Royal Geographical Society with IBG
Advancing geography and geographical learning

Argentina

In this section explore the latest projections about climate change

What is Argentina's climate like?

- Argentina is located in southern South America stretching from the subtropics (21°S) to sub-polar regions in the south (55°S)
- The western edge of the country runs along the Andean mountains. Most of the country is in the rain shadow of these mountains
- The vast extent of the country and the great range in altitude give the country a diverse climate
- Throughout Argentina, January is the warmest month and June and July the coldest
- months
- Mean annual temperature in the north is 24°C. There is rain throughout the year with an annual average of 750mm
- The mean annual temperature in the south is 0°C. The climate is sub-Arctic, has prevailing westerly winds and about 200mm of rainfall each year
- In central Argentina, the average rainfall varies between 1000mm in the east and 500mm in the west where the climate is temperate continental with hot summers and mild winters

Graph one: How did Argentina's temperature change between 1960 and 2009?

- The black line shows the actual temperature anomaly for each year from 1960 to 2000. This is the difference in temperature between the year's recorded temperature and the average of all years between 1970 and 1999. If the anomaly is positive, that year was warmer than the 1970-1999 average. If it is negative, that year was colder than the 1970-1999 average
- The brown line shows past temperature anomalies as produced by a computer model with the brown shading showing the range of temperatures produced by the model
- Argentina's temperatures do not show any consistent trend since the 1960s
- The green, blue and red lines show projected future temperatures from 2006 to 2100, according to three different emission scenarios– green (low), blue (medium) and red (high). The shading around each line shows the range of temperature that might be possible with each emission scenario
- Argentina's average year-round temperature is projected to increase by 0.7-2.3°C by the 2060s and 1.1-3.7°C by the 2090s
- The rate ofwarming is about the same in all the seasons

Graphs two to four: How will Argentina's annual temperature change during the 2030s, 60s and 90s?

- These 3 maps show projected temperatures in the 2030s, 60s and 90s (according to a high carbon dioxide emissions scenario, A2)
- All values are anomalies – the difference in temperature to the average of 1970 to 1999 temperatures
- Areas shaded deep orange will be 6°C hotter than average temperatures from 1970 to 1999, whereas areas shaded green will be the same as the 1970-1999 average
- The numbers in the centre of each grid box is the average projected temperature; numbers in the upper and lower corners give the highest and lowest possible annual mean temperature
- By the 2090s, the projected increase is over 4°C in northern Argentina

- By the 2090s, the projected increase is over 2°C in southern Argentina

Graphs five to seven: How will Argentina's temperature change seasonally? – December, January, February

- These 3 maps show projected December, January and February (DJF) temperatures in the 2030s, 60s and 90s (according to a high carbon dioxide emissions scenario, A2)
- All values are anomalies – the difference in temperature to the average of 1970 to 1999 temperatures
- Areas shaded red will be 6-7°C hotter than average temperatures from 1970 to 1999, whereas areas shaded green will be the same as the 1970-1999 average
- The number in the centre of each grid box is the average projected temperature; numbers in the upper and lower corners give the highest and lowest possible DJF mean temperature
- The North of the country will warm more than the south in all seasons

Graphs eight to 10: How will Argentina's temperature change seasonally? – March, April, May

- These 3 maps show projected March, April and May (MAM) temperatures in the 2030s, 60s and 90s (according to a high carbon dioxide emissions scenario, A2)
- All values are anomalies – the difference in temperature to the average of 1970 to 1999 temperatures
- Areas shaded red will be 6-7°C hotter than average temperatures from 1970 to 1999, whereas areas shaded green will be about the same as the 1970-1999 average
- The number in the centre of each grid box is the average MAM temperature anomaly we expect having had high carbon dioxide emissions; the smaller numbers in the upper and lower corners give the range of average temperature anomalies that might occur
- The North of the country will warm more than the south in all seasons

Graphs 11 to 13: How will Argentina's temperature change seasonally? – June, July, August

- These 3 maps show projected June, July and August (JJA) temperatures in the 2030s, 60s and 90s (according to a high carbon dioxide emissions scenario, A2)
- All values are anomalies – the difference in temperature to the average of 1970 to 1999 temperatures
- Areas shaded red will be 6-7°C hotter than average temperatures from 1970 to 1999, whereas areas shaded green will be about the same as the 1970-1999 average
- The number in the centre of each grid box is the average JJA temperature anomaly we expect having had high carbon dioxide emissions; the smaller numbers in the upper and lower corners give the range of average temperature anomalies that might occur
- The North of the country will warm more than the south in all seasons
- JJAwill see the smallest changes in temperatures

Graphs 14 to 16: How will Argentina's temperature change seasonally? – September, October, November

- These 3 maps show projected September, October and November (SON) temperatures in the 2030s, 60s and 90s (according to a high carbon dioxide emissions scenario, A2)
- All values are anomalies – the difference in temperature to the average of 1970 to 1999 temperatures
- Areas shaded red will be 6-7°C hotter than average temperatures from 1970 to 1999, whereas areas shaded green will be about the same as the 1970-1999 average
- The number in the centre of each grid box is the average SON temperature anomaly we expect having had high carbon dioxide emissions; the smaller numbers in the upper and

lower corners give the range of average temperature anomalies that might occur
- The North of the country will warm more than the south in all seasons

Graphs 17 to 18: How will Argentina's frequency of hot days change?

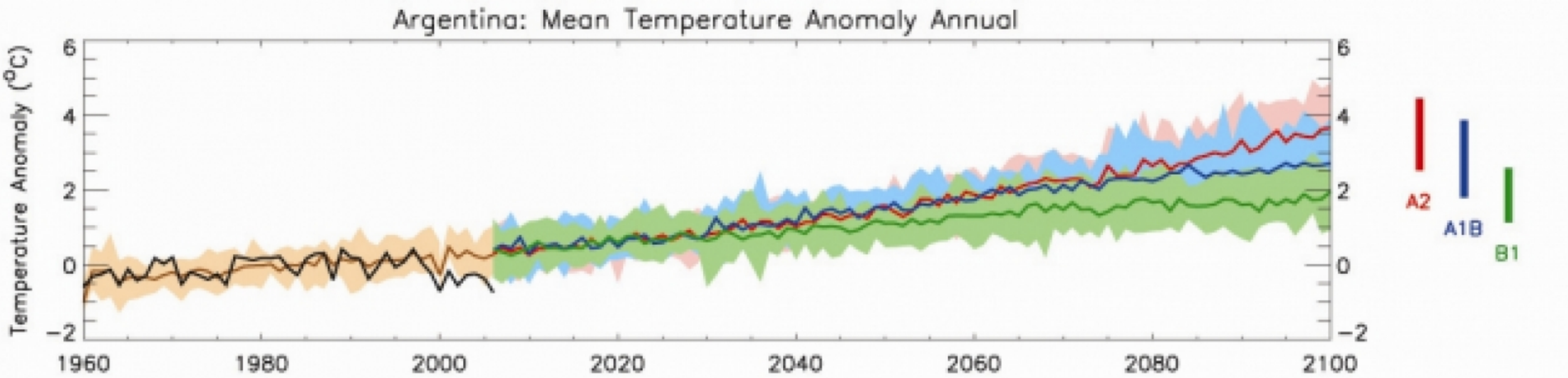
- These two maps show the percentage of hot days expected during the 2060s and 2090s given high carbon dioxide emissions through the century (scenario A2)
- A hot day is defined by the temperature exceeded on 10% of days in 1970-1999. So, in 1970 – 1999, you would have expected 1 in 10 days to be hot. If the map shading indicates that more than 10% of days are hot, then there has been an increase in the number of hot days
- In areas shaded deep red, every day will be a hot day. Yellow areas will have 30% hot days
- The number in the centre of each grid box is the number of hot days we expect; the smaller numbers in the upper and lower corners give the range of numbers of hot days that might occur
- Hot days will occur on 13-22% of days by the 2060s and 15-30% of days by the 2090s

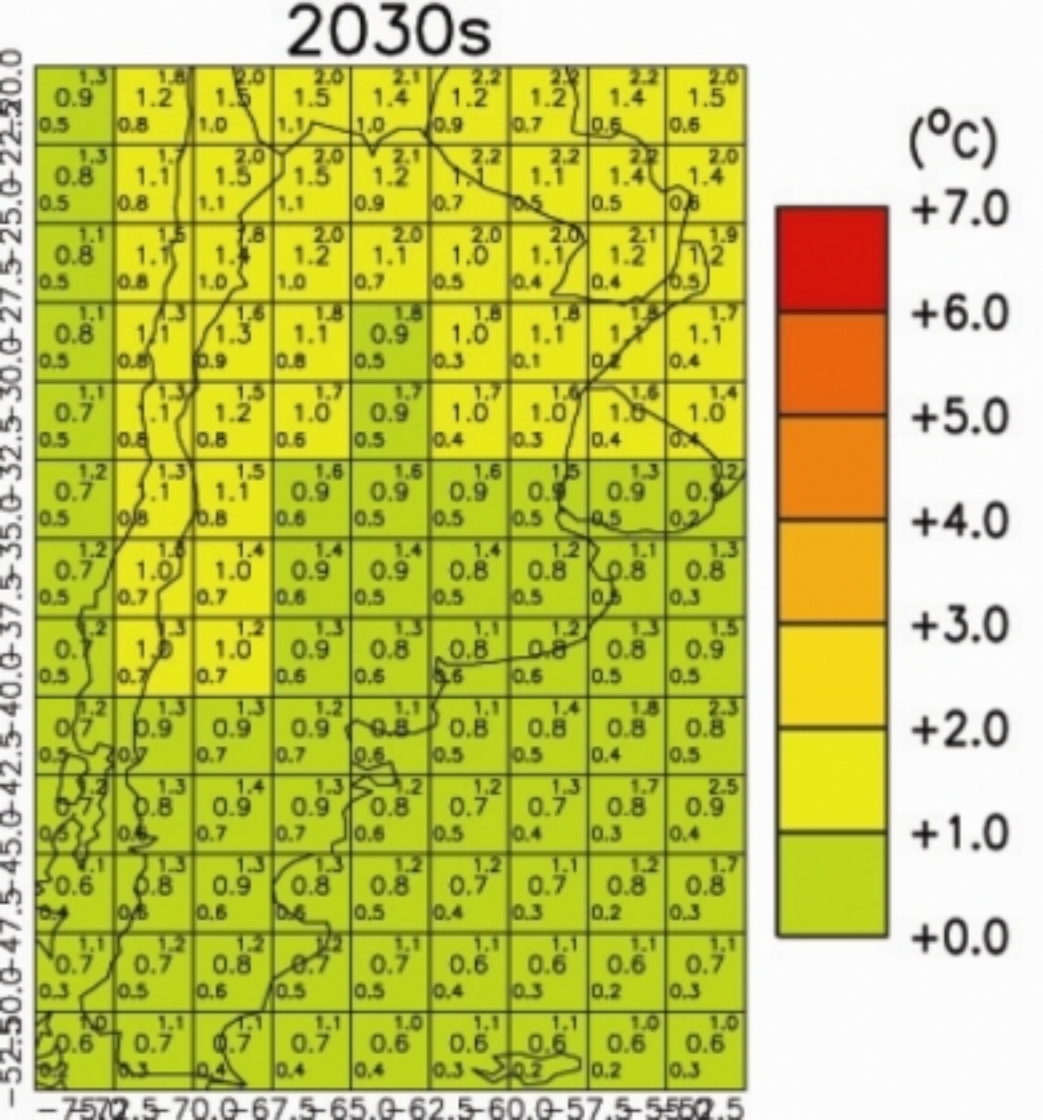
Graphs 19 to 20: How will Argentina's frequency of hot nights change?

