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Extreme Forest Fire Behaviour and its Potential Damage to the Environment and to Society

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Forest fires are one of the major natural disasters in several regions of the World given their frequency, extension and damaging effects. In present conditions of climate change due to global warming many countries are facing larger and more intense fires, more extended fire seasons and a greater inter-annual variability of fire occurrence conditions. Many societies are prepared to face forest fires in low to medium meteorological risk conditions but when these become extreme it is very difficult to control the fires.

Fire behaviour in extreme conditions is still poorly studied in spite of its great importance for the entire problem of fire management due to its high potential to damage the environment, to disrupt socio economic activities and to affect human health and life.

Typical extreme fire behaviour conditions like (i) eruptive fires, (ii) crown fires and (iii) spot fires shall be described and analysed. Some case studies will be presented to illustrate the concepts presented.