

Use of Geographical Information System for Determining Forest Fire Risk and Fire Danger Categories

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Abstract of the paper: The forests as a living organism are under many different threats because of their structural properties. In addition that there are 7 million people living in forest villages in Turkey, tourism, the increase of construction of new buildings, illegal cuttings due to people needs, forest fires and many different human activities changing in time are the main negative threats on forests in Turkey. The total coverage of forests in Turkey is about an area of 21.2 million hectares. While an area of 8.9 million hectares of this is productive forest, the rest is coppice or unproductive high forests. According to the sensibility of forests to the fire, there are five different regions in Turkey. The first region covers 35% of all forests and this is followed by second region with 23% coverage, third region with 22% coverage, fourth region with 15% coverage and fifth region with 5% coverage, respectively. As a result of the climatic conditions, topography and vegetation properties, forest fires negatively affect large areas of forests in Aegean and Mediterranean parts of Turkey in each year. From 1937, the date of which the first information was begun to collect about fire, to the end of 2004, 75255 forest fires were occurred. In these fires, an area of 1561026 hectares was burnt. This work was realized in the border of Antalya Forest Regional Directory. Forest fires are too effective in summer in Antalya, where includes 15 towns, 558 villages and the population of 1726205 people. In addition to this, population, topography and climatic conditions are the other factors, which make the region sensible to the fire. The meteorological data containing the years of 1978-2008 and 1980-2000 and ArcView 9.0 and Surfer 6.0 computer package programs were used in this work. The meteorological data of eleven different meteorological stations in Antalya were used to constitute the maps of mean wind speed, maximum temperature and relative humidity, which are the ones of the most effective factors on forest fires. It was determined that 6291 forest fires were occurred in the mentioned date and an area of 59680 hectares was burnt in these fires. The number of forest fires is highest in the border of Central Forest Enterprise in Antalya, which includes 13 forest enterprises. But according to the fire threat classification constituted by taking into consideration the burnt forest areas, it was determined in this work Serik Forest Enterprise

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