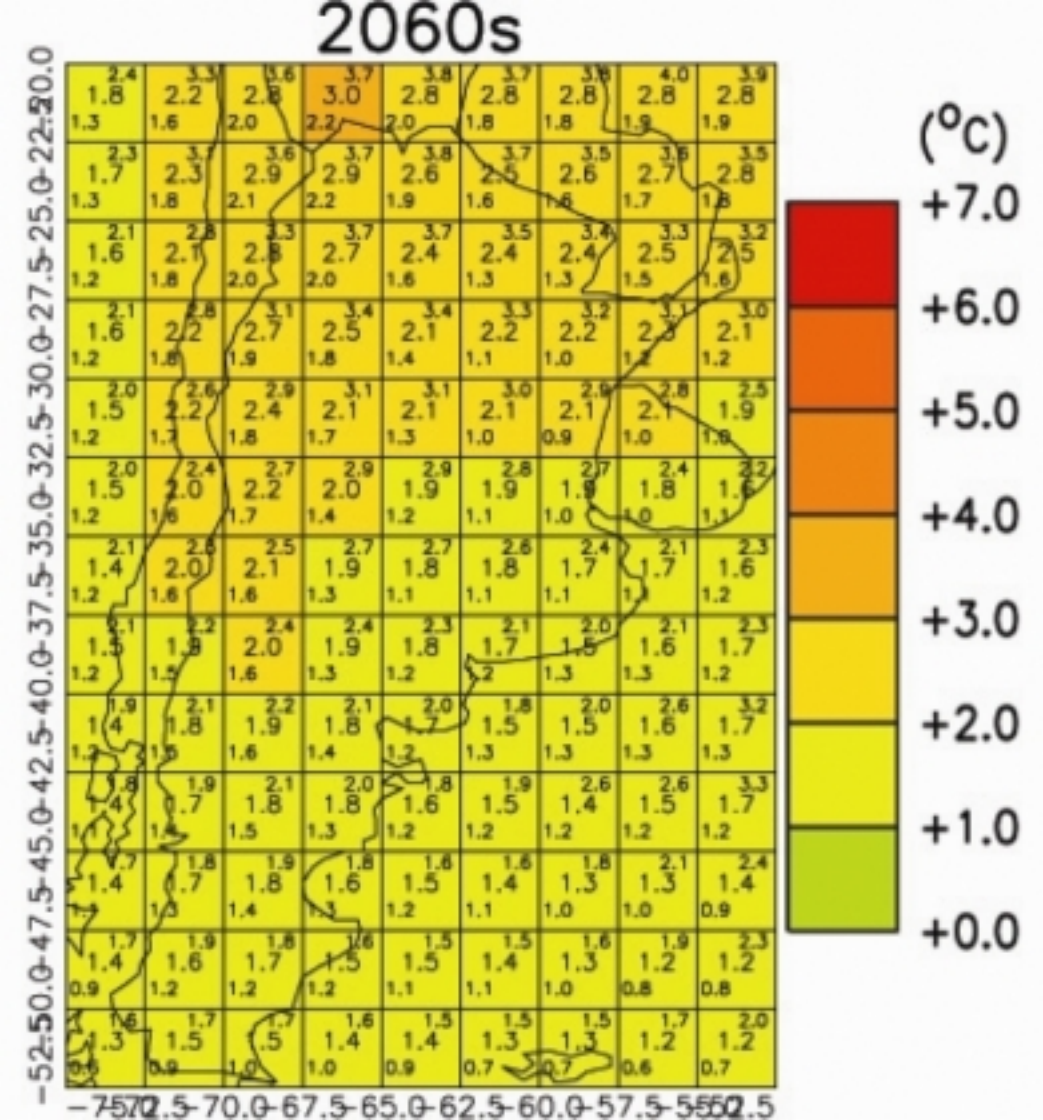
- These two maps show the percentage of hot nights expected during the 2060s and 2090s given high carbon dioxide emissions through the century (scenario A2)
- A hot night is defined by the temperature exceeded on 10% of nights in 1970-1999. So, in 1970– 1999, you would have expected 1 in 10 nights to be hot. If the map shading indicates that more than 10% of nights are hot, then there has been an increase in the number of hot nights
- In areas shaded deep red, every night will be a hot night. Yellow areas will have 30% hot nights
- The number in the centre of each grid box is the number of hot nights we expect; the smaller numbers in the upper and lower corners give the range of numbers of hot nights that might occur
- Hot nights are expected to occur on 14-23% of nights by the 2060s and on 16-31% of nights by the 2090s

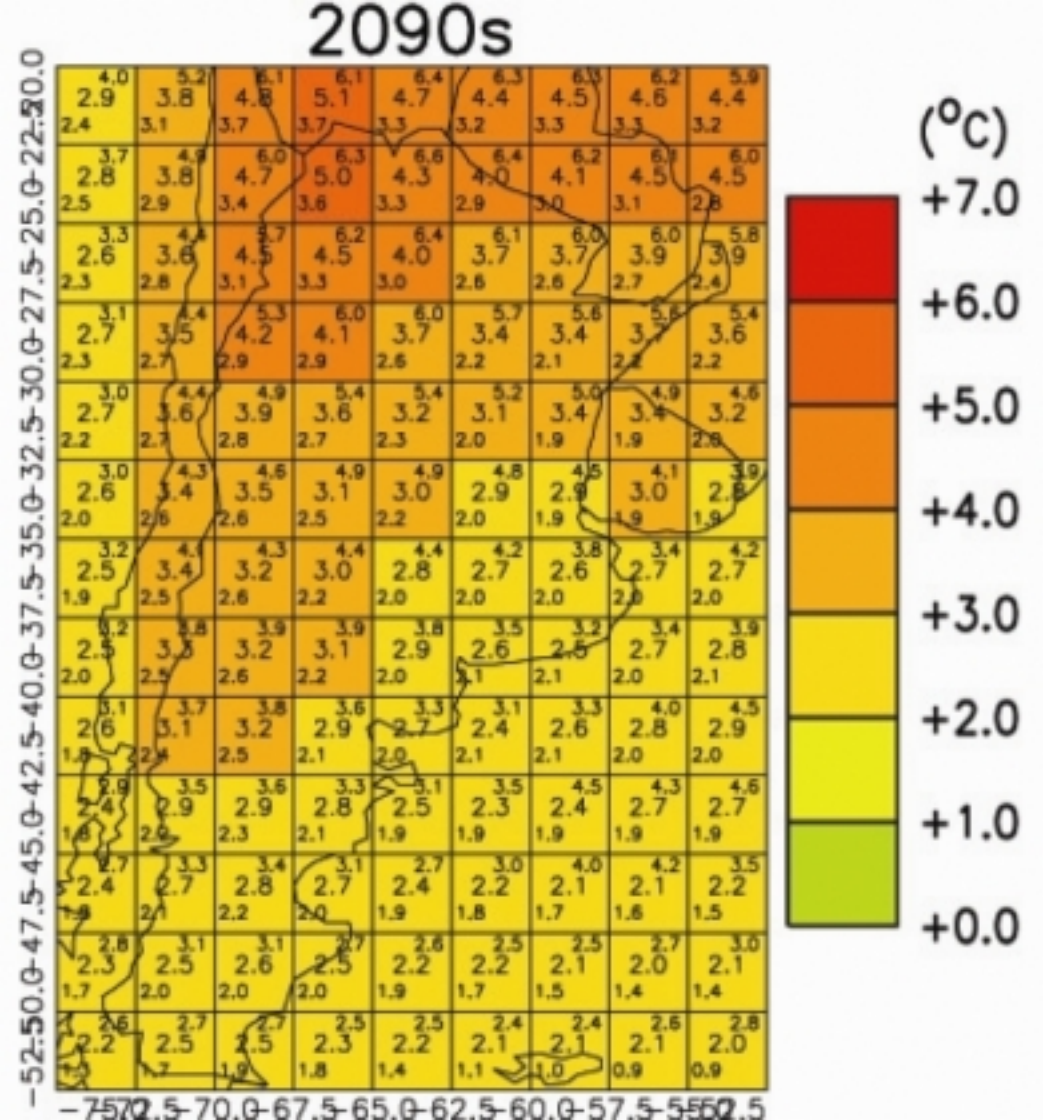
Graph 21: How will Argentina's precipitation change?

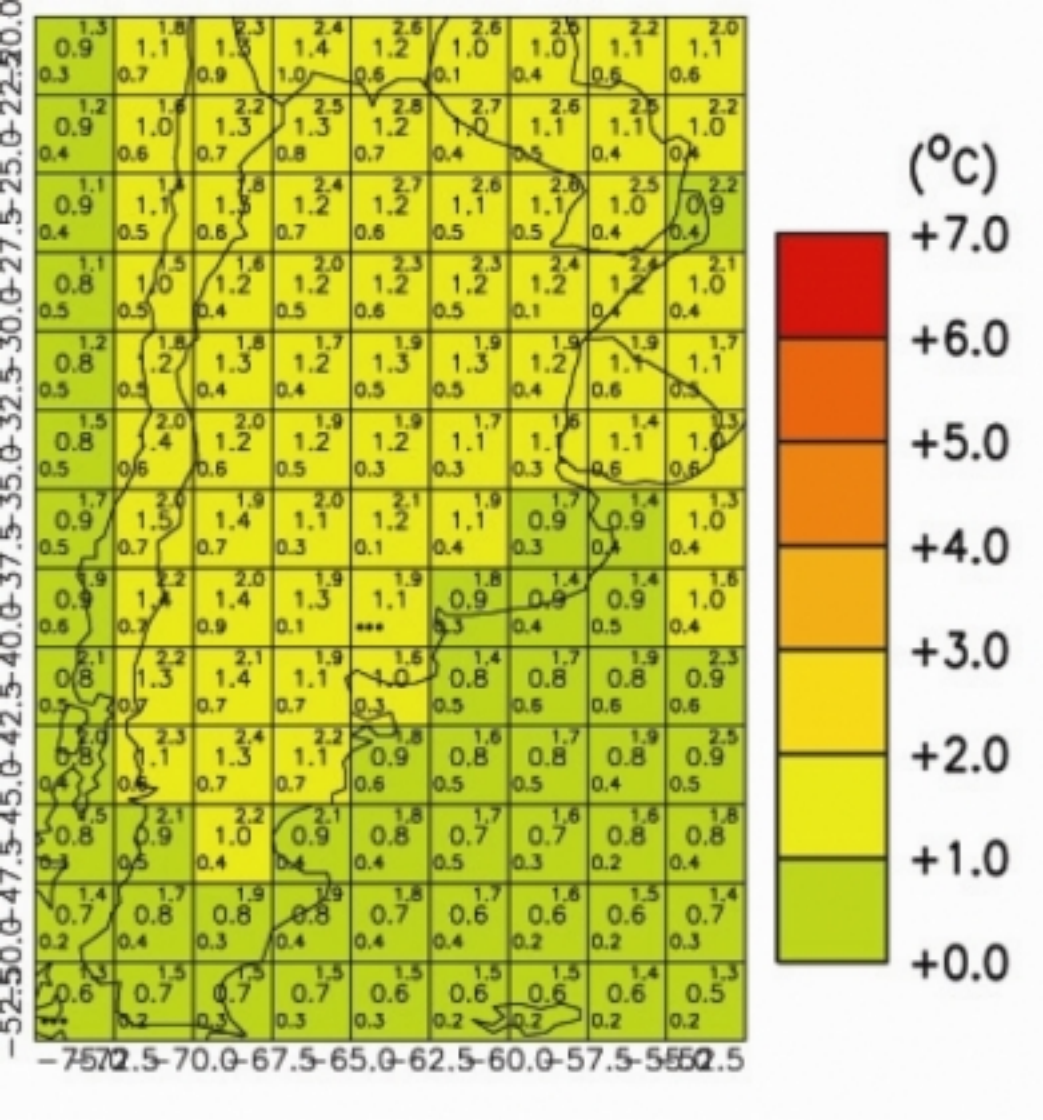
- This graph shows the 'precipitation anomaly' – the difference in rain or snowfall to the 1970-1999 average. If the graph shows a positive number, then it is wetter than the 1970-1999 average. If the graph shows a negative number, then it is drier
- The black line shows the actual precipitation anomaly for each year from 1960 to 2006. This is the difference in rain/ snowfall between the year's recorded precipitation and the average of all years between 1970 and 1999
- The brown line shows past precipitation anomalies as produced by a computer model with the brown shading showing the range produced by the model
- The green, blue and red lines show projected future precipitation from 2006 to 2100, according to three different carbon dioxide emission scenarios – green (low), blue (medium) and red (high). The shading around each line shows the range of precipitation that might be possible with each emission scenario
- Argentina's precipitation has increased at 3.5% per decade since the 1960s with most of the increase occurring in MAM and SON
- Rainfall is expected to increase in central to north-eastern Argentina
- Rainfall is expected to decrease in south-western Argentina

