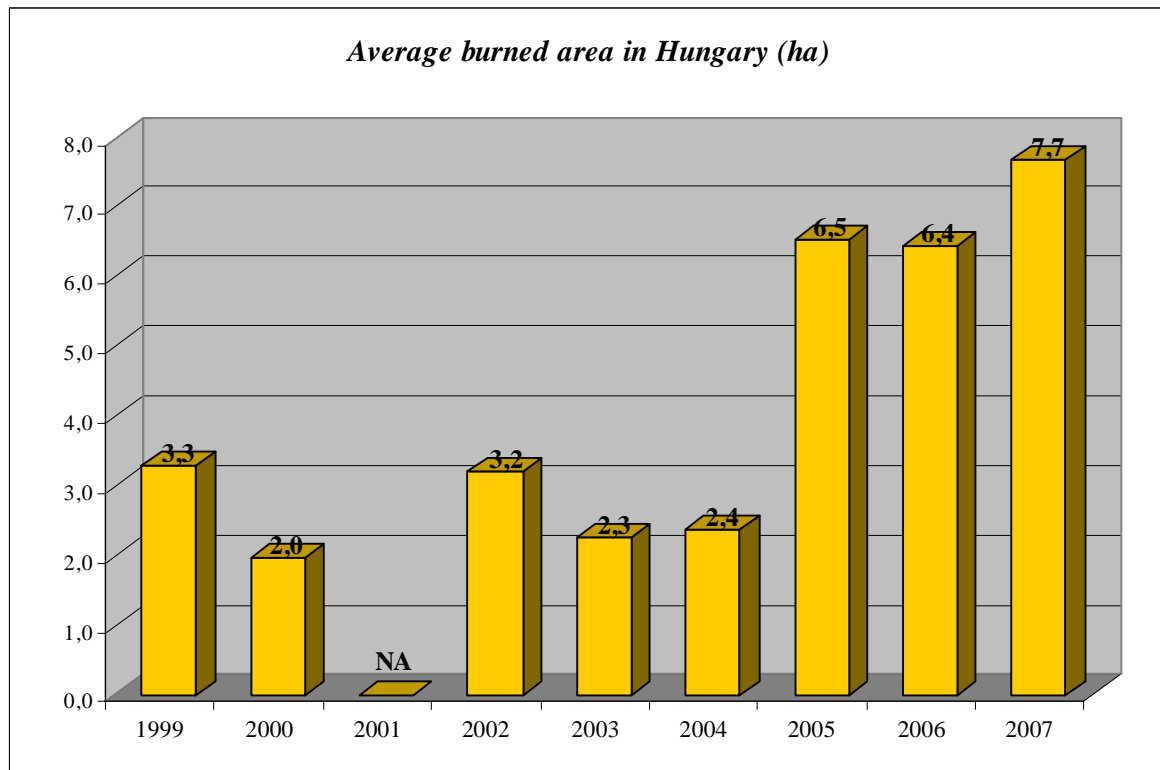
There were 103 fire events in county of Baranya, Somogy, Tolna, Veszprém in July and August. These occured altogether 699 hectares of vegetation.

33% of total burnt area lost int he course of the vernal fires and 52% of fires lost in summer period.

949,4 hectares of forest was destroyed in one single fire in a parish border of Kunfehértó in 25-30 July of 2007.

Counties of Hungary	Forest fires		Non forest fires
	Number of fires	Total burned area (ha)	Number of fires
Baranya county	28	319	83
Bács-Kiskun county	49	1 251	756
Békés county	13	15	228
Borsod-Abaúj-Zemplén county	56	512	547
Csongrád county	13	68	383
Fejér county	67	247	504
Győr-Moson-Sopron county	11	16	57
Hajdú-Bihar county	13	372	241
Heves county	33	223	583
Jász-Nagykun-Szolnok county	16	185	1023
Komárom-Esztergom county	26	113	196
Nógrád county	65	244	316
Pest county	40	216	177
Somogy county	61	154	453
Szabolcs-Szatmár-Bereg county	7	57	133
Tolna county	31	448	111
Vas county	22	58	32
Veszprém county	36	97	83
Zala county	4	11	62
Budapest capital city	12	29	120
<b>Total:</b>	<b>603</b>	<b>4 636</b>	<b>6 088</b>

The registered average burnt area increased significantly compared to the previous years. The reason of increasing is correcting of data collection and there were many big fire in summer of 2007.



#### The burned areas

The wildland fires can be classified in two representative groups in Hungary. Each group shows a different fire size and characteristics. First group contains the small surface fire with 5 hectares burnt area. The second one shows all of crown fires and other surface fire with more than 5 hectares burnt area.

The size of forest fires, were not over the 50 hectares with some exceptions in 2007.

