Report at a Glance

Source: RAP Bulletin of Biological Assessment: A Rapid Biological Assessment of the Lely and Nassau Plateaus, Suriname (with additional information on the Brownsberg Plateau): 13

Published By: Conservation International

URL: https://doi.org/10.1896/1-881173-98-4.13

Report at a Glance

A RAPID BIOLOGICAL ASSESSMENT OF THE LELY AND NASSAU PLATEAUS, SURINAME

Dates of RAP Survey

October 25 – November 6, 2005

Description of RAP Survey Sites

The Lely and Nassau Plateaus are two plateaus in eastern Suriname characterized by a solid and thick crust in the upper soil composed mainly of consolidated ferrite (Fe) and bauxite (Al). Lely contains a series of plateaus with maximum altitude of approximately 700 meters and Nassau is comprised of four plateaus ranging from 500 - 570 meters. The RAP survey focused on habitats above 500 m, including at Lely: mountain savannah forest, high dryland rainforest, palm swamp and secondary growth, and at Nassau: high dryland rainforest, some mountain savannah forest, limited patches of palm swamp, secondary forest and vegetation in areas cleared for infrastructure such as roads and an overgrown airstrip. These plateaus provide many watershed services for local and coastal communities, as well as important sources of employment (principally small-scale gold mining), food, medicine and building materials for local communities.

Reasons for the RAP Survey

The RAP biodiversity surveys of Lely and Nassau Plateaus were conducted in order to fill in gaps in biodiversity data for eastern Suriname. The 2002 Guayana Shield Priority-Setting Workshop determined that we lack essential biodiversity data for these plateaus needed for conservation planning. The RAP data collected for birds, mammals, fishes, amphibians and reptiles, ants, and dung beetles will contribute to a greater understanding of the fauna and flora of these two plateaus and enable comparisons of biodiversity value with the Brownsberg Plateau (see Executive Summary for comparisons) and other areas of the Guayana Shield. In addition, the data will be used by BHP-Billiton Maatschappij Suriname and the Suriname Aluminium Company LLC (Suralco) as part of their Mining Joint Venture (MJV) to incorporate biodiversity considerations in the earliest stages of decision-making for any mining operations that they may undertake in these areas. It is our aim to provide information so that any mining companies that work in this area can incorporate biodiversity conservation into their project planning.

MAJOR RESULTS

Lely and Nassau Plateaus

- High faunal diversity (see table below),
- At least 27 species endemic to the Guayana Shield region,
- At least 24 species new to science, illustrating how little we know of these areas and the Guayana Shield region overall,
- Many species and individuals of large mammals and large birds (e.g. parrots, guans), indicating that these areas may serve as refuges for larger species,

- While still in good condition, both sites are heavily threatened by human activities, particularly unregulated hunting which is having a direct impact on large mammals and birds, and illegal gold mining in the foothills.

Lely Plateau

- Higher species richness of plants, orchids, mammals, ants, birds, and dung beetles than Nassau, likely due to a combination of factors, including the fact that the Lely Plateau is larger and reaches a higher elevation so that the extent of each forest type is greater. Higher diversity of mammals and dung beetles may also be influenced by the more pristine condition of its habitats in comparison to Nassau,
- The Lely Mountains offer excellent conservation opportunities because of relatively low human impact, low human population densities, and relative lack of access.

Nassau Plateau

- Higher species richness and endemism of fishes in high altitude streams,
- *Harttiella crassicauda,* a rare catfish endemic to the Nassau Plateau, was documented for the first time since 1949,
- The Nassau Mountains have been more heavily impacted by human activities, particularly with regards to hunting and habitat fragmentation resulting from access routes created to facilitate small-scale mining activities and exploration activities for large-scale mining.

