

METEOCLIMATIC REPORT AND ACTIVITIES ANNEXED TO THE RURITAGE PROJECT

JANUARY 2021

JANUARY 2021 showed rather winter characters, with often cloudy skies, frequent rainfall although modest overall and low temperatures. In this sense, as happened for the first winter month, temperatures remained below - by a few tenths of a degree - the thirty-year seasonal averages and by more than a degree for the last fifteen years. At the highest altitudes in the area, day 17 is to be considered as an FROST day (with $t_{max} < 0^{\circ}C$ - figs. 2 and 4)

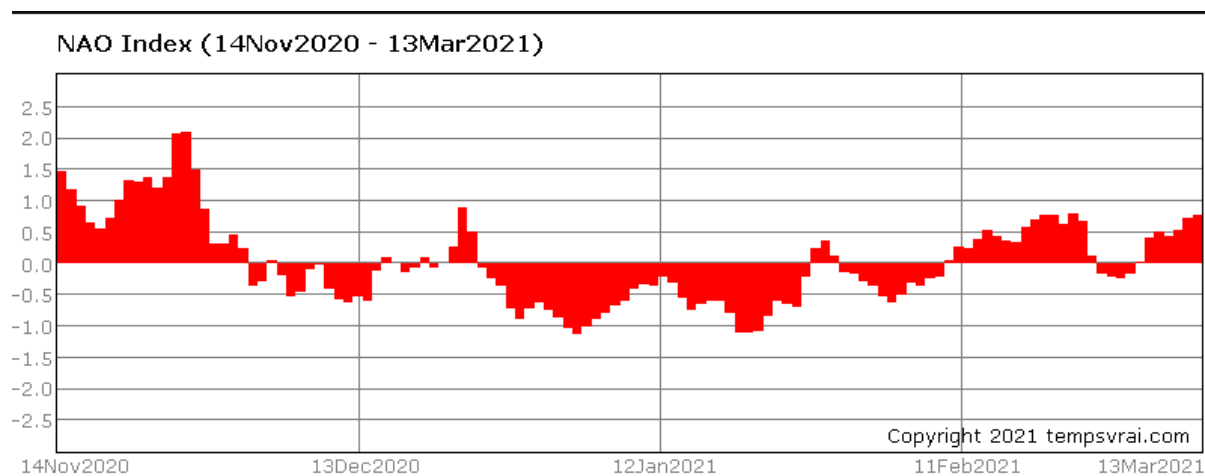


Figure 1 - standardized monthly NAO signal

With regard to the pluviometric situation, the monthly cumulative has just exceeded 50 mm compared to 10 rainy days, moreover there have been other 10 days in which the daily sum did not exceed the 1 mm. The remarkable perturbability derives from the frequent Mediterranean cyclogenesis deriving from the contrast between the warm water of the “Mare Nostrum” and some advections of marine polar air which occurred during the month. The most disturbed phases were concentrated between 8 and 10 and between 22 and 25 (figs. 2 and 4), also favored by a stable negative NAO (fig. 1)

