



**OPERATION  
WALLACEA**

**RESULTS OF THE 1996 BIRD  
SURVEY OF BUTON ISLAND,  
SULAWESI,  
INDONESIA**

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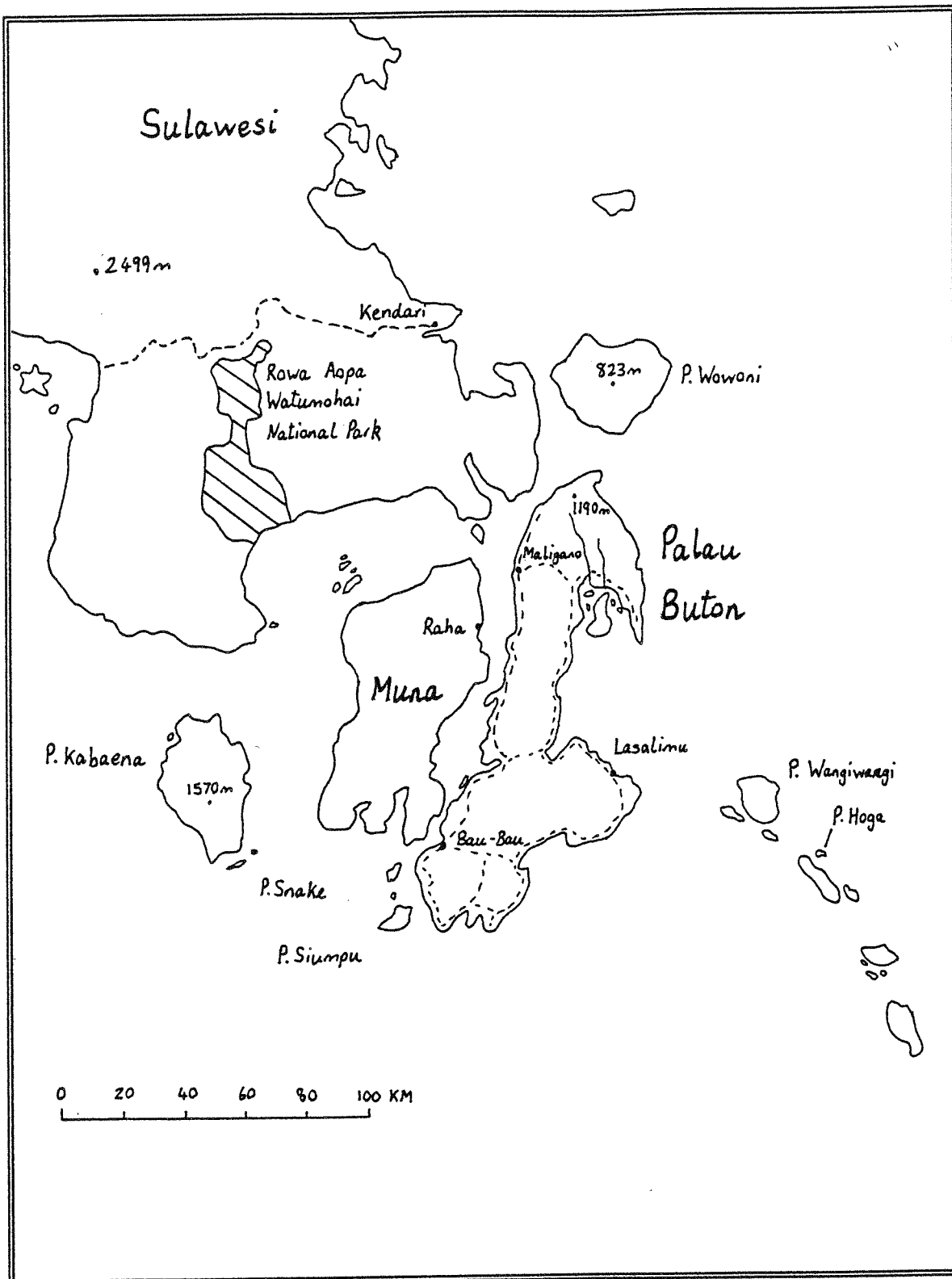
## ABSTRACT

Buton is a hilly island, situated just off the south-east peninsula of Sulawesi, in the Flores Sea. The island is fairly large measuring some 150 km long by between 10 and 30 km across, and reaches an altitude of just over 1100 m. Scientifically Buton is little known and hardly any recent information is available on the avifauna of the island. In June 1995 Operation Wallacea started a three year bird survey of Buton Island designed to produce a detailed bird atlas of the island and help with information needed for future conservation projects. To date 231 bird species have been recorded from Buton Island, the vast majority of which have been added by the expeditions carried out by Operation Wallacea.

In 1995 Buton Island was divided into 85 Squares, using a grid system similar to that utilised by the Ornithological Society of Indonesia. During the 1995 Bird Survey 33 squares were surveyed and a total of 187 bird species were identified. Between June and November 1996 12 different teams of volunteers surveyed 44 squares, including 22 new squares. During the survey a total of 207 species were recorded, including 52 Sulawesi endemics and 9 Indonesian endemics. Most Sulawesi endemics proved both common and widespread with 20 species having been recorded from 50% or more of the Buton squares. It is particularly interesting to note that the 1996 Bird Survey added no less than 35 birds to the Buton list including 5 Sulawesi endemics. Of major conservation importance is the presence of 19 threatened and near-threatened bird species on the island, including two species classified as 'endangered' by Birdlife International - Nordmann's Greenshank and the Yellow-crested Cockatoo.



Figure 1: Map of South East Sulawesi and Buton Island.



## 1: INTRODUCTION

The land masses of the biologically rich region of Wallacea have been isolated for a long time. Lying between the Sunda Shelf of continental Asia and the Sahul Shelf of Australia the region has developed elements of both Asian and Australian fauna and flora. The regions long isolation has resulted in a very high proportion of endemic species, with Sulawesi, the largest island in the region, having the most important centre of bird endemism in Wallacea. Birdlife International has designated 2 Endemic Bird Areas (EBAs) for Sulawesi, as the island supports 57 restricted range species (birds with a global distribution of <50,000 square km). Sulawesi has strong affinities to the Talaud, Sangihe, Peleng, Banggai and Sula island groups and a number of restricted range species are shared between them. If these 2 additional EBAs are included then the number of restricted range species increases to 98, of which 85 occur on Sulawesi (See Appendix 1).