NUMBER OF SPECIES RECORDED

	Both RAP Sites	Lely	Nassau
Ants	169	136	79
Dung Beetles	42	37	27
Fishes	41	8	35
Amphibians	27	20	16 (31)**
Reptiles	22	16	13 (26)**
Birds (RAP)	121	67	79
Birds (2003) *		(152)	
Bats	24	14	19
Small Mammals	4	3	1
Large mammals (including primates)	17	13	8
Total	**467**	**314**	**277**

*O'Shea, Chapter 8

**( ) Total number after surveys in 2006 by Ouboter et al. (Chapter 11)

SPECIES NEW TO SCIENCE

Amphibians
Eleutherodactylus (4 species)
Adenomera (1 species)
Atelopus (1 species)

Fishes
Guyanancistrus (1 species)
Harttiella (1 (sub) species)
Lithoxus (3 species)
Trichomycterus aff. *conradi* (1 species)

Ants
Pyramica (1 species)

Dung Beetles
Anomiopus (~ 2 species)
Ateuchus (~ 2 species)
Canthidium (~ 3 species)
Eurysternus (~ 3 species)
Sylvicanthon sp. nov.
Uroxys (~ 2 species)

NEW RECORDS FOR SURINAME

Ants: Genera
Acanthognathus: A. lentus and *A.* cf. *ocellatus*
Cryptomyrmex cf. *longinodus*

Ants: Species
Pyramica auctidens
Pyramica cincinnata
Pyramica crassicornis
Pyramica halosis
Strumigenys cosmostela
Strumigenys trinidadensis

THREATENED SPECIES (IUCN 2006 CATEGORY)

Bats

Carriker's Round-eared Bat, *Lophostoma carrikeri* (Vulnerable)
Dark Fruit-eating bat, *Artibeus obscurus* (Lower Risk/Near Threatened)
Brown Fruit-eating bat, *Koopmania concolor* (Lower Risk/Near Threatened)

Primates

Guyanan Red Howler, *Alouatta macconnelli* (Vulnerable)
Red-backed bearded Saki, *Chiropotes chiropotes* (Data Deficient)

Large Mammals

Brazilian Tapir, *Tapirus terrestris* (Vulnerable)
Jaguar, *Panthera onca* (Lower Risk/Near Threatened)
Cougar, *Puma concolor* (Lower Risk/Near Threatened)
Brocket Deer, *Mazama* sp. (Data Deficient)
Giant Anteater, *Myrmecophaga tridactyla* (Vulnerable)
Dubost's Neacomys, *Neocomys dubosti* (Data Deficient)

SPECIES ENDEMIC TO THE GUAYANA SHIELD

Mammals:
Guyanan Red Howler, *Alouatta macconnelli*
Red-backed bearded Saki, *Chiropotes chiropotes*
Linnaeus's Mouse opossum, *Marmosa murina*
Red-handed tamarin, *Saguinus midas*
Red-faced Spider monkey, *Ateles paniscus*
Dubost's Neacomys, *Neacomys dubosti*
Guiana Neacomys, *Neacomys guianae*
Guyenne Spiny Rat, *Proechimys guyannensis*

Birds
Black Curassow, *Crax alector*
Marail Guan, *Penelope marail*
Caica Parrot, *Gypopsitta caica*
Black Nunbird, *Monasa atra*
Guianan Toucanet, *Selenidera piperivora*
Green Aracari, *Pteroglossus viridis*
Chestnut-rumped Woodcreeper, *Xiphorhynchus pardalotus*
Guianan Streaked-Antwren, *Myrmotherula surinamensis*
Brown-bellied Antwren, *Myrmotherula gutturalis*
Todd's Antwren, *Herpsilochmus stictocephalus*
Black-headed Antbird, *Percnostola rufifrons*
Rufous-throated Antbird, *Gymnopithys rufigula*
White-throated Pewee, *Contopus albogularis*
Guianan Cock-of-the-Rock, *Rupicola rupicola*
Capuchinbird, *Perissocephalus tricolor*
White-throated Manakin, *Corapipo gutturalis*
White-fronted Manakin, *Lepidothrix serena*
Finsch's Euphonia, *Euphonia finschi*
Golden-sided Euphonia, *Euphonia cayennensis*

Amphibians
Colostethus beebei
Colostethus degranvillei
Eleutherodactylus chiastonotus
Eleutherodactylu zeuctotylus
Chiasmocleis shudikarensis

Reptiles
Gonatodes annularis
Neusticurus rudis

Fishes
Harttiella crassicauda (endemic to Nassau Plateau)
Guyanancistrus 'big mouth'

CONSERVATION CONCLUSIONS FROM THE RAP SURVEY

(see Executive Summary for more details)

