

ET Idaho 2009: Evapotranspiration and Consumptive Irrigation Water Requirements

for Idaho

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Dubois Experiment Station (NWS --102707) Statistics based on thirty

For a different land cover or crop click on the above link.

You can highlight this table and copy via the clipboard to a Microsoft Excel or OpenOffice spreadsheet to plot or otherwise work with this data.

Open water - shallow systems (ponds, streams)															
Precipitation Deficit (Click here for a graph)															
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Growing Season ^a	Non Growing Season ^b	Annual
Mean	mm/day												mm		
Monthly ^c	-0.35	-0.14	0.47	1.41	1.66	2.74	3.56	3.02	1.74	0.88	-0.26	-0.61	432	0	432
15-Day Moving Average ^d	-0.36	-0.25	0.50	1.45	1.68	2.74	3.57	2.94	1.66	0.96	-0.29	-0.52			
7-Day Moving Average ^e	-0.35	-0.19	0.46	1.42	1.66	2.74	3.56	3.00	1.73	0.91	-0.32	-0.54			
3-Day Moving Average ^f	-0.35	-0.14	0.47	1.42	1.65	2.73	3.56	3.02	1.74	0.89	-0.28	-0.58			
Standard Deviation	mm/day												mm		
Monthly	0.41	0.43	1.02	1.00	1.94	1.11	1.20	0.96	0.74	1.06	0.67	0.67	115	0	115
15-Day Moving Average	0.43	0.64	0.91	1.17	1.79	1.47	1.09	0.96	1.09	1.02	0.81	0.62			
7-Day Moving Average	0.65	0.91	1.25	1.66	2.33	2.09	1.47	1.25	1.53	1.46	1.03	0.93			
3-Day Moving Average	0.95	1.23	1.74	2.28	3.09	2.88	1.97	1.72	2.19	1.97	1.40	1.41			
20% Exceedance	mm/day												mm		
Monthly	-0.12	0.24	1.00	2.31	2.76	3.61	4.17	3.61	2.34	1.58	0.21	-0.25	528	0	528
15-Day Moving Average	0.19	0.49	1.63	2.89	3.83	4.50	4.62	3.99	2.90	2.09	0.62	0.23			
7-Day Moving Average	0.43	0.86	1.94	3.67	4.28	4.85	4.94	4.28	3.38	2.53	0.99	0.46			
3-Day Moving Average	0.56	0.95	2.33	4.06	4.73	5.14	5.20	4.56	3.72	2.69	1.16	0.57			

80% Exceedance		mm/day												mm			
Monthly	-0.61	-0.58	-0.09	0.59	0.03	1.79	3.24	2.39	0.89	0.22	-0.69	-1.04		327		0	32
15-Day Moving Average	-1.27	-1.28	-0.98	-0.43	-1.83	0.27	2.32	1.22	-0.15	-1.08	-1.73	-1.76					
7-Day Moving Average	-2.40	-2.22	-2.37	-2.26	-3.72	-2.83	0.64	-0.49	-2.72	-3.24	-2.47	-2.85					
3-Day Moving Average	-3.86	-4.38	-4.80	-6.27	-8.30	-7.72	-2.54	-2.93	-6.20	-6.44	-4.68	-6.15					
Ave Highest P _{def}	mm/day												--				
15-Day Moving Average ^e	0.11	0.28	1.15	2.33	2.88	3.84	4.25	3.63	2.39	1.71	0.36	0.10					
7-Day Moving Average ^h	0.32	0.67	1.57	3.13	3.84	4.45	4.66	4.11	3.11	2.14	0.70	0.31					
3-Day Moving Average ⁱ	0.48	0.85	1.94	3.57	4.36	4.88	4.99	4.40	3.51	2.40	0.95	0.47					
Ave Lowest P _{def}	mm/day												--				
15-Day Moving Average ^e	-0.77	-0.59	-0.16	0.57	0.38	1.60	2.91	2.26	0.87	0.13	-0.77	-1.18					
7-Day Moving Average ^h	-1.46	-1.31	-1.16	-0.89	-1.26	-0.36	1.73	1.36	-0.55	-1.11	-1.52	-2.18					
3-Day Moving Average ⁱ	-2.77	-2.60	-3.12	-3.15	-4.81	-3.77	-0.57	-0.64	-3.27	-3.19	-3.19	-4.24					
Special normal distribution parameters for monthly, seasonal, and annual intervals													--				
Skew	-0.02	-0.12	-0.42	-0.54	-0.18	-0.96	-0.46	-0.34	-0.34	-0.11	-1.25	-0.14		-0.71		0.00	-0.7
Kurtosis	0.69	2.09	1.05	2.95	0.64	4.71	1.25	0.84	2.71	0.61	4.81	0.69		3.23		0.00	3.23

