

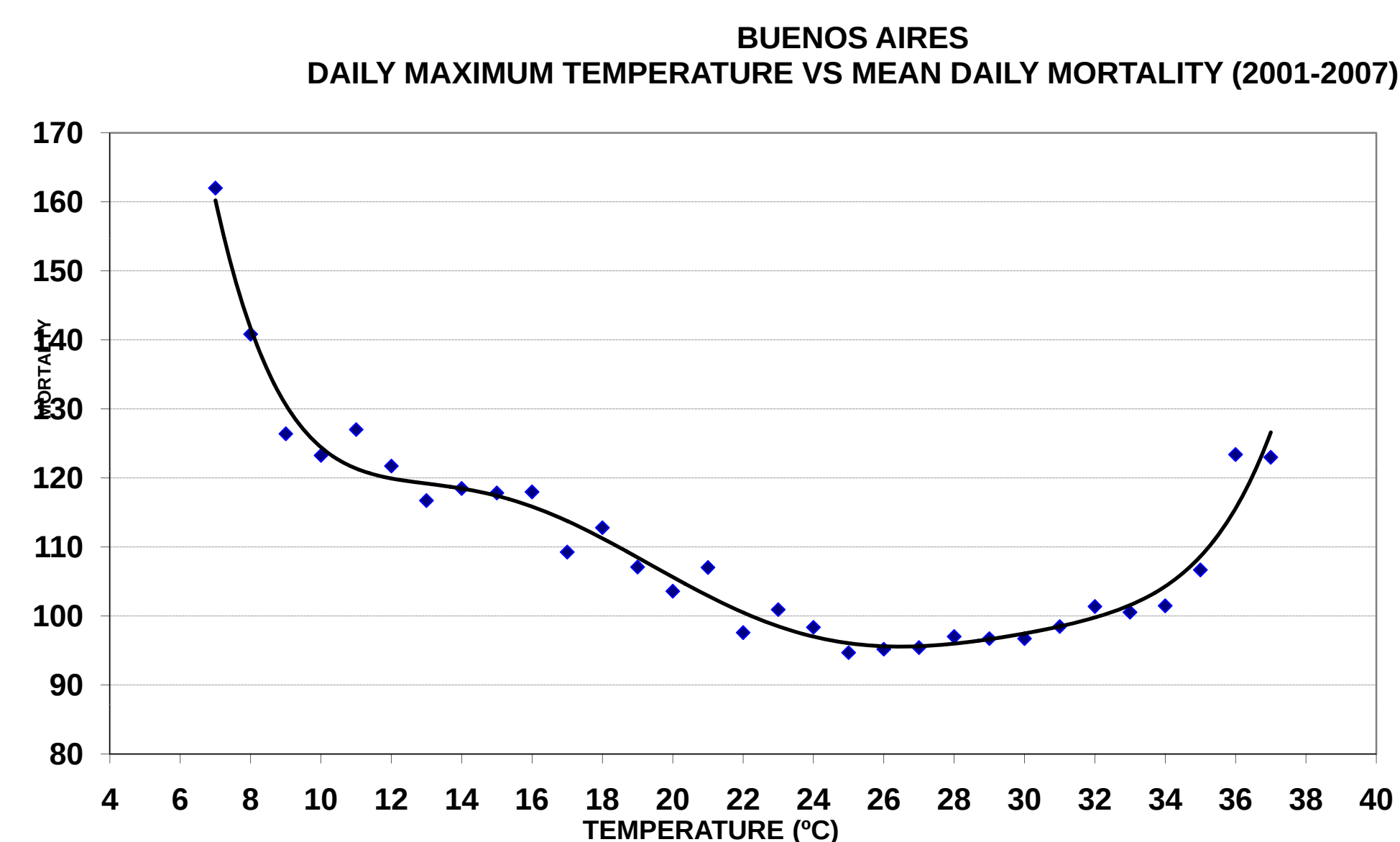
Are heat waves increasing over Argentina?

