

1. NUMBER OF HOURS OF BRIGHT SUNSHINE  
2. RELATIVE HUMIDITY

1. Number of Hours of Bright Sunshine

The number of hours of bright sunshine is the time when the sunlight shines over the surface of the ground without being screened by clouds or mist. More accurately, the number of hours of bright sunshine is expressed by local apparent solar time.

The annual number of hours of bright sunshine is large in areas along the Pacific Ocean but small in areas along the Japan Sea. By season, the number of hours of bright sunshine is extremely small in areas along the Japan Sea in winter since the sky is covered with snow clouds, whereas it is large on the Pacific Ocean side since it has fine weather every day. The regional differences in summer are not as conspicuous as in winter.

The 1: 8,000,000 scale maps showing the numbers of hours of bright sunshine per day were prepared on the basis of data collected from about 150 meteorological offices throughout the country.

The possible duration of sunshine represents the number of hours from the rise of the sun's center from the horizon to its disappearance from the horizon. This value is calculated on the basis of the longitude, latitude and altitude of a given point without considering the hours in which the sun is screened by mountains and other obstacles. The percentage of possible sunshine is gained by dividing the number of hours of bright sunshine by the duration of possible sunshine. This value represents the ratio of the sun not being screened by clouds and other obstacles and may be converted into an approximate mean amount of cloud cover for a given point.

The amount of solar radiation is regarded as heat received by the ground surface from the sun or sky. The amount of solar radiation consists of the amount of direct solar radiation and the amount of global solar radiation. The former represents the amount of solar radiation in which the sunlight directly reaches the ground surface and is difficult to observe. The latter represents the amount of solar radiation coming in from all directions of the sky. The amount of solar radiation is generally expressed in terms of calories of heat received by the ground surface per square centimeter a day. The maps showing the amounts of global solar radiation were prepared on the basis of the mean values for the period 1961 through 1970 obtained from about 65 meteorological offices where statistics on the amounts of solar radiation are available.

Sources

1. Japan Meteorological Agency, Climatic Table of Japan, Pt. 2, Monthly Normals by Stations (1941-1970), 1972.
2. Japan Meteorological Agency, Climatic Atlas of Japan, Vol. 2, 1972.

2. Relative Humidity

Humidity represents amounts of water vapor in the atmosphere. Absolute humidity is the mass of water vapor contained in the unit cubic volume. The principles of absolute humidity are simple, but its measurement is difficult. As the temperature fluctuates, there appears a change in the amount of water vapor contained in the unit cubic volume, with the consequence that absolute humidity is not an appropriate yardstick to indicate degrees of wetness in the atmosphere perceivable by the human body. Relative humidity (known merely as "humidity" at times) is the ratio of the amount of water vapor actually present in the air to the greatest amount possible at the same temperature. Since the humidity is variable all day, the Japan Meteorological Agency makes observations four times a day (0300, 0900, 1500 and 2100 hours) and takes the mean as the humidity reading for the day.

It is humid in Japan, which is an insular country, as wet air flows in from above the seas. It is particularly hot and humid in the summertime and during the long spells of rain in early summer and autumn when the front hovers overhead. In winter, however, it is continuously dry and the humidity is low on the Pacific Ocean side.

The 1: 12,000,000 scale maps showing degrees of relative humidity were prepared on the basis of the norms recorded at about 150 meteorological

