



## Executive Summary

Source: A Rapid Biodiversity Assessment of the Nakauvadra Range, Ra Province, Fiji: 14

Published By: Conservation International

URL: <https://doi.org/10.1896/054.057.0104>

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## Chapter 3

### Preliminary Baseline Survey of the Avifauna of the Nakauvadra Range, Ra Province, Fiji

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#### SUMMARY

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This report is of a preliminary baseline survey of the avifauna of the Nakauvadra Range, Ra, Viti Levu. The report provides observations and comments on the avifauna observed in the study area, as well as observations from other known surveys from the Range.

A total of 34 bird species were recorded in the surveys, 13 of which were endemic species. Four were introduced species and the remainder native.

Three of Viti Levu's globally threatened species were recorded – Long Legged Warbler (Endangered, auditory record only); Black-faced Shrikebill and the Friendly Ground-Dove which was quite common. Notable species not recorded included the Masked Shining Parrot and the Polynesian Starling, though these have both been recorded previously. For birds, the Nakauvadra Range has the same conservation significance as other large forest blocks on Viti Levu.

#### INTRODUCTION

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The Nakauvadra Range is a forest refuge, completely surrounded by cleared habitats with the shortest distance to another forest block being approximately four kilometers to the southwest. It is not a large forest block, approximately 114 km<sup>2</sup>, and so the avifaunal composition is of interest in that it may not be large enough to maintain viable populations of species which have large home ranges and/or are poor dispersers over non-forest habitats. Examples of these are the Masked Shining Parrot and the Giant Forest Honeyeater. The only previous record of bird observations in the Nakauvadra Range is Masibalavu (2004).

#### METHODS AND STUDY AREA

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##### Study area and base camps

The study area comprised the area traversed by the survey roads and paths as marked on Map 4. The team hiked from Vatukaceveceva village to Camp 1 on the confluence of the Nabiya and Toluwalu Streams which are headwaters of the Volivoli Creek on November 18. We spent three nights at Camp 1, then hiked down to Vunisea village on November 21. On November 22 we hiked from the village to Camp 2 on the Vuniqesa Creek. Dick Watling returned to Vunisea village on November 23. Alifereti Naikatini and Vido Senivasa remained at Camp 2 and hiked out to Camp 3 on

November 25. They spent one night at Camp 3 and hiked out of the mountain range on November 26 to Narara Village near Rakiraki town.

### Field methods

The team enjoyed fine weather throughout the fieldwork.

Bird observations were categorized according to three different observational methods:

1. Standardised Transects: Observations during timed transects along paths and river/stream beds – these are then expressed as encounter rates (number of individuals observed divided by number of

**Table 3.1.** Observation hours in different habitats and for different methods

Observation		Standardised Transect	Observation Site		Incidental	
Date	Time	Forest	Forest	Open	Forest Edge/ Gardens	Forest
18-Nov	0620-0750			90		
	0750-0845				55	
	0900-1145	165				
	1145-1615					275
19-Nov	0500-0755	180				
	0900-1145	165				
	1145-1500		195			
	1650-1750	60				
20-Nov	0500-0755	175				
	0845-1205	200				
	1310-1615					185
	1700-1800		60			
21-Nov	0515-0710	115				
	0900-1050					110
	1050-1300				70	
	1400-1440				40	
	1500-1620			80		
22-Nov	0930-1000			30		
	1000-1200				120	
	1200-1330					90
	1545-1800	135				
23-Nov	0555-0930					
	1030-1130					
	1130-1230					
	<b>Total Obs Time</b>	<b>1195</b>	<b>255</b>	<b>200</b>	<b>345</b>	<b>935</b>
	<b>Hours of obs Time</b>	<b>19.9</b>	<b>4.3</b>	<b>3.3</b>	<b>5.8</b>	<b>15.6</b>

standardised observer hours, Masibalavu and Dutson 2006) ;

2. Observations during timed periods at an observation post with a 200<sup>0</sup> view over the forest; and,
3. Incidental observations around camp and when hiking between camps.

A total of 39.8 hours was spent on forest observations, approximately half of which was on standardized transects. 5.8 hours was spent in 'forest edge – garden' habitats and 3.3 hours in open country (Table 3.1).