34% of fires are smaller than 1 hectare. Most of fires were observed soon and the fire brigade can start to fight with fire and extinguish very quickly. These surface fires burning with little intensity generally, that is the dry grass in the lawn level and thin branches burn. In this case the average burnt area is 0,2 hectare only.

We have the most problems with fires wich burnt between 1 and 50 hectares. 64% of fires belong to this group.

The average burnt area are 5,9 hectares. Generally these are surface fires, but they burn with higher intensity and on bigger area. The reason of these fire is a negligence mostly.

Size of forest fires	Forest fires	
	Number of fires	Burned area (ha)
< 1 ha	206	35
1 – 50 ha	386	2 297
50 – 100 ha	6	364
100 – 500 ha	5	992
> 500 ha	1	949
<b>Total:</b>	<b>603</b>	<b>4 636</b>

There are very rare forest fire above 100 hectares in Hungary. In 2007 we had 6 fires like this. The big fires occurred altogether 1941 hectares vegetation. This value covered 1119 hectares forest land and 822 hectares other land. There were two big crown fires and 4 surface fires. In these fires pinewood, acacia and domestic poplar substances were destroyed.

#### Fire types

There are the ground fires are not considerable in Hungary. 95% of forest fires in 2007 were surface fires. 73% of total burnt area suffered a loss in surface fire.

52,4 hectares burned averagely in the crown fires down.. 23 crown fires occurred 1206 hectares. There were 13 crown fires in county of Bács-Kiskun. 11 crown fires originated from the July-August period. 73% of crown fires burnt in pine-woods. In more cases the crown fires spreaded from pine wood towards leafy stands.

Type of forest fires	Forest fires	
	Number of fires	Burnt area (ha)
Ground fire	7	61
Surface fire	573	3 370
Crown fire	23	1 206
<b>Total:</b>	<b>603</b>	<b>4 636</b>

95% of hungarian fires burnt through 1-3 clocks long. The largest fire burned through 6 days long. In generally the fire brigades get out inside 30 minutes to the fires. The little fires are extinguished inside 1 clock.

In the course of the firefighting there was victim neither firefighter not civil. In the largest fire of last year 30 fireman car were wounded and 50 million Ft of damage occurred in the equipment.

The fires are to 95 % human caused. Most fires are started because of (adult's and non adult's) negligence , and only the whereas a small part of fires are caused by arsonists. Typical forestfire causes are the incorrect extinguished fires of hikers, and the illicit agricultural fires. 45% of fires are in this group. Natural cause is not relevant in Hungarian forest stands. 39% of total burnt area occurred by incorrect extinguished fires.

There are a lot of fires with unknown causes. The cause of the fire is not verifiable directly in many cases. The hungarian fire brigades register it as unknown if the circumstances of the forest fires is indeterminated.

Cause of fire	Forest fires	
	Number of fires	Burnt area (ha)
Unknown	326	2 841
Natural	6	9
Negligence	240	1 669
Arson	31	117
<b>Total:</b>	<b>603</b>	<b>4 636</b>

#### Fuel type

The fire brigades and the forestry authority use the same data sheet. We insure the comparability of the data and his uniformity in data gathering system. The burnt area are classified in vegetation types to make model about the destroyed biomass.

Fuel model types	Type of vegetation	Total burnt area (ha)
Other land	Short grass	<b>1054</b>
	Tall grass	<b>672</b>
Forested land	Broadleaf reforestation	<b>205</b>
	Coniferous reforestation	<b>104</b>
	Broadleaf stands	<b>770</b>
	Coniferous stands	<b>979</b>
Other wooded land	Shrubland	<b>836</b>
	Juniperus	<b>18</b>
<b>Total:</b>		<b>4636</b>

The total burnt area of forested land are 2057 hectares in 2007.

Burnt forest area is 44% of total burnt area only. It is very interesting fact.

The results of fire data analysis supports it well that during fire event the fire can spread from forest area into other land types. All the forest fires damaged forest stands and furthermore 1725 hectares grass lands and 854 hectares other wooded lands.

Damage occurred on 417 hectares in afforestation and forest renovation. It was necessary to repeat the afforestation on 150 hectares.

Death or personnel injury did not happen meanwhile fire fighting in 2007.

There were a lot of fire events in 2007 compared to previous years. Fire prevention and fire fighting activities were presented very well by spokesmen of disaster management and forest authority and by media in the frame of awareness-raising campaigns last fire season. They organized some media events such as press conferences, short reports and announcements in newspapers and on the radio and TV.

We worked out brand new forest fire prevention campaign symbol. Size and text of information boards have standardized which can be installed onto excursion places in forest areas and beside motorways.

Supplying of data from fire database is daily task to forest owners, managers and to media.

Expert presentation and demonstration about forest fires prevention and suppression were organized by SFS for fire management and forest managers.

#### International cooperation

Fire Service of Budapest provided help at the Greece fire last summer. Accident did not happen during the mission. The equipment was injured, but it was nonsignificant.