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# THE 1976-1985 FOREST FIRES IN TURKEY

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## Abstract

Especially Mediterranean, Aegean and Marmara regions have pure type *Pinus brutia* Ten. stands in Turkey. These stands are very susceptible to forest fires because of the suitable combustion conditions stem from the climatic features and the fuel type of the regions. The great majority of the forest fires occur in these regions are caused by human being.

Forest fires are still a suppressing problem in Turkey. Although the number of fires was high between 1976 and 1985, the amount of total burned area decreased because of the application of modern fire suppression systems and organization.

## 1. INTRODUCTION

Forest fire is very familiar with Turkish foresters. Large or small, intensive or light they have a profound influence on forests and wildlife lands. Forest fires cause great damage especially in Mediterranean, Aegean and Marmara regions, since these regions have widely distributed pure or nearly pure type of *Pinus brutia* Ten. stands. These pine stands are very susceptible to fire during their all life span.

I regret to report that the weather conditions, fuel types and ignition sources are always available and ready for forest fire in many parts of Turkey. Especially summer drought, accompanied by high air temperature and low relative humidity, set the stage for the forest fires by reducing the moisture content of all sort of forest fuels to abnormally low levels.

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The above short explanation leads to a key question. Are large forest fires still possible? The answer is unfortunately "yes". Adverse burning conditions will occur in the future as they had been in the past in Turkey. The only thing we can do is that all efforts must be concentrated on the limitation of the burned area dimensions.

## **2. MATERIALS AND METHOD**

The statistical data of forest fires given in this paper are taken from Forest Service of Turkey. Furthermore, all fire reports, management plans and forest inventories are taken into consideration.

To obtain the available information beforehand about the forest fire between 1976 and 1985 the fires were analyzed in some aspects. So, a detailed forest fire information is given here.

## **3. RESULTS**

It is necessary to give some information about the forest fires which occur between 1976 and 1985, in Turkey.

### **3.1 Classification of forest fires**

The classification of forest fires is based on the amount of fuels from mineral soil upward to tree tops which are involved in combustion. So, forest fires are classified as ground, surface and crown fires. In Turkey, between 1976 and 1985 almost 81 percent of the fires were surface fires.

### **3.2 Major causes of forest fires**

All over the world, the main causes of the forest fires are human being and lightning. In Turkey, the main cause of forest fires is human being (98.3 %). The distribution of forest fires by major causes throughout Turkey is shown in Table 1, for the period of 1976 to 1985.

As indicated in Table 1, the reason of the great number of forest fires is unknown. However, being not a workable category, it must be abandoned. In fact the majority of unknown fires are incendiary in Turkey.

### **3.3 The damages of forest fires**

Forest fires are still an important problem for Turkish foresters, because of their great damage on forests. But as it shown in Table 2, by contrast the past, the amount of the burned area is very low, especially during the last years. So, the amount of total burned material correspondingly is not high as it was in the past.

**Table 1** : The major causes of forest fires between 1976 and 1985 in Turkey

| Years        | Lightning | Incendiary | Miscellaneous<br>(Campfires,<br>smoking etc.) | Unknown | Total  |
|--------------|-----------|------------|---|---------|--------|
| 1976         | 10*       | 131        | 199   | 362     | 702    |
| 1977         | 12        | 770        | 15  | 818     | 1615   |
| 1978         | 4         | 276        | 266   | 576     | 1122   |
| 1979         | 19        | 367        | 260   | 654     | 1300   |
| 1980         | 14        | 324        | 185   | 569     | 1092   |
| 1981         | 19        | 202        | 182   | 574     | 982    |
| 1982         | 28        | 58         | 358   | 507     | 951    |
| 1983         | 20        | 199        | 276   | 473     | 968    |
| 1984         | 32        | 260        | 428   | 713     | 1433   |
| 1985         | 47        | 319        | 532   | 895     | 1793   |
| <b>TOTAL</b> | 205       | 2906       | 2701  | 6146    | 11958  |
| Mean         | 20.5      | 290.6      | 270.1   | 614.6   | 1195.8 |
| %            | 1.7       | 24.3       | 22.6  | 51.4    | 100    |