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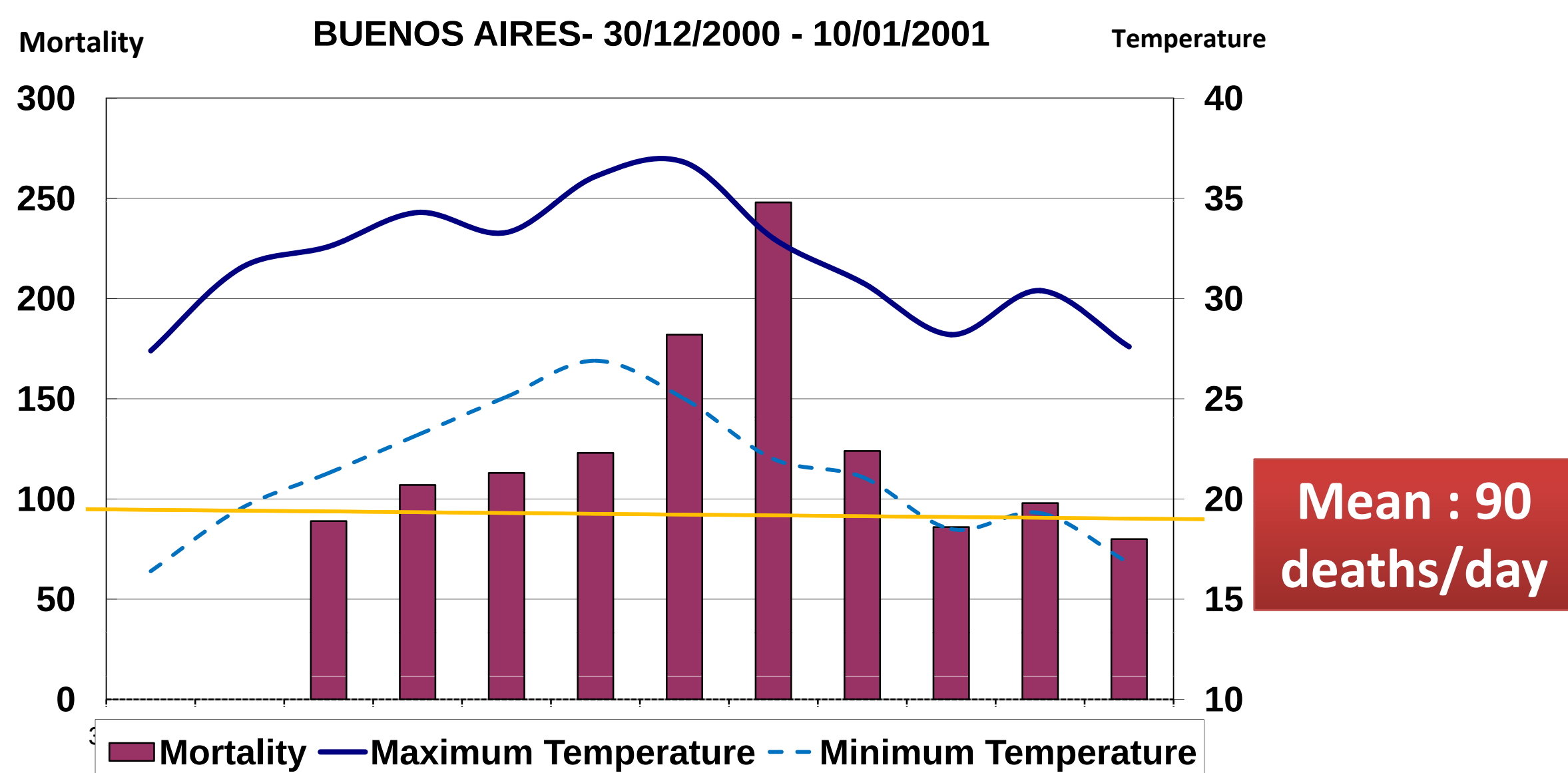
Motivation:

Strong heat waves are close related to mortality in Buenos Aires, so an alert system is trying to be implemented through the National Weather Service



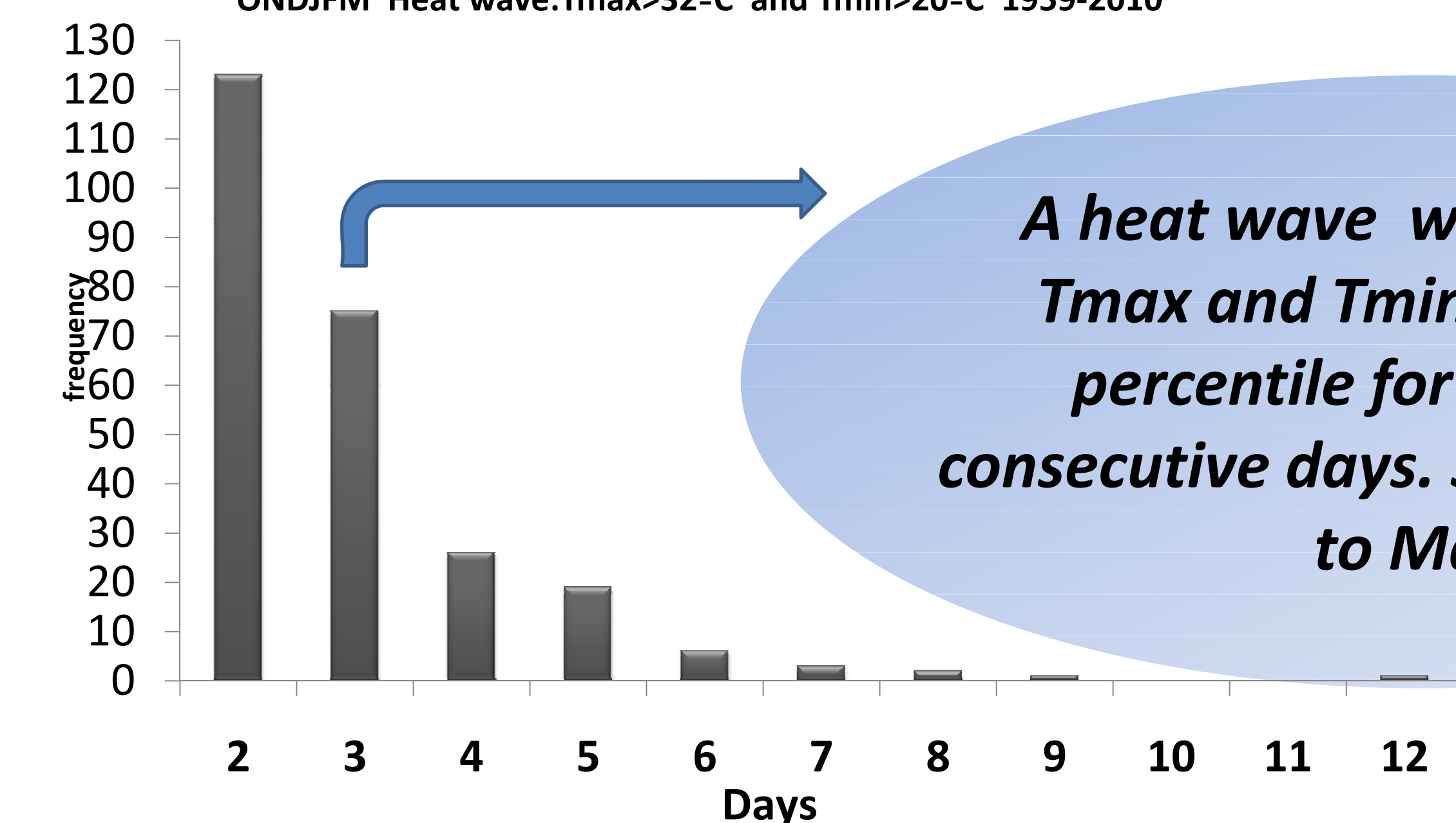
One example

Mortality and Temperature - Summer heat wave in Buenos Aires
