



Correction to: Spatio-temporal trends in monthly pan evaporation in Aguascalientes, Mexico

Osias Ruiz-Alvarez^{1,2} · Vijay P. Singh³ · Juan Enciso-Medina⁴ · Clyde Munster³ · Ronald Kaiser¹ · Ronald Ernesto Ontiveros-Capurata⁵ · Luis Antonio Diaz-Garcia² · Carlos Antonio Costa dos Santos⁶

Published online: 7 June 2018

© Springer-Verlag GmbH Austria, part of Springer Nature 2018

Correction to: Theoretical and Applied Climatology <https://doi.org/10.1007/s00704-018-2491-8>

The original version of this article unfortunately contained a mistake. Tables 1 and 2 have errors. The presentation of Table 2 was incorrect was not fixed even after being pointed out in the proofs. Furthermore, the information of Table 2 is copied in Table 1. The corrected Tables 1 and 2 are given below. Also, the 3rd author's name and the 5th institution have been corrected.

The original article has been corrected.

The online version of the original article can be found at <https://doi.org/10.1007/s00704-018-2491-8>

✉ Osias Ruiz-Alvarez
oruizalvarez454483@tamu.edu; ruiz.osias@inifap.gob.mx

¹ Water Management and Hydrological Science, Texas A&M University, College Station, TX 77843, USA

² Instituto Nacional de Investigaciones Forestales Agrícolas y Pecuarias (INIFAP), 20660 Pabellón de Arteaga, Aguascalientes, Mexico

³ Department of Biological and Agricultural Engineering, Texas A&M University, College Station, TX 77843, USA

⁴ Department of Biological and Agricultural Engineering, Texas A&M AgriLife Research, Weslaco, TX 78596, USA

⁵ CONACYT-Instituto Mexicano de Tecnología del Agua (IMTA), 62550 Jiutepec, Morelos, Mexico

⁶ Department of Atmospheric Science, Federal University of Campina Grande, Avenida Aprígio Veloso, 882, Bodocongó, Campina Grande, Paraíba 58109-970, Brazil

