Title: Ecological Regions Map for Forest plantation at Paraná State, Brazil

Authors: Fritzsons, Elenice; Mantovani, Luiz Eduardo; Carpanezzi, Antonio Aparecido; Wrege, Marcos; Garrastazu, Marilice; Chaves Neto, Anselmo

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Abstract of the paper: The Paraná State ecological regions map for forest plantation identifies similar ecological areas relied over climate, soil and vegetation covering 199.314 km² in Southern Brazil. This procedure presents other utilities for natural ecosystems conservation, land use planning including agrossilvopastoril production managing. Success in reforestation and ecosystem recovery requires species that have adjusted geographic origins to the new environments. The Paraná State presents climatic conditions going from subtropical over range and plateau highlands until humid tropical through the coastal zone and tropical wet and dry climate in the northern Paraná River basin. All through his surface, diverse landscapes are present: subtropical araucaria pine forests, subtropical humid prairies, tropical Atlantic mountain and coastal plain forests, some savannas, wet meadows, mangroves and Atlantic coast restingas (on sandy, acidic, and nutrient-poor soils, characterized by medium sized trees and grass). Nowadays large amounts of this territory are occupied with soya, corn, wheat, sugar cane, coffee farms, pastures, tree plantations and forest fragments. In this context, we try to define units of similar climate in the Paraná State employing statistical analysis and geographic information systems. Collected climatic series data from 82 meteorological stations had been used: average temperature of the minims, absolute extreme maximum temperature, absolute extreme minimum temperature, annual average temperature, annual thermal amplitude; July average temperature, January average temperature, average number of frosts days observed during one year, annual average relative humidity, maximum precipitation in 24 hours, annual total precipitation, wettest trimester, drier trimester, difference between trimesters, evaporation, Solar insolation, precipitation minus evaporation and average thermal amplitudes. These 18 variables with the data of all stations were submitted to multivariate analyses (Cluster and Principal Components Analysis). Each station was located over the 1:600.000 scale hypsometric map sliced with a 100 meters vertical equidistance, and had been signaled in accordance with groupings from the cluster analysis. The surface delimitation of the climates issued from linked stations was made by geomorphological, hydrographical and phytogeographical criteria of distribution. Ten great groups and some sub-groups had been gotten. A relevancy table was built with climatic characterization of each specific climatic group. This systemic table is important to guide the allocation of new forestry species to the State homoclimate zones.

Email: elenice@cnpf.embrapa.br, lem@ufpr.br, carpa@ufpr.br, wrege@cnpf.embrapa.br, marilice@cnpf.embrapa.br, anselmo@ufpr.br

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