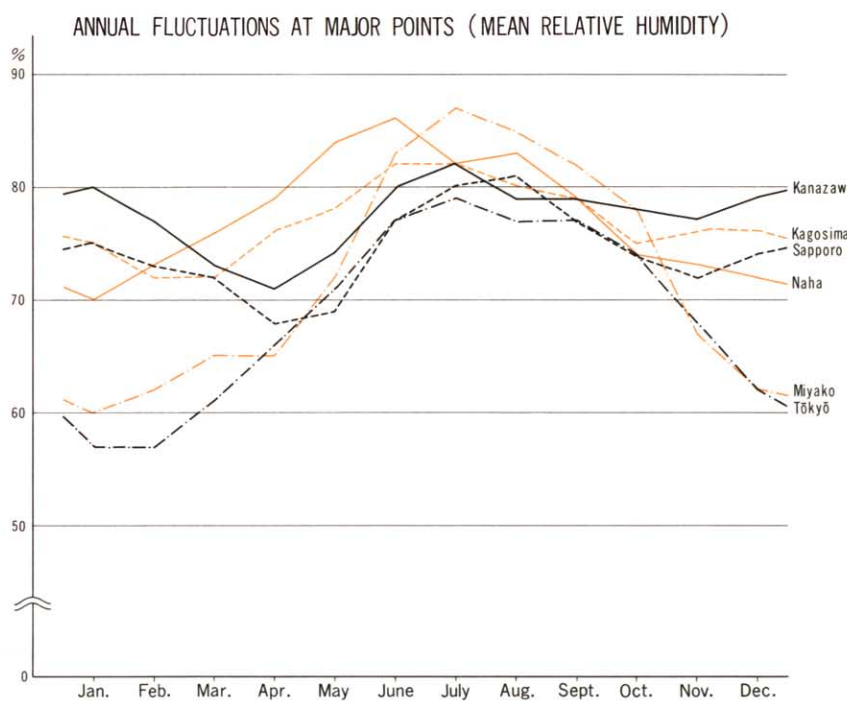
offices.

Of the various types of atmospheric pressure, the pressure caused by water vapor is known as water vapor pressure and expressed in millibars (mb). Water vapor pressure increases or decreases in correlation to the amount of water vapor and could be looked upon as a variation of the unit of absolute humidity.

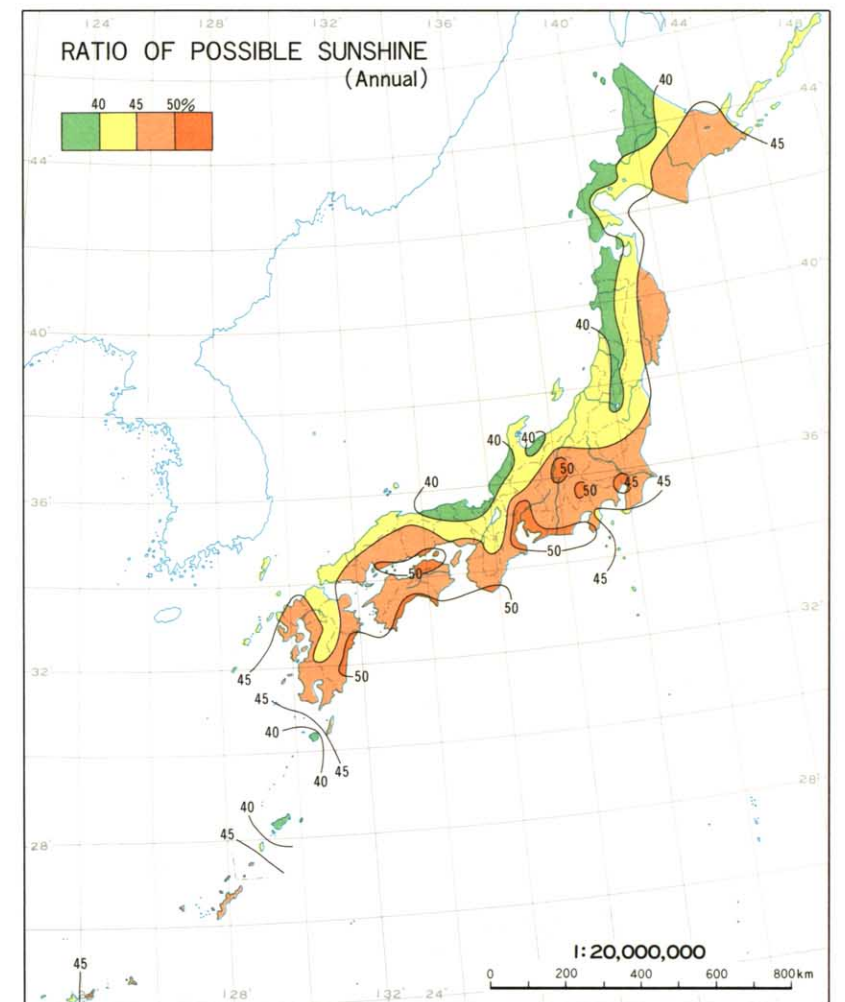
The maps showing values of mean water vapor pressure were prepared on the basis of the norms recorded by about 90 meteorological offices where statistics on water vapor pressure are available.