The aim of the Buton Island Bird Survey is to make a complete inventory of the avifauna of Buton Island and to produce a detailed bird atlas for the island. It is hoped that the results will provide a better understanding of the avifauna of this little known area and will identify key areas for future conservation purposes.

The projects objectives are as follows:

- To systematically record all bird observations made on Buton Island.
- To make detailed notes on, and detailed descriptions of, threatened and restricted-range species observed on Buton.
- To work with local officials and people to help raise their awareness of the importance of birds and the importance of conservation in general.
- To provide data to help with the creation of a National Park at the north end of the island.

In order to facilitate this Buton has been divided into a framework of 85 5' (minute) squares - representing 5' latitude by 5' longitude. Each square is roughly 5 miles by 5 miles (Figure 2). During the three year survey it is intended that at least 8 team hours will be spent per square. A similar grid system has been adopted by the Ornithological Society of Indonesia, using larger 10' squares.

## 2: LAND USE AND PROTECTED AREAS ON BUTON

### 2.1: LAND USE DIVISIONS ON BUTON

Buton Island has been divided into a number of land use categories by the Forestry Department of Indonesia (shown in Figure 3), which are designed to take account of local environmental conditions and potential economic activities that these areas can support. Only certain economic activities are allowed in different land use categories, but this is often difficult or impossible to implement on the ground. A great deal of importance is placed on watershed protection, especially since the introduction of irrigated cultivation systems. Watershed protection has met with varying degrees of success and seems to be largely dependent on the knowledge of local people involved in paddy cultivation. Watersheds around Lawelle are extremely well protected and extensive tracts of mature forest can be found on the hills around the settlement. Education programmes on forest conservation

Figure 2: Map of Buton and it's Division into 85 Squares.

