

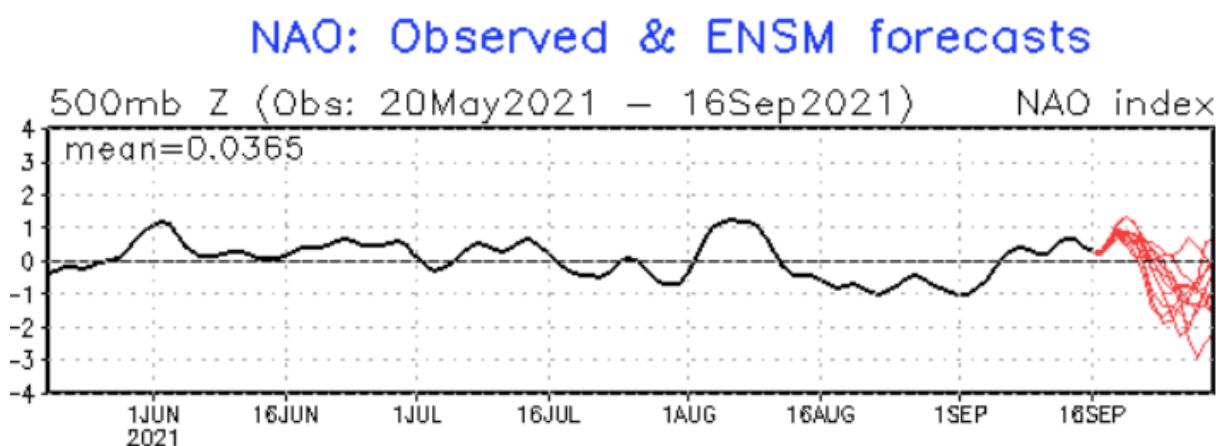
METEOCLIMATIC REPORT AND ACTIVITIES ANNEXED TO THE RURITAGE PROJECT

JULY 2021

The central month of summer was characterized by a clear dominance of anticyclonic conditions - MAINLY OF CONTINENTAL SUBTROPICAL NATURE - interrupted only in the middle of the month by a series of unstable passages heralds of convective phenomenologies. The thermal context turned out to be significantly higher than the climatic averages calculated over the last forty years and substantially in line with those of the last fifteen years. Rainfall, totally concentrated in the above-mentioned stable events, continues to remain below the climatological average. It was a month substantially devoid of any significant meteorological evidence, which could lead to operational problems in the Civil Protection, despite a moderate intensity reversal which occurred on the 17th.

Il segnale NAO si è mantenuto lievemente positivo nella prima decade per poi divenire negativo ma senza associati effetti meteorici, (fig.1).

Figura 1 - segnale NAO giornaliero normalizzato



The polar jet wave have always been quite marked, also depending on the northward rising of the Intertropical Convergence Line (ITCZ); for this reason the continental component prevailed over the Atlantic one, with obvious repercussions on the decidedly above average thermal signal (Figs. 2 and 3).

Figure 2 - geopotential map 500 hPa and at the ground, relative to 12Z on July 8th

