
AIR TEMPERATURE

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Preface

Air temperature is measured three times a day: at 7 am, 2 pm and 9 pm. The mean daily temperature represents a quarter of the amount of the morning and the afternoon values and twice the evening value.



Figure 1. Thermometer shelter

Air temperature in Slovenia has a distinctive daily and yearly course. The highest daily temperature is generally recorded early in the afternoon, between 2 and 3 o'clock and the lowest daily temperature is at sunrise. The warmest

month of the year is usually July, but in the mountains it is August. On the other hand January is the coldest month, while in the mountains the coldest month is February.

The biggest daily and annual temperature spans are found in the north-eastern part of Slovenia where the influence of the continental climate is strong. The smallest temperature spans are in the mountains where temperature conditions are close to the open atmosphere, and on the coast where the sea's influence reduces the spans.

Air temperature generally drops with altitude; the mean annual temperature drops by 5.3°C every 1000 m. Besides altitude, the relief also has an influence on air temperature. Temperature inversions on calm and bright nights are common in the basins and valleys of inland Slovenia. High relative humidity, low air temperature, frost and fog are typical of the inversion layer. An inversion can last all day long and for several days. In spring, sometimes a cold and moist air mass covers the northern part of the Adriatic and also causes a temperature inversion in the coastal part of Slovenia.

The sea has an influence on the air temperature along the coast and in the

Soča and Trenta valleys. Because of this the air temperature in autumn and winter is higher than in other similar parts of Slovenia. The morning temperature on the coast is higher than in the inland part of the country all year long. But in spring the sea interferes with heating; this causes a lower maximum air temperature.

The air temperature in cities is higher than in the surrounding countryside. The morning temperature is usually higher and in hot summer the evening one is. The city cools slowly due to various sources of heat (industry, traffic,...), asphalt and concrete surfaces (they are great warmth retainers). The bigger a city the more evident these phenomena are.

Temperature conditions

In Slovenia air temperature varies in different seasons and regions.

Extreme temperature values have been measured in the internal areas of Slovenia at Črnomelj and Babno polje. The highest air temperature measured in Slovenia is 40.6 °C, which was measured at Črnomelj at 2 pm on 5 July 1950. The minimum air temperature is -34.5 °C, which was

measured at Babno polje on 15 and 16 February 1956.

The south-eastern part of Slovenia, the coastal region, is the warmest one. The mean annual air temperature is above 12 °C (in Portorož it is 12.8 °C). The mean air temperature in July exceeds 20 °C and the mean temperature in January is above 4 °C.

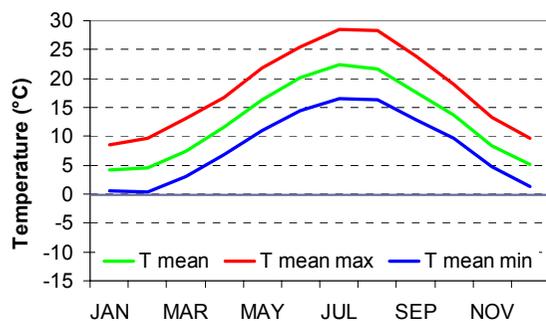


Figure 2. Long-term (1971–2000) mean air temperature (T mean), long-term mean maximum air temperature (T mean max) and long-term mean minimum air temperature (T mean min) in Portorož

On the other hand, mountains and mountain valleys are the coldest part of the country. In mountain valleys the mean annual air temperature is below 8 °C, the mean air temperature of the coldest month of the year (January) is below 0 °C but not lower than -4 °C, while in the warmest month of the year the mean air temperature does not reach 18 °C (see Figure 3).

In the mountains the mean annual air temperature is around 0 °C, the mean air temperature of the coldest month of the year (February) is below -4 °C, while the mean air temperature of the warmest month is below 10 °C. For example, at Kredarica, with an altitude of 2514 m, the mean annual temperature is -1.3 °C, the mean temperature in January is -7.2 °C and in February -8 °C. The warmest month is August, when the mean air temperature is 6.4 °C.

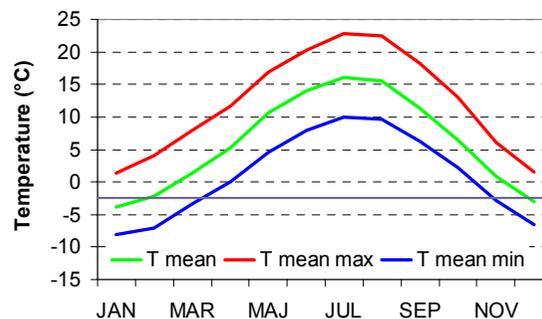


Figure 3. Long-term (1971–2000) mean air temperature (T mean), long-term mean maximum air temperature (T mean max) and long-term mean minimum air temperature (T mean min) in Rateče

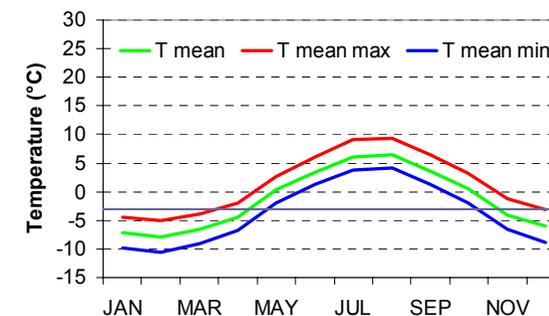


Figure 4. Long-term (1971–2000) mean air temperature (T mean), long-term mean maximum air temperature (T mean max) and long-term mean minimum air temperature (T mean min) at Kredarica

On a larger scale, in the inner parts of Slovenia the mean annual temperature is around 10 °C, in the coldest month the mean temperature is close to 0 °C, while in the warmest it is above 18 °C (see Figure 5).