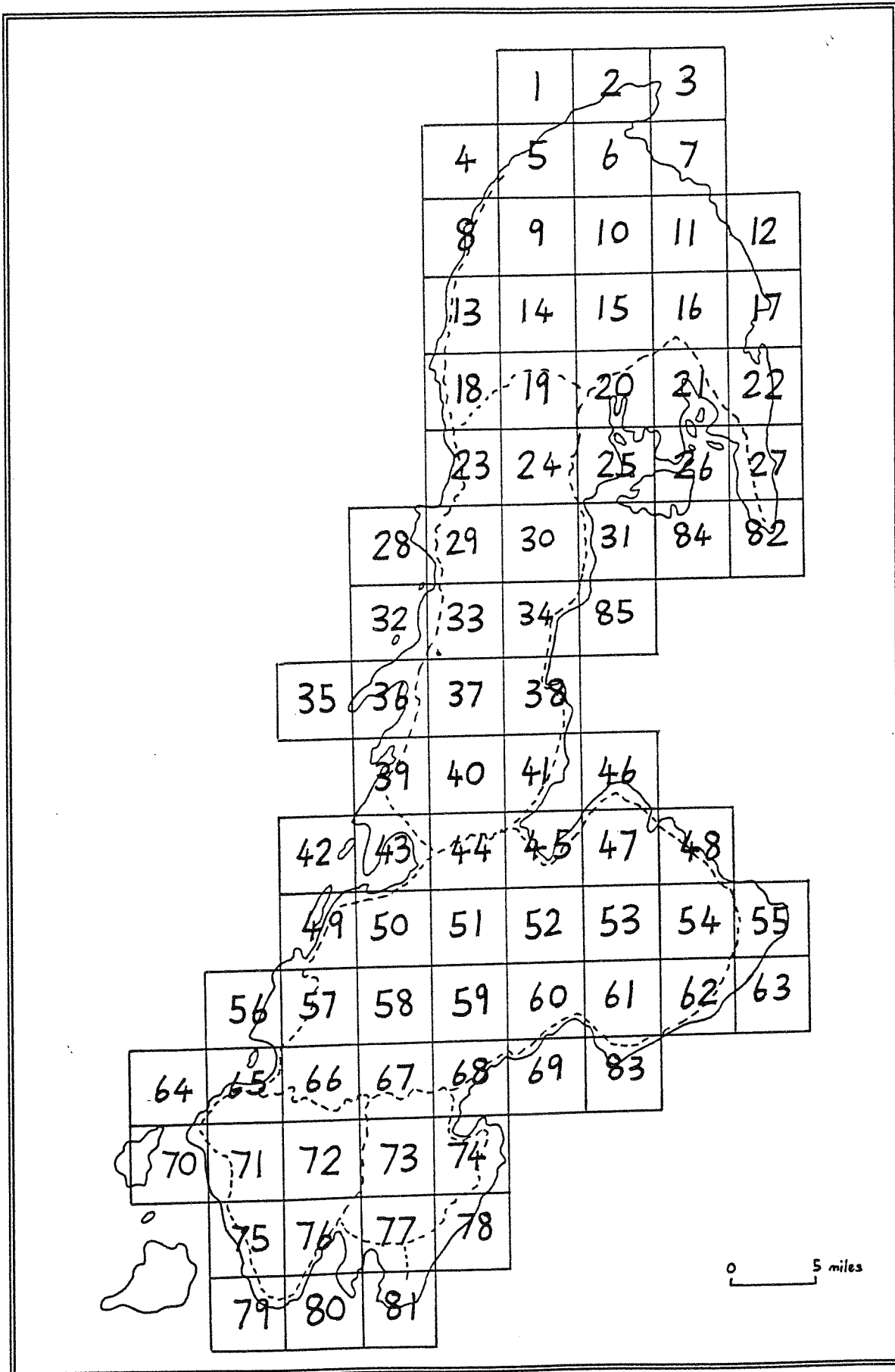
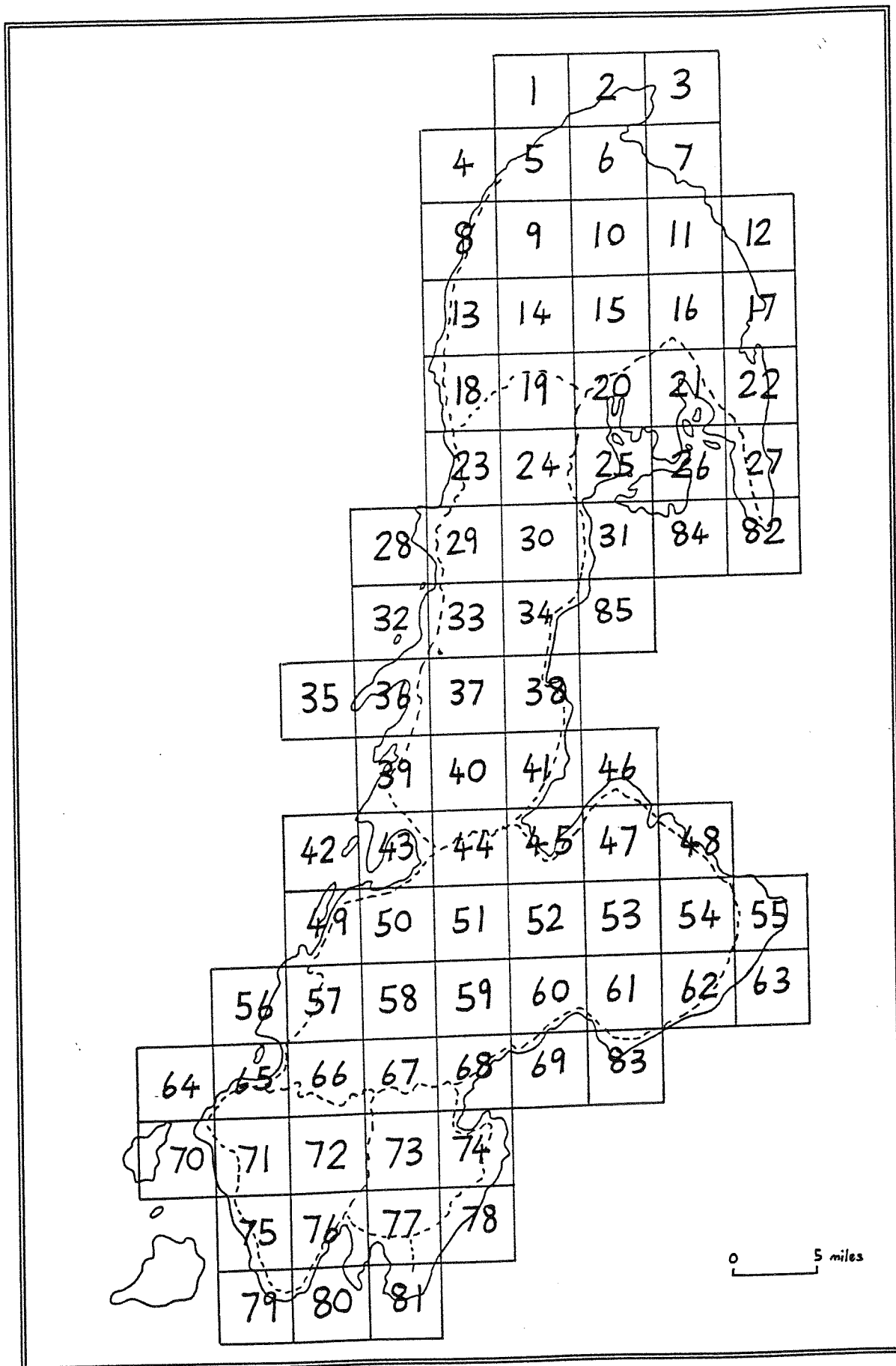
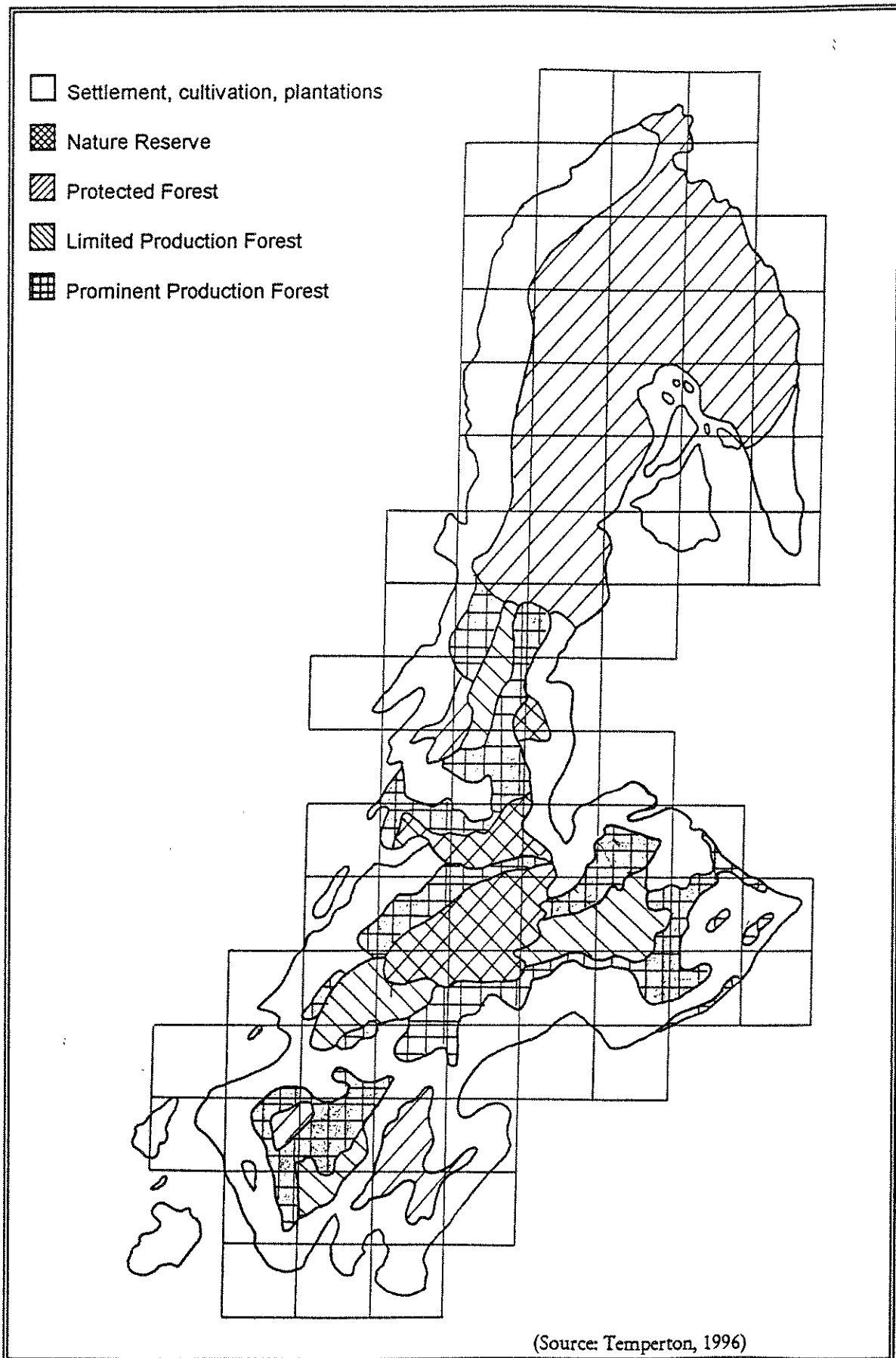