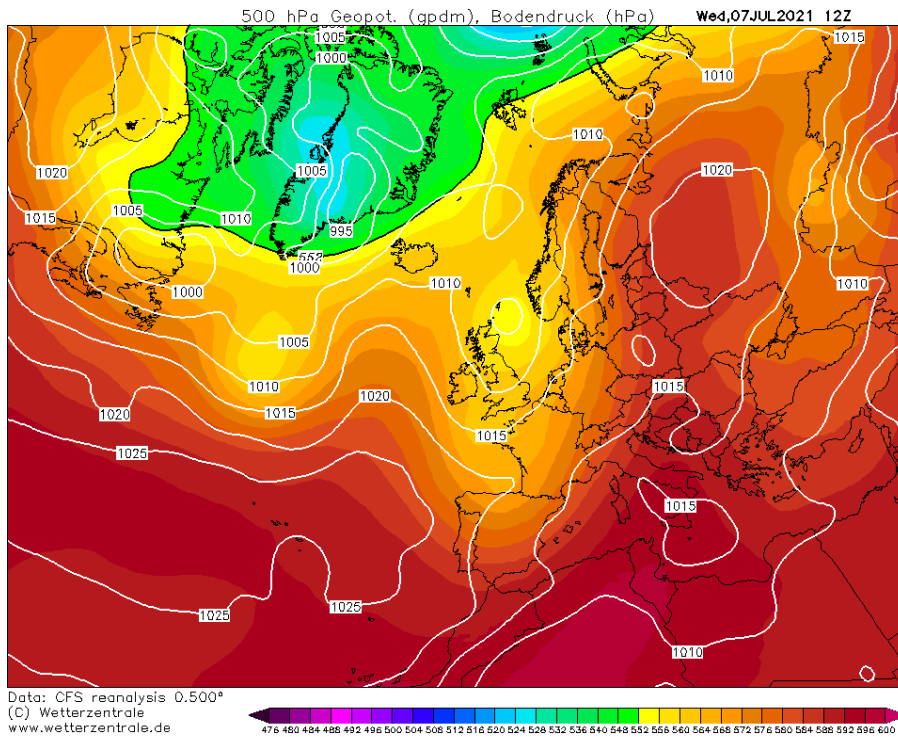
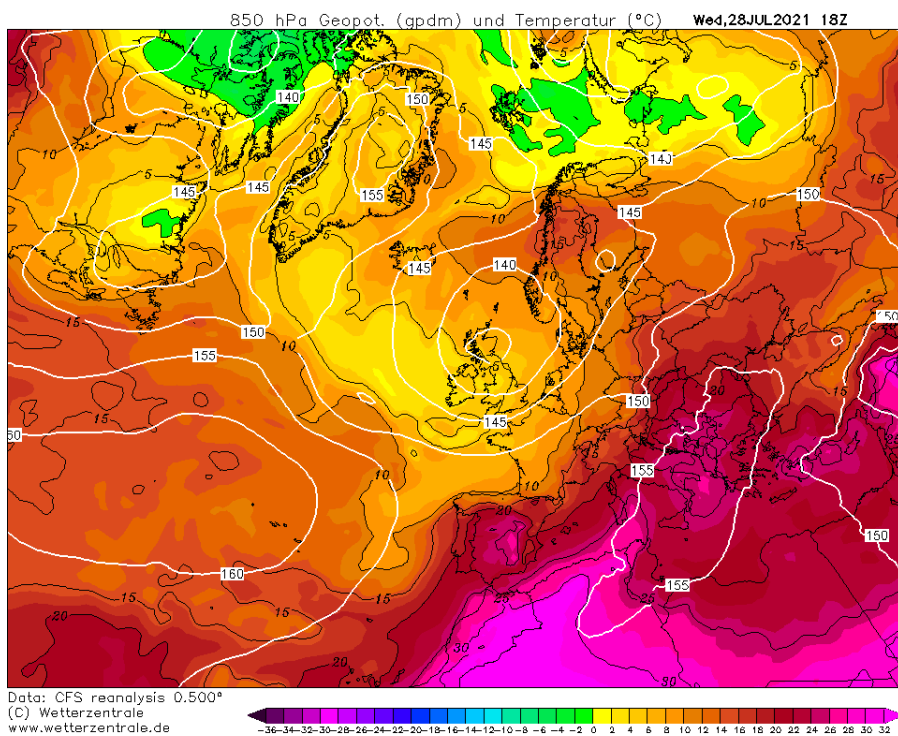