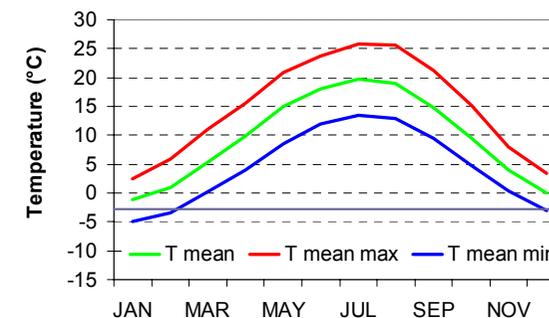


Figure 5. Long-term (1971–2000) mean air temperature (T mean), long-term mean maximum air temperature (T mean max) and long-term mean minimum air temperature (T mean min) in Murska Sobota

Air temperature in Ljubljana

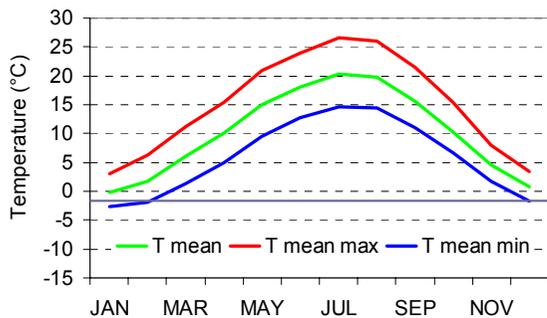


Figure 7. Long-term (1971–2000) mean air temperature (T mean), long-term mean maximum air temperature (T mean max) and long-term mean minimum air temperature (T mean min) in Ljubljana

Air temperature conditions in Ljubljana are similar to the conditions experienced by the inner parts of Slovenia. The mean annual air temperature is 10.2 °C, the mean temperature for July is 20.4 and for January it is -0.2 °C. In the cold part of the year temperature inversions are quite frequent. The phenomenon of a higher air temperature in the city than in the surrounding countryside is also noticed in Ljubljana. Air temperature in Ljubljana has been measured since 1851. In the 1851-2005 period, the coldest year was 1871 when the mean annual air temperature was 7.8 °C, but 2000 was the warmest one

when the mean annual air temperature was 12.2 °C.

In the 1948-2005 period in Ljubljana the maximum air temperature of 38.8 °C was measured on 6 July 1950, and the minimum of -23.3 °C on 16 February 1956. The highest number of days with a maximum air temperature below 0 °C was in 1963 (49 days); on average, in Ljubljana there are 17 such days. On the other hand, in 1998 there was the highest number of days with a maximum air temperature above 30 °C (33 days); in Ljubljana there are on average 14 such days.

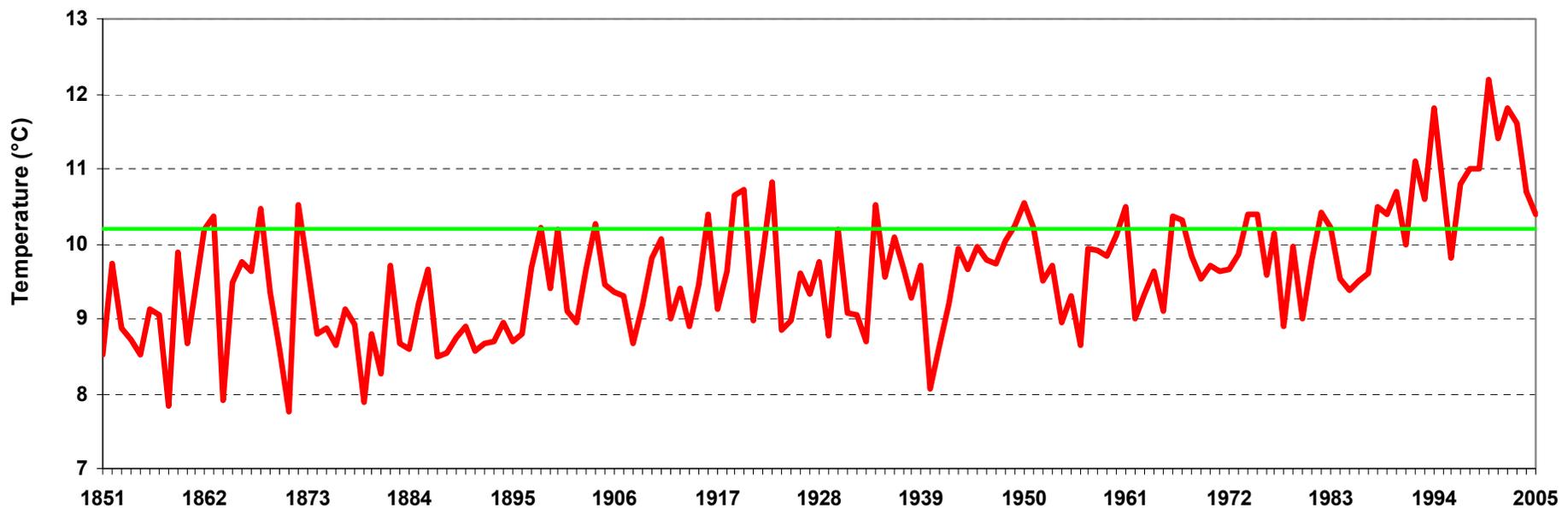


Figure 8. Mean annual air temperature in Ljubljana from 1851–2005 and long-term (1971-2000) mean air temperature (green line)