

# THE NORTH NEGROS FOREST RESERVE: A BIODIVERSITY HOTSPOT AT RISK

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## ABSTRACT

*This report outlines the results of habitat surveys, ecological research, species inventories, and conservation efforts that have been conducted in the North Negros Forest Reserve (NNFR) in Negros Occidental between 1995 and 2000 by a team of scientists and environmental workers. The habitat survey revealed that 50 years after its establishment the reserve still holds 4,700 ha of mid-elevation oldgrowth forest, 5,200 ha of high-elevation mossy forest, and 6,600 ha of secondary forest. Mainly due to its elevational gradient, the NNFR contains a stunning diversity of habitats despite its small size. Interviews and site inspections at 20 villages in the reserve pointed towards some of the immediate threats to the reserve and its wildlife such as small-scale logging, forest extraction, and hunting. Important first steps to constructively manage and protect the reserve are discussed in this paper.*

## Introduction

Being the last remaining forest fragments in the Philippines, montane and submontane ecosystems have recently become the focus of attention for conservation efforts. In particular, as global centers of endemism and biodiversity, forests fragments of the West Visayas are included in the IUCN category of the highest conservation priority (Dinerstein et al 1995). Established by legislation in 1946 to protect more than 100,000 ha of virgin rainforest on Negros, the North Negros Forest Reserve (NNFR) represents perhaps the most important refuge for endemic plant and wildlife species of this region. This report outlines the results of surveys, research, and conservation efforts that have been conducted between 1995 and 2000 by the Philippine Endemic Species Project of the Ruhr-University Bochum, Germany, in collaboration with the Department of Environment and Natural Resources of the Philippines, the Provincial Environment

Management Office of Negros Occidental, and the North Negros Forest and Ecological Foundation in Bacolod, Negros Occidental. The review is meant to draw attention to the importance and problems of this little protected reserve.

### **Habitat survey**

The NNFR is uniquely located, embraced by the volcanoes Mt. Silay and Mt. Mandalagan. The rugged topography of these two mountains has protected the area from logging in the past. The area is small compared to the remaining forests in Luzon and Mindanao, yet it is an important refuge for a great number of species endemic to the West Visayan biogeographic zone which includes the islands Panay, Negros, Guimaras, Cebu, and Masbate (Davis et al. 1995). While the last three islands have been entirely deforested, Panay contains a noteworthy range of semi-deciduous monsoon forest, and Negros has three fragments of wet tropical rainforest. The NNFR contains the largest fragment, although 50 years after its establishment only a relatively small portion (approximately 10%) of the reserve remains unlogged. A detailed aerial and ground survey revealed that all lowland dipterocarp forest of the reserve has been cleared except in a few inaccessible valleys, and 6,600 ha of secondary forest grows on areas that have been logged over in the past. The reserve, however, still contains 4,700 ha of mid-elevation oldgrowth forest and 5,200 ha of high-elevation mossy forest that is of no commercial importance (Figure 1). The two major fragments of submontane oldgrowth forest are bedded into half-craters that face each other and form arguably the most valuable watershed for quality water supply on Negros.

### ***Threats and Conservation***

The sites the team visited in Siquijor are forest reserves actively managed by the local DENR. Bandila-an and Salagdoong are both local tourist attractions. Endemic species of forest trees were observed planted under developed plantations in some areas within the reserve. This reforestation project should be extended to the other forested sites of Siquijor such as Canghaling, Lilo-an, and Salagdoong.

Trails created inside the forest for ecotourism purposes ironically also provide exits and entry for local hunters. Netting and hunting of both larger species of bats and birds were observed in all sites visited. Live-trapped birds were sold to nearby islands of Cebu and Negros. Commonly seen in cages was the subspecies *brevirostris* of White-eared Brown Dove.

The status of the endemic form of Everett's White-eye is of considerable concern given the fact that this genus has received little regional taxonomic attention in the Philippines. As well, the distinctness of the separate island forms has not been fully studied (D. Allen in litt.) while the Bohol and Cebu forms seem noticeably distinct.

### **Conclusion**

Of the six threatened species listed on Siquijor only the Streak-breasted Bulbul was observed on all three sites visited. In terms of subspecies endemic to Siquijor, four of the five subspecies were confirmed, two of which have limited distribution. The Everett's White-eye (*Zosterops everetti siquijorensis*) was recorded in Bandila-an while the Yellow-bellied Whistler (*Pachycephala philippensis siquijorensis*) was observed in both Bandila-an and Canghaling.