Figure 2: Map of Buton and it's Division into 85 Squares.



**Figure 3: Land use Map of Buton Island.**



are underway on Buton and volunteers were asked to participate in forest conservation talks on a couple of occasions.

### **Definitions of land use categories found on Buton are as follows:**

#### **1. Conservation Areas**

Nature Reserve - no activities other than land improvement are allowed and there is no provision for traditional use of the area by the indigenous population.

Protected Forest - protected due to the importance of the forest as a watershed; limited numbers of trees may be felled and allowed to regrow.

#### **2. Production Forest Areas**

Limited Production Forest - coppicing of trees is only allowed.

Prominent Production Forest - areas of full-scale tree felling allowed including the clearing of entire areas, and the replanting of economically important tree species.

#### **3. Cultivation/Settlement Areas**

Plantation or Cultivation Area - consisting of extensive cultivated fields, paddies, fish ponds and plantations (usually cashew nut or coconut).

**4. Settlement with Mixed Cultivation** - consists of areas with villages and towns and the surrounding fields containing various crops believed to be cultivated primarily for subsistence.

### **2.2: PROTECTED AREAS**

A number of protected areas already exist on Buton and a National Park, at the northern end of the island, is currently awaiting designation by the relevant ministry. Currently only two types of protected area exist on Buton - Protected Forest and Nature Reserves - but neither category is sufficient to guarantee protection. The present out-of-date legislation provides little protection for conservation areas from competing land-uses; for example, legislation provides protection for wildlife in game reserves, but does not provide protection for habitats, which means that timber concessions may be legally granted in these reserves at the discretion of the Director-General of Forestry. Nature Reserves are in theory fully protected, but this is often overlooked by local officials. Lack of consultation between the powerful Transmigration Ministry and ministries connected with the protection of forests and other natural resources is a major problem, which has often resulted in the establishment of transmigration sites within 'protected areas'.

There is (or was) a large area of protected forest in the north of Buton which is believed to contain primary or at least mature secondary forest. This area is due to be designated as a National Park, but legislation has still not been passed and the conservation value of this site is rapidly diminishing. Currently the protected forest is afforded little if any protection as a large transmigration site has been established in the area centred around the settlement of Ronta (Square 15). Aerial surveys have shown that the forests in Squares 15, 16, 20, 24 and 25 have already been devastated and that substantial tracts have been felled in adjacent squares. Large areas of untouched forest still exist, but these are increasingly restricted to

steeper slopes and rougher terrain, particularly in Squares 6, 9, 10, 11 and 14. If action is not taken immediately to designate what remains of the "protected forest" as a National Park, then the future conservation value of the area will be irreversibly damaged.

A number of protected forests and nature reserves already exist in the south of Buton. The largest nature reserve is centred on Square 51, but it is currently not known whether this reserve is sufficiently large enough to be of optimal benefit to wildlife. Major land-use changes may need to be implemented and the extension of existing protected areas into adjacent areas of 'production forest' is strongly recommended. Results of surveys in the south of Buton have highlighted the importance of a number of forests, many of which are comparatively small. These forests are often close to centres of habitation and have survived due to the efforts of local village headmen and forest wardens. Due to their close proximity to both villages and road networks, these forests could play a vital role in the development of ecotourism initiatives. These sites are also ideally placed for the implementation of community based conservation projects which could be designed to involve local people, particularly school children, in conservation activities.

Site Name	Square Number
Cockatoo Breeding Site near Bau-Bau	65
Hill forest above La Bundo-Bundo	44
Lowland forest near Lawelle	45
Hill forest north of Maligano	18 & 19
Maleo Breeding Site	13
Lowland forest & coastal areas east of	55
Lake Togomotonu	

### 3: INITIAL RESULTS OF THE BUTON BIRD SURVEY

Initial results from the 1995 and 1996 bird surveys of Buton Island have been extremely encouraging with 229 species (231 if old records are included) so far having been recorded, including 52 Sulawesi endemics (this figure includes species restricted to Sulawesi and adjacent islands) and 9 Indonesian endemics. Prior to the Operation Wallacea Expeditions little ornithological interest had been shown in the island, and the total number of birds recorded from Buton stood at only 78, including just 24 Sulawesi endemics. One early expedition to Buton described the island as extensively deforested, being covered with dry savanna and grasslands (van Bemmell & Voous, 1951), while the avifauna was described as being impoverished Sulawesian - the number of endemics being limited by the degraded environment. Early habitat assessments of Buton have proved misleading, as while parts of the south have been heavily degraded, much of the island is still covered by forest, especially in the north of the island. Much of the forest is secondary, at various stages of development, but extensive areas of old secondary and/or primary forest exists in the north of the island.