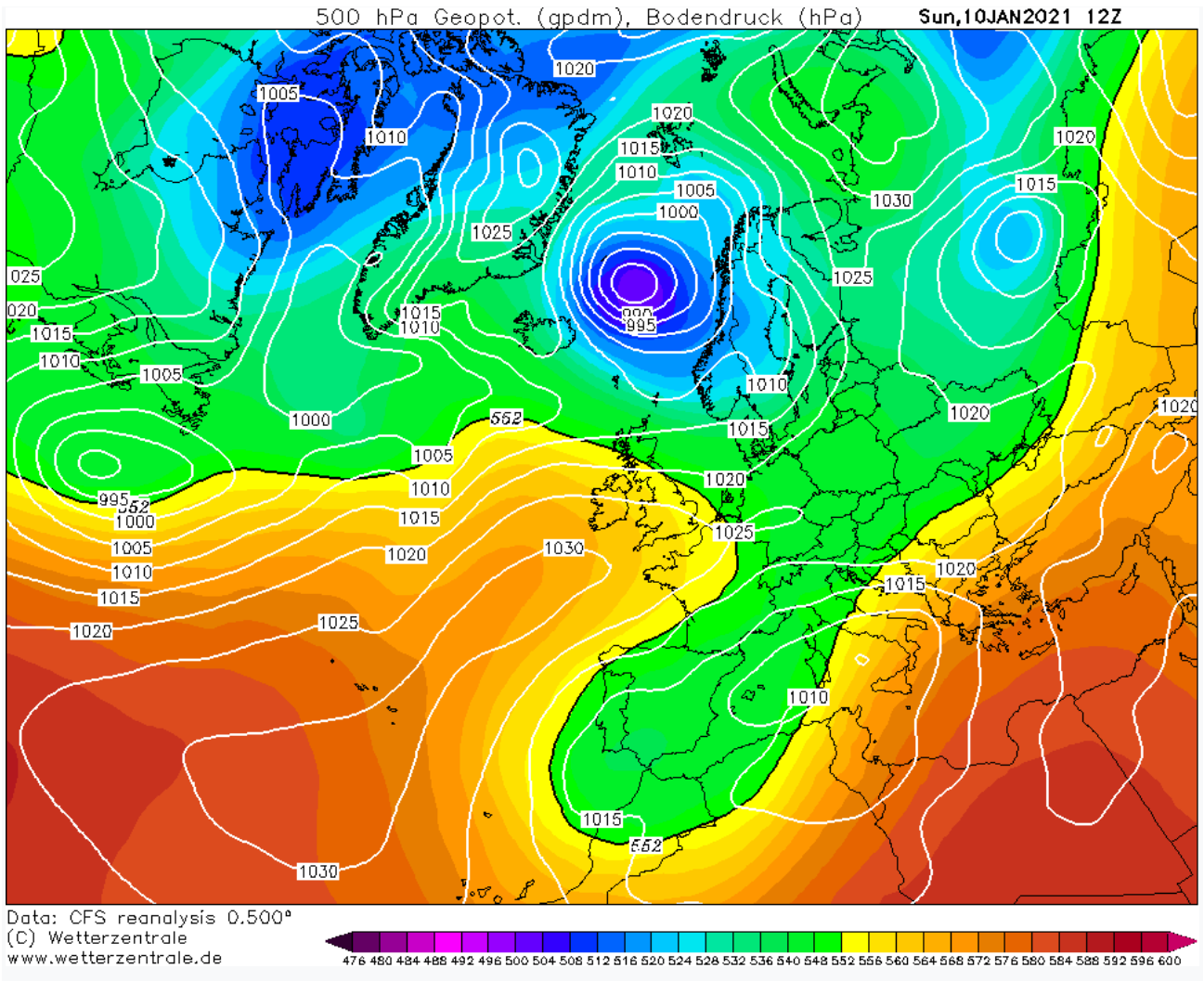


Figure 2 - ground map and geopotential 500 hPa, at 12Z on december 10th

The two most disturbed phases that characterized the month were both due to the formation of low pressures on the western Mediterranean and the consequent recall of sirocco (fig. 2). They produced *phénoménologies* typical of warm fronts with weak but extensive rainfall in space and time.

The frequent descents from polar air have on the other hand resulted in cold nights, with 13 days of frost in the valley floor and average minimum monthly values of only 1.4 ° C

The short cold phase deriving from the advection of arctic-polar sea air which took place between 15 and 17 stands out for its intensity, which caused minimum temperatures decidedly below zero throughout the municipality and even a day of ice over 300 mètres (fig. 3)