### **Recommendations**

#### ***Research***

Continued monitoring of the populations of threatened and forest wildlife of Siquijor is of immense important and should be

conducted. To this end the collaboration of the DENR, Silliman University through the Center for Tropical Conservation Studies, other NGOs and institutions and the local government of Siquijor cannot be overstressed. In particular, the population status and habitat requirement of the Siquijor Everett's White-eye is a priority.

### ***Habitat Conservation***

It has been observed that most local government offices have great difficulty in stemming the increase in forest clearance. Consequently, government efforts to enforce the legal protection assigned to most of the remaining forests such as patrolling the forest, relocating *kaingineros*, and prosecuting illegal loggers should be supported by various sectors with a stake in biodiversity conservation.

Studies have shown that government reforestation projects aimed at improving the natural forest stands for commercial timber production have deleterious effects on the threatened birds of these forests. Planting forest with commercial species of timber (often alien species), fruit trees, or other crops, causes severe short-term changes to the understory and long-term replacement of the forest. Forests managed by this method are likely to lose a proportion of the species they support as a direct result of habitat change. Reforestation projects of DENR utilizing endemic species of plants to other potential sites in Siquijor should be intensified.

The plan of the DENR, and the provincial and local governments to declare the remaining forest of Siquijor, especially Bandila-an Natural Park, a protected area (for inclusion in NIPAS) must be vigorously pursued into reality.

### ***Conservation Education***

Various institutions like the DENR, local government units, non-governmental organizations, as well as academic institutions in the area must work together to carry out extensive information and education drive promoting the conservation of Siquijor's unique

wildlife and its habitat.

The foresters in the Bandila-an Forest Reserve could well serve to disseminate information on the endemic taxa in the area. At the Nature Center, the staff must require visitors to log their names as well as provide them a short lecture on the wildlife and unique species before they are allowed to enter the reserve. Consequently, appropriate guidelines should be provided along with rules defining the limits of what is allowable within the reserve.

Topics related to the importance of biodiversity and species conservation should be incorporated in the curricula at the elementary and high school levels. The local Department of Education Culture and Sports, and academic institutions such as Silliman University, University of the Philippines-Cebu, University of the Philippines at Los Banos, as well as Haribon Foundation, and the local government could collaborate to provide a teachers' training program on the techniques of incorporating environmental concerns in the curricula.

The Department of Tourism (DOT) of Siquijor plans to include important facts about the island in its promotional brochures. The inclusion of information on endemic wildlife for a wider public dissemination in these tourist brochures is a step in the right direction.

### *Ecotourism*

The Local government of Siquijor as well as Siquijor Province are actively promoting the island's potential for ecotourism. Dive tours and white sandy beaches are already starting to attract attention, while Bandila-an and the other areas have potential for terrestrial nature tours and birdwatching. This will be a good opportunity to generate public awareness on the endemic taxa of Siquijor and to highlight the urgent need to conserve their habitats.

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**Table 4 (following pages). List of birds recorded in Siquijor. Records do not include shorebirds. Species in bold are Philippine endemic species. Species marked with \* are threatened species; \*\* means the bird was not recorded in Dickinson et al. (1991); R means the species was reported by locals but was not observed during the survey. Numbers in parenthesis refer to species mist-netted and numbers outside parenthesis refer to individuals observed during survey. Year indicated refers to the expedition of Rand and Rabor (1959), Cambridge-Philippines Rainforest Project (1992), and Paalan (1994); not sighted is presented as — and the sighted is indicated as X.**

