Report at a Glance

Source: Evaluation rapide de la biodiversité du massif du Panié et des Roches de la Ouaième, province Nord, Nouvelle-Calédonie: 32

Published By: Conservation International

URL: https://doi.org/10.1896/054.065.0108

Report at a glance

DATES OF RAP SURVEY

October 9 - November 25, 2010

DESCRIPTION OF STUDY SITES

We surveyed four forest sites between 300 – 900 m above sea level in the Mt. Panié region of northeastern New Caledonia: two on the western slopes of Mt. Panié (La Guen and Wewec), one on the western slopes of Mt. Colnett (Dawenia) and one on the eastern slopes of Roches de la Ouaième. Mt. Panié is known to host many micro-endemic species, some of which occupy only a few square kilometers. Mt. Panié (1629 m) is the highest mountain in New Caledonia, and with ca. 20,000 ha of forest, the Mt. Panié range contains one of the largest blocks of forest in the country, including the 5,400 ha Mt. Panié wilderness reserve. The forest of the Roches de la Ouaième lies at the eastern end of an 8,000 ha forest block, separated from the Mt. Panié forest by the Ouaième River. Habitats surveyed mostly included forests and rivers, including lower mountain cloud forest. The geological substrate is mostly of micashist, with some peridotits.

OBJECTIVES OF THE MT. PANIÉ RAP SURVEY

The Mt. Panié RAP goals were to:

- Update and improve the taxonomic inventory of the region
- Establish a biological and climatological baseline for long-term monitoring
- Contribute to taxonomic and scientific training of local guides
- Evaluate threats to biodiversity, including invasive species and climate change
- Identify priority sites and actions for conservation including management recommendations for the Mt. Panié Wilderness Reserve
- Contribute to the conservation of biodiversity and ecosystem services of the area

This survey complements a marine RAP survey of the neighboring coral reefs conducted in 2004, which together provide a complete integrated coastal watershed assessment from ridge to reef.

MAJOR RESULTS

This RAP survey provides the most comprehensive and multidisciplinary evaluation yet for four sites of the Mt. Panié region, for which little was previously known. The RAP team found high species richness and endemism, including 25 species considered globally threatened by IUCN. Fourteen plant species and three reptile species found during the survey are potentially new to science. New locality records, including many rare or endangered species, were discovered. The Crow Honeyeater, a rare and Critically Endangered bird species, was observed for the first time in twelve years in the region. The team also found a large breeding colony of the Tahiti Petrel, a Near Threatened species. Although not targeted during this survey, the team encountered remnants of human occupation which are at least a century old, although local people don't have stories related to these sites nor do they know when they were last occupied.

Despite its unique biodiversity and endemism, the region faces several threats. Invasive mammals, especially rusa deer and feral pigs, are significant and growing threats to biodiversity at all sites, especially in the foothills of La Guen. Although no invasive plant species were found within the forest, at least five were recorded in savannah and secondary forest. Deforestation is an active phenomenon with a rate of 1.9%/year. Anthropogenic bushfires have been an important historical driver of deforestation at all sites and still actively threaten the Roches de la Ouaième area. However, we also found forests to be quite resilient, showing recovery following deforestation in several places. Climate change also appears to be a threat to local biodiversity. We identified a warming trend, which, in conjunction with cyclical droughts

Table 1 : Summary of RAP results

	Total number of taxa	Number of taxa potentially new to science	Number of endemic taxa	Number of critically endangered species	Number of endangered species	Number of vulnerable species	Number of near threatened species
Plants	617	14	404			8	2
Birds	29			1		2	5
Reptiles	18	3	16	1	4		2
Freshwater fishes and crustaceans	19		2				
Odonates	23		12				

and invasive species, may be related to die-back of the iconic kauri tree and other ecological changes already observed, especially at high elevation sites.

Conservation Recommendations

Several conservation actions can help to avoid or minimize threats to the Mt. Panié region. The georeferenced data produced by this expedition will serve as a baseline and will guide management plans for the Mt. Panié wilderness reserve. Data from historical surveys should be analyzed and results used to target new inventories. High elevation cloud forests, which appear to be particularly unique and vulnerable, need specific attention in this respect. This will improve our understanding of how these ecosystems are responding to pressures such as invasive species and climate change. Several of the local guides whose scientific skills were built during this expedition could contribute to this monitoring and reserve management.

New efforts should be placed in conservation status assessment of freshwater fishes and crustaceans (underway), plants and odonates, as these taxonomic groups are largely underevaluated; these results are crucial to prioritize conservation efforts.

Greater efforts and increased and innovative resources are needed to avoid and control anthropogenic bushfires, especially through improved coordination among stakeholders. Previously cleared forests, such as those at Wewec, appear to recover, making reforestation programs potentially effective.

Invasive species, especially Rusa deer and feral pigs, which show increasing populations and ecological impacts, need to be carefully controlled. Experimental control of invasive rats and cats should also be implemented. Further studies of important and vulnerable species (e.g., Crow Honeyeater, Tahiti Petrel, *Nannoscincus exos*) are needed to develop active management strategies. These actions will be most effective if they are a formal part of conservation agreements both within and outside of the Mt. Panié wilderness reserve.

This RAP follows a nearby marine RAP in 2004; together, these assessments emphasize the relevance of integrated coastal watershed management. These systems are linked, and deforestation, erosion and river degradation not only affect life in the mountains, but also downstream ecosystems and coral reefs, as well as contaminating drinking water. The rivers of Mt. Panié drain into the buffer zone of the New Caledonian lagoons World Heritage site and the nearby reef.

Expanding existing protected areas and establishing wildlife corridors, especially along elevational gradients, is also critical for conserving biodiversity in the long-term. In consultation with local communities, the Mt. Panié wilderness reserve, with a current lower boundary at 400 m asl, could be extended to the Ouaième and Wewec rivers, including the lower areas of La Guen and Wewec. Dawenia and the Roches de la Ouaième should also be formally protected and managed.

Finally, a cultural inventory and program could facilitate the preservation, enhancement and transmission of cultural heritage in the region.