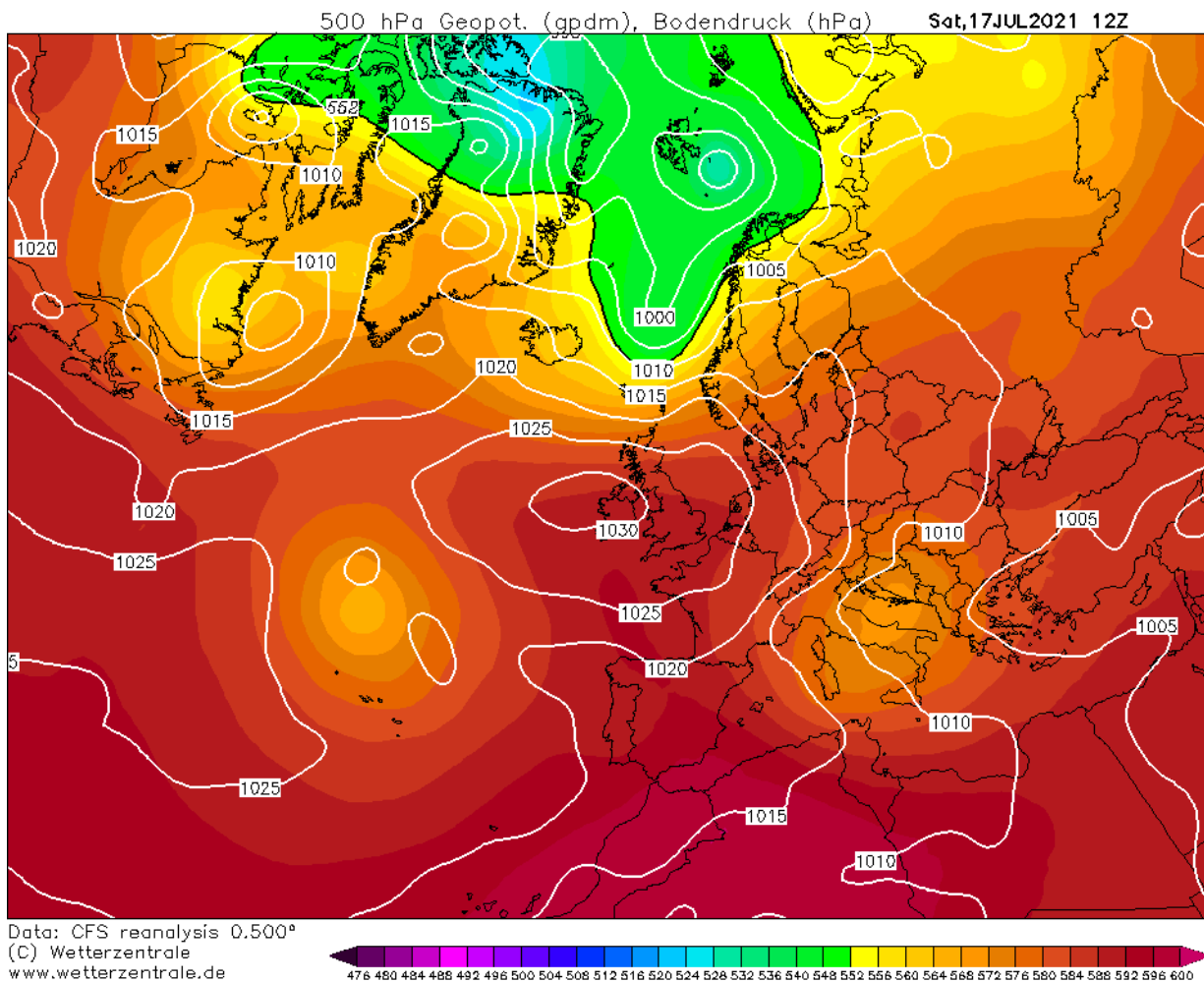