^a Growing Season: This is usually the time from green up or planting in the spring to a killing frost or harvest in the fall. It is not applicable for entries without a growing season and will be blank.

^b Nongrowing Season: This is usually the time from a killing frost or harvest in the fall to the of green up in the spring. It is not applicable for entries without a growing season.

^c Mean of the average daily value for month

^d Mean of the fourteen 15-day period averages contained in the month

^e Mean of the twenty three 7-day period averages contained in the month

^f Mean of the twenty seven 3-day period averages contained in the month

^g Mean of the highest/lowest 15-day period average in month

^h Mean of the highest/lowest 7-day period average in month

ⁱ Mean of the highest/lowest 3-day period average in month

This work and report were prepared by the University of Idaho Research and Extension Center at Kimberly, Idaho under contract with the Idaho Department of Water Resources. Work was supported by funding from IDWR and the Idaho Agricultural Experiment Station and Idaho Engineering Experiment Station. The authors gratefully acknowledge the long-term evapotranspiration data collection and long-standing advice provided by Dr. James L. Wright, USDA-ARS Kimberly (ret.), the more than two decades of high quality agricultural weather data collection by the U.S. Bureau of Reclamation AgriMet system, and the very long-standing, routine data collection by the hundreds of cooperative weather station volunteers across the state who, for more than one-hundred years, have faithfully observed daily air temperature and precipitation.

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Questions regarding the data should be addressed to Clarence W. Robison or Richard G. Allen, University of Idaho, Kimberly Research and Extension Center, 3793 North 3600 East, Kimberly, ID 83341. Telephone (208)-423-6610

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Dubois Experiment Station (NWS --102707)

Statistics based on thirty

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You can highlight this table and copy via the clipboard to a Microsoft Excel or OpenOffice spreadsheet to plot or otherwise work with this data.

Wetlands - narrow stands															
Precipitation Deficit (Click here for a graph)															
Mean	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Growing Season ^a	Non Growing Season ^b	Annual
mm/day															
Monthly ^c	-0.53	-0.42	-0.18	-0.10	-0.16	2.80	8.23	8.14	3.19	-0.07	-0.57	-0.69	695	-91	602
15-Day Moving Average ^d	-0.54	-0.54	-0.18	-0.09	-0.15	2.73	8.34	8.08	3.16	-0.03	-0.58	-0.61			
7-Day Moving Average ^e	-0.52	-0.48	-0.19	-0.09	-0.18	2.77	8.29	8.16	3.18	-0.08	-0.60	-0.63			
3-Day Moving Average ^f	-0.52	-0.43	-0.18	-0.09	-0.17	2.78	8.25	8.16	3.18	-0.09	-0.57	-0.66			
mm/day															
Standard Deviation															
Monthly	0.48	0.38	0.67	0.47	1.12	2.26	2.77	2.34	2.32	0.99	0.58	0.62	154	45	179
15-Day Moving Average	0.47	0.59	0.61	0.67	0.93	2.51	2.17	2.06	2.88	0.84	0.71	0.60			
7-Day Moving Average	0.71	0.88	0.90	1.06	1.34	2.91	2.49	2.38	3.27	1.23	0.93	0.88			
3-Day Moving Average	1.03	1.21	1.32	1.67	2.11	3.42	2.95	2.85	3.71	1.68	1.32	1.32			
mm/day															
20% Exceedance															
Monthly	-0.27	-0.05	0.15	0.28	0.32	4.58	9.86	9.36	5.54	0.28	-0.15	-0.31	856	-50	790
15-Day Moving Average	0.08	0.20	0.43	0.59	0.85	6.17	10.77	10.07	7.37	0.59	0.19	0.14			
7-Day Moving Average	0.28	0.38	0.81	1.08	1.44	7.30	11.69	10.71	8.46	1.05	0.50	0.28			
3-Day Moving Average	0.35	0.54	1.42	2.11	2.81	8.32	12.34	11.40	9.17	1.94	0.78	0.39			
mm															

