

Globe Program
Globe Virtual Student Conference

Floods and Climate Change

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ABSTRACT

Our research question is if floods in the city of La Plata during last April are related to climate change. In order to do that we analyzed statistics about precipitations in Buenos Aires province, in which territory La Plata is located. We found that, opposite to what we thought, there was not an increase of precipitations in the area in the last 20 years. We did not have enough information to answer the research question.

Last April 2nd there was a flood in the city of La Plata, in the province of Buenos Aires, Argentina. La Plata is the capital of the province of Buenos Aires, the most important one, economically and demographically speaking. It was founded in 1882 and it is located at 34° 55' south latitude and 57° 17' west longitude. With a surface of over 940,38 km², it is 9,7 meters above sea level.

The annual average precipitations are of 1,023 mm. On April 2nd 2013 it rained between 200 and 300 mm in just one day, producing catastrophic consequences for the city and its inhabitants.

La Plata City Plan



There are around 500,000 people living in La Plata nowadays. (1)

Our research question is: Was the flood in La Plata a consequence of climate change? In order to answer that question, we must first speak about climate change. It is the variation of climate during a certain period of time, due to natural or human causes. Its causes are the indiscriminate use of aerosols, the indiscriminate felling of trees, the use of fossil oil and the lack of human conscience.

In order to know if climate change altered the precipitation pattern, we need to know about the variation in rainfall during at least the last 20 years.

Monthly precipitations. Buenos Aires province 1991/2010 (2)

Monthly precipitations. Province of Buenos Aires 1991 / 2010

Month	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Total	1298,5	1219,0	1460,7	1037	865,2	921,5	1255,3	1017,4	1083,7	1635,5	1751,6	1621,8	1542,7	1087,9	1085,7	1281,3	1313,1	722,1	1.324,3	1.351,4
JAN	190,0	111,9	122,5	73,3	49,3	48,8	164,2	146,8	188,3	159,9	337,5	102,4	183,1	268,4	150,2	246,0	95,3	111,6	23,9	153,5
FEB	30,5	36,8	135,2	50,1	70,8	105,0	82,0	116,0	197,0	69,0	120,6	60,2	403,3	31,8	80,1	221,4	145,4	94,7	134,1	421,0
MARCH	55,0	116,0	98,5	134,5	151,5	25,5	24,0	100,1	155,6	71,1	314,5	274,6	87,7	28,1	155,4	154,0	317,1	120,9	168,7	102,0
APRIL	125,6	110,0	200,4	209,9	171,1	142,0	83,7	119,0	52,3	179,6	48,1	173,4	75,5	228,5	145,2	68,8	198,2	39,4	39,0	92,0
MAY	68,4	189,5	109,7	101,7	18,2	32,5	123,0	72,0	47,2	362,4	99,9	217,0	67,5	99,1	11,6	5,5	42,2	7,0	47,6	125,0
JUNE	119,7	98,9	132,5	51,9	27,3	9,1	87,3	25,1	16,1	147,3	81,3	37,5	54,4	20,1	91,7	78,3	52,9	59,9	20,8	53,6
JULY	89,3	46,5	39,1	73,7	28,7	21,6	28,3	96,0	118,9	48,9	46,9	115,1	82,2	46,2	62,6	58,8	11,1	46,3	129,7	105,2
AUG	66,4	77,8	50,5	39,4	4,3	67,0	94,2	17,0	103,5	66,4	168,5	122,3	28,2	60,3	195,2	4,1	68,4	19,0	26,8	24,4
SEPT	85,5	67,9	38,8	24,2	31,9	120,7	13,5	39,3	72,6	137,4	52,6	90,7	107,0	22,8	54,4	29,0	106,8	22,4	134,4	131,1
OCT	131,7	135,7	170,3	127,1	118,8	97,3	135,5	37,6	36,4	151,5	262,5	109,7	65,0	68,7	36,2	164,2	179,2	85,8	234,0	42,5
NOV	92,4	89,1	215,8	27,2	118,5	126,0	123,2	88,6	40,7	149,0	163,0	115,6	230,0	95,8	68,5	56,0	57,7	91,1	211,2	59,1
DIC	244,0	138,9	147,4	124,1	74,8	126,0	296,4	159,9	55,1	93,0	56,2	203,3	158,8	118,1	34,6	195,2	38,8	24,0	154,1	42,0

Source: National Weather Service. Buenos Aires Weather Station.

Taking into account the changes in the precipitation regime during the month of April, from 1991 to 2010, we cannot observe a meaningful increase in the amount of precipitations.

Conclusion

According to the evidence available, our research question proved to be wrong, because we could not give account of an increase of precipitations due to climate change in Buenos Aires in the last twenty years. Moreover, we could not find statistics about La Plata in particular, where there might be changes in the patters.

References and bibliography

- 1- www.laplata.gov.ar/
- 2- www.smn.gov.ar/

Link to the video

<http://youtu.be/jUhjLbPmmcw>

<http://www.youtube.com/watch?v=aqe5L83PLJI&feature=youtu.be>