Despite two years of field work carried out on Buton the avifauna is still comparatively little known and the species list for the island is by no-means complete - 35 species were added to the list during the 1996 Survey (3 species were only present on Siumpu and Snake Islands), including 5 endemics. Many of the Sulawesi endemics identified on the island are common

and widespread, with 20 species having been recorded from more than 50% of the squares surveyed during 1996. Of major conservation importance is the presence of 19 threatened or near-threatened species on the island, including two species classified as 'endangered' by Birdlife International and the International Union for the Conservation of Nature (IUCN).

A total of 56 squares have been surveyed out of a total of 85, plus the additional sites of Siumpu and Snake Islands which are situated to the south west of Buton. Of the 56 squares surveyed to date, 28 squares have had less than 8 hours of survey time spent on them, while a further 29 squares have never been surveyed. The latter include some of the most inaccessible areas on the island. The aim of the 1997 Survey will be to attempt to survey as many of the unknown squares as possible and to increase the survey times for those squares with minimal coverage. The main difficulty encountered during the previous two years has been accessibility with many areas, particularly in the north, being cut off due to washed away roads and bridges. Road improvements were in progress at the end of 1996 and it is hoped that this will help alleviate the problem. Due to problems with accessibility substantially more time was spent in some squares compared with others during 1996 (see Table 2). To some extent this has been exacerbated by the presence of permanent count sites in 6 of these squares. Permanent count sites were created in 1995 in order to provide data on important sites for conservation, and in order to encourage and promote awareness among local people. These sites also provide volunteers with an opportunity of viewing a wide range of birds.

Permanent Count Sites include:

1. Lake Togomotonu - Square 55.
2. Lowland forest near the Maleo breeding site at Maligano - Square 13.
3. Hill and lowland forest around La Bundo-Bundo - Squares 44 & 45.
4. Forest valley behind Bau-Bau used for training purposes by all groups - Square 66.
5. Cockatoo breeding site outside Bau-Bau - Square 65.

### **3.1: SUMMARY OF RESULTS BY SQUARE**

Detailed summaries of all surveys carried out during 1996 (by square) can be found in Appendix 8 at the back of this report. An assessment of species diversity per square, is extremely difficult to make given the uneven coverage of squares during both 1995 and 1996. As a general rule the more time spent in a square the greater the recorded diversity of the avifauna, although the type and variety of habitats present also play a crucial role in species diversity. During 1996 six squares were identified as having a particularly diverse avifauna, with each square having 90 species or more recorded within its boundaries - Squares 13, 18, 44, 45, 49 and 55 (see Table 2). If the 1995 results are included then the number of squares with 90 species or more recorded increases to eight (additional squares include Squares 44 & 65). The presence of large tracts of forest appeared to be particularly important in explaining the distribution of Sulawesi endemics and 10 squares were found to have 30 or more Sulawesi endemics present. Not surprisingly all sites, with the exception of Lake Togomotonu, identified as having particular conservation importance are forest sites and it is hoped that most of these forests will be given protection by local officials. No results are available for Trip 9 (28/9/96 to 11/10/96), although interesting records have been included wherever relevant.



Table 2: Summary of Squares Surveyed During 1996				
Square Number	Hours Spent	Species Recorded In Each Square	Sulawesi Endemics	Indonesian Endemics
1	1h	25	5	2
4	50m	25	7	2
5	22h40m	87	30	5
8	6h30m	50 [61]	15 [18]	1 [2]
13	62h20m	97 [115]	37 [38]	6
18	91h45m	126 [142]	38 [41]	7 [8]
19	24h10m	72 [78]	35	4
23	11h20m	70 [79]	27 [29]	4
24	1h05m	25	8	3
28	1h	24 [44]	4 [12]	3 [5]
33	3h	45 [58]	17 [20]	1 [2]
34	1h25m	25 [53]	12 [23]	1 [3]
41	5h05m	63 [77]	29 [31]	4
43	4h	42	19	2
44	55h35m	90 [97]	36 [37]	7
45	28h40m	98 [128]	34 [37]	6 [9]
47	50m	14 [46]	7 [20]	1 [3]
48	1h	24	6	2
49	26h40m	113 [114]	30 [31]	6
50	14h45m	58	26	4
54	13h30m	81 [119]	28 [32]	5 [6]
55	42h50m	117 [128]	32	7
56	1h45m	38 [65]	9 [16]	3 [4]
57	4h50m	42 [68]	13 [23]	5 [6]
58	1h55m	24	7	1
59	1h45m	20	6	1
60	8h65m	59	23	4
62	4h15m	45 [63]	25 [30]	2
63	2h	48	18	3
65	25h50m	76 [99]	31 [34]	5 [8]
66	26h33m	83	34	4
67	6h30m	54 [69]	20 [27]	5
68	6h15m	64	22	4
69	1h30m	25	10	2
70	6h30m	38	8	4
72	6h40m	59	19	1
73	2h	18	4	1
74	14h	80	25	4
75	11h15m	58	21	3
76	11h05m	77 [80]	24	5 [6]
78	2h	35	8	2
79	3h20m	52	18	2
80	1h45m	22	6	1
83	5h	43	18	2
SIUMPU ISLAND	11h25m	44 +1?	7	3
SNAKE ISLAND	6h45m	29	1	2

[ ] - total number of birds recorded during 1995 and 1996

### 3.2: COMMON SPECIES

Many species proved common, even abundant, and widespread, occupying a wide range of habitat types. As would be expected birds were more abundant in forested or wooded locations especially in areas where forest bordered other mixed habitats. Squares with a wide range of habitat types, both natural and modified, also contained a diverse avifauna - Square 18 being a case in point (141 species recorded during 2 years of field work). Of the 25 most widely distributed species (species occurring in 70% or more of Squares surveyed in 1996), 16 occur widely in adjacent parts of Indonesia and South East Asia, while only 9 are endemic to Sulawesi (Table 3). All species frequented a wide range of habitats including in some cases heavily degraded or modified habitats. It is interesting to note that with the exception of the ubiquitous Sulawesi Babbler, all the Sulawesi endemics appear to be dependant on forested or wooded habitats, including forest patches.

