



Protection of floristic diversity in New Caledonia

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Abstract. In New Caledonia, protected areas exist only on Grande Terre (mainly in the south of the main island, 16,500 km²). These land areas have been created either for their wealth of endemic plants, for their fauna, or to meet the needs of the population (protection of water supplies, tourist sites). Whatever their aims, in practice they protect only two types of plant formation: evergreen forest and maquis on ultrabasic substrates (South), covering only about 9% of the total area. This low percentage makes it necessary to (a) in-

crease the surface protected for the formations involved; (b) create protection zones urgently in the following formations not yet covered: mangrove, evergreen forest on schists and on limestone (Loyalty Islands) and sclerophyll forest; and (c) list the species exhibiting disjunct distributions and institute measures to protect their sites.

Key words. Nature conservation, New Caledonia, floristic diversity, disjunct distributions.

PRESENT POSITION

The archipelago of New Caledonia (19170 km²) has nearly 3500 native species, about 76% being endemic. Increased human activity in development (mining, especially for nickel, timber cutting, expansion of pasture and agriculture, fisheries, etc.) over the last few decades, accompanied by an appreciable increase in population, has led to urgent measures to protect both land and marine environments (Fig. 1). These have been applied mainly in the south of the main island (Grande Terre). Several land reserves have also been created in the north, but at present the Loyalty Islands (1970 km²) have no protection for their environment despite the fact of their intrinsic insular fragility and the increasing population pressure.

Protected sites (Grande Terre)

(a) These are listed in Table 1 below; Fig. 1 gives their positions.

(b) More detailed descriptions of protected floristic sites follow.

Water supply reserves

Aim: quality of drinking water.

Protected: flora and fauna in the catchment areas involved.

Integral reserve (Province South)

(1) Montagne des sources

Protected: thick forest; shrub–herb maquis rich in species; population of *Neocallitropsis pancheri*; mountain thickets dominated by *Araucaria humboldtensis*.

Notable species: *Platyspermatium crassifolium*, *Basselinia prophyrea*, *Canacomyrca monticola*.

Special botanical reserves (Province South)

(2) Chutes de la Madeleine

Protected: populations of *Neocallitropsis pancheri*, *Dacrydium guillauminii*, *Decussocarpus minor*; swamp and riverside associations (Cyperaceae).

(3) Plaine des Lacs, seven separate areas (Province South)

Protected: valley forest (*Agathis lanceolata*); populations of 'Chêne gomme' (*Arillastrum gummiferum*); shrub–herb maquis.

Notable species: *Nothofagus* spp., *Kermadecia pro-niensis*, *Xanthostemon aurantiacum*, *Gymnostoma deplancheanum*.

