

Marche Region. 2015 Climate Analysis.

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Temperatures

El Niño strongly influenced 2015, with a new average global record above the last-year record 0,14°C (for [details see here](#)). **Even in the Marche Region 2015 was the hottest year since 1961 (temperature series starting year), reaching the 2014 record.**

According to data collected by the [ASSAM agrometeorological network](#), 14,5°C was the annual average temperature with a difference of +0,9°C respect the 1981-2010 average. The 2015 was the 5th consecutive hottest year above the average (2010 was the last coldest year: -0,3°C respect the thirty-years value), confirming the progressive warming of the Region over the last decades in accordance with the increased thirty-years annual temperatures since 1961 (*Table 1*).

In all months, expect for October, temperatures were above the average (*Figure 2*).

In July the greatest gap of +3,4°C based on 1981-2010, was due to the 26,7°C regional average temperature; **therefore, July 2015, was the absolute hottest month in the Marche Region since 1961**, i.e. since the beginning of the available historical data set (August 2003 the hottest, 26,5°C previous regional record). The sole negative abnormality of October was slight: -0,4°C on the reference thirty-year average.

All seasons were hotter than the average (*Table 2*). In Summer the greatest difference was reached by an average temperature of 23,9°C, reaching a difference of +1, 6°C respect to 1981-2010 so to come 3rd among the hottest summers since 1961 (exceeded only by the ever 2003 and [2012](#) hottest summers).

Thirty-years	Mean (°C)	Anomaly (°C)
1961-1990	13,1	-
1971-2000	13,3	0,2
1981-2010	13,6	0,5
1986-2015	13,8	0,7

Table 1. Marche Region. Thirty-years mean temperature and anomaly to starting thirty-years (°C)

Season	Mean temperature (°C)		
	2015	1981-2010	Anomaly
Winter (Dec. 2014 – Feb. 2015)	6,5	5,5	1,0
Spring (March - May)	13,1	12,3	0,8
Summer (June – August)	23,9	22,2	1,6
Fall (Sept. - Nov.)	14,7	14,3	0,4

Table 2. Marche Region. Seasonal mean temperature and anomaly respect the 1981-2010 (°C)

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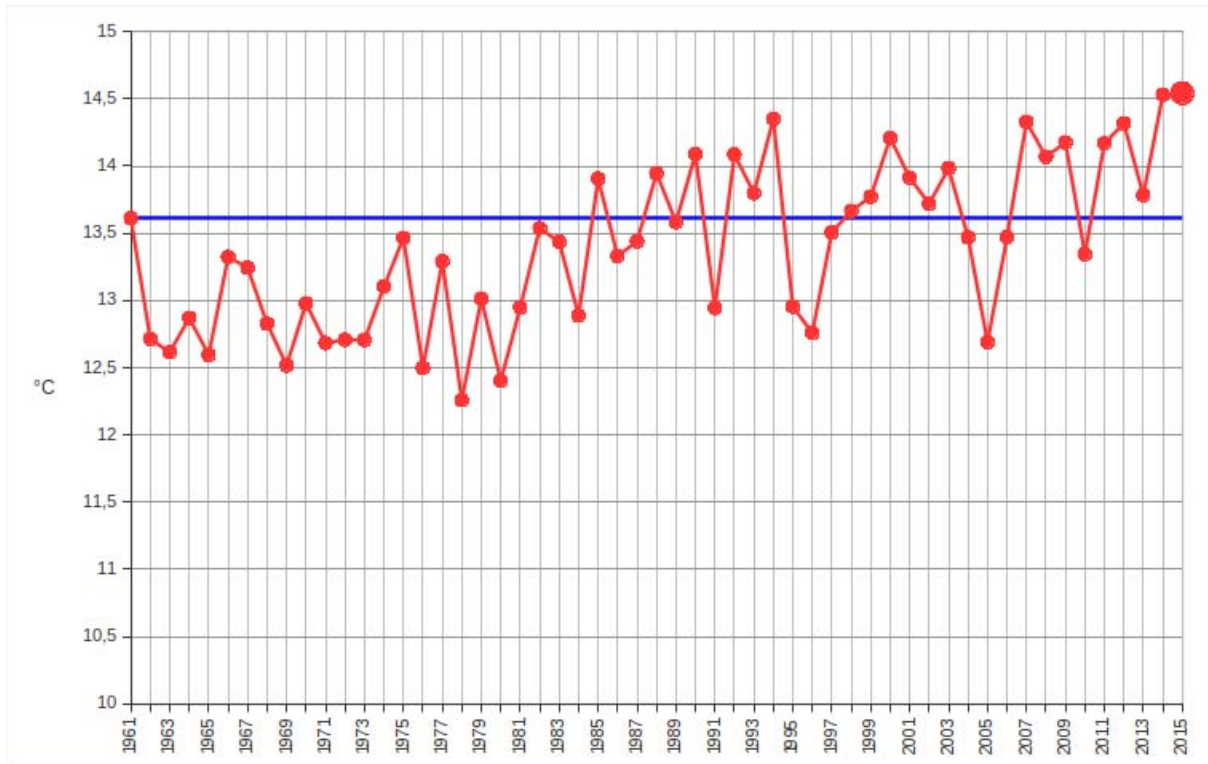