Common Name	Systematic Name	*
Collared Kingfisher	<i>Halcyon chloris</i>	98%
Black-naped Oriole	<i>Oriolus chinensis</i>	93%
Black Sunbird	<i>Nectarinia aspasia</i>	91%
Grey-rumped Tree-Swift	<i>Hemiprocne longipennis</i>	86%
White-breasted Woodswallow	<i>Artamus leucorhynchus</i>	86%
Brown-throated Sunbird	<i>Anthreptes malacensis</i>	84%
Olive-backed Sunbird	<i>Nectarinia jugularis</i>	84%
Lemon-bellied White-eye	<i>Zosterops chloris</i>	82%
Black-naped Fruit-Dove	<i>Ptilinopus melanospila</i>	80%
Sulawesi Hanging-Parrot	<i>Loriculus stigmatus</i>	80%
Bay Coucal	<i>Centropus celebensis</i>	80%
White-rumped Cuckoo-Shrike	<i>Coracina leucopygia</i>	80%
Black-naped Monarch	<i>Hypothymis azurea</i>	80%
Fiery-billed Malkoha	<i>Phaenicophaeus calyborhynchus</i>	77%
Yellow-sided Flowerpecker	<i>Dicaeum aureolimbatum</i>	77%
Grey-sided Flowerpecker	<i>Dicaeum celebicum</i>	76%
Lesser Coucal	<i>Centropus bangalensis</i>	75%
Hair-crested Drongo	<i>Dicurus hottentottus</i>	75%
White-necked Myna	<i>Streptocitta albigollis</i>	75%
White-bellied Swiftlet	<i>Collocalia esculenta</i>	73%
Sulawesi Babbler	<i>Trichastoma celebense</i>	73%
Slender-billed Cuckoo-Dove	<i>Macropygia amboinensis</i>	70%
Grey-cheeked Green Pigeon	<i>Treron griseicauda</i>	70%
Uniform Swiftlet	<i>Aerodramus vanikorensis</i>	70%
Pale-bellied White-eye	<i>Zosterops consobrinorum</i>	70%
* - Occurance of Species in all Squares Surveyed in 1996		

### 3.3: NON-FOREST HABITATS

Climax vegetation on Buton is tropical forest, and as would be expected this is the single most important habitat on the island. Deforestation in recent years has greatly reduced the amount of forest habitat available and this habitat will continue to shrink or even disappear in many areas over the next few years. A variety of new ecological niches have become available with the clearance and alteration of forest environments, but many of these have not been fully utilised by resident species. A range of new habitats have been created including grasslands, scrubby savanna, cultivation (including paddy rice), plantations (mainly cashew nut and coconut), plus degraded forest patches. Many areas of Buton, especially in the south, have been cleared repeatedly over a long period of time, resulting in the development of dry scrubby savanna dominated by alang alang grass (*Imperata* species), *Lantana camara* and other introduced shrubby species. Large areas of southern Buton are now covered in dense impenetrable thickets.

Common Name	Systematic Name	
Brahminy Kite	<i>Haliastur indus</i>	
Spotted Kestrel	<i>Falco moluccensis</i>	
Spotted Dove	<i>Streptopelia chinensis</i>	
Slender-billed Cuckoo-Dove	<i>Macropygia amboinensis</i>	*
Green-winged Pigeon	<i>Chalcophaps indica</i>	
Black-naped Fruit-Dove	<i>Ptilinopus melanospila</i>	
White Imperial Pigeon	<i>Ducula luctuosa</i>	*
Sulawesi Hanging-Parrot	<i>Loriculus stigmatus</i>	*
Plaintive Cuckoo	<i>Cuculus merulinus</i>	
Lesser Coucal	<i>Centropus bengalensis</i>	
Bay Coucal	<i>Centropus celebensis</i>	*
Grey-rumped Treeswift	<i>Hemiprogne longipennis</i>	
Collared Kingfisher	<i>Halcyon chloris</i>	
Rainbow Bee-eater	<i>Merops ornatus</i>	
White-rumped Cuckoo-Shrike	<i>Coracina leucopygia</i>	*
White-winged Triller	<i>Lalage suerii</i>	
Black-naped Oriole	<i>Oriolus chinensis</i>	
Slender-billed Crow	<i>Corvus enca</i>	
Sulawesi Babbler	<i>Trichastoma celebense</i>	
Pied Bushchat	<i>Saxicola caprata</i>	
Zitting Cisticola	<i>Cisticola juncidis</i>	
Golden-headed Cisticola	<i>Cisticola exilis</i>	
Black-naped Monarch	<i>Hypothymis azurea</i>	
White-breasted Woodswallow	<i>Artamus leucorhynchus</i>	
Brown-throated Sunbird	<i>Anthreptes malacensis</i>	
Black Sunbird	<i>Nectarinia aspasia</i>	
Olive-backed Sunbird	<i>Nectarinia jugularis</i>	
Yellow-sided Flowerpecker	<i>Dicaeum aureolimbatum</i>	*
Grey-sided Flowerpecker	<i>Dicaeum celebicum</i>	
Lemon-bellied White-eye	<i>Zosterops chloris</i>	

\* - Species Closely Associated with Forest Patches or Plantations

The avifauna of these modified 'non-forest' habitats is highly impoverished, although a few species are largely dependent on these habitat types. Some 30 species are regularly seen in degraded habitats on Buton, the vast majority of which are commonly found throughout Indonesia and South East Asia (Table 4). Of particular interest is the absence of most Sulawesi endemics, with the exception of the Sulawesi Babbler, from these habitats. Most other Sulawesi endemics found in open habitats are usually associated with remaining patches of forest, or have entered the environment in order to utilise a readily available source of food. Many of the species found in open habitats are surprisingly localised and even uncommon, despite the abundance of suitable habitat - this is true of the Spotted Kestrel, Pied Bushchat and both Cisticolas. This seems to suggest that many species have not had the opportunity to colonise these open habitats, although this will undoubtedly change with time.