\* Figures are representing the numbers of fire

**Table 2 :** The damages of forest fires between 1976 and 1985 in Turkey

| Years        | Number of fires | Area burned (Hectare) | Mean burned area of each fire (Hectare) | The amount of burned material m <sup>3</sup> | Kentals        | Total damage A thousand Turkish lira |
|--------------|-----------------|-----------------------|---|--|----------------|--------------------------------------|
| 1976         | 702             | 5171                  | 7.37                                    | 44384  | 192263         | 29253                                |
| 1977         | 1615            | 43076                 | 26.67                                   | 2039619                                      | 2454854        | 780059                               |
| 1978         | 1122            | 13235                 | 11.79                                   | 2189297                                      | 648679         | 424337                               |
| 1979         | 1300            | 34132                 | 26.52                                   | 1497208                                      | 1030190        | 903906                               |
| 1980         | 1092            | 10248                 | 9.38                                    | 239607                                       | 126990         | 739233                               |
| 1981         | 982             | 5470                  | 5.57                                    | 283956                                       | 147063         | 516975                               |
| 1982         | 951             | 4018                  | 4.22                                    | 86466  | 245200         | 382346                               |
| 1983         | 968             | 3556                  | 3.67                                    | 341703                                       | 902476         | 564557                               |
| 1984         | 1433            | 7358                  | 5.13                                    | 172148                                       | 13739          | 2595704                              |
| 1985         | 1793            | 26006                 | 14.51                                   | 484000                                       | 699000         | 10402000                             |
| <b>TOTAL</b> | <b>11958</b>    | <b>152270</b>         | <b>114.83</b>                           | <b>7378388</b>                               | <b>6460454</b> | <b>17338370</b>                      |
| <b>Mean</b>  | <b>1195.8</b>   | <b>15227</b>          | <b>11.48</b>                            | <b>737839</b>                                | <b>646045</b>  | <b>173337</b>                        |

(1) Total damage : The market value of material+Fire suppression expenses+Reforestation cost

**Table 3 :** Regional distribution of forest fires between 1976 and 1985 in Turkey

| Years | Number of fires | Mediterranean region | Aegean region | Marmara region | Other region |
|-------|-----------------|----------------------|---------------|----------------|--------------|
| 1976  | 702             | 88                   | 312           | 117            | 185          |
| 1977  | 1615            | 248                  | 476           | 352            | 539          |
| 1978  | 1122            | 335                  | 338           | 185            | 264          |
| 1979  | 1300            | 436                  | 401           | 252            | 211          |
| 1980  | 1092            | 287                  | 356           | 200            | 249          |
| 1981  | 982             | 248                  | 275           | 155            | 304          |
| 1982  | 951             | 299                  | 215           | 163            | 274          |
| 1983  | 968             | 302                  | 281           | 159            | 226          |
| 1984  | 1433            | 420                  | 343           | 283            | 387          |
| 1985  | 1793            | 395                  | 445           | 399            | 554          |
| TOTAL | 11958           | 3058                 | 3442          | 2265           | 3193         |
| Mean  | 1196            | 306                  | 344           | 227            | 319          |
| %     | 100             | 25.6                 | 28.8          | 18.9           | 27.7         |

**Table 4 :** Regional distribution of forest fires between 1976 and 1985 in Turkey

| Years        | Area burned<br>(in hectares) | Mediterranean<br>region | Aegean<br>region | Marmara<br>region | Other regio  |
|--------------|------------------------------|-------------------------|------------------|-------------------|--------------|
| 1976         | 6396                         | 520                     | 2357             | 22993             | 1226         |
| 1977         | 43076                        | 8402                    | 6354             | 12376             | 15944        |
| 1978         | 13233                        | 4295                    | 4004             | 2077              | 2857         |
| 1979         | 34480                        | 6895                    | 20164            | 2958              | 4463         |
| 1980         | 10248                        | 2436                    | 3010             | 1942              | 2860         |
| 1981         | 5470                         | 1407                    | 1625             | 894               | 1544         |
| 1982         | 4017                         | 878                     | 943              | 860               | 1336         |
| 1983         | 3556                         | 945                     | 1160             | 883               | 568          |
| 1984         | 7358                         | 2087                    | 1825             | 1557              | 1889         |
| 1985         | 26007                        | 2302                    | 9829             | 10706             | 3170         |
| <b>TOTAL</b> | <b>153841</b>                | <b>30167</b>            | <b>51271</b>     | <b>36546</b>      | <b>35857</b> |
| <b>Mean</b>  | <b>15384</b>                 | <b>3017</b>             | <b>5127</b>      | <b>3654</b>       | <b>3586</b>  |
| <b>%</b>     | <b>100</b>                   | <b>19.6</b>             | <b>33.3</b>      | <b>23.8</b>       | <b>23.3</b>  |

### **3.4 The distribution of forest fires**

The majority of forest fires (73.3 %) occur in Mediterranean, Aegean and Marmara regions in Turkey. The total number of forest fires and their distribution according to the regions are given in Table 3 and 4.