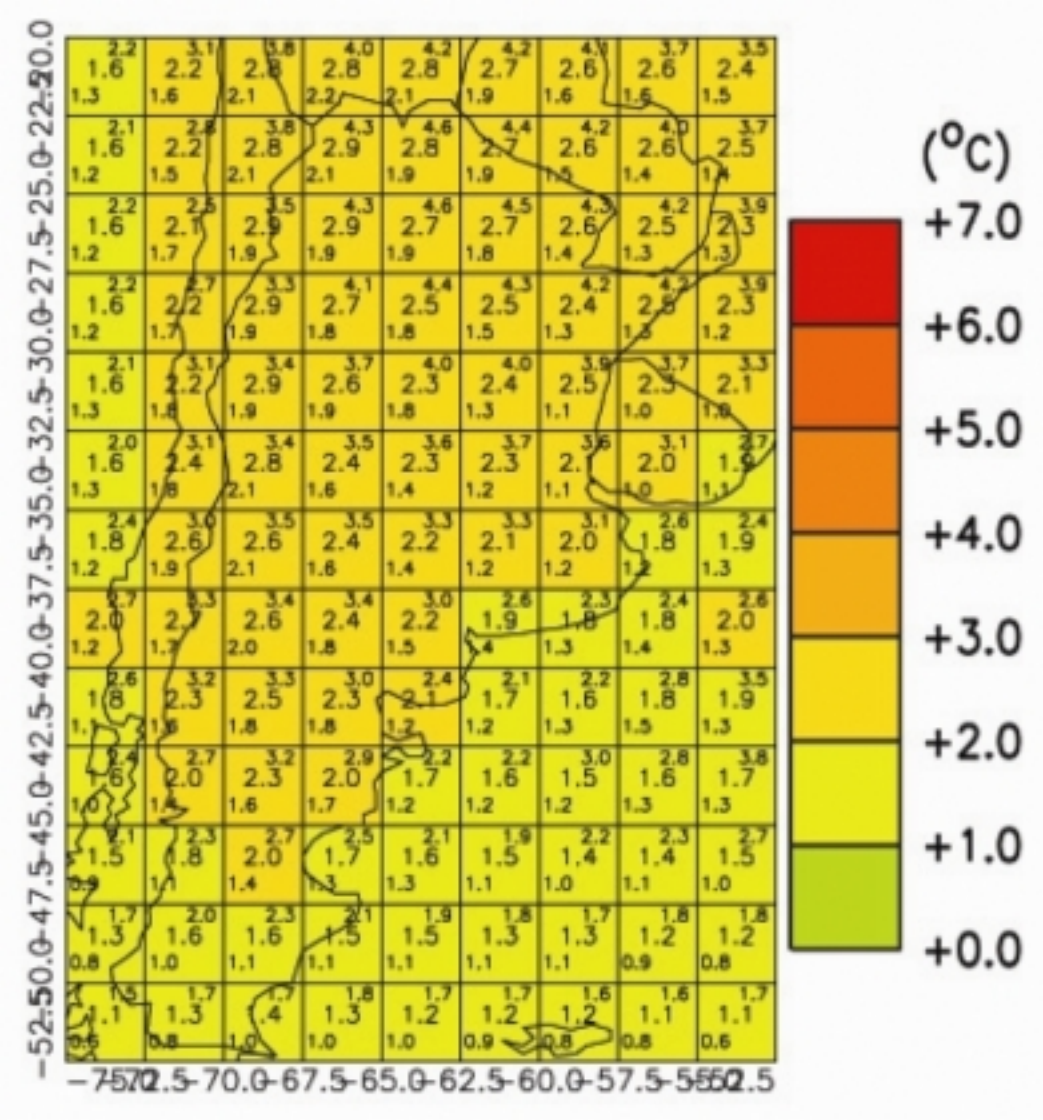

Argentina: Mean Temperature Anomaly Annual
Temperature Anomaly (°C)
6
4
2
0
−2
1960
1980
2000
2020
2040
2060
2080
2100
A2
A1B
B1

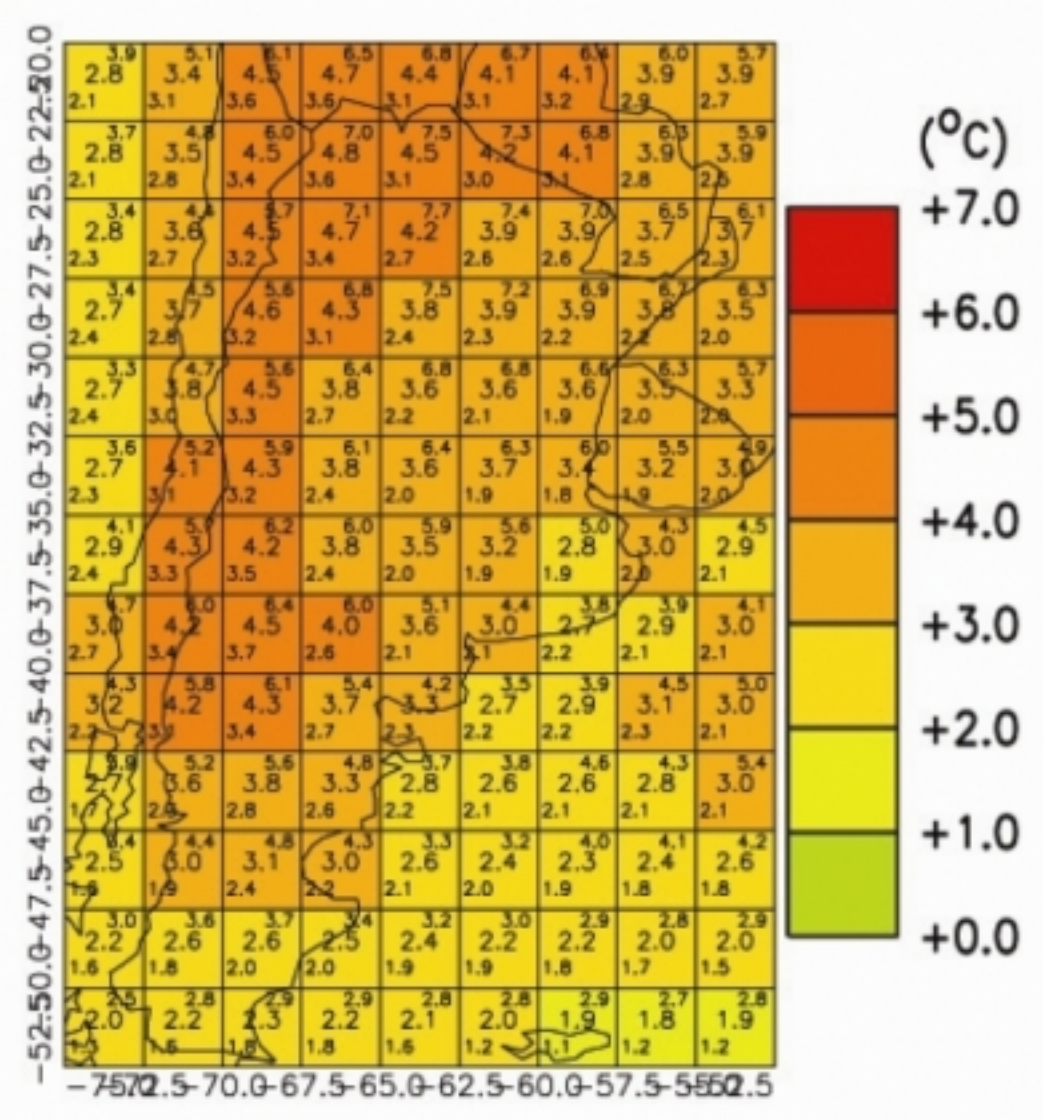

2030s
(°C)
+7.0
+6.0
+5.0
+4.0
+3.0
+2.0
+1.0
+0.0
-52.5 0.0-47.5-45.0-42.5-40.0-37.5-35.0-32.5-30.0-27.5-25.0-22.5-20.0
-75 72.5-70.0-67.5-65.0-62.5-60.0-57.5-55 52.5