### Conservation Significance

In the annotated accounts and discussion of the observations, prominence is given to the Conservation Significance of the species concerned. Conservation Significance is based on the following:

- Endemicity – Single Island, National, Regional or Regional Near-endemic for those birds whose distribution is primarily within the region but which extends to a few islands or an island group outside the region.
- Global Threat Status - according to the '2008 IUCN Red List of Threatened Species'. The threatened species categories now used in Red Data Books and Red Lists have been in place, with some modification, for over 30 years. Since their introduction these categories have become widely recognised internationally, and the Red List categories provide an easily and widely understood method for highlighting those species under higher extinction risk, so as to focus attention on the need for or efficacy of existing conservation measures. A simplified description of the categories applicable for this guide are as follows (refer <http://www.redlist.org> for a full description and the annually updated status):

- **CRITICALLY ENDANGERED**  
- when a species is facing an extremely high risk of extinction in the wild in the immediate future;

- **ENDANGERED** – when a species is not Critically Endangered but is facing a very high risk of extinction in the wild in the near future;
- **VULNERABLE** – a species is Vulnerable when it is not Critically Endangered or Endangered but is facing a high risk of extinction in the wild in the medium-term future;
- **NEAR THREATENED** – is a sub-category of LOWER RISK category, for species which are close to qualifying for Vulnerable; and,
- **DATA DEFICIENT** – there is insufficient information to make an evaluation.

- Introduced and naturalized species, some of these species pose a threat to native species and generally increase in abundance as a result of habitat disturbance, especially loss of forest.
- National Conservation Status – IUCN's Global Status is used wherever a threatened category has been applied, especially for national endemic species. However, the majority of species in Fiji are resident and breed in other Pacific island countries or even further afield. In such cases the Global Status does not reflect the often differing status in each country, which is very important for the countries concerned. To rectify this, two categories for the conservation status of the Fijian populations of these birds are used.

These follow Watling (2001):

- **At Risk** - the higher category for birds considered to be severely threatened in Fiji;
- **Conservation Concern** – a lower category for birds whose status is known to be declining, under threat or very vulnerable because of small population size, introduced predators or competitors, or adverse land use practices here in Fiji.

## RESULTS AND DISCUSSION

### Species Recorded

A total of 34 species were recorded in the Nakauvadra Range, primarily in forest habitats but including peripheral open habitats. Thirteen of these are Fijian

endemic species (Table 3.2). The composition is similar to other large forest blocks on Viti Levu – given the small amount of survey undertaken at Nakauvadra (this survey and Masibalavu 2004). Neither the Red-throated Lorikeet (Critically Endangered) nor the Pink-billed Parrotfinch (Endangered), two of Viti Levu's most threatened birds was observed, however, it is not possible to state that any of Fiji's forest birds are absent from the Nakauvadra Range, as not all have as yet been recorded.

Two species, the Friendly Ground Dove and the Black-faced Shrikebill are categorized as Vulnerable, while the Long-legged Warbler categorized as Endangered was recorded by AN and VS but not by DW.

No Masked Shining Parrots, Polynesian Starlings or Fan-tailed Cuckoos were observed during this survey, however, with the exception of the Fan-tailed Cuckoo, they had previously been observed in the Nakauvadra Range by Masibalavu (2004). It was most surprising not to find the Masked Shining Parrot during the survey and it is clearly a very rare bird in the Nakauvadra Range as Masibalavu only saw two individuals in 2004. The reason for this is unclear and it may be that the Nakauvadra forest block is too small to maintain viable populations of certain species, this is well worth follow up work. The Fan-tailed Cuckoo is a secretive bird except when in song and is rarely recorded but is doubtless present at low densities. Similarly, the Polynesian Starling is usually uncommon to rare in the forests of the larger islands and so is quite often missed on short surveys. Collared Lory were rare on this survey but there were no noteworthy trees in bloom i.e. vuga (*Metrosideros* sp.) which attract and concentrate these wandering nectivores.

The presence of a good population of Friendly Ground Doves (mostly seen rather than heard) is noteworthy, especially since Masibalavu did not record them in 2004. Neither did he record Fiji Goshawks and White-throated Pigeons during his survey, both of which are likely to be commoner at the forest edge than in true forest.