### **3.5 Large forest fires**

The large forest fires, which are larger than 500 hectares (class G), are frequent in Turkish forests. Especially in 1979 seven large forest fires occurred. Whereas, in 1980 only one large forest fire was reported.

The largest forest fire happened in Turkey was Marmaris fire. This bitter forest fire started on September 23, 1979 and suppressed on October 4, 1979. The result of this incendiary fire was 13260 hectares burned forested area. At the beginning and during this fire, weather and fuel conditions were very suitable. Furthermore, the lack of road and firebreaks made the fire easy to spread.

## **4. CONCLUSIONS**

According to the information which is given above, it is obvious that the forest fires are still an important damaging factor to Turkey's forests. Although the fire number is still high, the total burned area is getting smaller because of the establishment of new and modern fire suppression systems and organizations. It is clear that the development of the fire suppression techniques will lead to decrease both in number and area of forest fires in the future.



## TÜRKİYE'DE 1976-1985 YILLARI ORMAN YANGINLARI

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### Kısa Özet

**Saf *Pinus brutia* Ten. meşcerelerinin yaygın olduğu Akdeniz, Ege ve Marmara bölgelerinde orman yangınları, geçmişten bugüne kadar önemli bir problem olarak orman koruma ve savaş organizasyonunu meşgul etmektedir. Ancak son yıllarda yangınla savaşta etkin önlemlerin alınmasıyla yangın sayısının düşmesine karşın, bir yangının yaktığı alanda azalma sağlanmıştır.**

Türkiye'de orman yangınları özellikle Akdeniz, Ege ve Marmara bölgesinde büyük bir tahrip etkeni olmaya devam etmektedir. Bu bölgelerde geniş bir yayılış gösteren saf *Pinus brutia* meşcereleri yangın tehlikesinin odak noktalarını oluşturmaktadır.

Ormanları yangından koruma ve savaş organizasyonunu oluşturmakla görevli Orman Genel Müdürlüğü elindeki olanaklar ölçüsünde yeni teknik ve eğitim programlarını uygulamaya koymaktadır. Bu uygulamaların, orman yangınlarının sayı ve yaktıkları alanlar üzerindeki etkilerini ortaya koyabilmek için 1976-1985 yılları arasındaki 10 yıllık periyodu kapsayan orman yangın istatistikleri çeşitli yönlerden değerlendirilmiştir.

- 1- Orman yangınlarının % 81'i örtü yangınıdır.
- 2- Orman yangınlarının nedenleri arasında % 98.3'lük oranla insan unsuru gelmekte, % 1.7 oranında da yıldırım yeralmaktadır (Tablo 1).
- 3- Orman yangınlarının yaptıkları zarar, yanan alan ve orman ürünleri dikkate alındığında, Tablo 2'de görüldüğü gibi son yıllarda azalma göstermektedir.
- 4- Orman yangınlarının sayıları itibarıyla bölgelere göre dağılışında % 73.3'ünün Akdeniz, Ege ve Marmara bölgesinde meydana geldiği görülmektedir (Tablo 3 ve 4).

- 5- Büyük Orman yangınları sayısında da 10 yıllık periyodun son yıllarında önemli sayıda azalma olduğu gözlenmektedir.

Yukarıda verilen sonuçlar birleştirildiğinde orman yangınlarının Türkiye'de halen önemli bir tahrip unsuru olduğu ortaya çıkmaktadır. Yıllık ortalama yangın sayısının halen yüksek olmasına karşın yangın başına düşen yanan alan miktarı giderek azalmaktadır. Bunda yeni ve modern yangın söndürme sistem ve organizasyonlarının uygulanmasının etkili olduğu kuşkusuzdur.

### KAYNAKLAR

ANONYMUS, 1988. *Orman Koruma ve Yangınla İlgili İstatistik ve Değerlendirmeler. Tarım Orman ve Köyişleri Bakanlığı, Orman Genel Müdürlüğü, Orman Koruma ve Yangınla Mücadele Dairesi Başkanlığı, 58p.*

ÇANAKÇIOĞLU, H. 1985. *Orman Koruma. İstanbul Üniversitesi, Orman Fakültesi Yayınları, İ.Ü. Yayın No. 3315, O.F. Yayın No. 376, İstanbul, 486 p.*

1988. *Orman Yangın İstatistikleri. Tarım Orman ve Köyişleri Bakanlığı, Orman Genel Müdürlüğü Başkanlığı, Yayın No. 29, Seri No. 672, p. 8-44.*

ERON, Z., 1982. *Akdeniz Ülkelerinde Orman Yangını Sorunu. Ormanlık Araştırma Enstitüsü Dergisi, Cilt 28, Dergi No. 56:5-36, Ankara.*