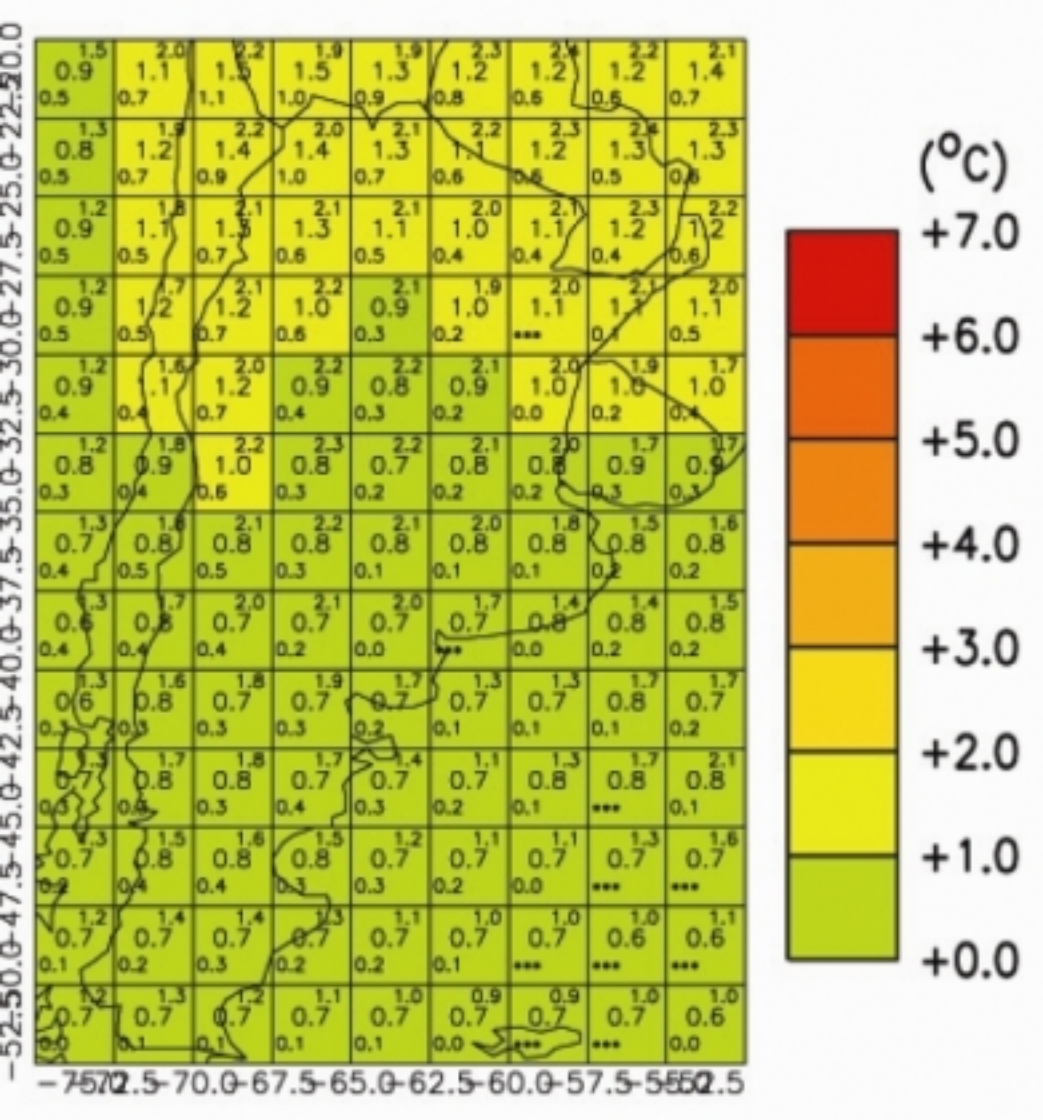

2060s
(°C)
+7.0
+6.0
+5.0
+4.0
+3.0
+2.0
+1.0
+0.0
-75.0
-72.5
-70.0
-67.5
-65.0
-62.5
-60.0
-57.5
-55.0
-52.5
-50.0
-47.5
-45.0
-42.5
-40.0
-37.5
-35.0
-32.5
-30.0
-27.5
-25.0
-22.5
-20.0

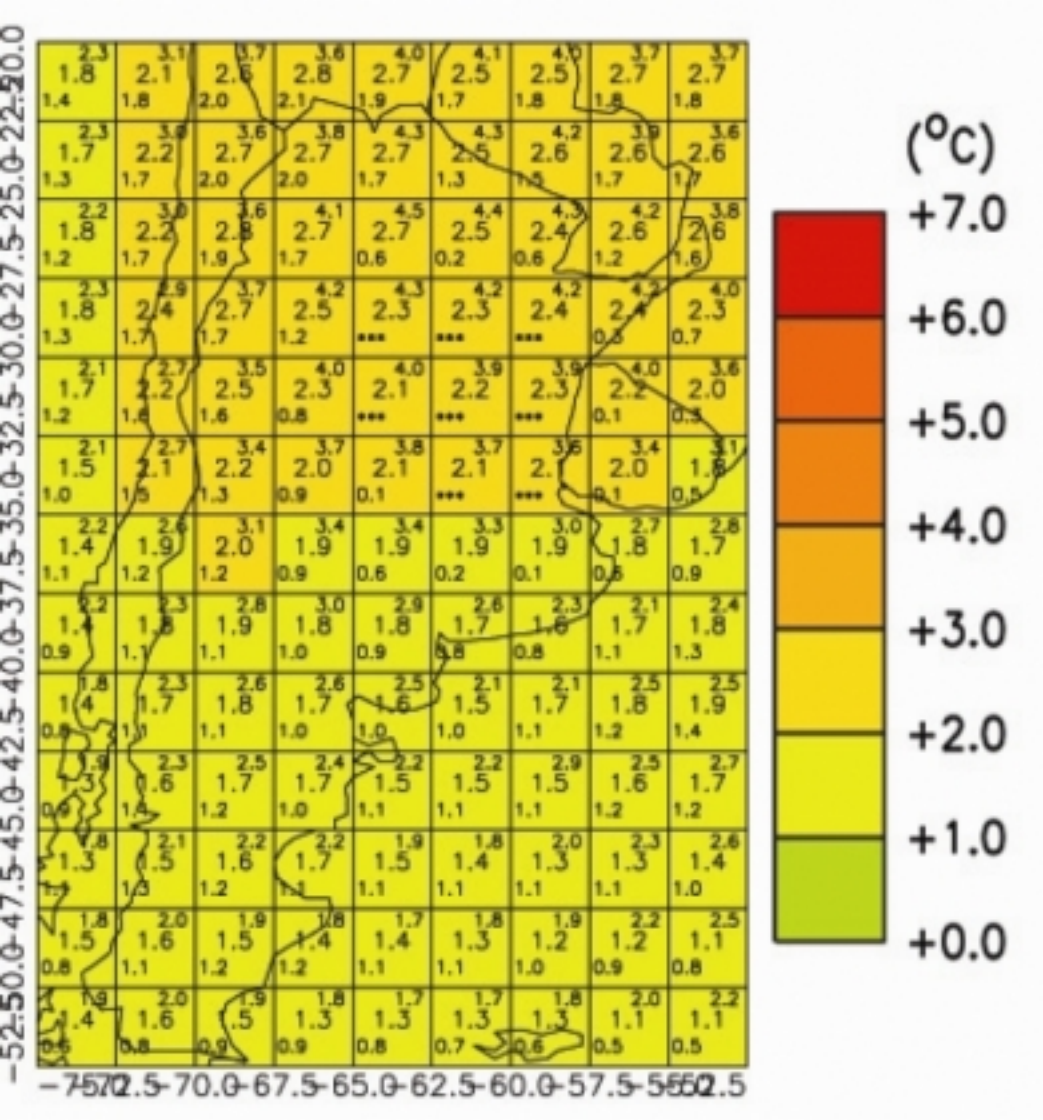

2090s
(°C)
+7.0
+6.0
+5.0
+4.0
+3.0
+2.0
+1.0
+0.0
-75.0
-72.5
-70.0
-67.5
-65.0
-62.5
-60.0
-57.5
-55.0
-52.5
-50.0
-47.5
-45.0
-42.5
-40.0
-37.5
-35.0
-32.5
-30.0
-27.5
-25.0
-22.5
-20.0

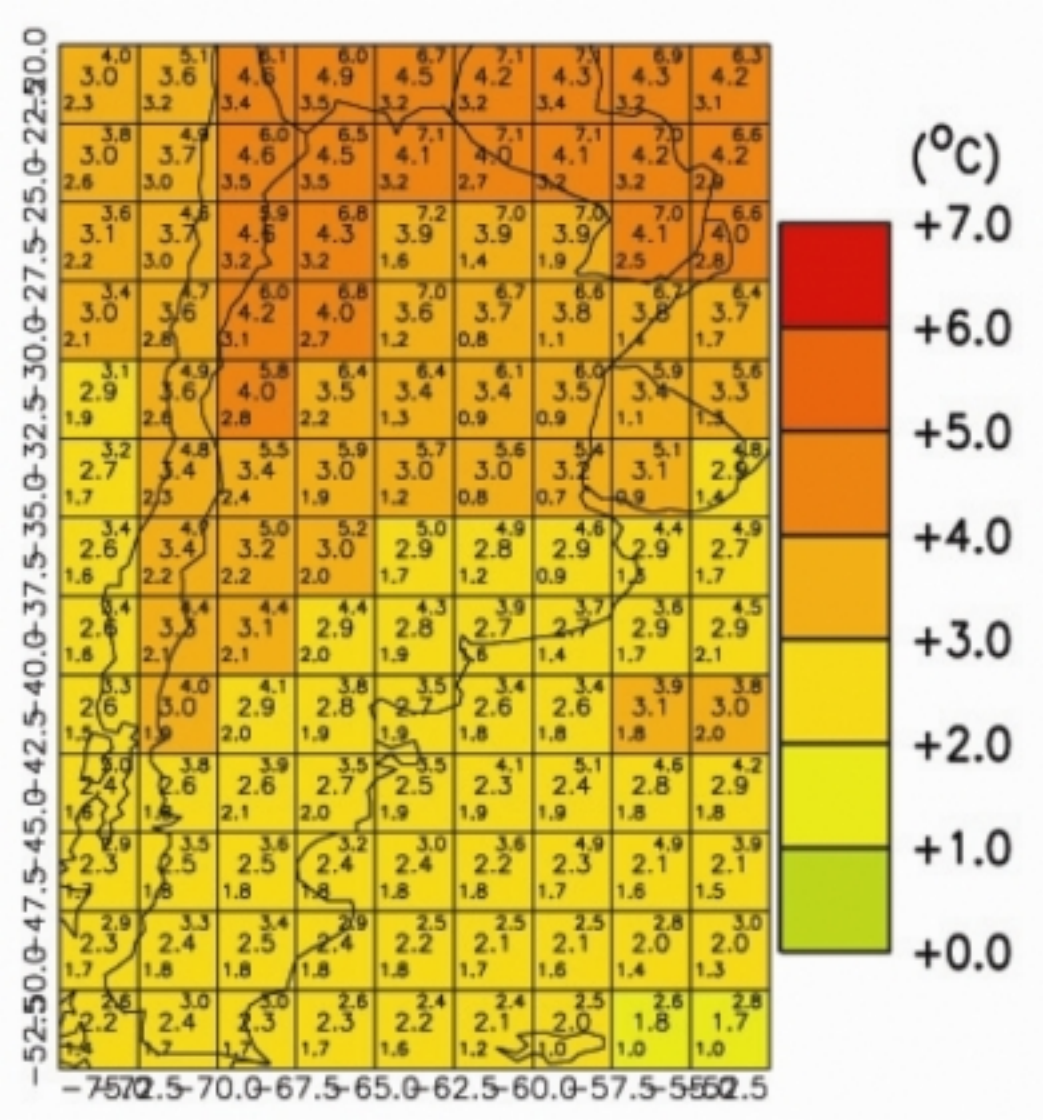

(°C)
+7.0
+6.0
+5.0
+4.0
+3.0
+2.0
+1.0
+0.0
-75.0
-72.5
-70.0
-67.5
-65.0
-62.5
-60.0
-57.5
-55.0
-52.5
-50.0
-47.5
-45.0
-42.5
-40.0
-37.5
-35.0
-32.5
-30.0
-27.5
-25.0
-22.5