Dec 2000-Jan 2001



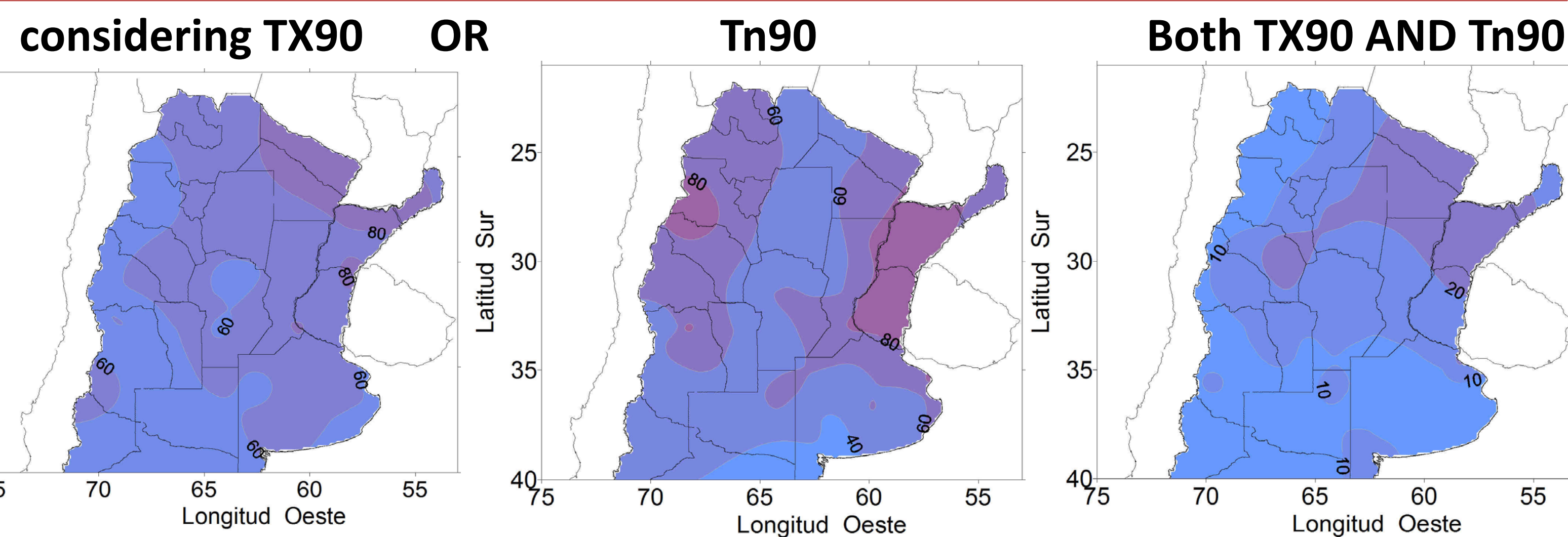
In Argentina, as all over the world, warm nights have been increasing and cold nights decreasing but the frequency of warm and cold days has been decreasing in some regions. So, the objective of this work is to find a definition of the heat waves that includes both variables together, and