There was a real difference in common species around the two campsites, the Giant Forest Honeyeater was absent at the Vuniqesa campsite (Camp 2) but were abundant in the "better" forest at the Vunilaci campsite (Camp 1). Golden Whistlers and the Island Thrush were also much less common

around the Vuniseqa campsite than the Vunilaci campsite.

Scarlet Robins, Lesser Shrikebills and White-rumped Swiftlets were found nesting during the survey. A fledgling Wattled Honeyeater was also observed.

## **CONCLUSION AND CONSERVATION SIGNIFICANCE**

The birds of the Nakauvadra Range are similar in composition and approximate abundance, and hence conservation significance, to other large forest blocks on Viti Levu. Differences between this survey and that of Masibalavu (2004) can be attributed to the brevity of both surveys. Further surveys would be required to determine the presence/absence of such rare species as the Pink-billed Parrot-finch and the Red-throated Lorikeet and to confirm the presence of the Long-legged Warbler. The apparent rarity of the Masked Shining Parrot is of great interest and worthy of further study.

The size of the Nakauvadra Range forest and its complete isolation from other forest blocks makes it vulnerable to extirpation of species which are poor dispersers over non-forest habitats and have large home ranges such as the Masked Shining Parrot and the Giant Forest Honeyeater. This appears not to have happened as yet but any further erosion of forest size or quality will increase the likelihood of this happening.

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- Watling, D. 2001. Guide to the Birds of Fiji and the Western Pacific. Environment Consultants Fiji, Suva.

**Table 3.2.** Land and Freshwater Birds of Viti Levu with those Species Observed at Nakauvadra.

	Common Name	Scientific Name	Origin	Endemicity	Threat Status
	Pacific Black Duck	<i>Anas superciliosa</i>	N		
1	Reef Heron	<i>Egretta sacra</i>	N		
	White-faced Heron	<i>Ardea novaehollandiae</i>	RI		
2	Fiji Goshawk	<i>Accipiter rufitorques</i>	N	E	
3	Pacific Harrier	<i>Circus approximans</i>	N		
	Peregrine Falcon	<i>Falco peregrinus</i>	N		
4	White-thoated Pigeon	<i>Columba vitiensis</i>	N		
5	Spotted Turtle-dove	<i>Streptopelia chinensis</i>	I		
6	Friendly Ground-dove	<i>Gallicolumba stairii</i>	N	RE	V
7	Barking Pigeon	<i>Ducula latrans</i>	N	E	
8	Many-coloured Fruit-dove	<i>Ptilinopus perousii</i>	N	RE	
9	Golden Dove	<i>Chrysoenas luteovirens</i>	N	E	
10	Collared Lory	<i>Phigys solitarius</i>	N	E	
	Red-throated Lorikeet	<i>Charmosyna amabilis</i>	N	E	CE
	Masked Shining Parrot	<i>Prospeia personata</i>	N	ES	NT
	Fan-tailed Cuckoo	<i>Cacomantis flabelliformis</i>	N		
11	Barn Owl	<i>Tyto alba</i>	N		
12	White-rumped Swiftlet	<i>Aerodramus spodiopygia</i>	N		
13	White-collared Kingfisher	<i>Todiramphus chloris</i>	N		
14	Polynesian Triller	<i>Lalage maculosa</i>	N	RE*	
15	Red-vented Bulbul	<i>Pycnonotus cafer</i>	I		
16	Island Thrush	<i>Turdus poliocephalus</i>	N		
17	Fiji Bushwarbler	<i>Vitia ruficapilla</i>	N	E	
	Long-legged Warbler	<i>Trichocichla rufa</i>	N	E	E
18	Streaked Fantail	<i>Rhipidura spilodera</i>	N	RE*	
19	Slaty Monarch	<i>Mayrornis lessoni</i>	N	E	
20	Lesser Shrikebill	<i>Clytorhynchus vitiensis</i>	N	RE	
21	Black-faced Shrikebill	<i>Clytorhynchus nigrogularis</i>	N	E	V