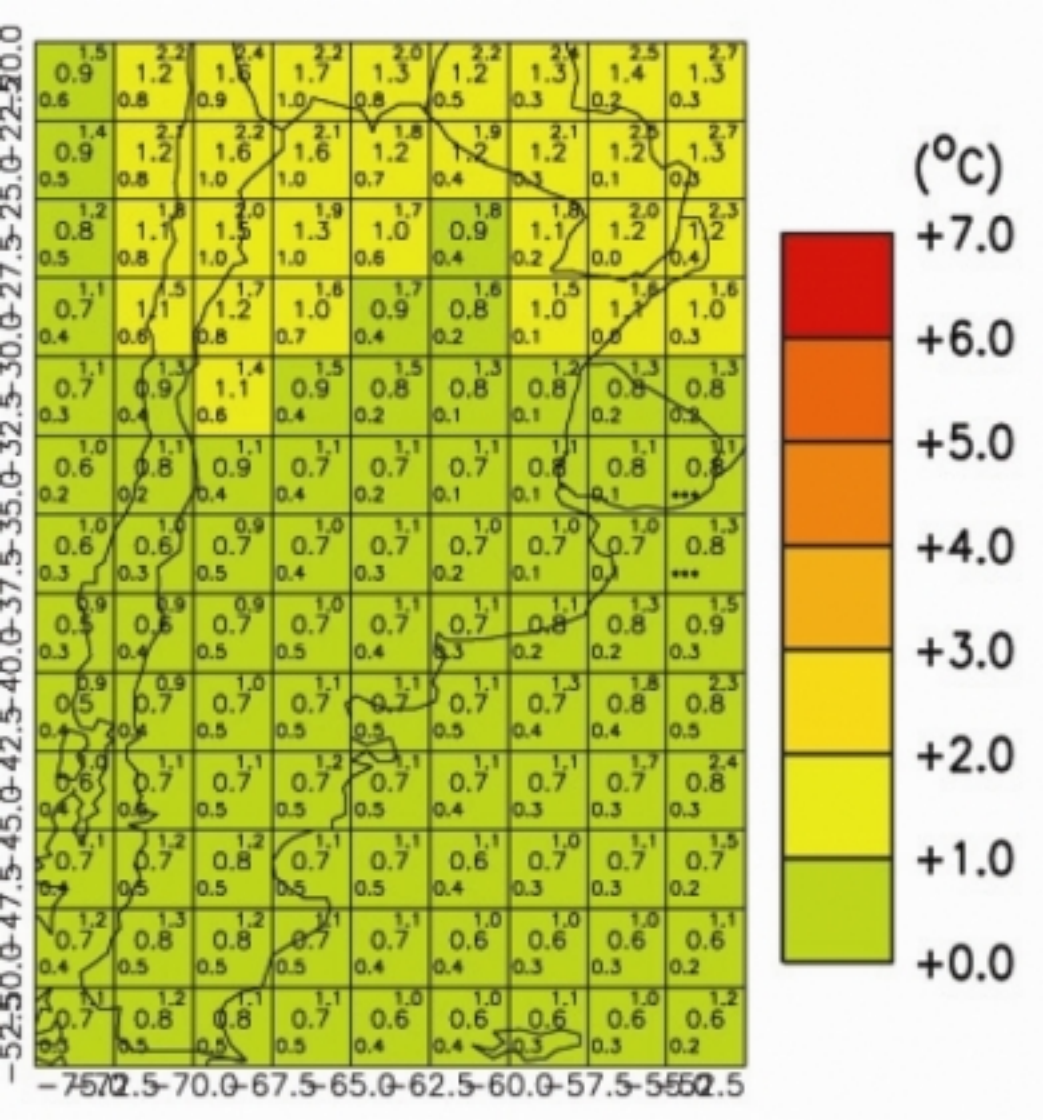

(°C)
+7.0
+6.0
+5.0
+4.0
+3.0
+2.0
+1.0
+0.0
-52.5 -50.0 -47.5 -45.0 -42.5 -40.0 -37.5 -35.0 -32.5 -30.0 -27.5 -25.0 -22.5 -20.0
-75 -72.5 -70.0 -67.5 -65.0 -62.5 -60.0 -57.5 -55 -52.5

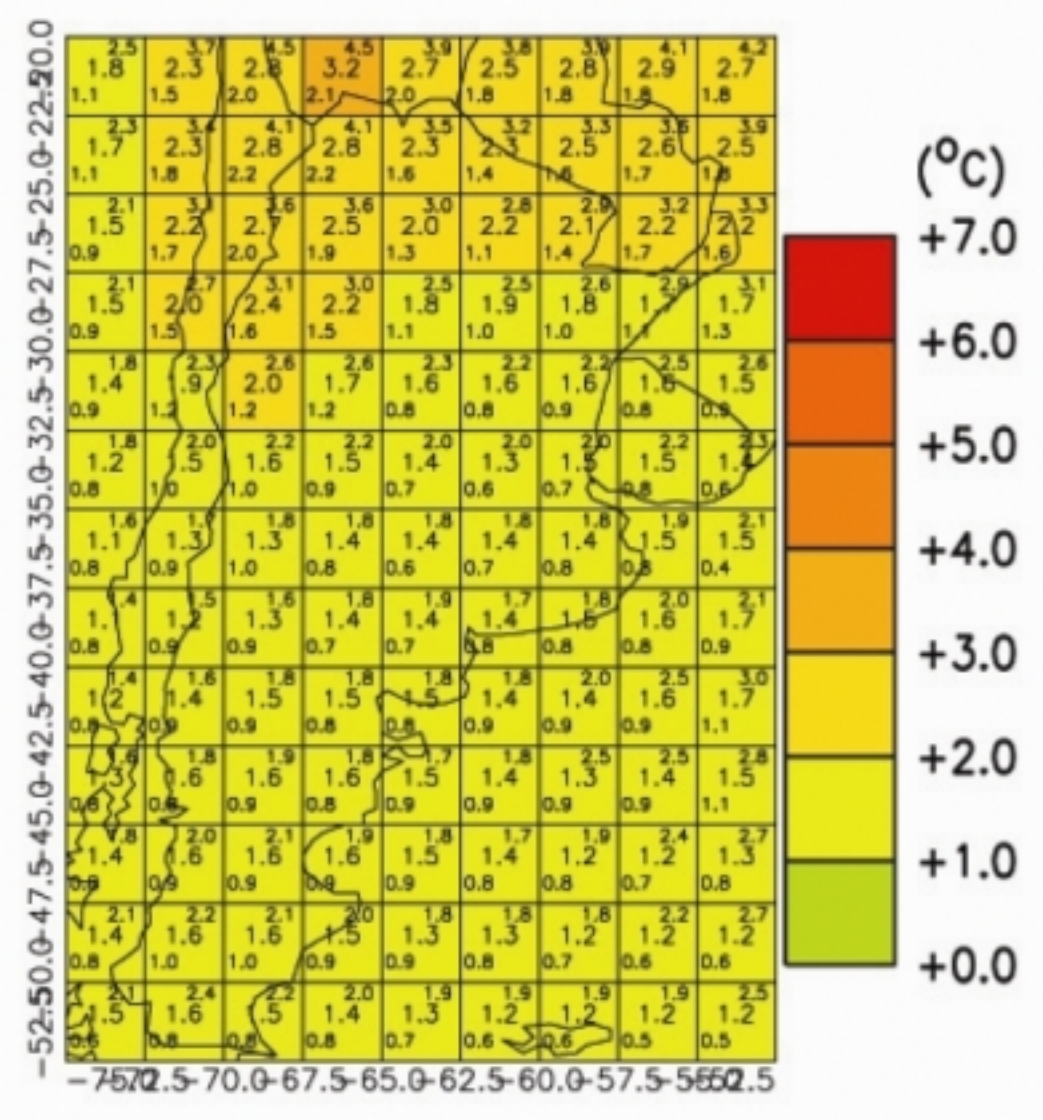

(°C)
+7.0
+6.0
+5.0
+4.0
+3.0
+2.0
+1.0
+0.0
-75.0
-72.5
-70.0
-67.5
-65.0
-62.5
-60.0
-57.5
-55.0
-52.5
-50.0
-47.5
-45.0
-42.5
-40.0
-37.5
-35.0
-32.5
-30.0
-27.5
-25.0
-22.5
-20.0

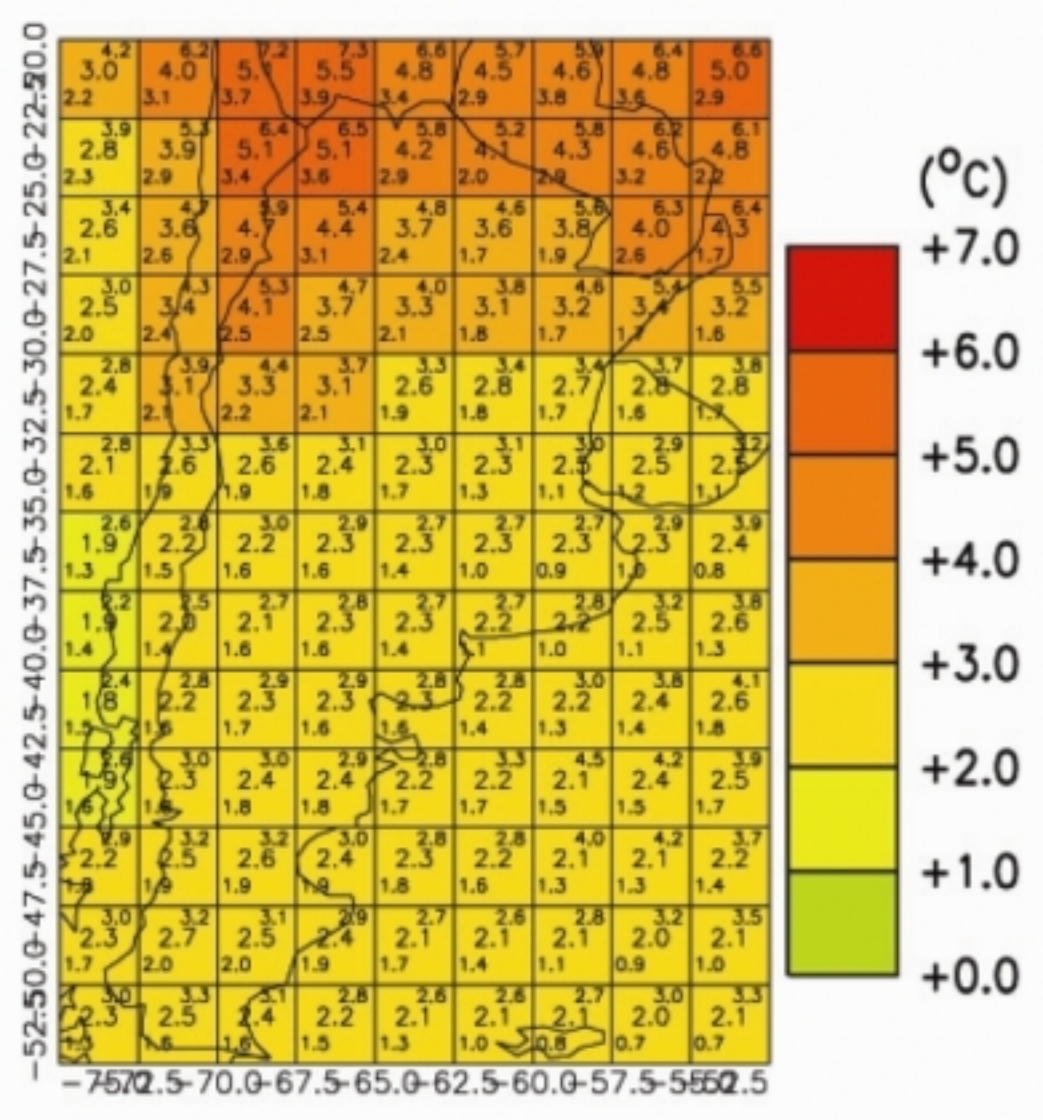

(°C)
+7.0
+6.0
+5.0
+4.0
+3.0
+2.0
+1.0
+0.0
-75
-72.5
-70.0
-67.5
-65.0
-62.5
-60.0
-57.5
-55
-52.5
-50.0
-47.5
-45.0
-42.5
-40.0
-37.5
-35.0
-32.5
-30.0
-27.5
-25.0
-22.5
-20.0