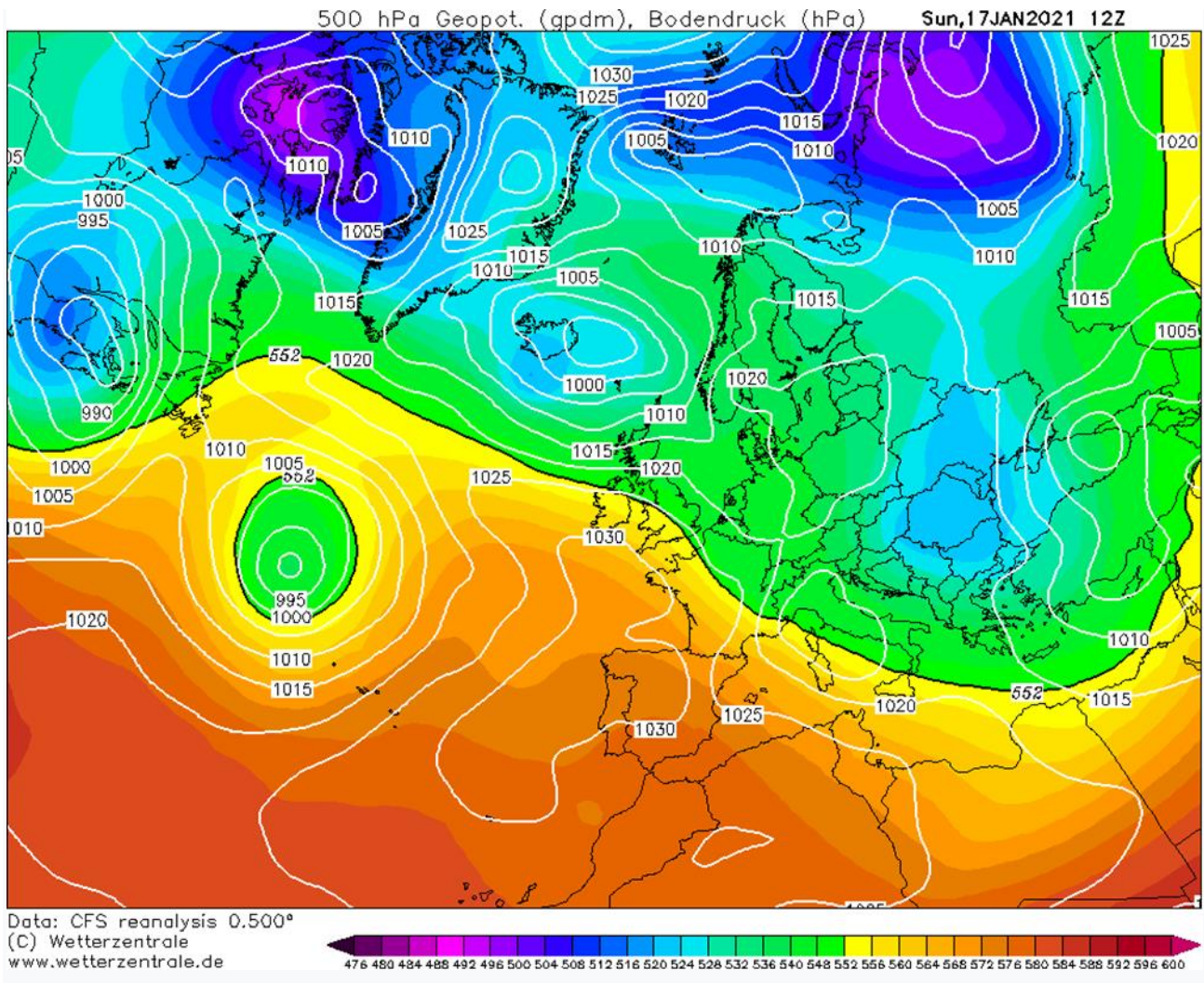


Figure 3- ground map and geopotential 500 hPa, related to 12 pm on december 17th

From the analysis of the thermometric data, complete (Table 1), it can be observed that the **average monthly temperature** was about **6.2° C**, the average minimum and maximum respectively of **1,4 ° C** and **11 ° C**; consequently the average daily temperature range was found to be about 10 ° C practically coincident with the average climate of about 9.7 ° C. The absolute minimum temperature was **-3,2° C** on day 17 while the absolute maximum was recorded on day 30, with **19,4° C**.

Compared to the monthly climatological average calculated for the meteorological station of Ascoli Piceno and related to the period 1981-2015 - of about 6,5 C, - there is a slight **negative deviation of about 0.3 C**, slightly higher in minimum values than the maximum ones. If we consider the average monthly data of the last fifteen years and relating to the station under analysis - coinciding with the thirty-year data of the chief town we see a lower average value of about 1.2° C.

