



## Preparing for extreme heat events in a changing climate

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Under climate change, extreme weather events such as heatwaves now increasingly occur in places that did not experience such extremes in the past. Recurrent and sustained extreme heat can affect many different domains, from health, especially in the vulnerable part of the population, to agriculture (e.g., through drought), energy production and usage, and mountain infrastructure (e.g., through permafrost thawing). These societal impacts of heatwaves could be mitigated to some extent by region-specific planning and warnings. Currently, heatwave warnings are typically issued hours to a few days in advance. However, the time it takes countries, municipalities, and institutions to prepare for heatwaves is often longer than the current timescale of issuing warnings. Preparation measures include the provision of cooling centers, reaching out to the vulnerable population, providing drinking water, or rescheduling outdoor work. This discrepancy between required and available lead times may also explain why heat health action plans for responsible actors to take appropriate and timely measures are often missing. Any extension of these lead times may convince communities of the usefulness of developing such plans in the long-run and better prepare for heatwaves and other weather extremes in the short-run. Strikingly, heatwaves are the most predictable extreme weather events, in principle allowing for lead times and hence warnings of several weeks, i.e., considerably longer than the currently used warning timescales. This contribution explores to what extent the potential for extended planning and warning horizons may contribute to improved policies, planning, actions, and interactions between science and stakeholders given the increasing threats and impacts from extreme heat events under climate change.