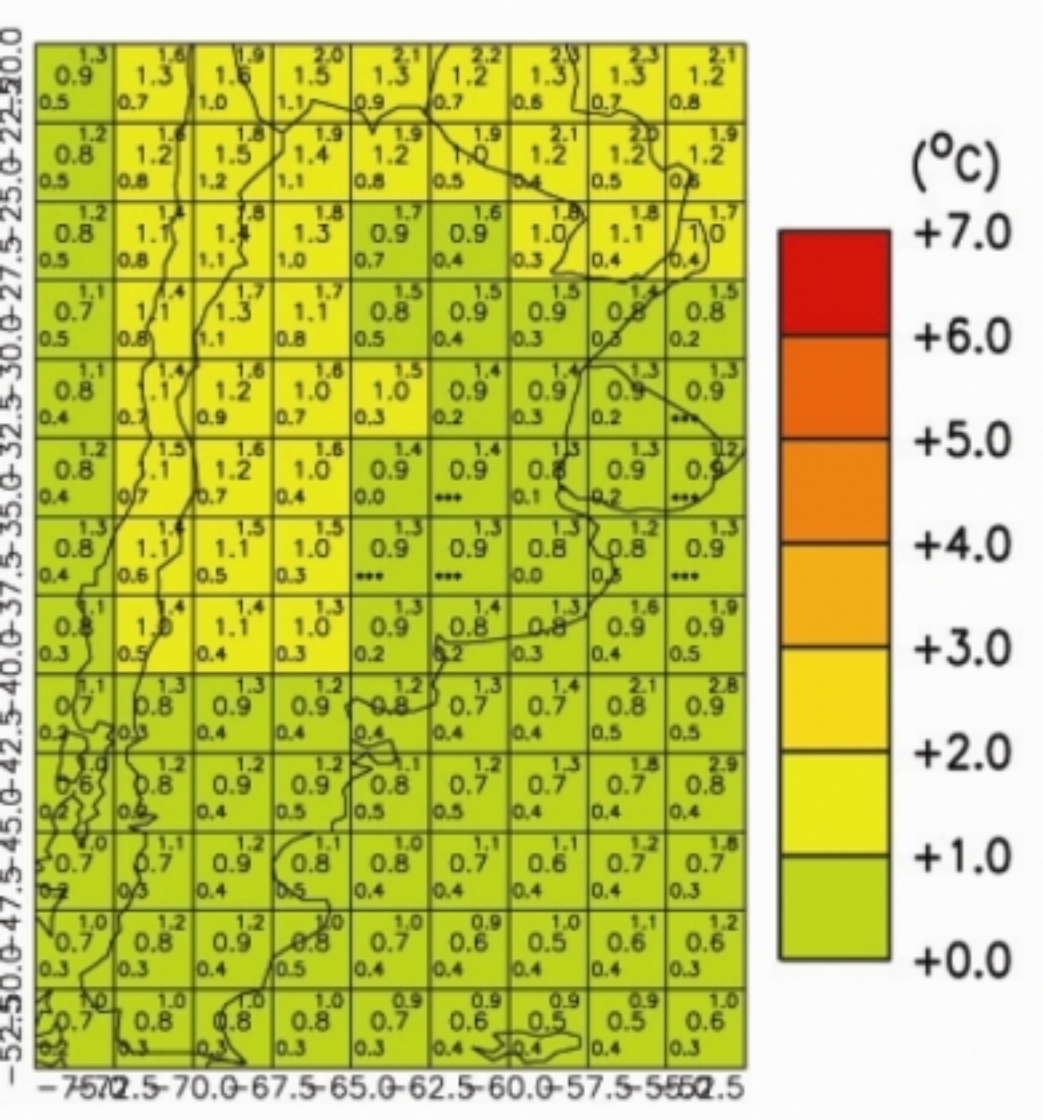

(°C)
+7.0
+6.0
+5.0
+4.0
+3.0
+2.0
+1.0
+0.0
-52.5 -50.0 -47.5 -45.0 -42.5 -40.0 -37.5 -35.0 -32.5 -30.0 -27.5 -25.0 -22.5 -20.0
-75.0 -72.5 -70.0 -67.5 -65.0 -62.5 -60.0 -57.5 -55.0 -52.5

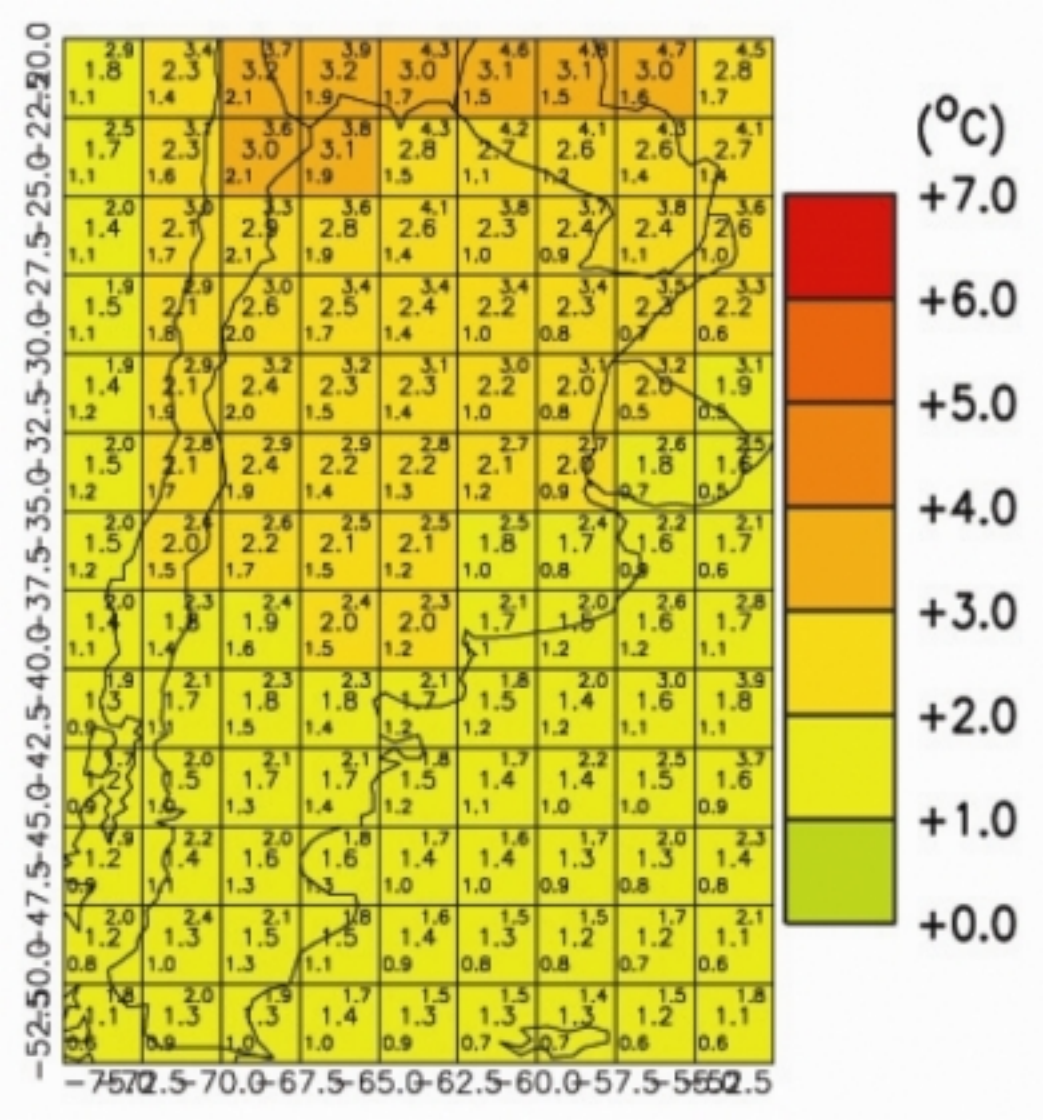

(°C)
+7.0
+6.0
+5.0
+4.0
+3.0
+2.0
+1.0
+0.0
-75.0
-72.5
-70.0
-67.5
-65.0
-62.5
-60.0
-57.5
-55.0
-52.5
-50.0
-47.5
-45.0
-42.5
-40.0
-37.5
-35.0
-32.5
-30.0
-27.5
-25.0
-22.5
-20.0

