

## **WHAT REVEGETATION METHOD WILL RESTORE THE BIODIVERSITY OF OLD MINE SITES IN NEW CALEDONIA**

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New Caledonia is renowned for its floristic diversity and high level of endemism. Outcrops of ultramafic rock, the origin of nickel ore, cover 1/3 of the Grand Terre (main island) and possess a highly diverse flora (1800 species of phanerogams of which 1150 species are endemic to these outcrops)

Nickel mine revegetation practices in New Caledonia are based on three methods. Site rehabilitation is carried out by either artificially improving substrate conditions, hence favouring exotic species or by implanting several gregarious nitrogen fixing species (Casuarinaceae, Leguminosae), or by establishing a variety of endemic ultramafic colonisers (Cyperaceae, Myrtaceae, Proteaceae ...). These three methods differ in their ability to both restore the biological conditions of the site and reconstitute its original biodiversity. Studies of the natural and secondary vegetation show the possible effects vegetation composition have on restoring the fertility of the underlying soil.

Preliminary results indicate that endemic ultramafic species are slow growing due to the poor nutrient status of the substrate. Many of the species accumulate different plant nutrients. Combining these ultramafic colonisers with nitrogen fixing species may increase the growth and eventual establishment of a diverse endemic flora.