the associated warming excess, with focus on the warm period of the year. Strong heat waves are close related to mortality in Buenos Aires, so an alert system is trying to be implemented through the National Weather Service. These limits were considered to study the trends and variability of heat waves occurrence and intensity

Heat waves Persistence in Buenos Aires –
ONDJFM Heat wave: T_{max}>32°C and T_{min}>20°C 1959-2010

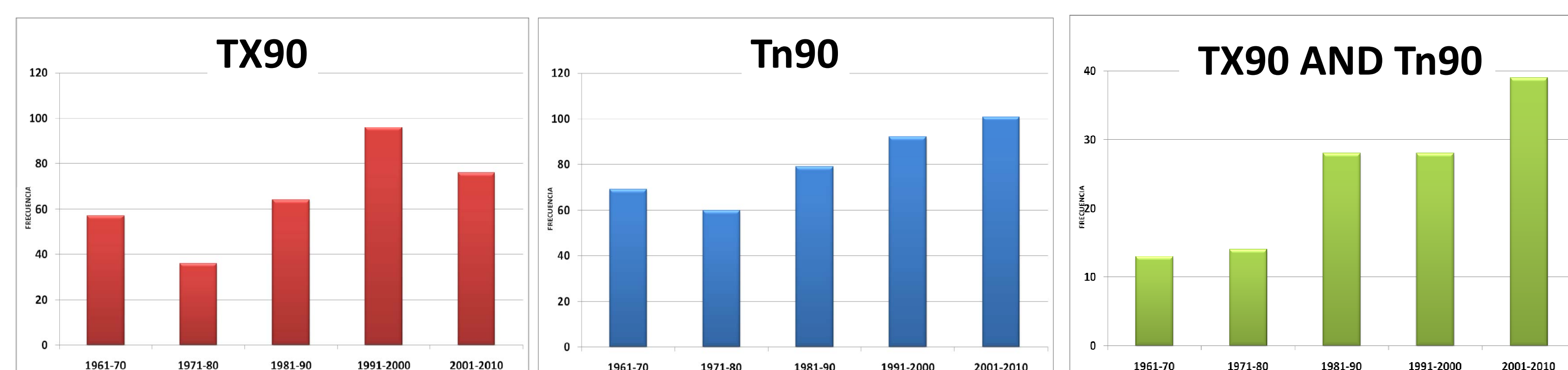


*A heat wave was defined as :
T_{max} and T_{min} over the 90th
percentile for more than 3
consecutive days. Summer: October
to March*

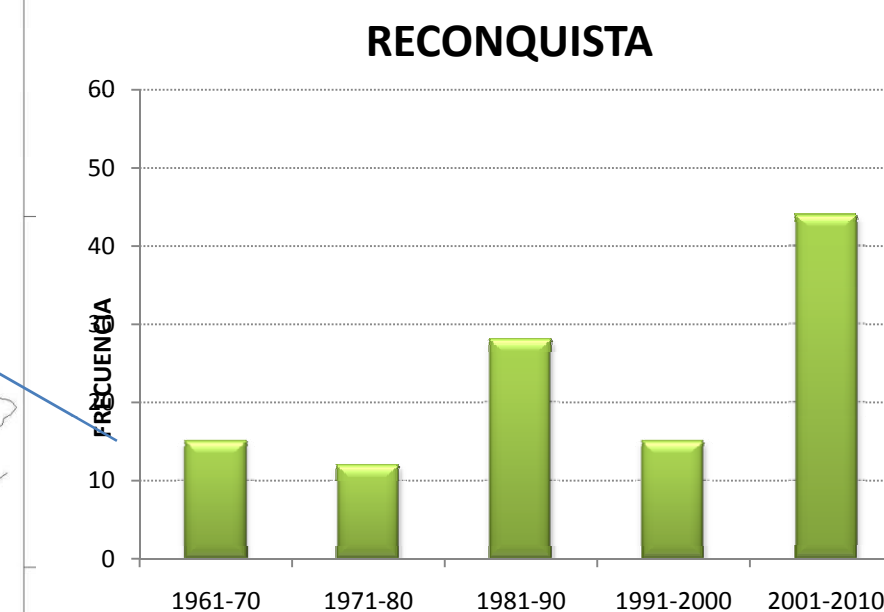
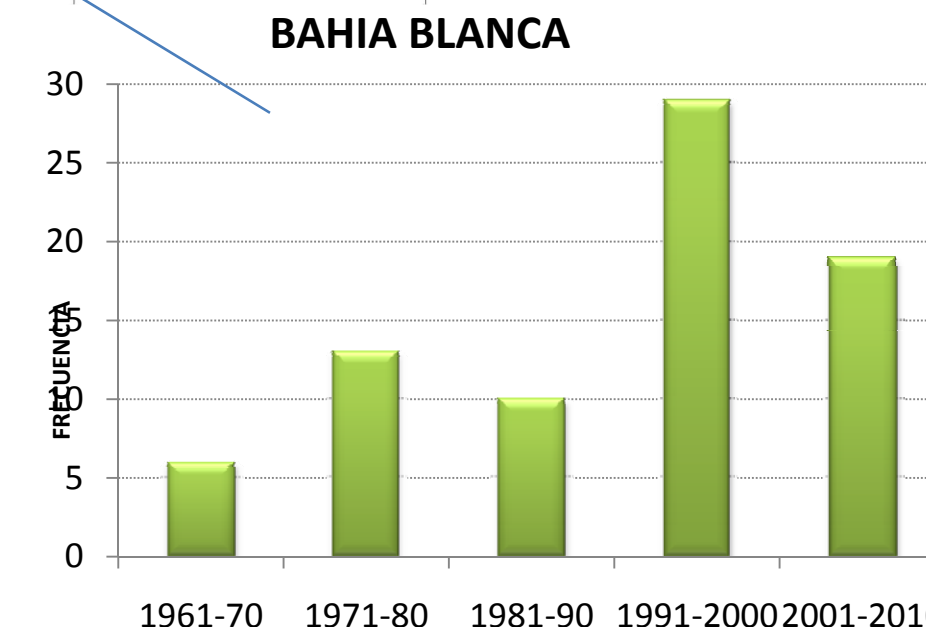
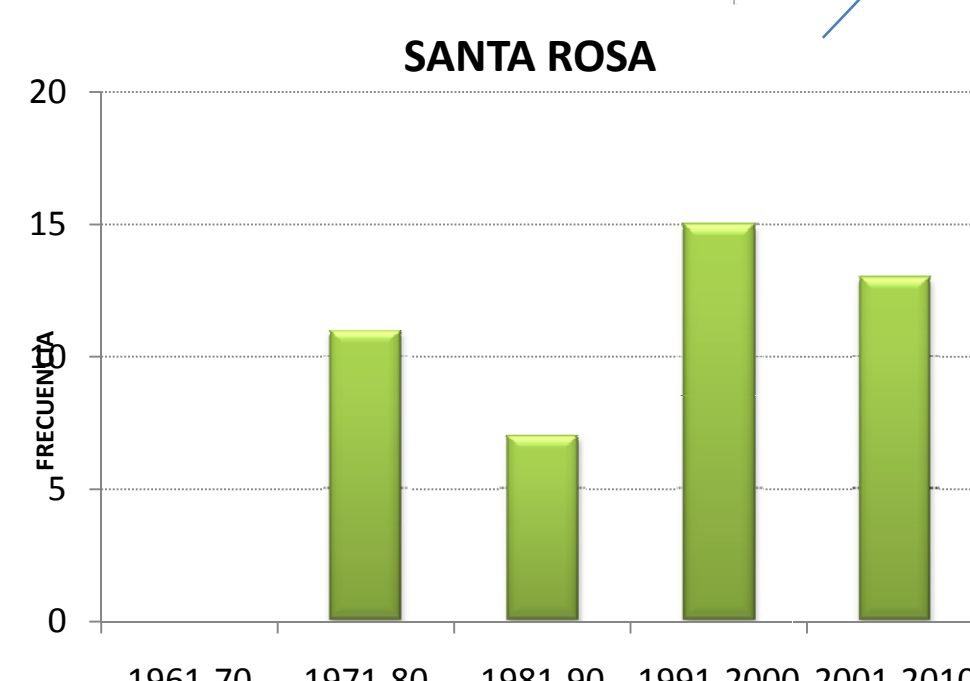
