

Regional geology of the upper Negro River area - Amazon - Brazil

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The geology of northwesternmost Brazil in Amazonas State has been reinterpreted and updated for SIVAM Project (scale 1:250,000) using remote sensing (LANDSAT 5 radar mosaics), RADAM maps and fieldwork data. Geotectonically, the study area is within the Amazonic Structural Province including the Parima-Tapajós and Central Guiana Mobile Belts, both related to the Transamazonic Cycle (2.3 - 1.9 Ga), and the Mesoproterozoic Rio Negro-Juruena Mobile Belt.

Basement rocks comprising the Urariquera (E), Cauaburi (central and NW areas) and Rio Traíra Complexes (Colombian border) usually consist of gneisses, granitoids and migmatites. Gneisses and aluminous granitoids with sillimanite crop out northward along the upper Uaupés River. Paleo-Mesoproterozoic sedimentary rocks overlying the basement in the highest Brazilian mountains (Neblina Mt, 3,014 m) include continental and transitional sequences of the Roraima Supergroup. Coeval metasediments and volcanic rocks also occur in the Tunuí mountains. Extending to the east along the Negro River, biotite granites with titanite, known as the Curicuriari Intrusive Suite, gave rise to a gentle topography. High-grade metamorphism (anatexis) of sedimentary rocks produced the Içana granitoids. Stocks of gabbro and olivine websterite named the Tapuruquara Intrusive Suite occur to the SE, whereas several inselbergs to the N are related to a highly aluminous, post-tectonic granite unit (Tiquié) emplaced into older rocks. A Mesozoic carbonatite intrusion highly enriched in rare earths occurs in Seis Lagos Hill. Quaternary deposits comprise sandy sequences doubtfully correlated with the Içá Formation (best represented to the S), lateritic covers and Holocene alluvial deposits.