



agriculture & rural development

Department:
agriculture
& rural development
PROVINCE OF KWAZULU-NATAL

PASTURES IN KWAZULU-NATAL

BIOCLIMATIC GROUPS OF NATAL

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INTRODUCTION

Philips, in *The agricultural and related development of the Tugela Basin and its influent surrounds (Town and Regional Planning Report, Volume 9, Town and Regional Planning Commission, Natal, 1973)*, has classified the extremely varied natural resources of Natal into 11 bioclimatic groups. The original classification has been modified to include the portion of Natal commonly known as East Griqualand. These groups are convenient natural resource classes in terms of which pasture production guidelines can be formulated.

A brief description of the essential characteristics of each of the 11 bioclimatic groups is given, with Acocks Veld Type and commonly used "veld type" names given in brackets after the Bioclimatic Group name.

BIOCLIMATIC GROUPS

Bioclimatic Group 1: Coast Lowlands (Coastal forest and Thornveld)

The Coast Lowlands occur as a belt, 15 to 65 km wide along the coast, from sea level to an altitude of 450m. Rainfall is well distributed with the annual figure varying between 850 and 1 400 mm. Average annual temperatures of 20 to 22,5EC are experienced. Few dry months occur. Very little, or no frost occurs in winter, with very high humidity occurring during the months October to March.

Bioclimatic Group 2: Coast Hinterland (Ngongoni Veld)

The topography of the Coast Hinterland is steep and broken with altitudes ranging from 450 to 900 m. Annual rainfall varies between 850 and 1 300 mm. Average annual temperatures vary from 17,5 to 20EC with relatively high humidity. Short term droughts occur occasionally.

Bioclimatic Group 3: Mist-belt (Ngongoni Veld of Natal Mist-belt)

Altitudes in the Mist-belt range from 900 to 1 400 m. Annual rainfall varies between 800 and 1 600 mm. Mist is common, and average annual temperatures are between 16 and 18EC. Main climate hazards include occasional dry spells of short duration in summer, excessive cloudiness in early summer, slight to sometimes severe frosts, occasional severe hail and hot berg winds in early spring.

Bioclimatic Group 4: Highland (Highland Sourveld)

Altitudes in the Highland range from 1 400 to 2 000 m. The annual rainfall ranges from 800 to 1 500 mm. Average annual temperatures are between 13 and 15EC. Mild summer conditions are followed by regular, severe to very severe frosts, resulting in a relatively short growing season. Snow is experienced occasionally and severe hail storms occur periodically. Frequent strong, cold winds depress temperatures early in spring.

Bioclimatic Group 5: Montane (*Themeda* — *Festuca* Alpine Veld)

Altitudes in the Montane region range from 1 950 to 3 400 m. The mean annual rainfall exceeds 1 500 mm. General climatic conditions include cool summers, cold winters with frequent snowfalls, severe frost, hail and intense ultraviolet radiation.

Bioclimatic Group 6: Upland, moister type (Southern Tall Grassveld, also referred to as Moist Tall Grassveld)

Bioclimatic Group 6 forms the transition between Groups 4 (high altitude, cool, high rainfall), and Groups 8 and 10 (low altitudes, warm, low rainfall). Altitudes range from 900 to 1 400 m. The range in rainfall is between 800 to 1 000 mm. There are 3 to 4 dry months. Average annual temperatures are between 16 and 18EC, with moderate to severe frosts for several months in winter and occasional hail storms in summer.

Bioclimatic Group 7: Riverine (Lower Tugela): (Valley Bushveld)

Altitude in Bioclimatic Group 7 ranges from 300 to 600 m. Annual rainfall ranges from 700 to 800 mm. Average annual temperatures are between 17 and 22EC. General climatic conditions include frequent droughts, occasional light frosts, high temperatures and hail. This relatively small area is transitional between the dry Bioclimatic Group 10 and the Coast Hinterland (Bioclimatic Group 2).

Bioclimatic Group 8: Upland, drier type (includes Piet Retief Sourveld, Northern Tall Grassveld, Natal Sour Sandveld; also referred to as Dry Tall Grassveld)

Altitudes in Bioclimatic Group 8 range from 900 to 1 400 m, with annual rainfall ranging from 600 to 800 mm, and averaging 716 mm. There are 4 to 5 dry months.

Average annual temperatures vary between 16 and 18EC. Climatic hazards include erratic rainfall, frequent periods of moisture stress and moderate to severe frosts in winter.

Bioclimatic Group 9: Lowland to Upland, Mild sub-arid (Zululand): (Zululand Thornveld)

Altitudes in Bioclimatic Group 9 range from 150 to 1 100 m. Annual rainfall ranges from 700 to 850 mm.

There are 4 dry months. Average annual temperatures are between 21 and 22EC. Frosts are very rare. Prolonged dry spells during the rainy season constitute the main hazard.

Bioclimatic Group 10: Sub-arid, Riverine and Lowland (Lowveld and Valley Bushveld)

Bioclimatic Group 10 consists of two extensive areas of interior lowland, and the main river valleys where the terrain often is excessively steep, broken and rocky. Altitudes range from 150 to 900 m. Apart from two extensive areas of interior lowland, mostly in KwaZulu, this Bioclimatic Group is highly fragmented. Annual rainfall ranges between 600 and 700 mm. There are 3 to 5 dry months. Rain shadow effects are particularly marked in this group. Mean annual temperatures are between 18 and 23EC and may rise to 26EC locally. Frequent periods of drought are a major hazard.

Bioclimatic Group 11: Arid, Lowland (Zululand): (Arid Lowveld)

Altitudes in Bioclimatic Group 11 range from 150 to 450 m. This is the most arid bioclimatic group, receiving an annual rainfall of between 520 and 600 mm and experiencing 6 or more dry months. Average annual temperatures are between 21 and 23EC, but locally may be considerably higher. Main climatic hazards include low and erratic rainfall, high temperatures and excessive evaporative demand.