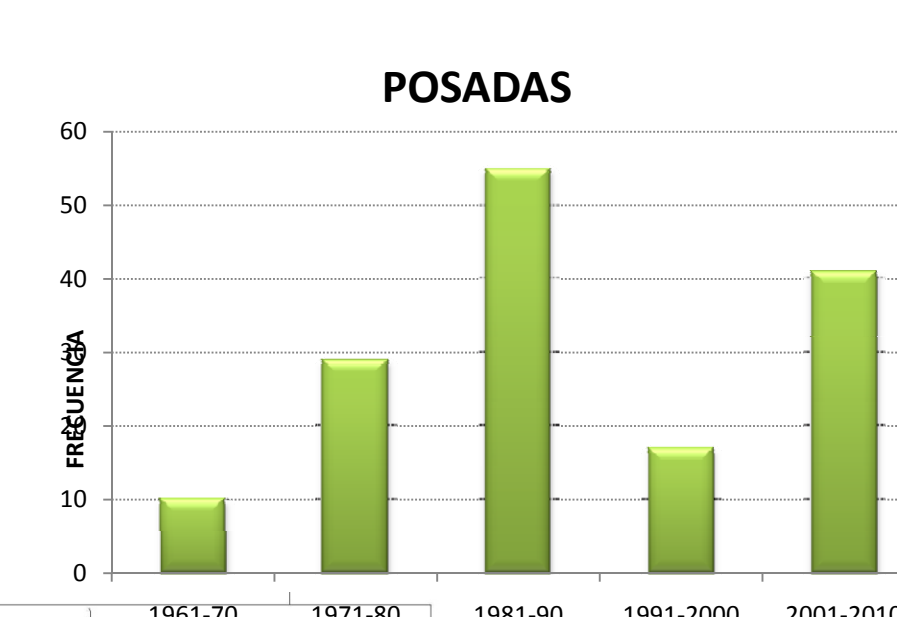
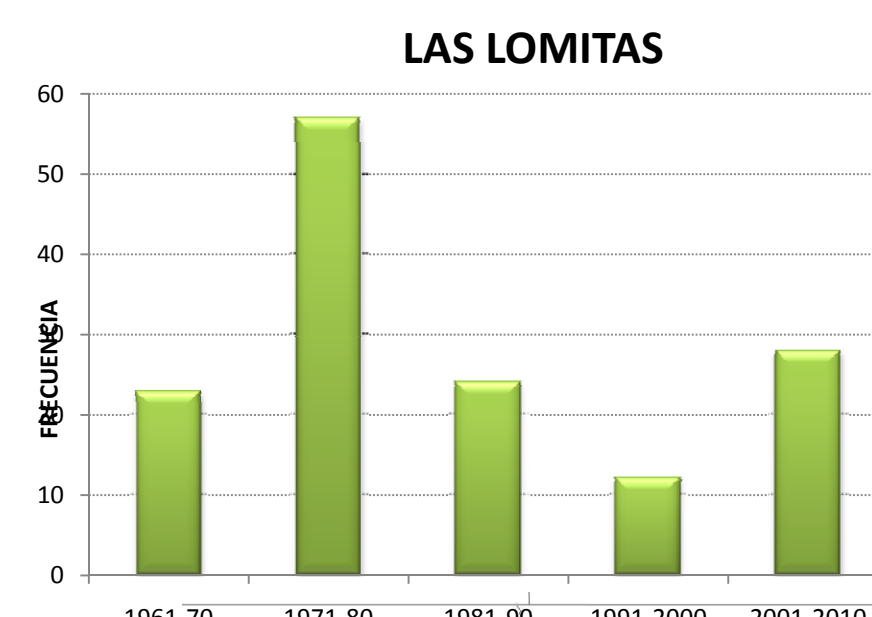
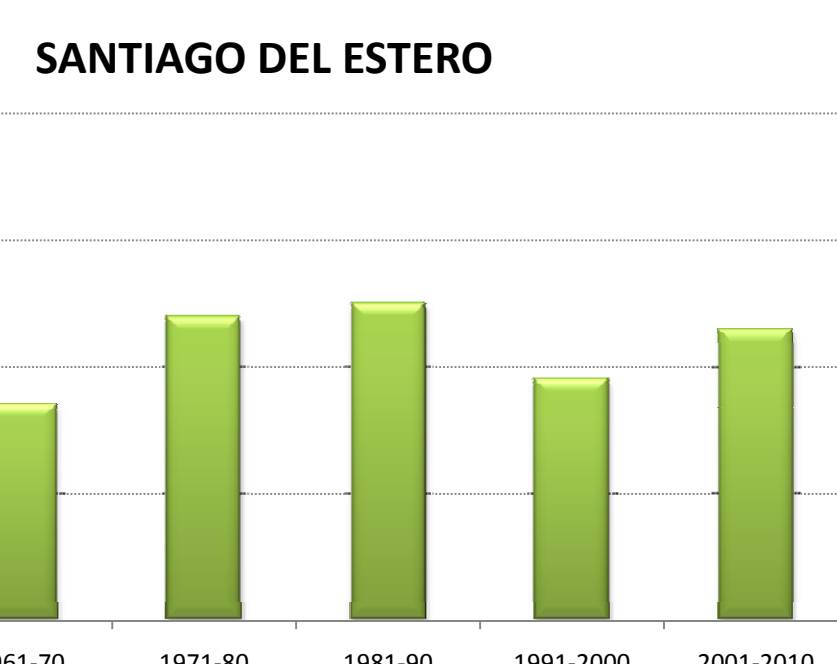
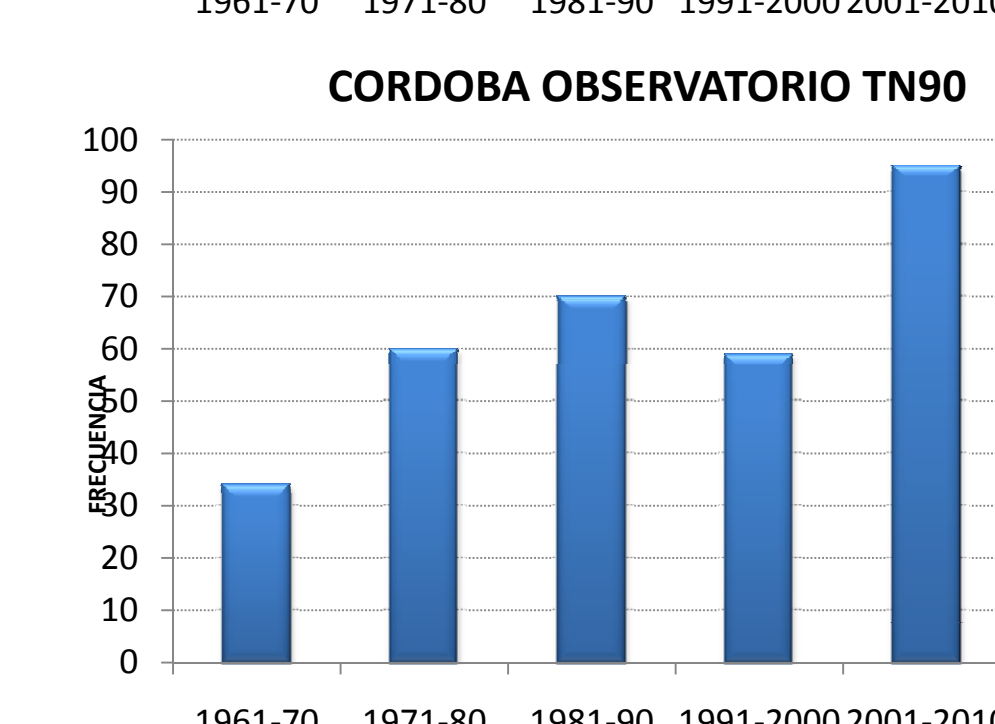
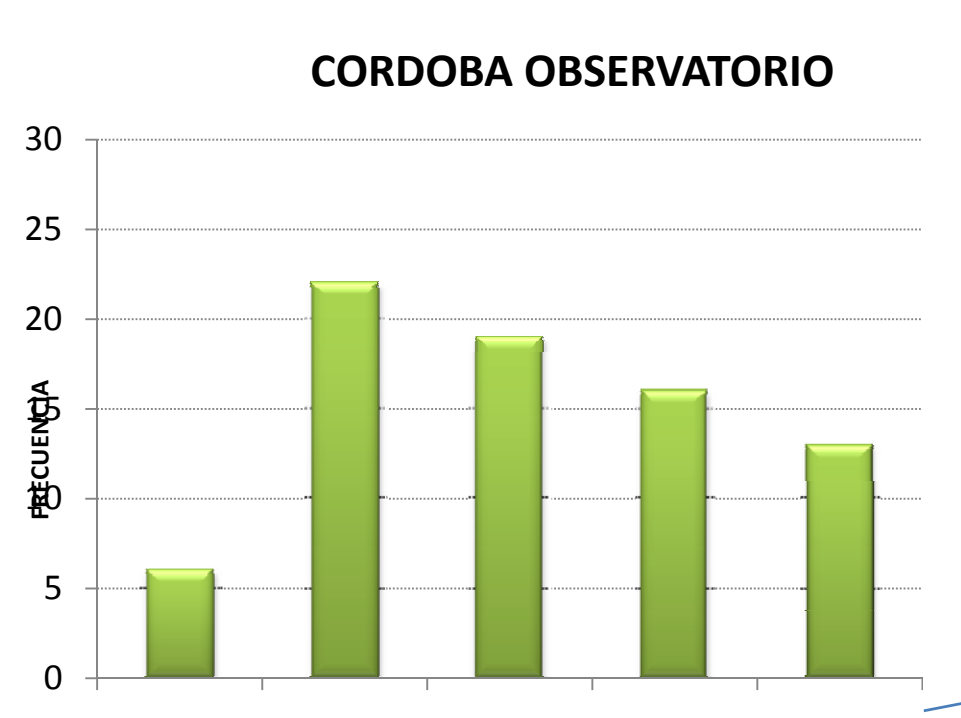
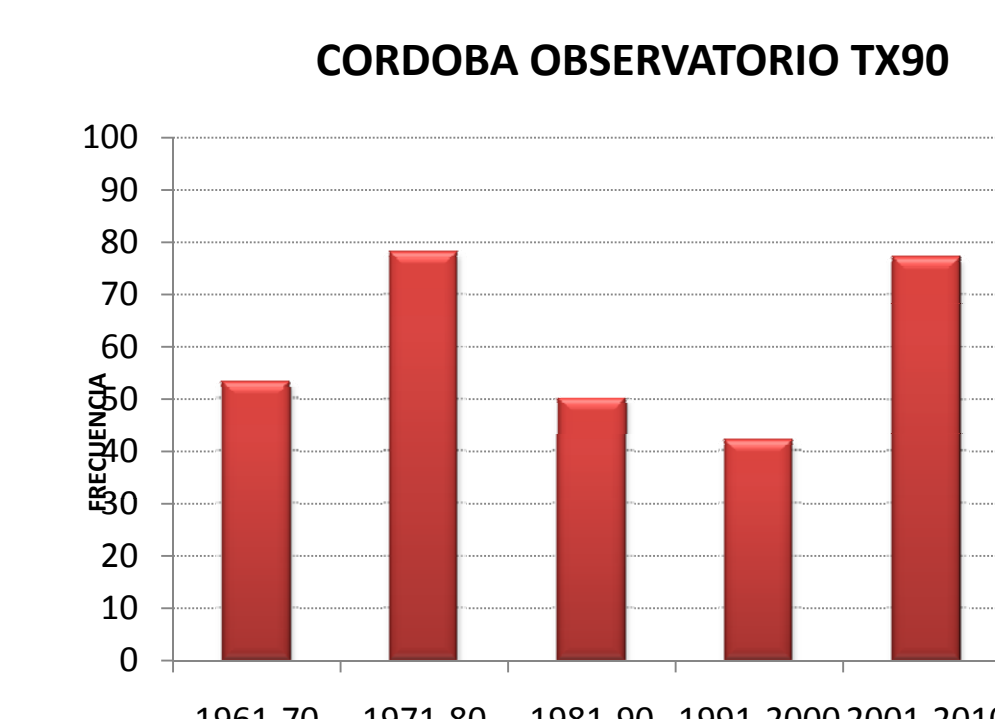
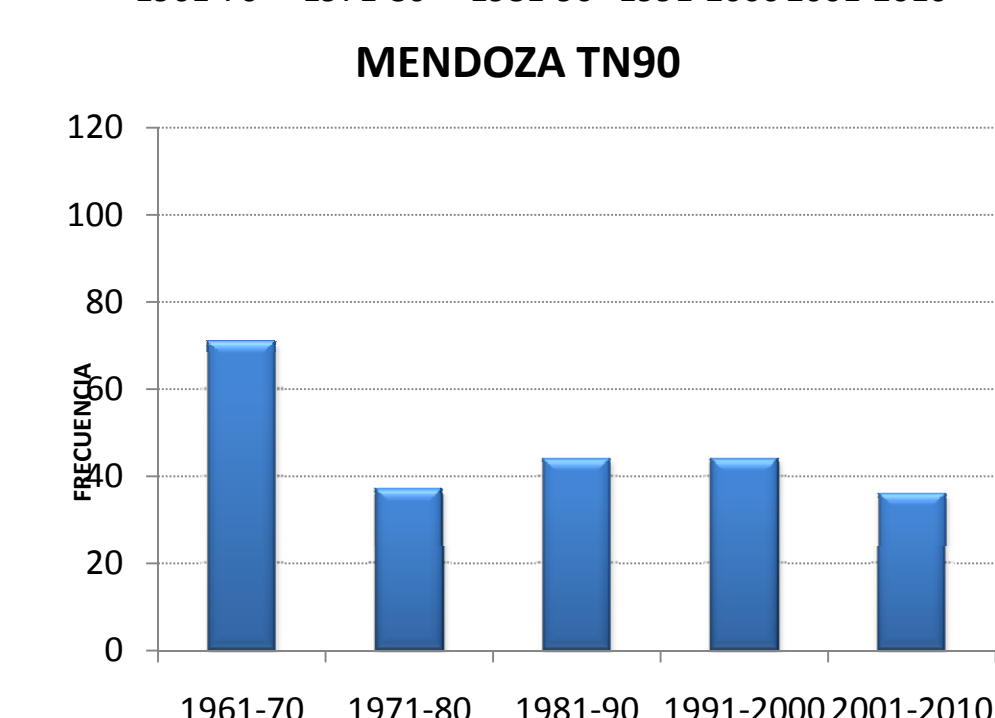
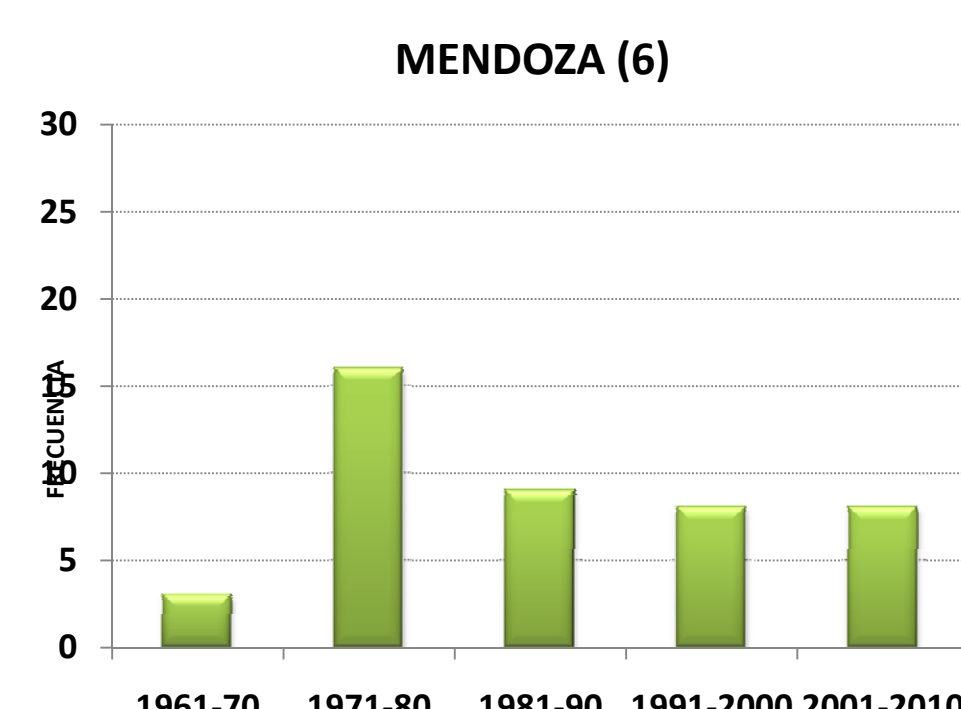
