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Relation of Soils and Geomorphic Surfaces in the Brazilian Cerrado

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THE CERRADO REGION IS LOCATED BETWEEN THE EQUATORIAL zone and 23° south latitude. It is bordered by the Amazon forest to the north, by the Atlantic forest to the south and southeast, and by the *caatinga* (deciduous xerophytic vegetation) of the semiarid region to the northeast. Also included in the cerrado region is the nonflooded part of the western *pantanal* (wet plains; see chapter 6). During its evolutionary process, the areal extent of the cerrado expanded and contracted in response to climatic fluctuations. During dry periods, the cerrado expanded at the expense of forest (Ab'Saber 1963). During wet periods, forest expanded at the expense of cerrado except in places that were depleted of plant nutrients and that presented some water deficiency (Resende 1976). Once established, the cerrado tends to maintain itself with more tenacity than other vegetation formations because the climate and soil factors that favor it are not extreme (Ker and Resende 1996). In contrast, other vegetation types are favored by more severe conditions. For example, the xerophytic *caatinga* is maintained by the very pronounced water deficiency in a semiarid climate. The *pantanal*, an extensive, low-lying waterlogged plain with hydrophytic grassland in the central-western region, is maintained by a severe oxygen deficiency. The cerrado region has great climatic diversity because of its wide latitudinal and altitudinal ranges. In addition to its 15° range in latitude, the cerrado varies in altitude from 100 m in the *pantanal* to 1,500 m in some of the more elevated tablelands of the Central Plateau.