80% Exceedance		mm/day												mm		
Monthly	-0.82	-0.82	-0.46	-0.61	-1.14	0.72	6.50	7.35	0.44	-0.64	-0.91	-1.13		531	-118	389
15-Day Moving Average	-1.49	-1.45	-1.25	-1.68	-2.17	-0.56	4.58	4.91	-0.59	-1.71	-1.85	-1.87				
7-Day Moving Average	-2.68	-2.42	-2.84	-2.93	-3.86	-1.77	2.32	2.00	-1.53	-3.81	-2.98	-2.85				
3-Day Moving Average	-4.91	-4.61	-4.95	-5.93	-8.98	-6.48	-0.12	0.39	-4.31	-7.28	-4.76	-5.26				
Ave Highest P_{def}	mm/day												--			
15-Day Moving Average ^e	0.04	0.07	0.29	0.45	0.62	4.49	9.63	9.30	4.92	0.60	0.10	0.05				
7-Day Moving Average ^h	0.17	0.31	0.62	0.87	1.18	5.52	10.49	10.27	6.39	0.97	0.34	0.17				
3-Day Moving Average ⁱ	0.30	0.45	1.00	1.62	2.34	6.47	11.23	10.92	7.39	1.54	0.56	0.30				
Ave Lowest P_{def}	mm/day												--			
15-Day Moving Average ^e	-0.95	-0.85	-0.67	-0.65	-0.93	1.07	7.00	6.88	1.46	-0.66	-1.05	-1.26				
7-Day Moving Average ^h	-1.69	-1.61	-1.44	-1.73	-2.16	-0.27	5.59	5.78	0.00	-1.57	-1.82	-2.20				
3-Day Moving Average ⁱ	-3.08	-2.98	-3.03	-3.77	-4.89	-2.94	3.42	3.68	-1.98	-3.36	-3.47	-4.08				
Special normal distribution parameters for monthly, seasonal, and annual intervals																
Skew	-0.14	-0.19	-0.58	-1.01	-0.13	0.79	-0.20	-0.54	-0.07	0.62	-1.41	-0.13		-0.04	-0.81	0.01
Kurtosis	0.69	2.05	1.31	3.83	0.69	3.05	0.69	1.20	2.05	2.62	4.96	0.56		1.91	4.13	1.85

^a Growing Season: This is usually the time from green up or planting in the spring to a killing frost or harvest in the fall. It is not applicable for entries without a growing season and will be blank.

^b Nongrowing Season: This is usually the time from a killing frost or harvest in the fall to the of green up in the spring. It is not applicable for entries without a growing season.

^c Mean of the average daily value for month

^d Mean of the fourteen 15-day period averages contained in the month

^e Mean of the twenty three 7-day period averages contained in the month

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You can highlight this table and copy via the clipboard to a Microsoft Excel or OpenOffice spreadsheet to plot or otherwise work with this data.