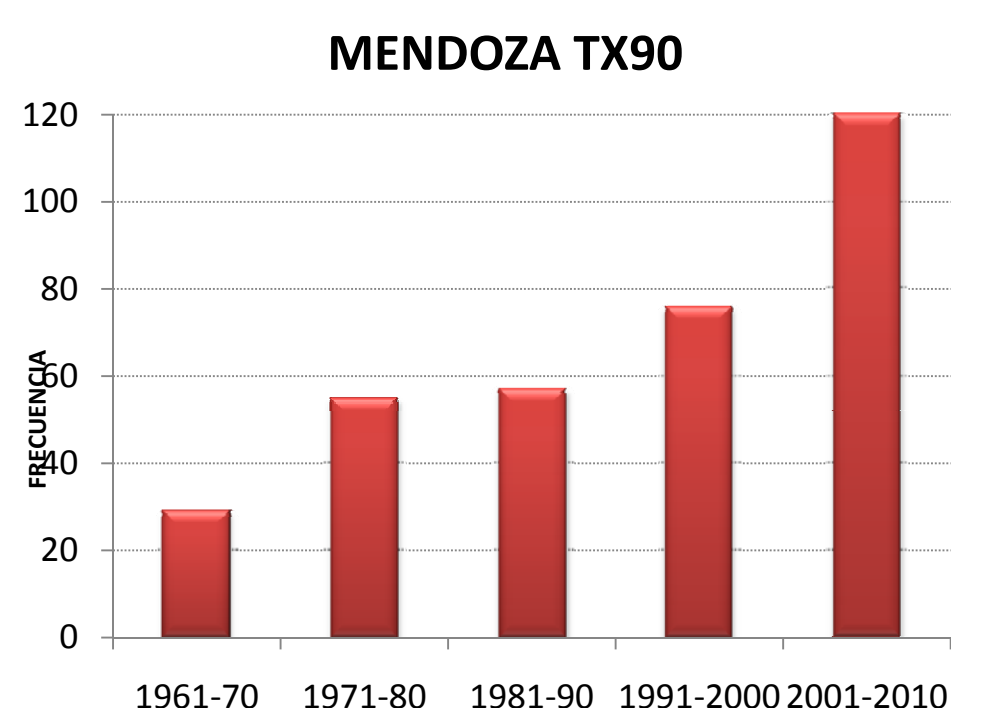
Mean decadal number of heat waves (persistency >= 3 days)



BUENOS AIRES (1)



Decades from 1961/70 to 2000/2010



No clear trend in the occurrence of heat waves is found regionally. No trend in central Argentina, negative trend in western and northern Argentina, but more heat waves in the last decades were found in several stations. Significant positive trends in Buenos Aires and Reconquista. This behavior has not exactly followed the trend of Tn90 or Tx90. This index seems to be rigorous to describe heat waves, it represents extreme and persistent Heat events. The physical reasons that evolved in these events will be explored to update and enhance the alert system 'health-heat waves'