Figure 1. Marche Region. 1961-2015 annual mean temperature (°C) (red line) compared to the 1981-2010 reference average (blue line)

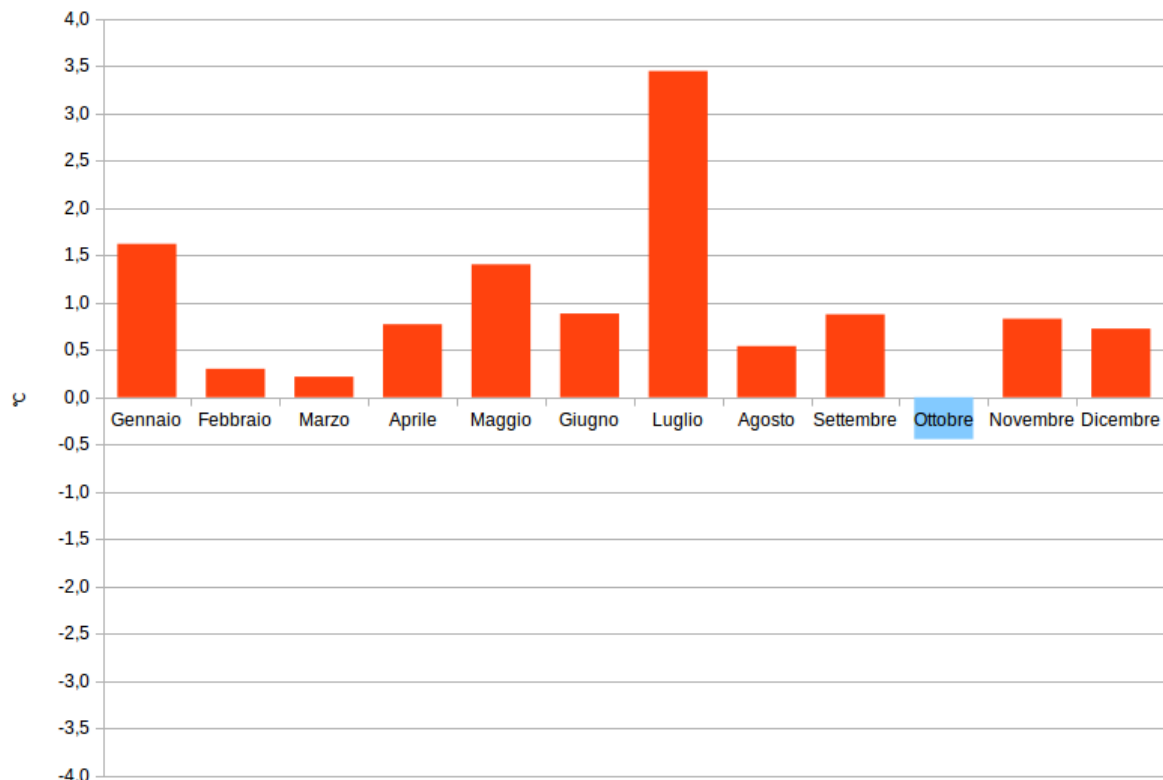


Figure 2. Marche Region. 2015 monthly anomaly temperature (°C) respect the 1981-2010 average

Precipitation

The particularly rainy period started in 2012 goes on in 2015 with a regional precipitation above the 957mm average corresponding to an increase of +158mm on the 1981-2010 average. Unlike temperatures, these last years' rainfall seem to settle down after a general decreasing trend (*Table 3*).