With regard to **rainfall**, the monthly cumulative, as previously highlighted, reached 100 mm spread over 7 days with cumulative > 1mm. Considering a monthly climatic average referring to the Ascoli Piceno weather station is about 97 mm, the monthly cumulative recorded is practically coincident with it but with a deficit in the number of days with rainfall of 30% confirming the extreme rainfall phenomena. In this regard, it is evident that 70% of the accumulated ones fell on days 6 and 26 (fig. 4 and table 1).

With regard to **precipitation**, the monthly cumulate has, as previously highlighted, reached **51 mm** distributed over 10 days with cumulated > 1 mm. They consider a monthly climate average for the meteorological station of Ascoli Piceno is about 84 mm, the cumulative monthly recorded shows a **deficit** in the cumulative of **30%**. The most rainy day, however, recorded a cumulative of less than 12 mm. Despite the moderate cold, there was **no snowfalls**.

Figure 4 and Table 1 show the thermo-rainfall graph and daily climatic data with their monthly averages.

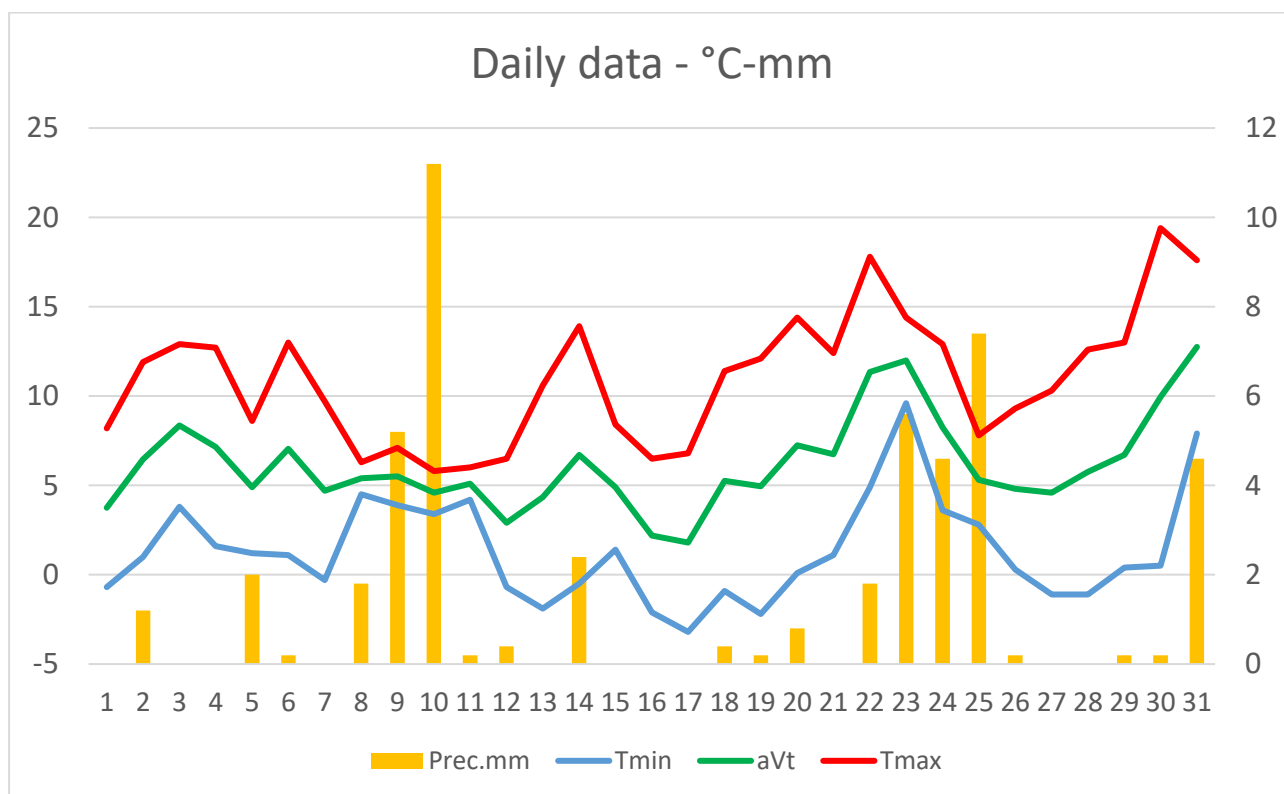


Figure 4 – meteoclimatic daily data

| Y | M | D | Tmin | avt | Tmax | Prec.mm | RD | SD | ID | |
|-------------|---|---|------|------------|------------|-------------|-------------|----|----|-----|
| 2021 | | 1 | 1 | -0,7 | 3,8 | 8,2 | 0 | | * | |
| 2021 | | 1 | 2 | 1 | 6,5 | 11,9 | 1,2 * | | | |
| 2021 | | 1 | 3 | 3,8 | 8,4 | 12,9 | 0 | | | |
| 2021 | | 1 | 4 | 1,6 | 7,2 | 12,7 | 0 | | | |
| 2021 | | 1 | 5 | 1,2 | 4,9 | 8,6 | 2 | | | |
| 2021 | | 1 | 6 | 1,1 | 7,1 | 13 | 0,2 | | | |
| 2021 | | 1 | 7 | -0,3 | 4,7 | 9,7 | 0 | | * | |