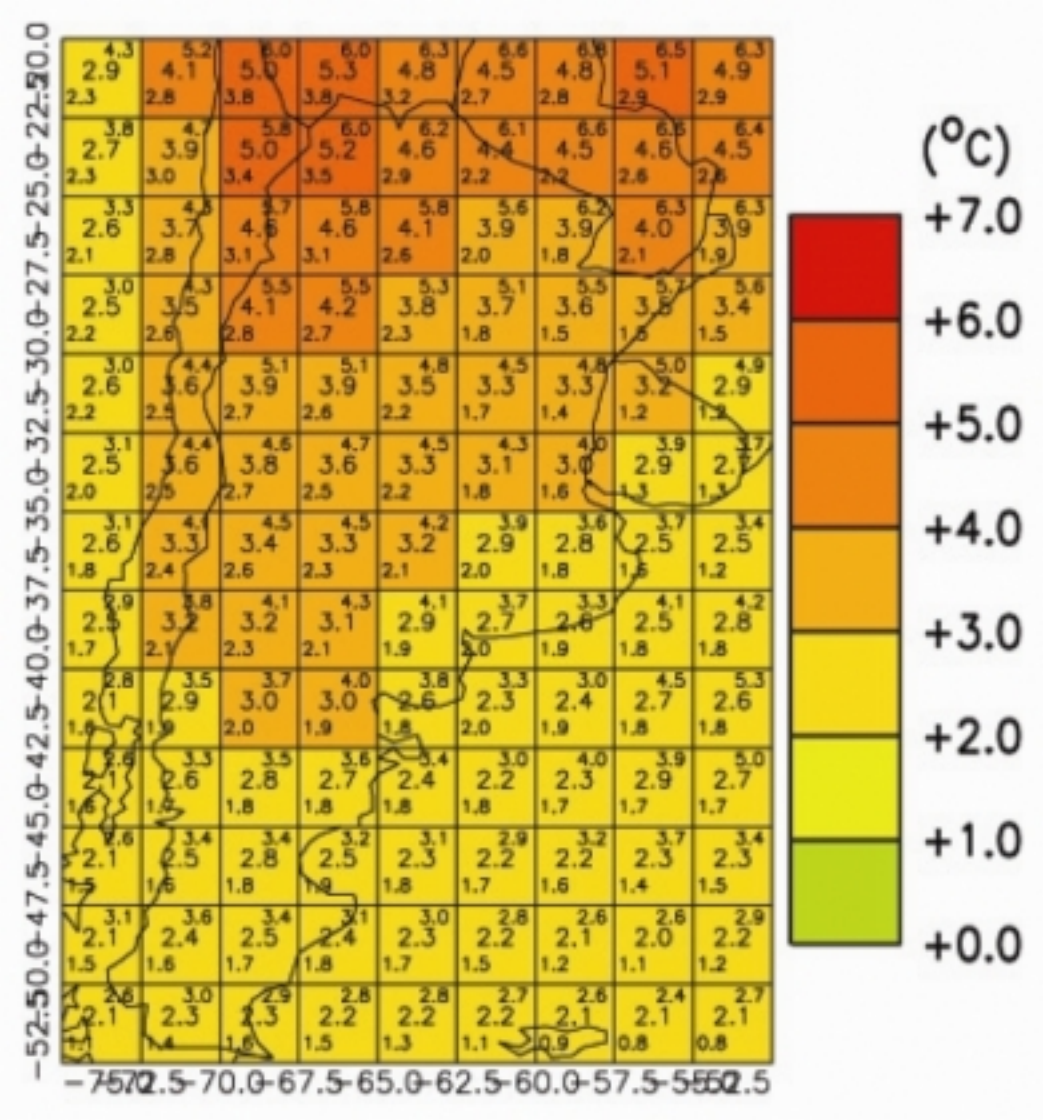

(°C)
+7.0
+6.0
+5.0
+4.0
+3.0
+2.0
+1.0
+0.0
-75.0
-72.5
-70.0
-67.5
-65.0
-62.5
-60.0
-57.5
-55.0
-52.5
-50.0
-47.5
-45.0
-42.5
-40.0
-37.5
-35.0
-32.5
-30.0
-27.5
-25.0
-22.5
-20.0

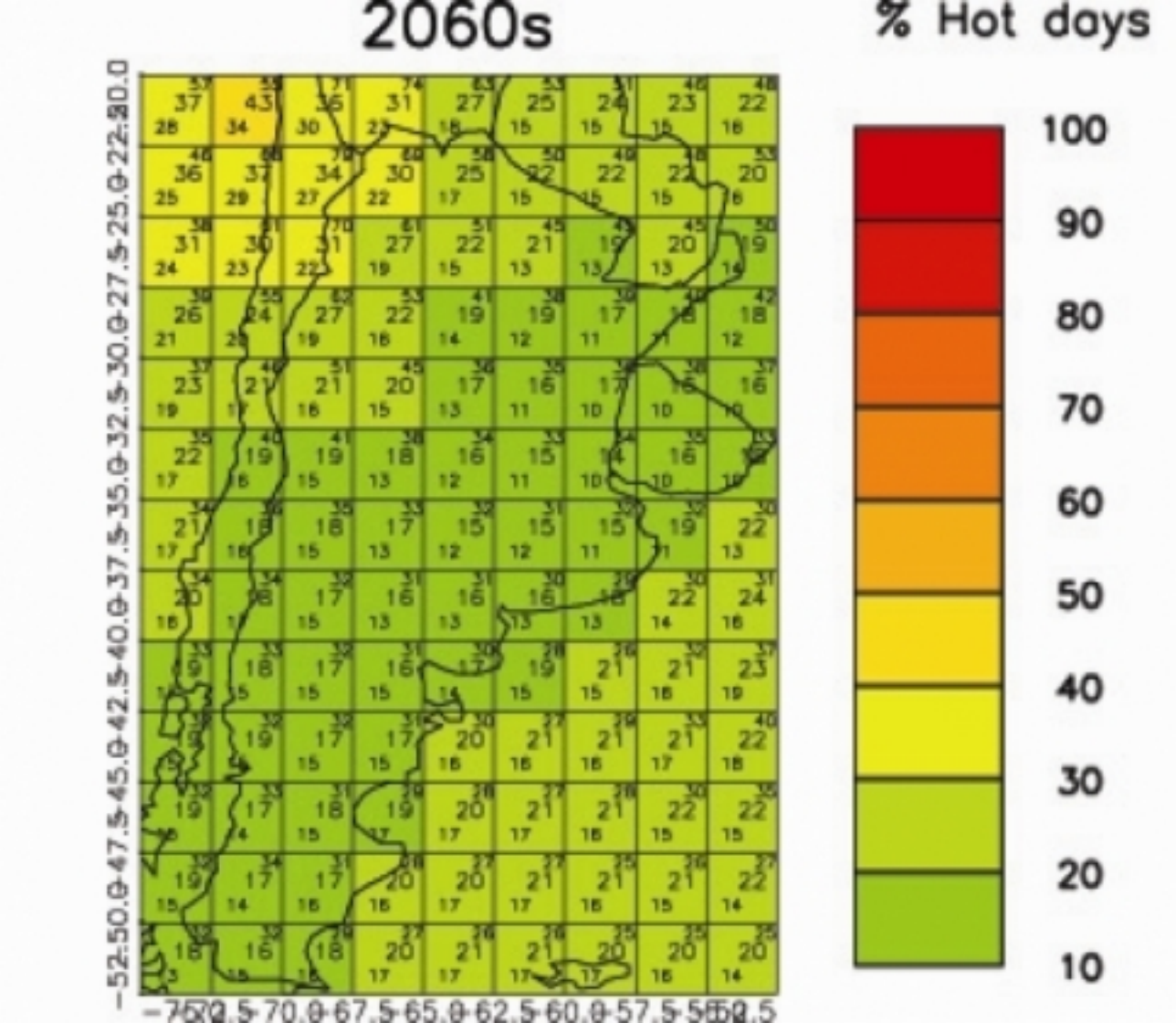

(°C)
+7.0
+6.0
+5.0
+4.0
+3.0
+2.0
+1.0
+0.0
-52.5 -50.0 -47.5 -45.0 -42.5 -40.0 -37.5 -35.0 -32.5 -30.0 -27.5 -25.0 -22.5 -20.0
-75.0 -72.5 -70.0 -67.5 -65.0 -62.5 -60.0 -57.5 -55.0 -52.5

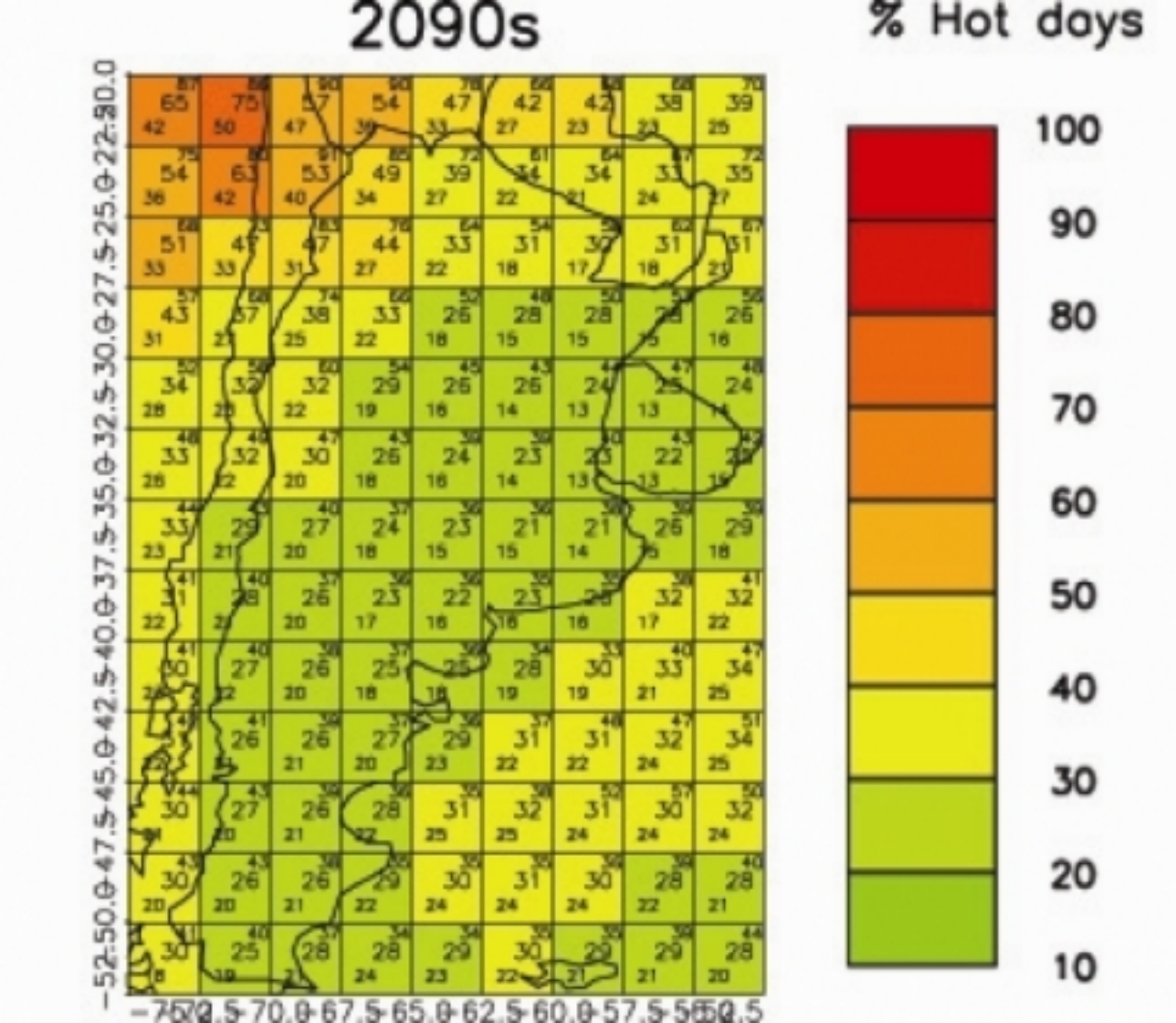

(°C)
+7.0
+6.0
+5.0
+4.0
+3.0
+2.0
+1.0
+0.0
-75.0
-72.5
-70.0
-67.5
-65.0
-62.5
-60.0
-57.5
-55.0
-52.5
-50.0
-47.5
-45.0
-42.5
-40.0
-37.5
-35.0
-32.5
-30.0
-27.5
-25.0
-22.5
-20.0