Sources

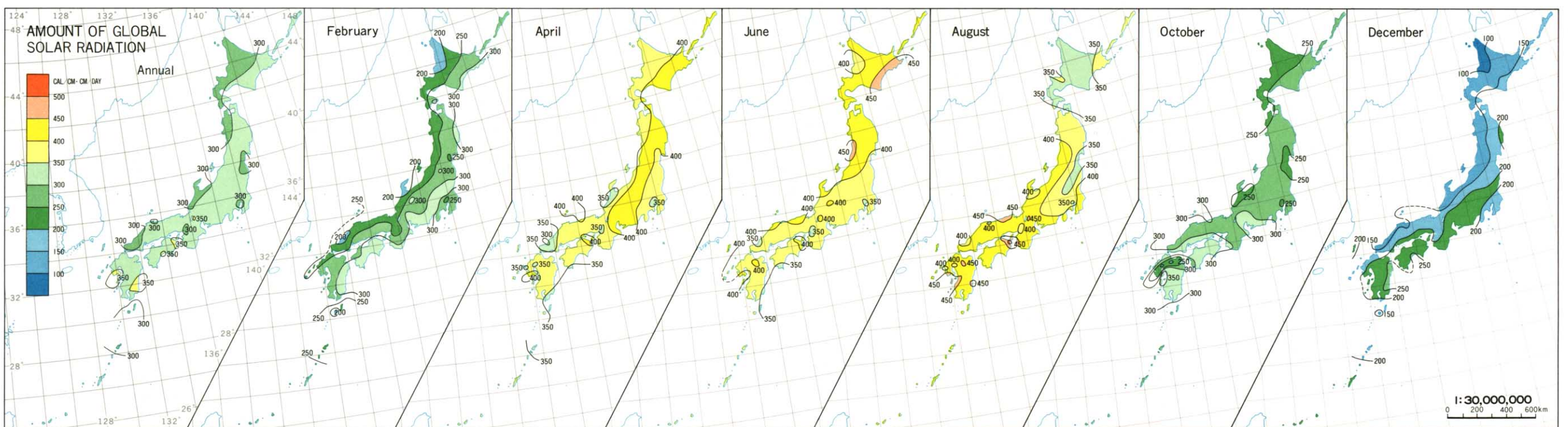
1. Japan Meteorological Agency, Climatic Table of Japan, Pt. 2, Monthly Normals by Stations (1941-1970), 1972.
2. Japan Meteorological Agency, Climatic Atlas of Japan, Vol. 1, 1971.
3. Japan Meteorological Agency, Climatic Atlas of Japan, Vol. 2, 1972.