Table 1 Characteristics of 52 weather stations used in the study

No.	Weather station	Latitude (N)	Longitude (W)	Elevation (m)	Duration of data
1	Cañada Honda	22° 00' 0"	102° 11' 56"	1702	1970–2008
2	Presa El Niagara	21° 46' 44"	102° 22' 19"	1828	1957–2008
3	Jesus Maria	21° 57' 0"	102° 21' 0"	1800	1949–1988
4	Puerto De La Concepcion	22° 12' 7"	102° 08' 6"	2300	1973–2008
5	La Tinaja	22° 09' 50"	102° 33' 14"	2425	1971–2008
6	Malpaso	21° 51' 36"	102° 39' 50"	1775	1958–2008
7	Presa Media Luna	21° 47' 38"	102° 48' 7"	1585	1970–2008
8	Mesillas	22° 18' 47"	102° 09' 58"	1990	1963–2008
9	Pabellon Campo Experimental	22° 10' 1"	102° 17' 35"	1909	1946–2006
10	Palo Alto	21° 54' 58"	101° 58' 8"	2015	1970–2008
11	Ganaderia Peñuelas	21° 42' 0"	102° 18' 0"	1878	1945–1970
12	Presa Potrerillos	22° 13' 59"	102° 26' 38"	2090	1947–2008
13	Presa Plutarco Elias Calles	22° 08' 28"	102° 24' 54"	2020	1937–2008
14	Presa Jocoque	22° 07' 41"	102° 21' 32"	1970	1942–2008
15	Presa La Codorniz	21° 59' 49"	102° 40' 26"	1783	1963–2008
16	San Bartolo	21° 44' 53"	102° 10' 12"	1965	1949–2000
17	Calvillo	21° 50' 13"	102° 42' 43"	1665	1959–2008
18	San Isidro	21° 46' 40.80"	102° 5' 14.40"	1895	1970–2008
19	Tepezala	22° 13' 23"	102° 10' 8"	2110	1962–2008
20	Venadero	21° 52' 37"	102° 27' 47"	1995	1951–2008
21	Villa Juarez	22° 06' 4"	102° 04' 5"	1970	1958–2003
22	Asientos	22° 14' 31"	102° 25' 12"	2155	1963–2008
23	Aguascalientes	21° 53' 42"	102° 18' 29"	1865	1947–2008
24	El Novillo	22° 01' 8"	101° 59' 56"	2010	1972–2008
25	Las Fraguas	22° 02' 20"	101° 53' 31"	2020	1972–2008
26	Los Conos	21° 53' 49"	101° 59' 31"	2015	1972–2008
27	Sandoval	21° 53' 6"	102° 06' 32"	2000	1972–2008
28	Agua Zarca	21° 58' 26"	102° 35' 2"	2300	1976–2008
29	Arellano	21° 48' 7"	102° 16' 23"	1890	1979–2008
30	La Tinaja II	21° 48' 36"	102° 07' 44"	2010	1977–2008
31	Cieneguilla	21° 43' 52"	102° 27' 11"	1780	1979–2008
32	Montoro	21° 45' 25"	102° 18' 7"	1855	1979–2008
33	Los Negritos	21° 52' 12"	102° 20' 56"	1845	1980–2008
34	El Ocote I	21° 46' 55"	102° 31' 1"	2005	1979–2008
35	El Ocote II	21° 53' 24"	102° 49' 55"	2275	1980–2008
36	Peñuelas	21° 43' 34"	102° 16' 19"	1860	1979–2008
37	Presa Canutillo	21° 50' 13"	102° 31' 19"	1930	1979–2008
38	Rancho Seco	22° 05' 17"	101° 58' 1"	2055	1979–2008
39	Rincon De Romos	22° 13' 52"	102° 18' 54"	1947	1979–2008
40	San Francisco de Los Romo	22° 04' 44"	102° 16' 23"	1885	1979–2008
41	San Gil	22° 12' 29"	102° 01' 19"	2010	1979–2008
42	Tepetattoo	22° 05' 28"	102° 10' 52"	2020	1979–2008
43	Cosio	22° 21' 47"	102° 17' 49"	1885	1978–2008
44	Presa 50 aniversario	22° 11' 20"	102° 27' 50"	2050	1980–2004
45	Jesus Maria, Jesus Maria	21° 57' 11"	102° 20' 31"	1907	1979–2008
46	Los Alisos	21° 44' 31"	102° 42' 58"	2040	1981–2008
47	El Chayote	22° 17' 10"	102° 14' 10"	1930	1983–2008
48	Milpillas De Arriba	21° 56' 6"	102° 33' 4"	2140	1982–2008
49	Calvillito	21° 50' 6"	102° 10' 55"	1950	1983–2008
50	La Posta UAA	21° 58' 19.20"	102° 21' 43.20"	1905	1986–2008
51	Jesus Teran (El Muerto)	21° 58' 34"	102° 03' 43"	2040	1985–2008
52	Las Presas, El Llano	21° 54' 32.40"	102° 5' 13.20"	2025	1986–2008

Table 2 Monthly evaporation trend [Theil-Sen (Q) value] at 52 weather stations of Aguascalientes

