

Chapter 4

Assessment of targeted fish stocks of the northwestern lagoon of Grande-Terre, New Caledonia

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SUMMARY

- An initial stock assessment of select targeted coral reef fishes was undertaken on a wide range of coral reef habitats in the northwest lagoon area (Yandé to Koumac) of New Caledonia. Observations were made by underwater visual counts while SCUBA diving.
- From the target list of 164 species, a total of 127 target species from 51 genera and 18 families were recorded on 63 transects (each of 500 m²) at 52 sites.
- The most diverse families observed were Acanthuridae, Scaridae, Serranidae, Lutjanidae and Labridae, but the most abundant species were from the family Caesionidae.
- Caesionids contributed over 60% of fish counted and over 21% of total biomass with *Caesio caerulea* being the most abundant species of this family.
- Counts of individual target fishes ranged from zero to 2,839 (mean 257).
- There was a trend for decreases in the mean number of target families, species, number of fish and biomass observed from the outer barrier reef to the inshore reefs. The barrier reef had the highest observed values.
- Mean target species biomass as well as mean densities and lengths of Serranids observed were greater than that observed during several other Conservation International Marine Rapid Assessment Surveys in western central Pacific areas using similar methods, including Raja Ampat in Indonesia.

INTRODUCTION

There are three main types of fishing for finfish in New Caledonia that include lagoon, coastal and deep sea. Lagoon fishing is generally intended for the local market. Much of this is amateur and sustenance fishing which is more important in terms of tonnage caught than commercial fishing. Coastal fishing takes advantage of the resources on the ocean side of the reef. Deep sea fishing is for tuna, marlin and pelagic fish in the Exclusive Economic Zone (EEZ) to 200 miles offshore. This is nearly all for export, mostly to Japan for fresh bigeye and yellowfin tuna, and Europe for frozen fish (Chamber of Commerce and Industry of New Caledonia or CCINC, 2005). All tuna fishing within the EEZ is carried out by French flag-owned boats. Since 2001, no licenses have been issued to foreign vessels (West Pacific Regional Fisheries Marine Council or WPRFMC, 2006).

This chapter addresses the stocks of reef and lagoon fishes of commercial, recreational, or artisanal importance in the northwestern lagoon of New Caledonia, and assesses their distribution and abundance observed during the survey period. The survey area is in the northwestern part of Province Nord from Yandé Island and nearby reefs in the north to Koumac and nearby reef sites in the south (Map 1).

This area of New Caledonia generally has a low level of development and small population. A study by Labrosse et al. (2000) showed that fish stocks in the northern part of this area were virtually un-fished, while fish communities in the southern part of this zone show