In details on a monthly (*Figure 4*) basis, the first year quarter was particularly rainy; March was the rainiest 2015 month, with 165mm of total regional average rainfall which is a +100mm on the 1981-2010 average, 3rd March record since 1961 (ahead 2008 and 2011). Afterwards a rather swinging period followed with a rainy decreasing trend at the year-end, particularly in December when the regional total reached barely 2mm (!), **the driest December from 1961**.

All seasons' rainfall were in, except for summer, above the average. In particular, the Spring rainfall of 345mm and difference of 152mm to 1981-2010, established a **new spring record since 1961** (*Table 4*).

Thirty-years	Total (mm)	Anomaly (mm)
1961-1990	845	-
1971-2000	820	-25,1
1981-2010	799	-46,1
1986-2015	828	-17,8

Table 3. Marche Region. Total average thirty-year precipitation and difference to the starting thirty-year period (mm)

Season	Total precipitation (mm)		
	2015	1981-2010	Anomaly
Winter (Dec. 2014 – Feb. 2015)	268	193	75
Spring (March - May)	345	193	152
Summer (June – August)	132	164	-32
Fall (Sept. - Nov.)	284	247	37

Table 4. Marche Region. Seasonal total precipitations and difference from the 1981-2010 (mm)

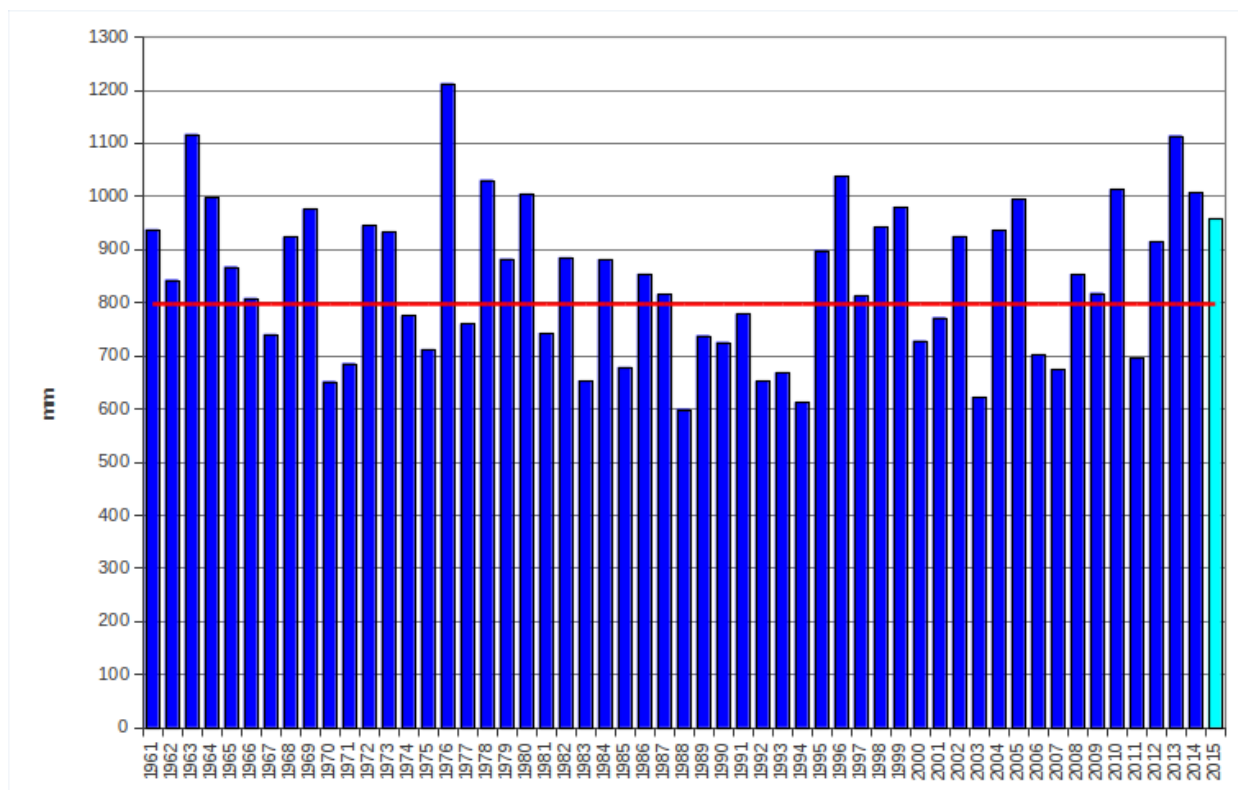


Figure 3. Marche Region. 1961-2015 annual average total precipitation (mm). The red line shows the 1981-2010 (mm) average

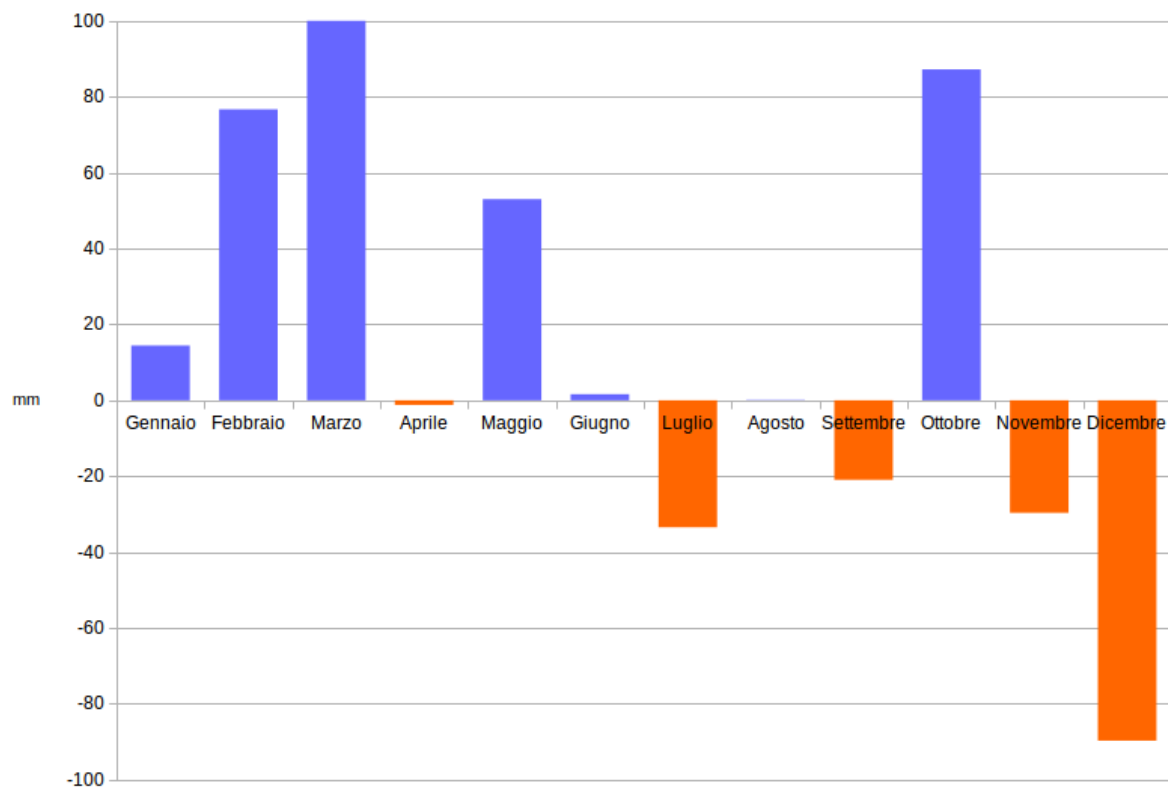


Figure 4. Marche Region. 2015 anomaly monthly precipitation (mm) based on the 1981-2010 average.

