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Global climate change and forest fires

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Abstract: Today, it is accepted by almost all climate scientists that there is a deterioration in the world climate system. In the event that the people who cause the natural balance disruption continue their various activities without taking the necessary precautions, it is stated that these deteriorations in the climate will increase and the climate change due to the global warming will be very negative. Because of anthropogenic causes, the increase in the accumulation of greenhouse gases and particulates in the atmosphere, the destruction of the natural environment, the thinning of the ozone layer, will cause to rise the temperature in the global dimension. Photosynthetic fixation of carbon dioxide (CO₂) by green plants and other autotrophs sustains life on Earth by moving carbon from atmospheric to terrestrial pools, and by helping to mitigate the global climate. Forest fires, however, play an important role in the atmospheric release of stored terrestrial carbon. As forests store about 45% of terrestrial carbon and can hold 25% of annual anthropogenic carbon emissions, forest fires are a critical link in the global carbon cycle. Many climate models have predicted significant climate change over the past century due to the greenhouse effect, including increase in temperature worldwide and the tendency to dry in many subtropical and mid-latitude regions. Turkey is one of the countries most affected by a climate change that can be seen in the complex climate structure. Although there are differences in scenarios and models, almost all of the simulations predict a temperature increase from 1.0 °C to 3.5 °C for Turkey's general and decrease in precipitation for southern and western Turkey by 2100. In the case of global warming continuing, extreme high temperatures, widespread and severe drought events for some regions are predicted at a very high level of reliability. A natural consequence of these, shrub and forest fires will cause some serious potential changes, including human health and ecosystem function. Especially hot weather waves and drought; Forest fire risk, fire intensity, number of fire, burning area together with the fire frequency will increase. In addition, new vegetation and fuels community that may arise under a changing climate regime may affect fire potential, burning area, combustion efficiency, and available fuel load, and fuel consumption.

Keywords: Global climate change, Global carbon cycle, Forest fire regime