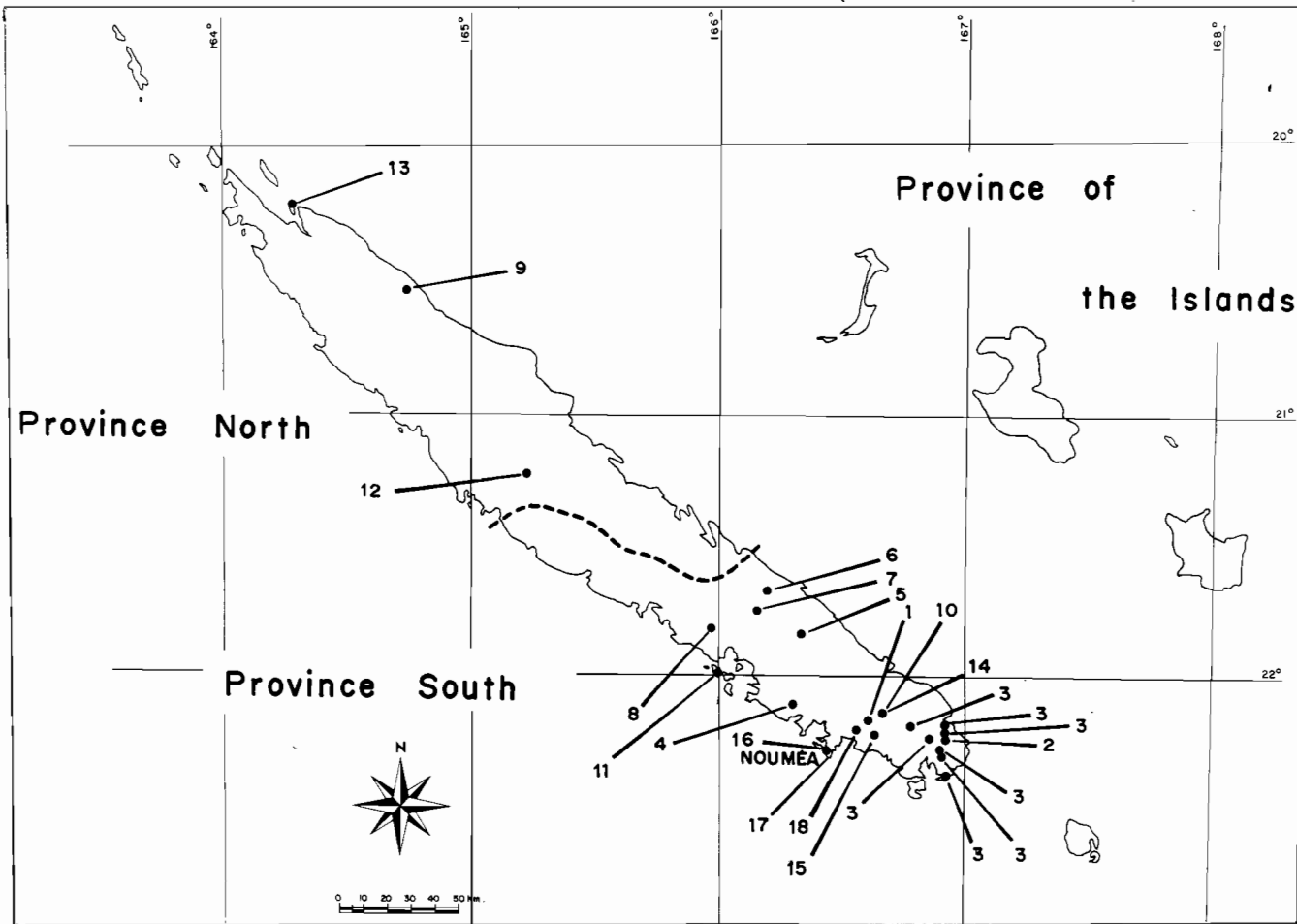


Fig. 1. Protected sites in New Caledonia.

Table 1. Protected sites (Grande Terre).

Number	Status	Province	Area (ha)	Grande Terre 16500 km ² (%)
148	Protection of water supplies 3 to 24,000 ha; motion 105, 9 August 1968	North and south	94,093	5.7
1	Motion 108, 9 May 1980 integral reserve	South	5878	
13	Special botanical reserves	South	15,494	
1	Special botanical reserves	North		
2	Special faunal reserves	South	22,520	3.29
2	Special faunal reserves	North		
4	Provincial parks; motion 225, 17 June 1965	South	10,257	
1	Tourist area (Mt Koghi forest); motion 108, 9 May 1980	South	228	
3	Maritime zones	South	53,657	Lagoon 19,000 Km ² 2.82

(4) Mt Mou, 500–1200 m (Province South)

Protected: mountain forest and shrubberies; associations rich in bryophytes and filmy ferns.

Notable species: *Nothofagus baumanniae*, *Metrosideros porphyrea*, *Strasburgeria robusta*.

(5) Mt Humboldt, 1000–1618 m (Province South)

Protected: thick forest; mountain maquis.

Notable species: *Araucaria humboldtensis*, *Paracryphia alticola*, *Logania imbricata*, *Libocedrus chevalieri*, *Metrosideros tetrasticha*, *Greslania montana*.

(6) Salle Forest; (7) Mt Ninga; (8) Mt Do (Province South)

Protected: valley forest with *Agathis lanceolata*; thick *Araucaria–Nothofagus* forest; *Greslania circinnata* association; shrub–herb maquis.

Notable species: *Pseudosciadium balansae*, *Oxera* sp., *Austrobuxus montis-do*, *Casearia coriifolia*.

(9) Mt Panié, 200–1630 m (Province North)

Protected: thick forest rich in palms at middle and high altitudes; mountain shrubberies.

Notable species: *Araucaria schmidii*, *Agathis montana*, *Lavoixia macrocarpa*, various Cunoniaceae and Winteraceae.

Special faunal reserves

(10) Upper Yaté; (11) Le Prédour Island (Province South)

(12) Mt Aoupinié; (13) Pam Island (Province North)

Protected: birds only, particularly the 'Cagou' in thick forest.

Provincial parks

Four in Province south, reserved and arranged for public recreation.

(14) Rivière Bleue; (15) Thy

Protected: thick rain forest.

(16) Corbasson Park; (17) Ouen-Toro

Protected: sclerophyll forest.

Tourist site

(18) Mt Koghi forest, 100–1080 m (Province South)

Protected: forest at middle altitudes and mountain shrubberies with *Araucaria* and *Nothofagus*.

Notable species: *Neisosperma thiollieri*, *Sloanea koghiensis*, *Acropogon megaphyllus*.

Comments

(a) The last column of Table 1 shows the low percentage of the total surface which is protected on Grande Terre: 9% of 16,500 km². For the lagoon, only 2.82% of the total (19,000 km²) is protected.

(b) The present areas of protection (see detailed descriptions) cover mainly either rain forest, or maquis on ultrabasic rocks.

CONCLUSIONS

A complete cover of biodiversity requires a maximum of biotopes in the protected areas. This involves the following.

(1) *Extension* over the whole archipelago of protective measures to other plant formations and particularly to:

(a) *mangrove*—the floristic composition differs between the east and west coasts. It is also disappearing progressively near urban areas;

(b) *rain forest* on varied substrates in the north and the central part of Grande Terre;

(c) *sclerophyll forest*. Occurs along the west coast of Grande Terre on calcareous or other substrates receiving less than 1 m of rain per year. This formation, of limited area and containing endemic species,

some very localized, is directly menaced by extension of pastures and by bush fires. Its protection is urgent;

(d) *high forest of the Loyalty Islands*. This contains floristic elements from both rain forest and sclerophyll forest, and has several endemic species;

(e) *maquis on varied substrates*, particularly in the north and north-west of Grande Terre.

(2) *Protection* of sites containing floristic elements exhibiting a *discontinuous distribution*. Some species limited to ultrabasic rocks occupy similar biotopes in widely separated localities. More than thirty examples have been recognized. Protection of these sites is necessary if it is desired to conserve the genetic heritage.

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