| 2021 | | 1 | 8 | 4,5 | 5,4 | 6,3 | 1,8 * | | | |
| 2021 | | 1 | 9 | 3,9 | 5,5 | 7,1 | 5,2 * | | | |
| 2021 | | 1 | 10 | 3,4 | 4,6 | 5,8 | 11,2 * | | | |
| 2021 | | 1 | 11 | 4,2 | 5,1 | 6 | 0,2 | | | |
| 2021 | | 1 | 12 | -0,7 | 2,9 | 6,5 | 0,4 | | * | |
| 2021 | | 1 | 13 | -1,9 | 4,4 | 10,6 | 0 | | * | |
| 2021 | | 1 | 14 | -0,5 | 6,7 | 13,9 | 2,4 * | | * | |
| 2021 | | 1 | 15 | 1,4 | 4,9 | 8,4 | 0 | | | |
| 2021 | | 1 | 16 | -2,1 | 2,2 | 6,5 | 0 | | * | |
| 2021 | | 1 | 17 | -3,2 | 1,8 | 6,8 | 0 | | * | |
| 2021 | | 1 | 18 | -0,9 | 5,3 | 11,4 | 0,4 | | * | |
| 2021 | | 1 | 19 | -2,2 | 5,0 | 12,1 | 0,2 | | * | |
| 2021 | | 1 | 20 | 0,1 | 7,3 | 14,4 | 0,8 | | * | |
| 2021 | | 1 | 21 | 1,1 | 6,8 | 12,4 | 0 | | | |
| 2021 | | 1 | 22 | 4,9 | 11,4 | 17,8 | 1,8 * | | | |
| 2021 | | 1 | 23 | 9,6 | 12,0 | 14,4 | 5,6 * | | | |
| 2021 | | 1 | 24 | 3,6 | 8,3 | 12,9 | 4,6 * | | | |
| 2021 | | 1 | 25 | 2,8 | 5,3 | 7,8 | 7,4 * | | | |
| 2021 | | 1 | 26 | 0,3 | 4,8 | 9,3 | 0,2 | | | |
| 2021 | | 1 | 27 | -1,1 | 4,6 | 10,3 | 0 | | * | |
| 2021 | | 1 | 28 | -1,1 | 5,8 | 12,6 | 0 | | * | |
| 2021 | | 1 | 29 | 0,4 | 6,7 | 13 | 0,2 | | | |
| 2021 | | 1 | 30 | 0,5 | 10,0 | 19,4 | 0,2 | | | |
| 2021 | | 1 | 31 | 7,9 | 12,8 | 17,6 | 4,6 * | | | |
| AVER | | | | 1,4 | 6,2 | 11,0 | 50,6 | 10 | 0 | 12 |
| aver 81-15 | | | | 2,1 | 6,4 | 10,7 | 84 | | | 7,3 |
| aver 03-19 | | | | | 7,6 | | | | | |

Table 1 – daily summary of available meteorological data. LEGEND: Tmin: minimum temperature; avt: average temperature; Tmax: maximum temperature; prec. mm: daily precipitation; monthly sum of total precipitation; RD: days with precipitation > 1mm, SD : days with snow; ID: days of frost (Tmin < 0°C).