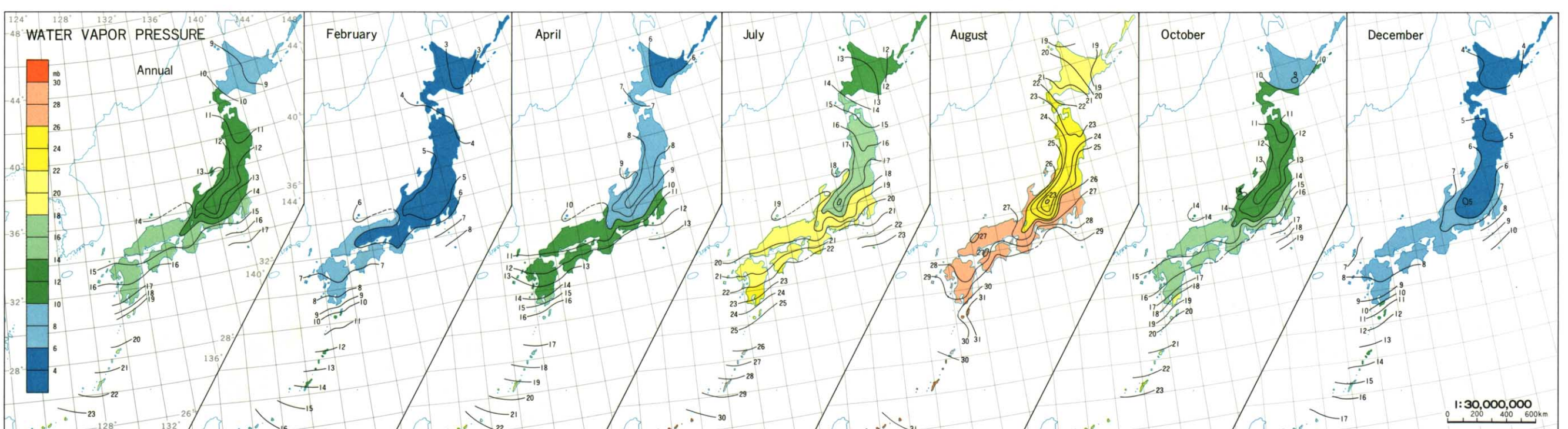
(Compiled from the Climatic Table of Japan)



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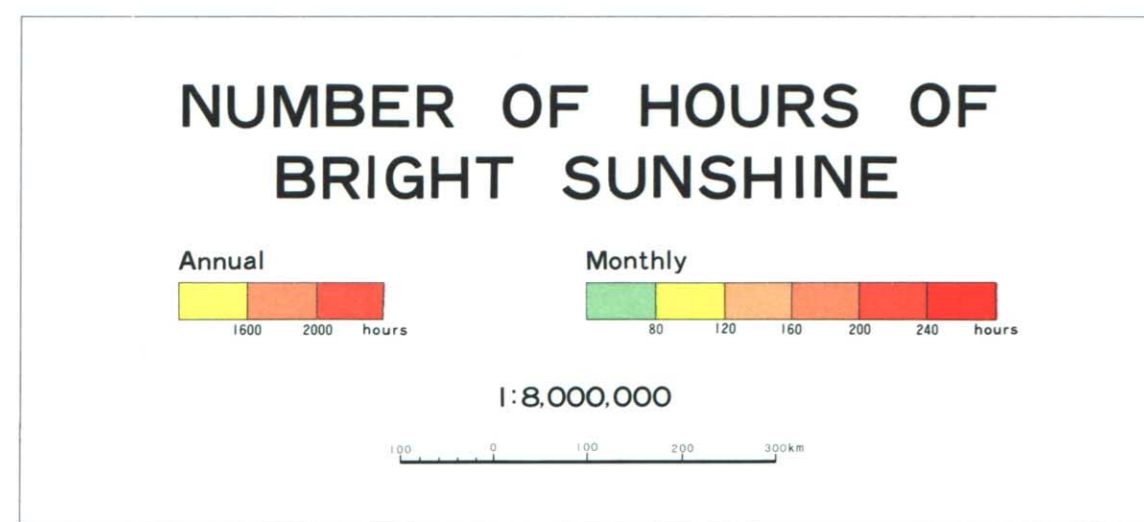


(Compiled from the Climatic Table of Japan)



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15.1



Annual Changes