No.	Weather station	J	F	M	A	M	J	J	A	S	O	N	D	Total
1	Cañada Honda	-4.17	-1.27	-2.68	-0.37	0.32	-2.50	0.71	-2.07	-7.23	-5.35	-9.36*	-8.01*	
2	Presa El Niagara	-6.07*	-6.19	-10.04*	-11.58	-11.92*	-9.08	-6.64	-5.53	-6.87*	-6.77*	-5.40*	-3.15	
3	Jesus Maria	2.75	6.27	9.87	15.94	19.65*	6.82	10.87	5.96	7.04	10.51	4.82	4.86	
4	Puerto De La Concepcion	-14.71*	-6.56	7.49	20.36*	12.90	3.78	-6.53	-6.48	-12.15*	-11.10	-11.85*	-11.70*	
5	La Tinaja	-5.23	-1.98	-23.16*	-17.52*	-21.48*	-23.09*	-4.60	-10.05	-4.81	-8.40	-6.69	-3.57	
6	Malpaso	7.65	3.78	6.54	5.38	0.50	2.82	0.92	0.62	-2.72	8.40	7.12*	9.69*	
7	Presa Media Luna	5.80	9.41*	13.76*	13.04*	8.23	4.01	2.95	2.79	-3.45	-4.64	-5.68	-4.15	
8	Mesillas	-0.23	5.05	-0.55	-0.06	-5.11	-4.24	-4.49	-9.84	-7.46	-0.60	-0.46	1.17	
9	Pabellon Campo Experimental	-5.82*	-4.84	-9.81	-7.54	-7.35	-3.12	-6.21	-6.40*	-5.10	-8.44	-6.07*	-8.37*	
10	Palo Alto	5.10	-5.41	-13.53*	-24.27*	-14.93	-11.70	-2.14	-2.86	-4.38	0.09	2.33	3.87	
11	Ganaderia Peñuelas	-0.62	-2.61	-3.32	6.43	8.40	7.61	0.42	-3.25	-7.55	-6.88	-4.11	-3.72	
12	Presa Potrerillos	-8.55*	-7.01	-15.82*	-17.30*	-12.47*	-12.52	-9.92*	-7.85*	-9.12*	-8.80*	-8.02*	-6.33	
13	Presa Putarco Elias Calles	-4.45	-4.72*	-11.35*	-16.53*	-14.92*	-10.10*	-12.81*	-10.65*	-12.49*	-10.72*	-6.95*	-5.02	
14	Presa Jocoque	-6.27*	-5.79*	-8.64*	-8.18	-3.81	-4.58	-8.43	-8.43*	-8.10*	-6.35	-6.74*	-6.25*	
15	Presa La Codomiz	-9.08	-4.43	-10.78*	-12.66	-14.44	-11.12	-7.01	-6.01	-9.47*	-8.67*	-6.87	-6.65	
16	San Bartolo	-5.40	4.06	0.81	-1.87	8.25	-5.66	-4.84	-5.59	-1.23	-0.64	2.28	4.11	
17	Calvillo	-9.58*	-7.55	-11.99	-8.66	-11.52	-14.89*	-13.15*	-4.08	-7.85*	-9.27	-10.08*	-7.47	
18	San Isidro	8.52	3.46	-9.77	-15.00	-13.88*	-3.76	4.78	10.58	13.28	9.71	9.72*	11.18*	
19	Tepezala	-11.50	-11.57	-12.23	-16.16*	-16.29*	-20.52*	-13.41*	-13.51*	-7.94	-14.34*	-9.71	-5.25	
20	Venadero	-1.99	-2.48	-11.19	-8.06	-9.43	-6.06	-7.63	-7.30	-7.45*	-0.79	-1.31	4.11	
21	Villa Juarez	6.89	3.28	-11.56	-20.11*	-11.17	-12.05*	-13.10*	-10.69*	-5.44	-5.31	-4.50	-0.04	
22	Asientos	4.49	-2.23	-13.04	-20.58*	-10.73	-14.77*	-4.40	-8.18	2.38	-2.03	3.09	8.73	
23	Aguascalientes	-3.64	-1.90	0.98	-0.56	-0.83	-3.72	-3.04	-5.65	-5.34	-0.23	-2.29	-1.97	
24	El Novillo	-3.18	-3.43	-7.78	-9.24	-6.50	-6.34	-2.62	-3.71	-5.98	-14.60*	-16.27*	-6.17	
25	Las Fraguas	4.94	4.99	-3.87	-11.11	-16.33*	-14.81*	-0.65	-0.11	-0.35	1.77	2.43	7.91	
26	Los Conos	1.97	0.21	-7.98	-2.25	-8.01	-6.69	-1.96	-6.19	-6.76	-2.50	-1.87	-2.63	
27	Sandovalos	-4.85	-11.79*	-12.24	-23.90*	-20.87*	-13.69	-14.39*	-6.14	-5.78	-8.29	-2.10	2.01	
28	Agua Zarca	12.36	12.40	-15.50	-12.43	-7.24	-2.72	6.29	5.84	5.38	6.61	1.87	10.92	
29	Arellano	-0.16	11.51	14.16	22.29*	17.11*	4.27	10.06	4.14	9.21	2.90	3.01	-2.88	
30	La Tinaja II	-4.78	2.05	-12.73	-13.83	-23.02*	-9.89	-3.53	-0.95	0.77	3.22	-2.78	-3.58	
31	Cieneguilla	8.42	17.18*	2.50	-5.17	-12.76	-3.49	8.97	4.54	11.79	14.25*	14.94*	12.01	
32	Montoro	-10.43	-7.45	-11.28	-19.36*	-9.42	-15.72*	-9.39	-9.54	-5.23	-22.31*	-12.69*	-11.48*	
33	Los Negritos	7.79	2.38	-1.09	8.90	-7.97	-7.90	2.96	-3.96	2.98	9.61	-0.23	5.03	
34	El Ocoite I	4.21	-2.49	-8.27	-19.44*	-10.72	-8.00	-1.80	-9.41	5.49	-5.83	0.09	9.59	
35	El Ocoite II	8.89	3.08	=	=	=	=	0.38	3.26	8.58	0.63	-1.55	3.05	

