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Forest Fire Situation in Turkey

Fire Environment and Fire Regimes in Turkey

Turkey is a country with a land mass of 76.96 million hectares, of which 20.749 million hectares is forested. About 12 million hectares of forested land are subjected to forest fires. Most fires occur where the Mediterranean climate is characterized by high temperatures and low to non-existent precipitation.

In terms of fire regimes, 65-70 percent of the burned area is found in *Pinus brutia* forests, 15-20 percent in *Pinus nigra* forests, five percent in other coniferous forests, ten percent in bushy and degraded coppice forests and one percent in broad-leaved forests.

Narrative summary of major wildfire impacts on people, property, and natural resources during the 1990s

Most of the fires in the country occur between June and October and in the vicinity of tourist areas. There is a growing national concern for the damage caused by forest fires due mainly to its impact on tourism and on eco-tourism and the environment.

Arson fires are set for several reasons. People with low income and low standards of living see the forests as an earning ground for their sustenance. So people set fire to the forests to create jobs or improve their subsistence.

A number of people have died while fighting forest fires.

Systematic fire management organization used in Turkey

Fire management in Turkey is a federal responsibility. Duties are carried out by the state forest enterprises functioning under regional directorates. Although fire control policies in the past were developed around a strong emphasis on total fire control, these policies are rapidly evolving today. A national database on forest fires is being created containing information on all aspects of forest fires. Information gathered on the location and causes of fires are used to develop fire prevention techniques and prevention planning. Forest fire prevention efforts are being mounted in terms of mass media awareness campaigns for the public and through fire law enforcement.

The construction and maintenance of firebreaks have been instrumental in breaking up continuous expanses of fuels. The firebreaks often are supplemented by planting fire resistant species.

Fire suppression strategies are based on early detection, fast initial attack, and a strong suppression effort. Each region has been provided with sufficient resources and fire crews to combat forest fires. Available resources include 208 fire trucks, 12 helicopters, 11 airplanes, 882 fire lookout towers, 8472 radios, 650 initial attack crews (12-15 people), and 120 standby forces (of 40-50 people). These forces are allocated to each district based on fire danger levels and the area in question.

Overall, 71 percent of the fires are controlled at less than 5 hectares and account for only 8 percent of the area burned. In contrast, only one percent of the fires exceeds 200 hectares in size. These fires account for 37 percent of the total area burned. See Table 1 for detailed wildfire statistics.

Wildfire Database

Year	Total No. of Fires on Forest Other Wooded Land & Other Land	Total Area Burned on Forest Other Wooded Land & Other Land ha	Area of Forest Burned ha	Area of Other Wooded Land Burned ha	Human Causes No.	Natural Causes No.	Unknown Causes No.
1990	1 725	13 000	6 127	3 331	684	30	1 011
1991	1 445	7 642	3 230	2 113	n/a	n/a	n/a
1992	2 110	12 312	7 951	4 349	997	56	1 057
1993	2 547	13 734	9 520	3406	1 270	40	1 237
1994	3 221	20 997	20 155	801	1 158	135	1 928
1995	1 768	4 791	3 928	750	941	129	698
1996	1 631	14 922	10 127	4 329	902	56	673
1997	1 339	6171	4 525	1 486	888	76	375
1998							
1999							

Table 1. Total number of fires and area burned in Turkey between 1990 and 1997 on forest, other wooded land and other land.

Fires started by people account for 97 percent of the total fires. Lightning starts the remaining three percent. Of the people-caused fires, 23 percent are classified as arson, 27

percent are caused by negligence and carelessness, and 50 percent of the fires are due to unknown causes.

Use of prescribed fire to achieve resource management objectives

At the present time, the policy in Turkey is to practice fire exclusion through fast and aggressive fire suppression. Although Turkey has no experience in the use of prescribed fire, it can be an important management tool in pine forests where the accumulation of pine needles can become a fire hazard due to increased fuel load. In view of the fact that *Pinus brutia* forests account for 65 to 70 percent of the total burned area in Turkey, trials of prescribed burning on an experimental basis in pine forests are being considered. Research results on this practice would be necessary before general application could be recommended.

Public policies affecting wildfire impacts

Public policy and legislation to prohibit agricultural burning near forest boundaries during fire season to reduce fire risk has actually had the opposite effect. The ban is not working, since 15 percent of the fires are due to agricultural burning, the largest single cause of forest fires. Consideration is being given to modifying this legislation to permit agricultural burning under controlled conditions coupled with farmer training in better burning practices.

Following a review of national fire policies in November 1998, new policy guidelines were developed. Some of this policy direction included the development of a Forest Fire Management Centre, implementing plantation practices and fuel management to reduce fire risk, involving all stakeholders in fire management planning, involving village communities in fire protection activities, rehabilitating burned areas, and making fire management more cost effective.

Sustainable land use practices used in Turkey to reduce wildfire hazards and wildfire risks

Although grazing is banned in most forest areas, there is a need to evolve proper grazing policies and practices. Controlled grazing could be used to help reduce fuel loads to more acceptable levels. Such changes are being considered.

Consideration also is being given to the development of "Green Firebreaks" of less flammable species to complement the systems of roads and traditional firebreaks in disrupting the continuity of fuels.

Community involvement in fire management activities.

Since most fires are started by people, awareness and education campaigns that involve the community are expected to bring down the extent of damage. There is increasing recognition that participation of rural people in the development process of natural

resources is the most important driving force for responding to present day challenges and opportunities.

References

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Figures 1-3. Construction of fuel breaks alongside of roads in Turkey is associated with intensive utilization of small fuels for charcoal production – an environment-friendly approach to reduce the threat of fire starts and to replace fossil fuel consumption by renewable energy sources. Photos: GFMC.