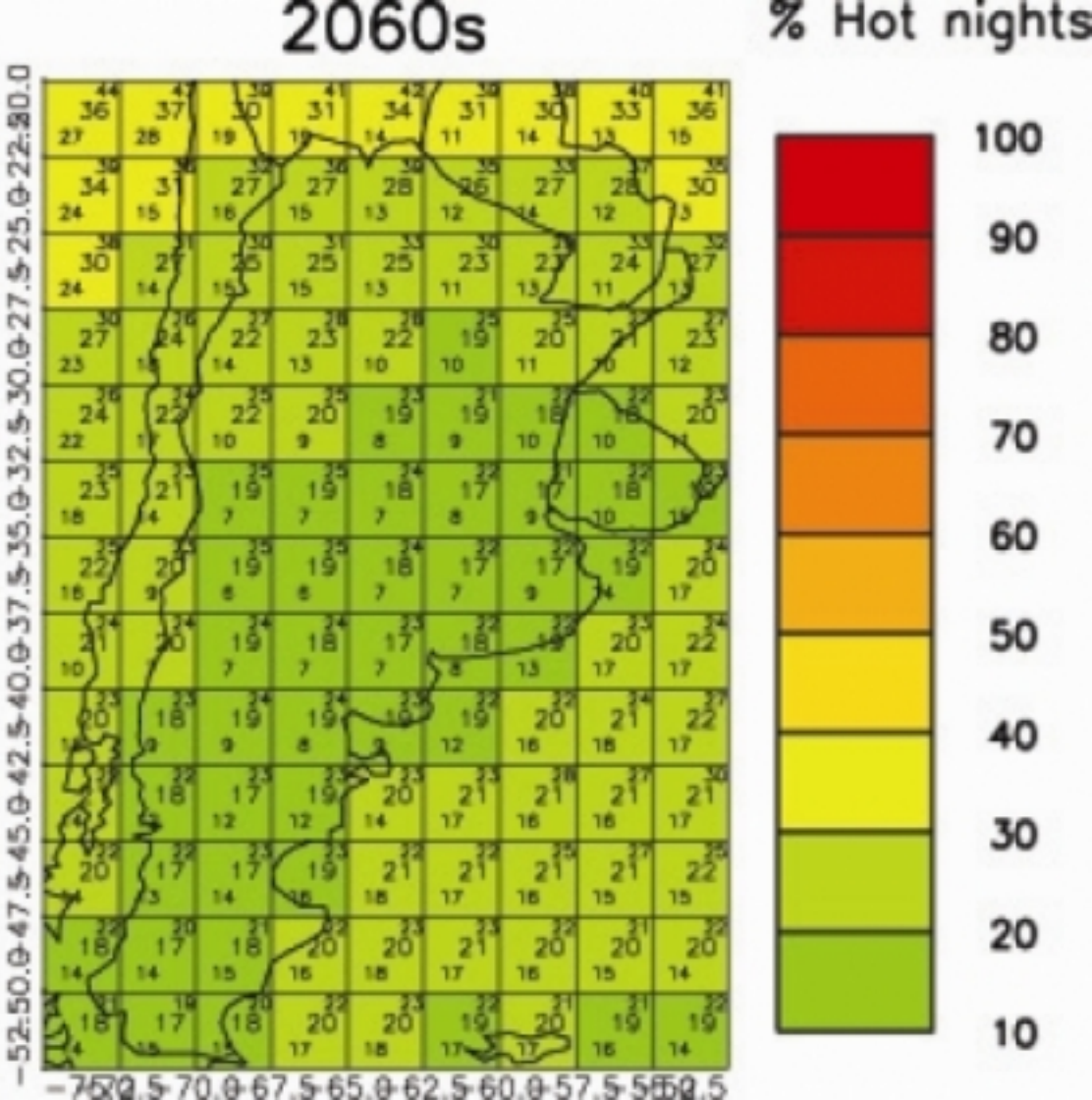

(°C)
+7.0
+6.0
+5.0
+4.0
+3.0
+2.0
+1.0
+0.0
-75.0
-72.5
-70.0
-67.5
-65.0
-62.5
-60.0
-57.5
-55.0
-52.5
-50.0
-47.5
-45.0
-42.5
-40.0
-37.5
-35.0
-32.5
-30.0
-27.5
-25.0
-22.5
-20.0

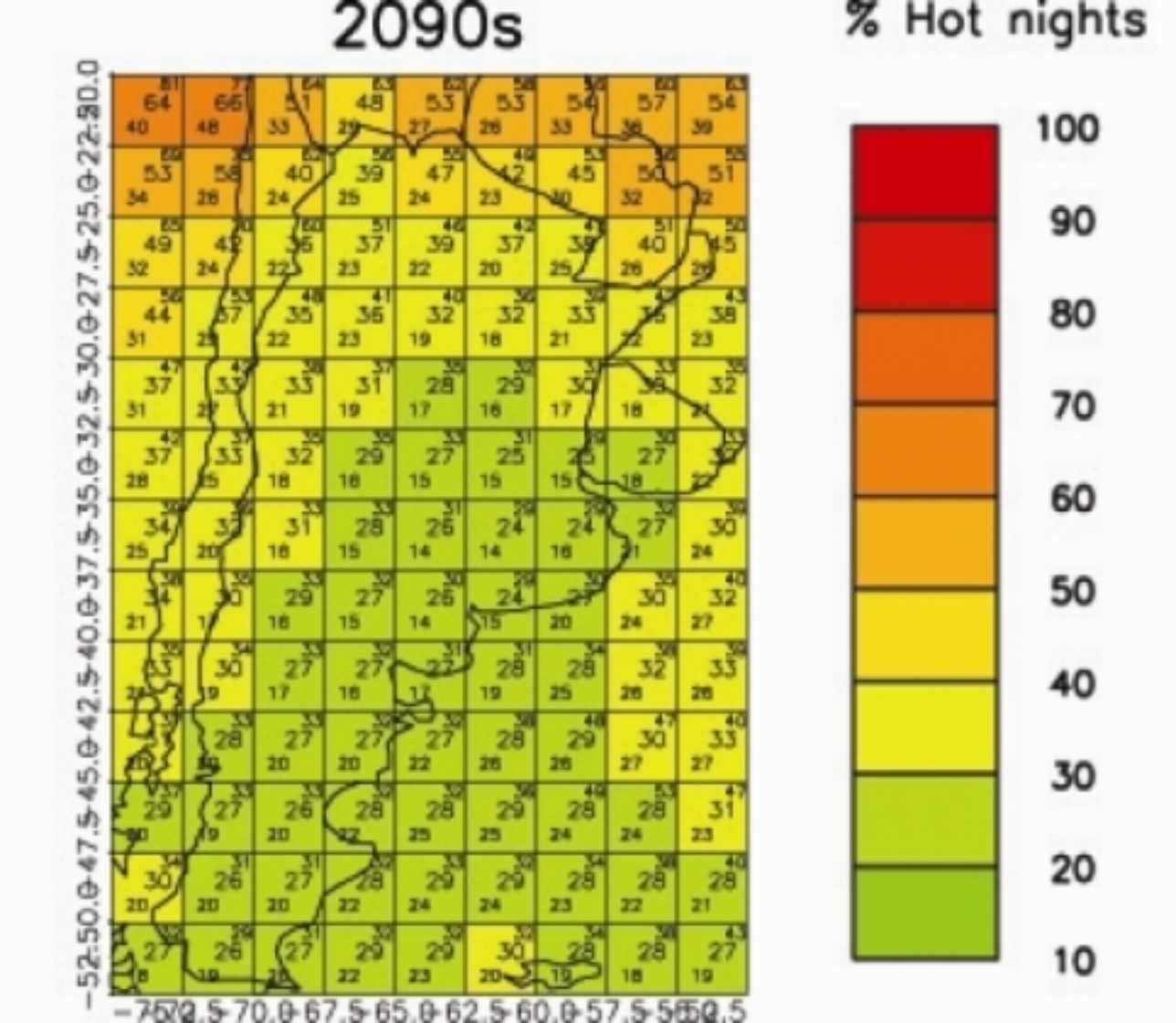

(°C)
+7.0
+6.0
+5.0
+4.0
+3.0
+2.0
+1.0
+0.0
-75.0
-72.5
-70.0
-67.5
-65.0
-62.5
-60.0
-57.5
-55.0
-52.5
-50.0
-47.5
-45.0
-42.5
-40.0
-37.5
-35.0
-32.5
-30.0
-27.5
-25.0
-22.5
-20.0

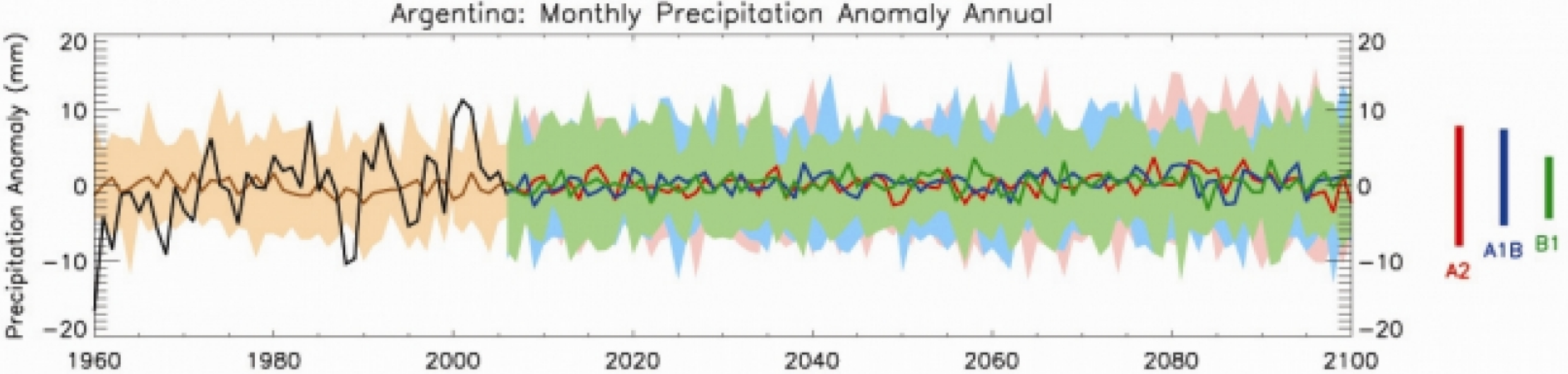

(°C)
+7.0
+6.0
+5.0
+4.0
+3.0
+2.0
+1.0
+0.0
-52.5 -50.0 -47.5 -45.0 -42.5 -40.0 -37.5 -35.0 -32.5 -30.0 -27.5 -25.0 -22.5 -20.0
-75.0 -72.5 -70.0 -67.5 -65.0 -62.5 -60.0 -57.5 -55.0 -52.5


2060s
% Hot days
100
90
80
70
60
50
40
30
20
10
−52.5 0-47.5-45.0-42.5-40.0-37.5-35.0-32.5-30.0-27.5-25.0-22.5 0
−75.0 72.5 70.0 67.5 65.0 62.5 60.0 57.5 55.0 52.5


2090s
% Hot days
100
90
80
70
60
50
40
30
20
10
−52.5
−50.0
−47.5
−45.0
−42.5
−40.0
−37.5
−35.0
−32.5
−30.0
−27.5
−25.0
−22.5
−20.0
−75.0
−72.5
−70.0
−67.5
−65.0
−62.5
−60.0
−57.5
−55.0
−52.5


2060s
% Hot nights
100
90
80
70
60
50
40
30
20
10
-52.5
-50.0
-47.5
-45.0
-42.5
-40.0
-37.5
-35.0
-32.5
-30.0
-27.5
-25.0
-22.5
-20.0
-75.0
-72.5
-70.0
-67.5
-65.0
-62.5
-60.0
-57.5


2090s
% Hot nights
100
90
80
70
60
50
40
30
20
10
80.0
77.5
75.0
72.5
70.0
67.5
65.0
62.5
60.0
57.5
55.0
52.5
50.0
47.5
45.0
42.5
40.0
37.5
35.0
32.5
30.0
27.5
25.0
22.5


Argentina: Monthly Precipitation Anomaly Annual
Precipitation Anomaly (mm)
20
10
0
−10
−20
1960
1980
2000
2020
2040
2060
2080
2100
A2
A1B
B1