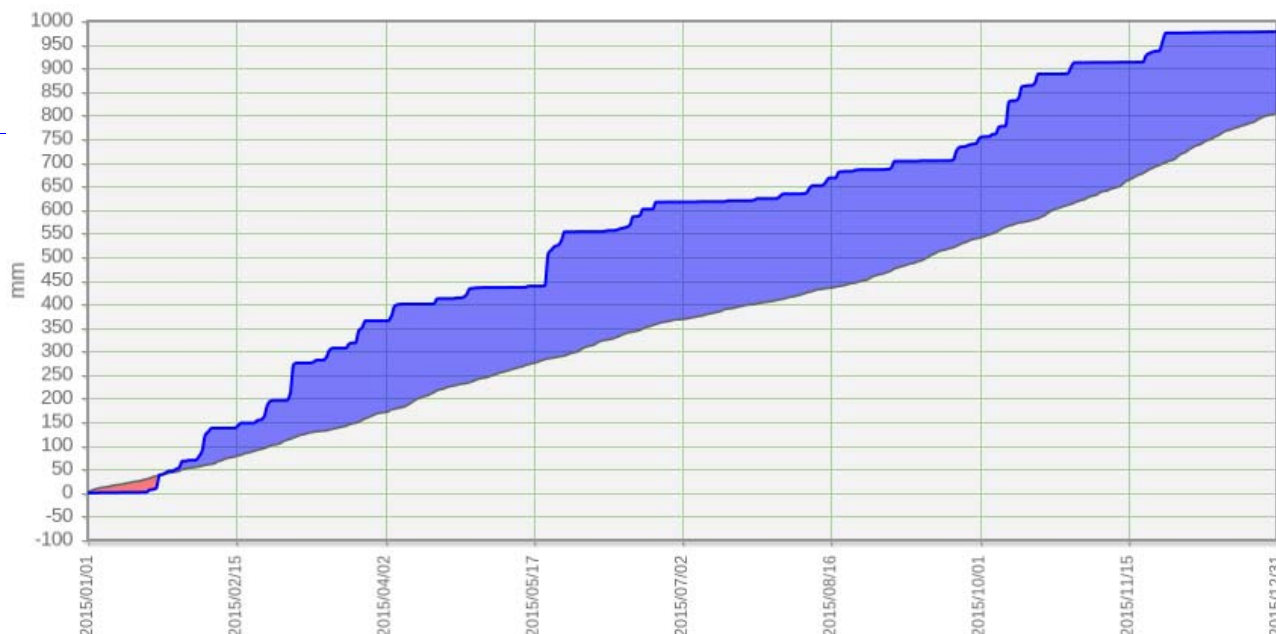


Figure 5. Marche Region. Accumulated daily precipitation trend based on the 1981-2010 regional average (mm).

The 2015 in summery

Parameter	Description
Mean temperature	14,5°C, +0,9°C compared to 1981-2010; record since 1961 shared with 2014
Monthly mean temperature	July: 26,7°C, +3,4°C compared to 1981-2010; monthly absolute record since 1961 October: 14,2°C, -0,4°C compared to 1981-2010; sole over the average coldest month
Seasonal average temperature	Summer: 23, 9°C, +1, 6°C compared to 1981-2010; Summer record since 1961. No coldest season over the average
Total precipitation	957mm, +158mm compared to 1981-2010.
Monthly total precipitation	March: 165mm, +100mm compared to 1981-2010; 3 rd March record since 1961. December: 2mm, -90mm compared to 1981-2010; December absolute negative record since 1961.
Seasonal total precipitation	Spring: 345mm, +152mm compared to 1981-2010; Spring record since 1961. Summer: 132mm, -32mm compared to 1981-2010.
Daily heaviest precipitation	Maiolati Spontini, 22 nd May: 129mm
Hourly heaviest precipitation	Falconara M., at 0 a.m., 22 nd May: 43mm
10-minutes heaviest precipitation	Serra de' Conti, at 3:30 p. m., 15 th August: 24mm