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SPECIES NAME	COMMON NAME	1959	1992	1994	BANDI-LA-AN	CANGHALING	SALAGDOONG
1. <i>Gorsachius goesagi</i> *	Japanese Night Heron	X	---	---	---	---	---
2. <i>Gorsachius melanolophus</i>	Malayan Night Heron	---	---	---	---	---	---
3. <i>Haliaeetus leucogaster</i>	White-bellied Sea Eagle	---	---	---	---	---	---
4. <i>Haliastur indus</i>	Brahminy Kite	X	X		---	1	1
5. <i>Accipiter virgatus</i>	Besra	---	X	---	----	----	---
6. <i>Accipiter gularis</i>	Philippine Sparrow Hawk	----	---	X	---	---	---
7. <i>Spizaetus philippensis</i> *	Philippine Hawk Eagle	----	---	---	----	----	----
8. <i>Falco severus</i>	Oriental Hobby	---	---	R	---	---	---
9. <i>Falco peregrinus</i>	Peregrine Falcon	X	---	---	---	---	---
10. <i>Gallus gallus</i>	Red Junglefowl	X	---	---	2	---	---
11. <i>Coturnix chinensis</i>	Blue-breasted Quail	---	---	---	2	1	---
12. <i>Gallirallus torquatus</i>	Barred Rail	---	---	---	3	4	---
13. <i>Porzana eurizonoides</i>	Slaty-legged Crake	---	---	---	---	3	---
14. <i>Treron pompadora</i>	Pompadour Pigeon	X	---	---	---	---	---
15. <i>Treron vernans</i>	Pink-necked Green Pigeon	X	---	X	---	X	---
16. <i>Ptilinopus leclancheri</i>	Black-chinned Fruit Dove	X	---	X	---	---	---
17. <i>Ducula carola</i> *	Spotted Imperial Pigeon	X	---	---	---	---	---
18. <i>Ducula aenea</i>	Green Imperial Pigeon	---	---	---	---	---	---
19. <i>Ducula bicolor</i>	Pied Imperial Pigeon	X	---	---	---	---	---
20. <i>Columba vitiensis</i>	Metallic Wood Pigeon	X	---	---	---	---	---
21. <i>Phapitreron leucotis brevirostris</i>	White-eared Brown Dove	X	X	X	16 (3)	6 (1)	(1)
22. <i>Macropygia phasianella</i>	Reddish Cuckoo-dove	X	X	X	---	1	---
23. <i>Chalcophaps indica</i>	Emerald Dove	X	X	X	7	3	2 (1)
24. <i>Streptopelia chinensis</i>	Spotted Dove			X	---	3	5
25. <i>Geopelia striata</i>	Zebra Dove	---	X	X	1	4	8 (1)
26. <i>Caloenas nicobarica</i>	Nicobar Pigeon	X	X	---	---	---	---
27. <i>Cacatua haematropygia</i> *	Philippine Cockatoo	X	X	---	---	---	---
28. <i>Tanygnathus lucionensis</i>	Blue-naped Parrot	X	---	---	---	---	---

SPECIES NAME	COMMON NAME	1959	1992	1994	BANDI-LA-AN	CANG-HALING	SALAG-DOONG
29. <i>Loriculus philippensis siquijorensis</i>	Philippine Hanging Parakeet	---	---	---	---	---	---
30. <i>Ninox philippensis centralis</i>	Philippine Hawk Owl	X	X	X	12	6	3
31. <i>Centropus viridis</i>	Philippine Coucal	X	X	X	12	15	2
32. <i>Tyto capensis</i>	Grass Owl	---	---	---	---	---	---
33. <i>Cacomantis sepulchralis</i>	Rusty-breasted Cuckoo	X	---	---	---	---	---
34. <i>Eudynamys scolopacea</i>	Koel	X	X	---	---	---	---
35. <i>Centropus bengalensis</i>	Lesser Coucal	---	---	---	---	---	---
36. <i>Caprimulgus affinis</i>	Savannah Nightjar	---	---	---	---	---	* 3
37. <i>Collocalia esculenta**</i>	Glossy Swiftlet	X	X	X	15	24	36
38. <i>Collocalia troglodytes</i>	Pygmy Swiftlet	---	X	X	12	8	3
39. <i>Collocalia vanikorensis**</i>	Island Swiftlet	---	X?	---	---	---	4
40. <i>Cypsiurus balastensis</i>	Asian Palm Swift	---	X	---	5 (1)	3	---
41. <i>Hirundapus celebensis</i>	Purple Needletail	---	---	---	---	2	3
42. <i>Ceyx lepidus</i>	Variable Dwarf Kingfisher	---	---	---	---	---	---
43. <i>Halcyon winchelli*</i>	Rufous-lored Kingfisher	---	X	---	---	---	---
44. <i>Halcyon smyrnensis</i>	White-throated Kingfisher	X	---	---	---	---	---
45. <i>Halcyon coromanda</i>	Ruddy Kingfisher	---	---	X	---	---	---
46. <i>Halcyon chloris</i>	White-collared Kingfisher	X	X	X	2	2	3 (1)
47. <i>Hirundo rustica</i>	Barn Swallow	X	X	---	---	---	2
48. <i>Hirundo tahitica</i>	Pacific Swallow	X	X	X	---	---	3
49. <i>Megalaima haemacephala</i>	Crimson Barbet	X	X	X	3	---	---
50. <i>Pitta sordida</i>	Black Hooded Pitta	X	X	X	18 (1)	5 (1)	6
51. <i>Pitta erythrogaster</i>	Red-bellied Pitta	X	---	---	---	---	---
52. <i>Merops philippinus</i>	Blue-tailed Bee-eater	X	---	---	---	---	---
53. <i>Eurystomus orientalis</i>	Dollarbird	---	---	X	---	---	---
54. <i>Lalage nigra</i>	Pied Triller	X	X	X	---	---	6
55. <i>Pycnonotus goavier</i>	Yellow-vented Bulbul**	---	---	---	---	3	6
56. <i>Hypsipetes siquijorensis* siquijorensis</i>	Streak-breasted Bulbul	X	X	X	78 (10)	32 (2)	37 (4)
57. <i>Corvus macrorhynchus</i>	Large-billed Crow	X	X	X	---	---	---
58. <i>Oriolus chinensis</i>	Black-naped Oriole	X	X	X	18	1	5



