

THORNTHWAITE CLIMATIC CLASSIFICATION OF KARNATAKA

1. The climate of India was classified according to Thornthwaite and Mather (1955) by Subrahmanyam *et al.* (1965) and Rao *et al.* (1972) and that of Karnataka by Subramaniam (1964). Here Karnataka climate has been classified according to the same scheme at taluk level.

2. The recent annual rainfall normals of all the taluk headquarters in Karnataka were collected (Anon. 1981). The annual normals of the Penman's potential evapotranspiration (PET) of all the district headquarters in Karnataka were collected from the publication of Rao *et al.* (1971). The Penman PET of each district was used in the computation of all the taluks of that district. The moisture index ($I_m\%$) of Thornthwaite was computed for each taluk using the formula,

$$I_m(\%) = \frac{P - PET}{PET} \times 100$$

where, P is the annual precipitation in mm and PET is the annual potential evapotranspiration in mm.

2.1. The climate of Karnataka was classified following the scheme of Thornthwaite and Mather (1955) with the following limits of $I_m\%$:

Classification	Type	Limits of $I_m\%$
Perhumid	A	100 and above
Humid	B	20 to 100
Moist subhumid	C ₂	0 to 20
Dry subhumid	C ₁	-33.3 to 0
Semi-arid	D	-66.7 to -33.3
Arid	E	-100 to -66.7

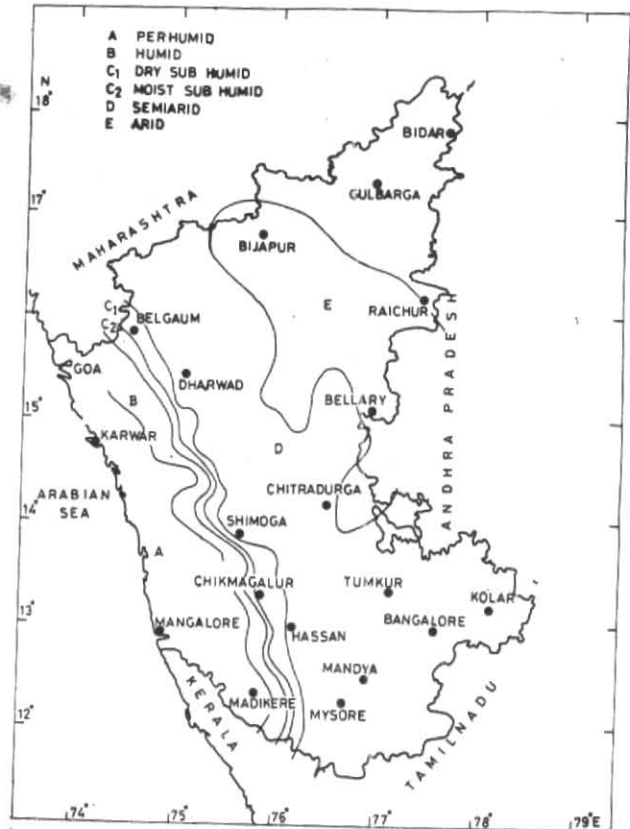


Fig. 1. Thornthwaite climatic classification of Karnataka

3. All the climatic types of Thornthwaite are found in Karnataka (Fig. 1). Perhumid climate is observed in the coastal districts of utara Kannada and dakshina Kannada, in the hilly district of Kodagu and the western parts of Shimoga and

Chikkamagalur. Humid climate is seen in a narrow zone running nearly north-south, to the east of the perhumid climate. Thin zones of the transition climate, viz., moist subhumid and dry subhumid are found, parallel to the humid belt towards the east. The major portion of Karnataka is occupied by the semi-arid climate. The driest climate, viz., arid is found in the interior northeast Karnataka enveloping parts of Bijapur, Raichur, Bellary and also part of Chitradurga.

3.1. There is a general similarity between these results and those of Rao *et al.* (1972). The transitional climates found in the south-east Karnataka according to Subramaniam (1964) are not present in this classification, otherwise there is a similarity between Subramaniam's (1964) and this work. Fig. 1. enables us to ascertain the climatic type of any taluk.

4. The wet climates are found in the coastal and adjoining region. With a rapid transition towards the east, the semi-arid, which occupies the major area, is reached. The arid zone is observed in the central northeast Karnataka. All the possible spectrum of climate is visible in Karnataka.

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