Table 2 (continued)

No.	Weather station	J	F	M	A	M	A	M	J	J	A	S	O	N	D	Total
36	Peñuelas	3.06	6.94	-3.90	2.82	-2.46	2.56	3.06	-4.23	-1.19	-1.85	-3.29	-3.86			
37	Presa Canutillo	0.35	4.04	4.02	0.51	-6.58	-3.07	-4.86	-3.47	-2.56	-2.41	-1.42	-0.62			
38	Rancho Seco	=	=	26.91*	=	17.35	=	10.86	11.74	=	7.21	1.55	4.33			
39	Rincon De Romos	-0.38	-8.62	-16.21*	-12.01	-17.95	-12.13	-1.98	-3.49	-3.47	-3.76	-3.27	-1.23			
40	San Francisco de Los Romo	14.97	15.55	7.82	14.73	-9.72	-6.59	8.16	-1.82	8.47	9.37	23.95*	16.91*			
41	San Gil	8.86	9.99	-10.90	-4.97	-3.09	-4.24	5.24	-1.01	2.60	-2.38	9.29	1.39			
42	Tepetatillo	=	-6.44	-8.82	-1.87	-7.05	-2.10	0.64	1.56	0.57	-9.08	-7.73	-8.30			
43	Cosio	3.70	5.04	0.96	5.34	-10.98	3.35	1.15	3.77	2.08	-0.70	0.50	11.80			
44	Presa 50 aniversario	-6.04	-10.12	-16.10*	-18.59	-22.48*	-10.93	-5.41	-4.69	-13.25	-10.57	-5.37	-6.33			
45	Jesus Maria	-9.91	-11.38	-5.09	-7.20	-4.60	3.93	-1.53	-5.66	3.44	-4.53	-9.21	-7.84			
46	Los Alisos	=	2.05	3.99	9.22	-3.88	-1.43	14.80	7.11	8.84	-5.58	=	=			
47	El Chayote	11.63	1.05	-10.79	-0.12	-2.42	-11.66	-4.75	1.19	-1.15	-0.20	-3.48	0.48			
48	Milpillas De Arriba	7.99	15.68	14.18	14.46	9.46	-3.40	7.98	5.12	5.09	3.82	-1.39	-0.26			
49	Calvillito	5.05	5.63	9.00	24.63*	22.85	18.39	-2.87	-8.10	-10.83	-11.56	-0.49	-0.66			
50	La Posta UAA	=	=	=	=	=	=	=	=	13.76	1.42	-6.75	=			
51	Jesus Teran (El Muerto)	-4.64	7.89	20.20*	7.36	7.99	7.99	1.75	2.36	-2.68	0.61	-7.12	-0.84			
52	Las Presas, El Llano	-7.52	1.17	-8.34	-10.16	-9.50	-7.72	-6.41	-3.06	-3.85	-2.02	4.66	3.79			
Summary																
	Not statistically significant	42	45	38	35	38	41	45	45	43	44	37	42	495		
	Significant positive trends	0	2	3	4	2	0	0	0	0	1	4	3	19		
	Significant negative trends	6	3	9	10	10	8	6	6	8	7	10	5	88		
	Total	48	50	50	49	50	49	51	51	51	52	51	50	602		

*Statistically significant at 95% level ($p \leq 0.05\%$)

=Not calculated because meteorological data was not available