Willows															
Precipitation Deficit (Click here for a graph)															
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Growing Season ^a	Non Growing Season ^b	Annual
Mean	mm/day												mm		
Monthly ^c	-0.48	-0.38	-0.12	0.20	1.56	4.04	4.82	4.05	2.21	0.68	-0.49	-0.68	544	-71	473
15-Day Moving Average ^d	-0.49	-0.50	-0.12	0.18	1.59	4.11	4.84	4.00	2.19	0.74	-0.55	-0.61			
7-Day Moving Average ^e	-0.47	-0.44	-0.13	0.20	1.55	4.09	4.82	4.04	2.22	0.70	-0.55	-0.62			
3-Day Moving Average ^f	-0.48	-0.39	-0.12	0.20	1.55	4.05	4.82	4.06	2.21	0.68	-0.51	-0.65			
Standard Deviation	mm/day												mm		
Monthly	0.43	0.38	0.66	0.58	1.69	0.90	1.03	0.84	0.67	0.96	0.58	0.62	80	39	100
15-Day Moving Average	0.47	0.59	0.61	0.69	1.46	1.19	0.91	0.84	0.93	0.97	0.71	0.61			
7-Day Moving Average	0.70	0.88	0.90	1.10	1.91	1.79	1.25	1.10	1.37	1.42	0.94	0.89			
3-Day Moving Average	1.01	1.20	1.32	1.71	2.74	2.66	1.80	1.58	2.02	1.87	1.32	1.33			
20% Exceedance	mm/day												mm		
Monthly	-0.26	-0.02	0.20	0.62	2.54	4.74	5.41	4.61	2.74	1.15	-0.11	-0.30	598	-40	550
15-Day Moving Average	0.12	0.22	0.53	0.88	3.83	5.57	5.79	4.99	3.49	2.34	0.25	0.16			
7-Day Moving Average	0.31	0.43	0.87	1.94	4.24	6.12	6.18	5.34	4.00	2.77	0.52	0.29			
3-Day Moving Average	0.39	0.61	1.43	2.67	5.73	6.85	6.61	5.89	4.60	3.04	0.91	0.42			

80% Exceedance		mm/day												mm		
Monthly	-0.78	-0.78	-0.38	-0.39	0.38	3.23	4.30	3.48	1.62	0.02	-0.89	-1.12		474	-96	395
15-Day Moving Average	-1.39	-1.42	-1.15	-1.59	-0.88	2.01	3.49	2.53	0.66	-0.81	-1.75	-1.86				
7-Day Moving Average	-2.66	-2.39	-2.75	-2.93	-3.24	-0.60	1.67	1.47	-1.90	-2.56	-2.67	-2.85				
3-Day Moving Average	-5.19	-4.57	-4.90	-5.63	-7.79	-5.73	-0.96	-0.93	-5.04	-6.38	-4.62	-6.11				
Ave Highest P_{def}	mm/day												--			
15-Day Moving Average ^e	0.05	0.08	0.35	0.74	2.67	5.08	5.47	4.65	2.98	1.57	0.15	0.06				
7-Day Moving Average ^h	0.20	0.35	0.69	1.38	3.54	5.79	5.91	5.13	3.66	2.13	0.44	0.19				
3-Day Moving Average ⁱ	0.33	0.50	1.09	2.16	4.96	6.48	6.42	5.55	4.26	2.52	0.69	0.33				
Ave Lowest P_{def}	mm/day												--			
15-Day Moving Average ^e	-0.92	-0.82	-0.62	-0.44	0.41	2.99	4.23	3.36	1.41	-0.11	-0.99	-1.24				
7-Day Moving Average ^h	-1.67	-1.56	-1.41	-1.47	-1.04	1.26	3.15	2.58	0.17	-1.15	-1.72	-2.20				
3-Day Moving Average ⁱ	-3.07	-2.91	-2.98	-3.47	-4.16	-2.19	0.93	0.76	-2.15	-2.97	-3.26	-4.11				
Special normal distribution parameters for monthly, seasonal, and annual intervals																
Skew	-0.04	-0.19	-0.59	0.44	0.20	-0.89	-0.29	-0.23	-0.33	0.12	-1.40	-0.13		-0.29	-1.87	-0.84
Kurtosis	0.59	2.01	1.32	3.54	0.75	4.49	0.89	0.67	2.67	0.69	5.12	0.55		3.11	8.11	4.20

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