SPECIES NAME	COMMON NAME	1959	1992	1994	BANDI-LA-AN	CANG-HALING	SALAG-DOONG
59. <i>Copsychus saularis</i>	Oriental Magpie-Robin	X	X	X	---	7	2
60. <i>Saxicola caprata</i>	Pied Bushchat	X	X	X	---	3	2
61. <i>Phylloscopus borealis</i>	Arctic Warbler	---	---	---	3	---	---
62. <i>Cisticola exilis</i>	Bright-capped Cisticola	X	X	X	---	4	2
63. <i>Megalurus timoriensis</i>	Tawny Grassbird	---	---	---	---	---	---
64. <i>Gerygone sulphurea</i>	Yellow-bellied Flyeater	---	X	---	---	---	---
65. <i>Muscicapa dauurica</i>	Asian-Brown Flycatcher	---	---	---	3	---	---
66. <i>Muscicapa griseisticta</i>	Grey-streaked Flycatcher	---	---	---	2	---	---
67. <i>Cyornis rufigastra</i>	Mangrove Blue Flycatcher	X	X	X	38 (5)	8 (1)	---
68. <i>Rhipidura javanica</i>	Pied Flycatcher	X	X	X	8	4	10 (2)
69. <i>Pachycephala philippinensis siquijorensis</i>	Yellow-bellied Whistler	X	X	X	22 (8)	8 (3)	---
70. <i>Hypothymis azurea</i>	Black-naped Monarch	X	X	X	18 (1)	4	---
71. <i>Ficedula hyperythra</i>	Thicket Flycatcher	---	---	---	---	---	---
72. <i>Motacilla flava</i>	Yellow Wagtail	---	X	---	2	2	---
73. <i>Anthus novaseelandiae</i>	Richard's Pipit	X	---	---	---	---	---
74. <i>Artamus leucorhynchus</i>	White-breasted Wood Swallow	X	X	X	6	7	9
75. <i>Lanius cristatus</i>	Brown Shrike	X	---	X	3 (2)	7 (1)	10 (4)
76. <i>Lanius schach</i>	Long-tailed Shrike	X	X	X	---	---	---
77. <i>Aplonis panayensis</i>	Asian Glossy Starling	X	X	X	4	11 (1)	13
78. <i>Sarcops calvus</i>	Coletto	X	X	X	7	6	10
79. <i>Anthreptes malacensis</i>	Plain-throated Sunbird**	---	---	---	13	3	---
80. <i>Nectarinia jugularis</i>	Olive-backed Sunbird	X	X	X	41	13	3
81. <i>Nectarinia sperata</i>	Purple-throated Sunbird	X	X	X	12	2	---
82. <i>Aethopyga siparaja</i>	Crimson Sunbird	---	---	R	17	1	2
83. <i>Dicaeum trigonastigma besti</i>	Orange-bellied Flowerpecker	X	X	X	38	7	3
84. <i>Dicaeum australe</i>	Red-keeled Flowerpecker	---	---	•	3	---	---
85. <i>Dicaeum pygmaeum</i>	Pygmy Flowerpecker	X	---	X	---	---	---
86. <i>Zosterops everetti siquijorensis</i>	Everett's White-eye	X	X	X	14	---	---
87. <i>Lonchura malacca</i>	Chestnut Munia	X	X	X	6	16	13
88. <i>Lonchura leucogastra</i>	White-bellied Munia	X	X	X	5	1	---
Total Number Species		53	45	44	36	39	32
Total Observation Hours					31	25	13
Netting Results					31	10	14
Number of Individuals					271	240	216

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