The cultivation of rice in irrigated fields on Buton has had a significant impact on waterbirds and waders on the island. Natural freshwater habitats are extremely scarce on Buton, although seasonally flooded areas were previously fairly extensive, prior to the development of transmigration settlements, around the small lakes of Togomotonu and Ambuau, near Lasalimu. The introduction of irrigation schemes and paddy rice cultivation to Buton has resulted in a dramatic increase in the availability of freshwater habitats on the island, although waterbirds seem to have been relatively slow in colonising these habitats. Comparatively few waterbirds were noted during the 1995 Survey away from the vicinity of the two lakes. During 1996 a number of waterbirds were recorded from irrigated rice fields, and it seems likely that numbers will continue to increase. Species regularly noted include Intermediate Egrets *Egreta intermedia*, Little Egrets *E. garzetta*, Woolly-necked Storks *Ciconia episcopus*, Sunda Teal *Anas gibberifrons*, Buff-banded Rail *Gallirallus philippensis*, Barred Rail *G. torquatus* and White-browed Crake *Porzana cinerea*. Two species, Cinnamon Bittern *Ixobrychus cinnamomeus* and Javan Pond-Heron *Ardeola speciosa*, proved to be unexpectedly uncommon in irrigated paddy fields. The latter is abundant on mainland Sulawesi around Kendari, but only small numbers have been encountered to date. Large numbers of migrant waders were attracted to unplanted rice fields between August and November, and these habitats may become important for them in the future. Small seed-eating finches have benefited greatly from the introduction of wet rice cultivation and Chestnut Munias *Lonchura malacca* are now locally abundant. Important irrigation schemes exist in Squares 45, 49, 55 and 57, and further schemes are under construction. Waterbirds and waders have also adapted readily to the construction of fish ponds around the coast.

The two lakes, unfortunately, have not fared well in recent years due to encroachment of agriculture, and in the case of Lake Ambuau the building of a substantial irrigation ditch. The latter site will probably not survive, but Lake Togomotonu remains an important site for many species. A programme has been agreed with local officials to improve the conservation of Lake Togomotonu and its environs, and it is hoped that this will be sufficient to protect and develop this important Buton site.

Table 5: Checklist of Species Recorded on Buton Island						
Common Name	Systematic Name	Muna#	Buton#	1995	1996	
1 Little/Red-throated Grebe	Tachybaptus ruficollis			26	33	
2 Christmas Island Frigatebird	Fregata andrewsi				4	
3 Great Frigatebird	Fregata minor			>15	1	
4 Lesser Frigatebird	Fregata ariel			>10	63	
5 Little Black Cormorant	Phalacrocorax sulcirostris			2	>8	
6 Little Pied Cormorant	Phalacrocorax melanoleucos			>10	>60	
7 Oriental Darter	Anhinga melanogaster			1		
8 Brown Booby	Sula leucogaster			>10		
9 Great-billed Heron	Ardea sumatrana	*		1	3	
10 Purple Heron	Ardea purpurea			3	2	
11 White-faced Heron	Ardea novaeollandiae				1	
12 Great Egret	Egretta alba	*		7	24	
13 Intermediate Egret	Egretta intermedia			1	35	
14 Little Egret	Egretta garzetta nigripes	*		1	190	
15 Pacific Reef-Egret	Egretta sacra	*		1	5	
16 Cattle Egret	Bubulcus ibis		*	5		
17 Javan Pond-Heron	Ardeola speciosa		*	1	2	
18 Striated Heron	Butorides striatus	*	*	>10	>25	
19 Cinnamon Bittern	Ixobrychus cinnamomeus			2	5	
20 Black Bittern	Ixobrychus flavicollis			1	1	
21 Woolly-necked Stork	Ciconia episcopus	*	*	17	7	
22 Milky Stork	Mycteria cinerea				21	
23 Osprey	Pandion haliaetus	*	*	2	3	
24 Jerdon's Baza	Aviceda jerdoni			1	2	
25 Barred Honey-Buzzard	Pernis celebensis	*		4	1	
26 Black-shouldered Kite	Elanus caeruleus	*		2	2	
27 Brahminy Kite	Haliaeetus indus	*	*	3	9	
28 White-bellied Sea-Eagle	Haliaeetus leucogaster	*	*	2	3	
29 Lesser Fish-Eagle	Ichthyophaga humilis			3	2	
30 Grey-headed Fish-Eagle	Ichthyophaga ichthyaeus			2	1	
31 Sulawesi Serpent-Eagle	Spilornis rufipectus	S	*	3	6	
32 Spotted Harrier	Circus assimilis	SS			1	
33 Eastern Marsh Harrier	Circus spilonotus				1	
34 Sulawesi Goshawk	Accipiter griseiceps	S	*	*	1	
35 Chinese Goshawk	Accipiter soloensis		*	1		
36 Spot-tailed Goshawk	Accipiter trinotatus	S	*	*	1	3
37 Small Sparrowhawk	Accipiter nanus	S		?	2	
38 Vinous-breasted Sparrowhawk	Accipiter rhodogaster	S	*	*	?	3
39 Grey-faced Buzzard	Butastur indicus			2		
40 Black Eagle	Ictinaetus malayensis			1	3	
41 Rufous-bellied Eagle	Hieraetus kienerii				1	
42 Sulawesi Hawk-Eagle	Spizaetus lanceolatus	S	*	*	4	1
43 Spotted Kestrel	Falco moluccensis		*	*	2	5
44 Oriental Hobby	Falco severus			1	1	
45 Peregrine Falcon	Falco peregrinus			1	1	
46 Spotted Whistling-Duck	Dendrocygna guttata			>40	35	
47 Wandering Whistling-Duck	Dendrocygna arcuata			>50	116	
48 Sunda Teal	Anas gibberifrons	I	*	*	>50	141
49 Pacific Black Duck	Anas superciliosa				4	
50 Tabon Scrubfowl	Megapodius cumingii				1	
51 Maleo	Macrocephalon maleo	S		6	26	
52 Blue-breasted Quail	Coturnix chinensis		*			
53 Red Junglefowl	Gallus gallus		*			
54 Red-backed Buttonquail	Turnix maculosa		*	1	4	
55 Buff-banded Rail	Gallirallus philippensis		*	5	15	
56 Barred Rail	Gallirallus torquatus		*	10?	8	
57 Slaty-breasted Rail	Gallirallus striatus			2	1	
58 Snoring Rail	Aramidopsis plateni	S		4	2	
59 Isabelline Waterhen	Amauornis isabellinus	S		4	2	
60 White-breasted Waterhen	Amauornis pheoncurus		*?	*	6	7
61 Baillon's Crake	Porzana pusilla			2	2	
62 Ruddy-breasted Crake	Porzana fusca			2	1	