Figure 3 - geopotential map 500 hPa and at the ground, relative to 12Z on July 18th



The ANTICYCLONIC FORCING was clearly interrupted and in some ways anomalous by the formation, in the middle of the month, of a "cold drop" north of the Alpine chain which migrated southwards in the following days involving the entire peninsula, with weather at times unstable and also associated thunderstorms. (fig. 4)

Figure 4 - geopotential map 500 hPa and at the ground , relative to 12Z on 17 July



The most intense local phenomena occurred in the afternoon of day 17 with a very intense downpour and temporarily hail. Conditions of variability then persisted until day 20.

From the analysis of the complete thermometric data (table 1 and figure 4), it can be observed that the **average monthly temperature was about 25.7 ° C**, the average minimum and maximum respectively of 20 ° C and 31.5 ° C ; consequently the average daily temperature range was found to be about 11.5 ° C, more than one degree higher than the climatic average of about 10.4 ° C. The absolute minimum temperature was 16.7 ° C on day 2 while the absolute maximum was recorded on day 28, with 37.7 ° C.

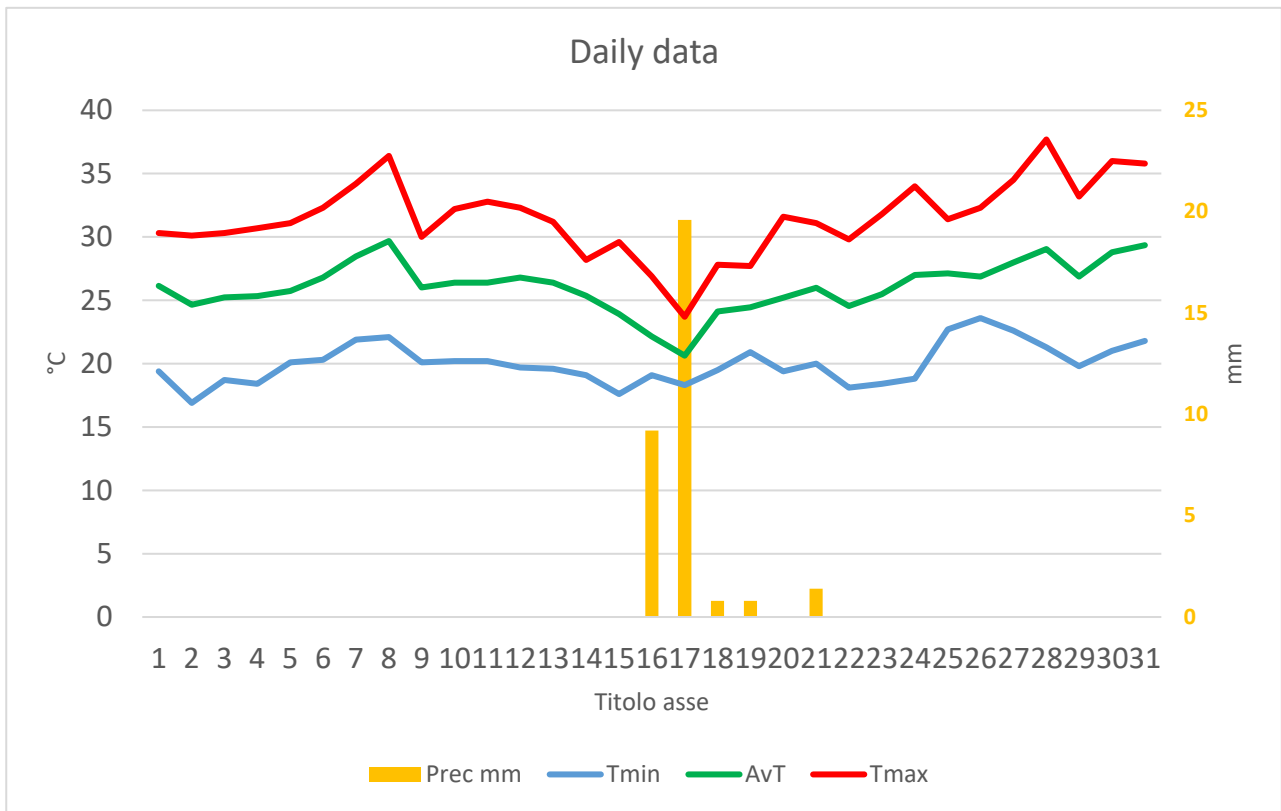
Compared to the monthly climatological average calculated for the meteorological station of Ascoli Piceno and relative to the period 1981-2015 - of about 24.3 ° C, - a surplus of 1.5 ° C is observed, more significant in the minimum values (over 2 ° C) compared to the maximum values (about 0.7 ° C) If we consider the monthly average data of the last fifteen years and relating to the station under analysis, we can observe a substantial identity in the values. It

