Chapter 1

Flora and Vegetation Survey of the Nakorotubu Range, Ra and Tailevu Provinces, Viti Levu, Fiji.

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SUMMARY

A series of eight 1000m^2 plots were used in selected forest types to assess the vegetation and flora of the Nakorotubu Range. Two principle vegetation types based on Mueller-Dombois & Fosberg (1998) description were observed in the study area. They are the Lowland Vegetation Type and the Upland Vegetation Type. Within these vegetation types four main plant communities or forest types were distinguished—(1) Secondary Forest, (2) Primary Forest, (3) Freshwater Swampland and (4) Karst or Limestone Forest. Only the secondary and primary forest types were quantitatively assessed and the other two briefly described qualitatively.

The flora of the Nakorotubu Range is described from a rapid biodiversity assessment survey. A total of 425 plant taxa (including 32 undetermined species) were recorded representing 118 families. This comprises 75 dicot families, 19 monocots, 2 gymnosperms and 21 fern and fern allies families. Two of the largest families include Orchidaceae with 20 genera and 26 species; followed by Poaceae with 19 genera and 20 species.

Of the 393 species identified 78% (307 species) are native with 35% (132) endemic species. The 307 native species comprise about 17% of the entire native flora for Fiji. The Angiosperms and Gymnosperms recorded during the survey added up to 337 species. Of these, 75% (251) are native species and of this native species, 53% (132 species) are endemic. A total of 64 exotic plant species were recorded during the survey of which six species are internationally recognized invasive species.

Two species of conservation interest include the Critically Endangered gymnosperm *Acmopyle sahniana* and the endemic palm *Calamus vitiensis* considered Least Concern in the IUCN Red list. The presence of *A. sahniana* in the study area has resulted in its range extensión to a third province of Ra in Fiji. The palm is known to occur in only two locations (small populations) on Viti levu- Wailekutu (within the vicinity of Nasaua village) and interior of Namosi, but common on Taveuni.

The findings are discussed in a conservation framework that highlights the taxonomic and/or ecosystem value of notable plant species and vegetation types.

INTRODUCTION

This botanical survey is part of a Rapid Assessment Program (RAP) conducted in the Nakorotubu Range, on the northeast portion of Viti Levu, the largest island of the Fiji group. The elevation of the study area ranges from about 100 m to 560 m on the highest peaks. Much of the mountainous interior area is covered with primary forest, but the vegetation of many other areas comprises secondary forest, agroforest, and village land. The primary or native forest is not homogeneous, because elevation, topography, and substrate all contribute to differences in species composition, density and distribution. The two principle vegetation types (Mueller-Dombois and Fosberg 1998) observed for the area includes the Low Land Rainforest and the Upland Vegetation. Hardly any botanical collecting has been done in this area, hence a reason for its selection as a RAP site.

A research team conducted a biological survey of the area from 30 November to 12 December 2009 with the results of the botanical survey included here. The botanical team was