

**COMPARISON OF COMMERCIAL FISH ASSEMBLAGES OF NEW CALEDONIAN  
FRINGING REEFS SUBJECTED TO DIFFERENT LEVELS OF GROUND EROSION**

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A comparative study was conducted in two zones of the Northern Province of New Caledonia, one located windward (East coast) and the other located leeward (West coast). In each zone, three major sectors were investigated; fringing reefs close to areas subjected to important mining activities, fringing reefs close to areas subjected to moderate mining activities, and fringing reefs close to areas free of mining activities. In addition, on the west coast, fringing reefs close to areas subjected to high natural ground erosion were also studied. Only commercial species *sensus lato* were censused, along 50 m transects using visual censuses. A total of 153 stations are considered, concerning approximatively 155 fish species. Substrate characteristics were not statistically different between zones and sectors. However, significant differences were observed for living organisms: the live coral cover was higher on non-mining sectors than on the mining ones, and the algal coverage increased in mining sectors and in sector subjected to high ground erosion. The structures of fish communities (trophic, demographic, ecological, potential size, and size of schools) differed between sectors, but without a clear link with mining activities or ground erosion. The three main descriptors of the commercial fish communities (e.g. mean species richness, density and biomass) have all shown lower values in sectors not subjected to mining activities or ground erosion, although these trends were not all statistically significant. Similar results were found for some of the major fish families, such as the Acanthuridae and Siganidae, whereas other families had no specific pattern, such as the Lutjanidae, or a «partial» pattern (i.e. a trend on only one coast), such as the Serranidae, Lethrinidae, Mullidae, Labridae and Scaridae. Among the 66 major species, 23 have increased in densities and/or biomasses with increasing mining and/or ground erosion levels, and 6 displayed the opposite trend.

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