should be evidence that, despite the just highlighted thermal surplus, the number of very hot days is restricted to 4 events while 16 were tropical nights (Table 1)

With regard to **rainfall**, the **monthly cumulative**, as previously highlighted, reached **32 mm** distributed over 3 days with a liquid cumulative or equivalent from the solid > 1mm (on days 16, 17 and 21). Considering a monthly climatic average referring to the Ascoli Piceno weather station is about 46 mm, the monthly cumulative recorded shows a deficit in the cumulative of about 35%, a value that is repeated in recent months and highly worrying during the summer season, given that have already been experiencing more or less severe water drought conditions for over a year.

Figure 5 and Table 1 show the thermo-pluviometric graph and the daily climatic data with the respective monthly averages.

Figure 5- graph of daily thermo-meteoric data



Y	M	D	Tmin	AvT	Tmax	Prec mm	RA	TS	VHD	TRN
2021	7	1	19,4	26,2	30,3	0				
2021	7	2	16,9	24,7	30,1	0				
2021	7	3	18,7	25,2	30,3	0				
2021	7	4	18,4	25,3	30,7	0				
2021	7	5	20,1	25,7	31,1	0				*
2021	7	6	20,3	26,8	32,3	0				*
2021	7	7	21,9	28,5	34,2	0				*
2021	7	8	22,1	29,7	36,4	0			*	*
2021	7	9	20,1	26,0	30,0	0				*
2021	7	10	20,2	26,4	32,2	0				*
2021	7	11	20,2	26,4	32,8	0				*
2021	7	12	19,7	26,8	32,3	0				
2021	7	13	19,6	26,4	31,2	0				
2021	7	14	19,1	25,4	28,2	0				
2021	7	15	17,6	23,9	29,6	0				
2021	7	16	19,1	22,2	26,9	9,2	*			
2021	7	17	18,3	20,6	23,7	19,6	*	*		
2021	7	18	19,5	24,1	27,8	0,8				
2021	7	19	20,9	24,5	27,7	0,8				*
2021	7	20	19,4	25,2	31,6	0				
2021	7	21	20,0	26,0	31,1	1,4	*			*
2021	7	22	18,1	24,6	29,8	0				
2021	7	23	18,4	25,5	31,8	0				
2021	7	24	18,8	27,0	34,0	0				
2021	7	25	22,7	27,1	31,4	0				*
2021	7	26	23,6	26,9	32,3	0				*
2021	7	27	22,6	28,0	34,5	0				*
2021	7	28	21,3	29,1	37,7	0			*	*
2021	7	29	19,8	26,9	33,2	0				
2021	7	30	21,0	28,8	36,0	0			*	*
2021	7	31	21,8	29,3	35,8	0			*	*
AV			20,0	26,1	31,5	31,8	3	1	4	16
AVER 81-15			17,8	24,3	30,7	43	4,0			
AVER 02-18				26,2						

Table 1 - daily summary of the meteorological and climatic data available. LEGEND: Tmin: minimum temperature; avT: average temperature; Tmax: maximum temperature; prev. mm: daily precipitation; monthly sum of total precipitation; RD: days with precipitation > 1mm; TS: stormy days, TRN: tropical nights; VHD: very hot days (Tmax > 35 ° C)