Encounter Rate (this survey; standardised transect, forest only)	Encounter Rate (Masibalavu 2004)	Abundance (combined surveys)	Comment (observations of this survey)
0.00	0		Not observed
0.00	0		Observed at forest edge only
0.00	0		Not observed
0.05	0	R	
0.00	0.17	U	Observed in Open Area only
0.00			Not observed
0.10	0	U	
0.85	0	C	
2.61	1.91	V	
0.30	0.35	F	
2.36	1.74	C	
0.05	0.61	F	
0.00	0		Not observed
0.00	0.2	U	Not observed
0.00	0		Not observed
0.00	0		Feathers only recorded
2.26	1.13	C	
0.60	0.43	F	
1.41	0.95	C	
0.00	0.17	U	Observed at forest edge
1.31	0.69	C	
2.21	1.48	C	
0.00	0		Not observed by DW; but heard by AN/VS
0.70	0.95	C	
0.95	0.95	C	
0.60	0.09	U	
0.10	0.26	U	

	<b>Common Name</b>	<b>Scientific Name</b>	<b>Origin</b>	<b>Endemicity</b>	<b>Threat Status</b>
22	Vanikoro broadbill	<i>Myiagra vanikorensis</i>	N	RE*	
23	Blue-crested Broadbill	<i>Myiagra azureocapilla</i>	N	E	
24	Scarlet Robin	<i>Petroica multicolor</i>	N		
25	Golden Whistler	<i>Pachycephala pectoralis</i>	N		
26	Fiji White-eye	<i>Zosterops explorator</i>	N	E	
27	Silvereeye	<i>Zosterops lateralis</i>	N		
28	Orange-breasted Myzomela	<i>Myzomela jugularis</i>	N	E	
29	Wattled Honeyeater	<i>Foulehaio carunculata</i>	N	RE*	
30	Giant Forest Honeyeater	<i>Gymnomyza viridis</i>	N	E	
31	Fiji Parrotfinch	<i>Erythrura pealii</i>	N	E	
	Pink-billed Parrotfinch	<i>Erythrura kleinschmidti</i>	N	ES	V
	Red Avadavat	<i>Amandava amandava</i>	I		
	Polynesian Starling	<i>Aplonis tabuensis</i>	N	RE*	
32	Common Mynah	<i>Acridotheres tristis</i>	I		
33	Jungle Mynah	<i>Acridotheres fuscus</i>	I		
34	Fiji Woodswallow	<i>Artamus mentalis</i>	N	E	

**KEY**      **Grey Shading - Species known from Viti Levu but not recorded during the Nakauvadra forest survey**

Origin: N - native  
I - introduced

Endemicity: E - Fiji endemic  
ES - Endemic to a single island (and offshore islets)  
RE - Regional endemic (F, T, S, AS, Tu, N, To, W & F)  
RE\* - Regional endemic as above with outliers in other neighbouring island nations

Threatened status: IUCN Red List 2008 CE - Critically Endangered; E - Endangered; V - Vulnerable; NT - Near Threatened

Encounter Rate: Number of individuals recorded on standardised transects (i.e. in forest only) divided by 19.9 - the number of hours spent in these transects (Masibalavu & Dutson, 2006)

Abundance: V = very common if encounter rate >2.0; C = Common 0.8 - 2.0; F = Fairly common 0.4 - 0.8; U = Uncommon 0.1 - 0.4; R = Rare <0.1>0. Based on (Masibalavu & Dutson 2006) and averaged for this survey and Masibalavu (2004).



Encounter Rate (this survey; standardised transect, forest only)	Encounter Rate (Masibalavu 2004)	Abundance (combined surveys)	Comment (observations of this survey)
0.40	0.26	U	
0.60	0.61	F	
0.70	0.78	F	
1.36	0.35	C	
3.67	2.08	V	
0.00	0.17	R	Observed at forest edge only
1.46	1.30	C	
3.16	2.6	V	
1.96	0.43	C	
0.10	0.09	R	
0.00	0		Not observed
0.00	0		Not observed
0.00	0.26	U	Not observed
0.00	0		Observed only in villages and farmland
0.00	0		Observed only in open habitats
0.00	0.35	R	Not observed on standardized transect