1. We recommend that the Lely and Nassau plateaus (and also Brownsberg- see Executive Summary) receive increased levels of biodiversity protection. All three areas contain a high proportion of Suriname's biodiversity and contain great habitat diversity that includes typical lowland forest habitats as well as more unique habitats at higher elevations (> 400 m) that are not widely found in the region. Global amphibian declines have resulted in the loss of many higher elevation amphibian faunas, so the presence of abundant, diverse, stream-associated amphibian assemblages at Nassau and Lely is of significant conservation value. These sites provide refuge for many threatened species and species endemic to the Guayana Shield.

Both the Lely and Nassau plateaus warrant conservation action:

Lely

- Lely has high habitat and species diversity for all taxa as well as pristine forest conditions. Lely has slightly higher richness for most taxa compared to Nassau, and slightly higher plant diversity (per plot) than Brownsberg.
- There are still high numbers of large mammals and large birds, indicating that Lely may provide a refuge for these hunted animals,
- Lely is fairly inaccessible with little human impacts, thus presenting an excellent opportunity to protect a large area of high biodiversity, pristine rainforest, and exceptional mountain savannah (moss) forest.

Nassau

- Nassau has been more heavily impacted, but also still contains high biodiversity and good populations of large mammals and larger birds.
- Nassau contains many endemic species (that are found nowhere else), particularly of fishes.
- Protection of the Paramacca Creek (with tributary IJskreek) catchment is critical to the survival of several rare fish species.
- Only 31% of the documented amphibian species were found at both sites, indicating that both Lely and Nassau are important for amphibian diversity, including many species new to science.
- The greater impacts and threats at Nassau call for immediate action.

2. The mechanism for conservation of these sites should be developed through a collaborative approach between public and private institutions, including local communities, to address and halt the threats currently and potentially facing these sites. Some possible mechanisms include:

- Empower and fund the Nature Conservation Division of the Suriname government to increase monitoring in all three areas, especially for hunting and illegal mining.

- Create a Nature Park on the Nassau Plateau to protect the unique Paramacca Creek watershed. Urgent action is needed at Nassau due to the higher level of human pressures there.
- Engage the local people including the traditional communities in the area, particularly the Paramaka Maroons (Nassau and Lely), Aukaner/Okanisi or Djuka Maroons (Lely), Saramaka Maroons (Brownsberg) and also the non-traditional communities such as the small-scale gold miners.
- Integrate the protection of key areas into any development plans for the plateaus (e.g. mining planning). Key areas include the Paramacca watershed at Nassau, the pristine higher elevation forests of Lely, and the vegetation along creeks at Brownsberg. The Lely and Nassau Plateaus are concessions of Suralco (Alcoa). Suralco is also involved in large-scale gold exploration by Newmont in the foothills of the Nassau and Brownsberg Mountains.
- Explore potential tourism opportunities in the two areas as an alternative income for local communities to reduce their dependence on the bushmeat trade, logging, and gold mining.

SPECIFIC CONSERVATION RECOMMENDATIONS

- Integrate the Lely, Nassau and Brownsberg plateaus into a regional conservation strategy and follow up on the IBAP recommendations in Chapter 2.
- Control hunting, which poses a significant threat to the large mammals, larger birds and dung beetles of both sites.
- Maintain the integrity of forest streams.
- Minimize fragmentation of the natural habitat, control access routes and limit logging, which accelerates habitat fragmentation and degradation and has already begun to impact several groups, especially dung beetles, ants, and mammals.
- Enhance protection of Brownsberg Nature Park and other parts of the plateau.
- Monitor to detect the presence of the chytrid fungus, Batrachochytrium dendrobatidis in adult frogs along forest streams.

- **Additional Research Priorities**
  - Biodiversity surveys during the rainy season,
  - Surveys of lowland streams in the foot hills (especially Paramacca Creek) and high-altitude streams on the Nassau and Lely plateaus,
  - Research on the biodiversity of the Paramacca Creek watershed, including the rare catfish *Harttiella crassicauda,*
  - Research on the population sizes and viability of key species,
  - Further plant inventories of Nassau and Lely,
  - Further research on the potentially new species for science.