

Biodiversity Research Consortium (BRC): A technical and scientific partnership in search of "State of the Art" Mined Area Recovery

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Abstract

Hydro Paragominas is a bauxite mining company that operates in the municipality of Paragominas, in Pará State, Brazil. To carry out environmental restoration activities as close as possible to what was before or with superior environmental quality, Hydro has an initiative to create the Brazil-Norway Biodiversity Research Consortium (BRC), aiming to achieve existing, and create a new "State of Art in Environmental Restoration "in areas of bauxite mining. Of this initiative, 26 projects were approved and are in the implementation phase (be it budgetary or technical). Of these, three are presented with their main results. These projects are: Terrestrial Mammal Monitoring Project (25 species were recorded, 11 of conservation interest); Evaluation of chemical components of stored wood (favorable results in increasing organic matter in soil); Biodiversity of Birds, where 240 species were registered, 146 in the forest areas, 53 species in the Natural Regeneration technique, 49 species in the Traditional Planting technique and 37 in the Nucleation technique. For the academy, these four studies assisted in the development of 5 master's degrees; one graduation, with 14 students involved. In total the BRC's projects have at least 100 researchers and students working on surveys, 10 master's degrees concluded (and more in progress), 9 graduation's degree concluded, and several papers and articles produced. During the studies 3 new species of fungi, a new species of lichen and a new species of bug was discovered.

Keywords: Biodiversity, BRC, Hydro Paragominas, Amazon, Research.

1. Introduction

Hydro Paragominas is a project located in municipality of Paragominas, in the state of Pará, Brazil, which mines and beneficiates bauxite ore, transforming it into pulp (50% water and 50% ore), that is sent by pipeline to the municipality of Barcarena (244 km), to transform into alumina and later aluminium.

Mining activities have as the first step the removal of vegetation before the excavation of topsoil and overburden to reach the bauxite deposit. After this last stage, the organic rich topsoil, which is removed and stored, is returned to the mined area after contour reshaping with overburden to initiate forest recovery. Three different techniques are used for reforestation: Traditional Planting; Natural Regeneration; and a third and innovative technique, Nucleation.

On its own initiative, Norsk Hydro ASA (Hydro) invited four academic institutions to research and study three different scientific themes. This work had the purpose of establishing a model of environmental restoration proposed by scientific criteria integrating the academy and the technical operation, along with fostering the knowledge of Amazonian biodiversity and the exchange of technical-scientific learning, to achieve the State of the Art in Environmental Restoration after bauxite mining.