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Thematic Focus: Disasters and Conflicts, Environmental Governance, and Climate Change

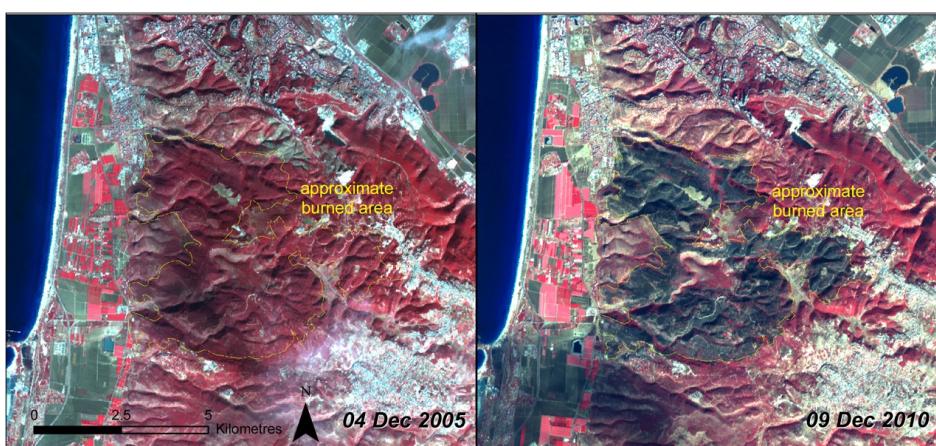
Largest Fire in Israel's History Consistent with Climate Change Predictions

Why is this issue important?

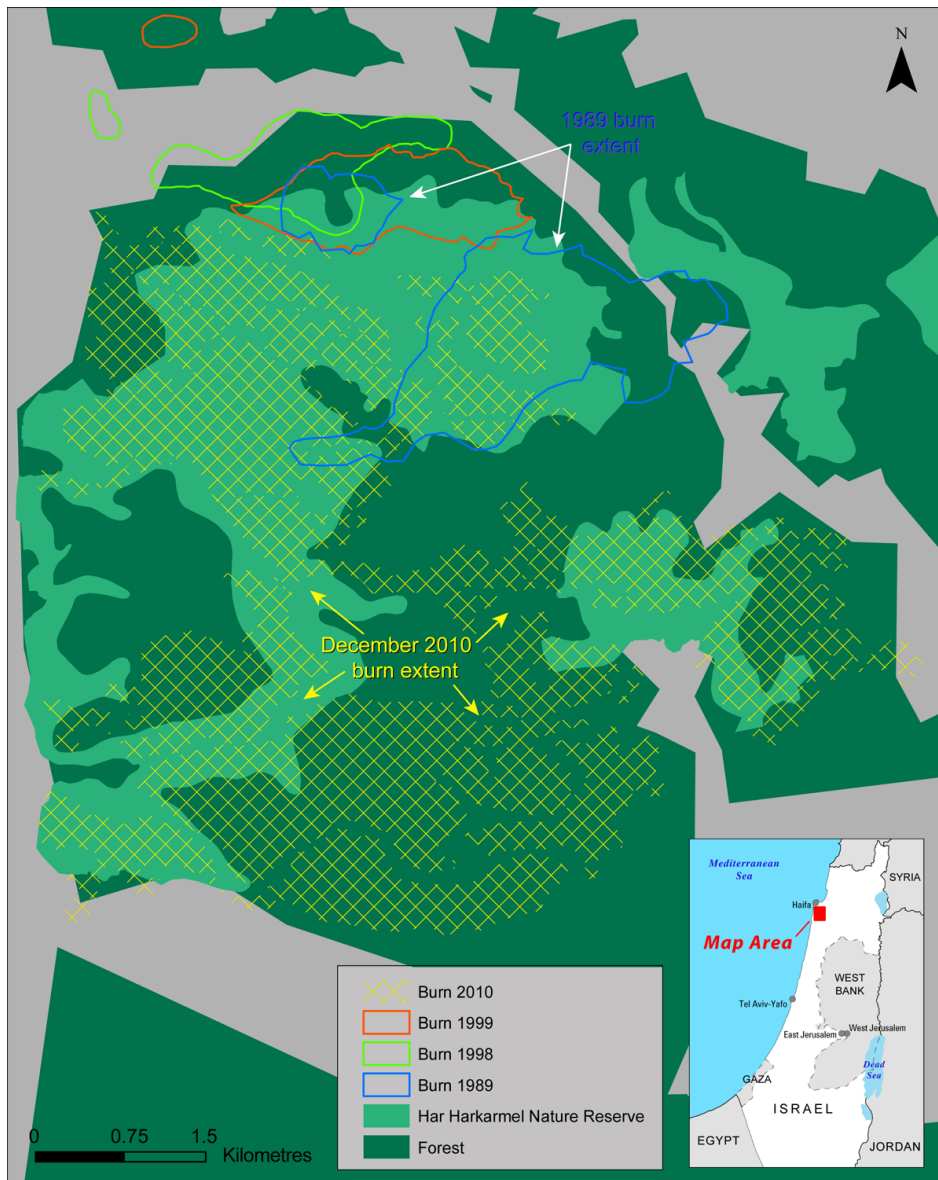
A wildfire in early December, described as the largest in Israel's history, burned nearly 2000 ha of pine and oak forest surrounding Mt. Carmel. The fire is consistent with predictions made by Israel's ministry of environment in a report released over a decade ago, and reiterated in a follow-up report released in November 2010. The reports predicted that climate change would lead to "increased dry conditions and a lengthening of the dry season which will increase risks of forest fires" (IME 2010). In fact, Israel had been suffering from a drought over the past several years leading up to the fire (JPost.com 2010).



The fire was centred in a portion of Har Hakarmel Nature Reserve located on a ridge rising to the south of Haifa. Several previous large fires (80 to 500 ha) had burned in this area between Haifa and the nature reserve over the past 27 years (Wittenberg 2007). The December fire, however, burned roughly five times the area of the second-largest fire over that same period (~500 ha in 1989) (Wittenberg 2007). December's fire consumed roughly 1.4 per cent of Israel's total forested area of 132 000 ha.



These ASTER satellite images from before and after the fire show the extent of the burned area. Red corresponds to healthy vegetation, silvery gray areas are urban areas; agriculture, along the left side, shows as patches of red and gray with straight-line edges, while the Mediterranean Sea is the deep blue area in the upper left. The burned area (outlined in yellow) changes from a deep red indicating healthy forest in the 2005 image to black showing burned areas in the 2010 image.



Findings and Implications

Fire is a common event in Mediterranean ecosystems and forest regeneration should occur naturally thus fire itself is not an ecological disaster (Ne'eman 1997; Wittenberg and others 2007). Changes in fire frequency or severity under climate change scenarios would change this ecosystem and would likely change the nature and species mix of the forest as well (Pausas 1999). The single occurrence of a fire such as this is not in itself evidence of climate change. However, this fire and the fires in Russia in the summer of 2010, which burned ten times this area, add to the growing body of evidence that climate change is already occurring. Both fires were preceded by drought and higher than normal temperatures (UFZ 2010, CSMonitor 2010) and are consistent with the types of events expected under climate change scenarios.

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