Table 5: Checklist of Species Recorded on Buton Island						
Common Name	Systematic Name	Muna#	Buton#	1995	1996	
63 White-browed Crane	Porzana cinerea			>10	6	
64 Purple Swamphen	Porphyrio porphyrio				4	
65 Common Moorhen	Gallinula chloropus			>10	27	
66 Dusky Moorhen	Gallinula tenebrosa			26	25	
67 Comb-crested Jacana	Irediparra gallinacea			>20	16	
68 Pacific Golden Plover	Pluvialis fulva	*	*	8	21	
69 Grey Plover	Pluvialis squatarola				2	
70 Greater Sand-Plover	Charadrius leschenaultii	*				
71 Lesser Sand-Plover	Charadrius mongolus				1	
72 Oriental Plover	Charadrius veredus		*			
73 Little-ringed Plover	Charadrius dubius		*			
74 Malaysian Plover	Charadrius peronii				5	
75 Ruddy Turnstone	Arenaria interpres				1	
76 Great Knot	Calidris tenuirostris			4		
77 Sharp-tailed Sandpiper	Calidris acuminata			2		
78 Rufous-necked Stint	Calidris ruficollis			>30	3	
79 Curlew Sandpiper	Calidris ferruginea				2	
80 Dunlin	Calidris alpina				1	
81 Red-necked Phalarope	Phalaropus lobatus				31	
82 Common Redshank	Tringa totanus			>30	>40	
83 Common Greenshank	Tringa nebularia		*	2	5	
84 Nordmann's Greenshank	Tringa guttifer				1	
85 Marsh Sandpiper	Tringa stagnatilis			3	2	
86 Green Sandpiper	Tringa ochropus			1		
87 Wood Sandpiper	Tringa glareola		*	5	49	
88 Grey-tailed Tattler	Heteroscelus brevipes	*		1	7	
89 Common Sandpiper	Actitis hypoleucos		*	>20	8	
90 Whimbrel	Numenius phaeopus	*	*	>20	28	
91 Bristle-thighed Curlew	Numenius tahitiensis				1	
92 Far Eastern Curlew	Numenius madagascariensis			2		
93 Swinhoe's Snipe	Gallinago megala			1	1	
94 Beach Thick-Knee	Esacus magnirostris	SS			1	
95 Oriental Pratincole	Glaucous maldivarum				5	
96 Long-legged Pratincole	Stiltia isabellia		*	3		
97 Whiskered Tern	Chlidonias hybridus				1	
98 White-winged Tern	Chlidonias leucopterus				1	
99 Gull-billed Tern	Gelochelidon nilotica				1	
100 Common Tern	Sterna hirundo			5	7	
101 Black-naped Tern	Sterna sumatrana			>10	1	
102 Bridled Tern	Sterna anaethetus				1	
103 Little Tern	Sterna albifrons			2		
104 Great Crested Tern	Sterna bergii			>5	32	
105 Lesser Crested Tern	Sterna bengalensis				4	
106 Fairy Tern	Gygis alba				1	
107 Feral Pigeon	Columba livia			8	>8	
108 Spotted Dove	Streptopelia chinensis		*	30	11	
109 Slender-billed Cuckoo-Dove	Macropygia amboinensis		*	12	15	
110 White-faced Cuckoo-Dove	Turacoena manadensis	S	*	11	11	
111 Green-winged Pigeon	Chalcophaps indica		*	3	3	
112 Stephan's Pigeon	Chalcophaps stephani			3	3	
113 Zebra Dove	Geopelia striata	SS			2	
114 Pink-necked Green Pigeon	Treron vernans			23	11	
115 Grey-cheeked Green Pigeon	Treron griseicauda	I	*	>20	>57	
116 Maroon-chinned Fruit-Dove	Ptilinopus subularis	S		4	1	
117 Black-naped Fruit-Dove	Ptilinopus melanospila		*	17	>51	
118 White-bellied Imperial Pigeon	Ducula forsteni	S		8	>30	
119 Grey-headed Imperial Pigeon	Ducula radiata	S		>3	5	
120 Green Imperial Pigeon	Ducula aenea		*	9	6	
121 Blue-tailed Imperial Pigeon	Ducula concinna	I		5		
122 Pink-headed Imperial Pigeon	Ducula rosacea	I		39	>27	
123 Pied Imperial Pigeon	Ducula bicolor			497	3	
124 White Imperial Pigeon	Ducula luctuosa	S	*	>50	>79	
125 Yellow-crested Cockatoo	Cacatua sulphurea	I	*	9	9	

Table 5: Checklist of Species Recorded on Buton Island							
	Common Name	Systematic Name		Muna#	Buton#	1995	1996
126	Ornate Lorikeet	<i>Trichoglossus ornatus</i>	S	*	*	20	27
127	Yellow-and-Green Lorikeet	<i>Trichoglossus flavoviridis</i>	S			2	1
128	Sulawesi Hanging-Parrot	<i>Loriculus stigmatus</i>	S	*	*	10	>27
129	Green Hanging-Parrot	<i>Loriculus exilis</i>	S			19	>30
130	Golden-mantled Racket-tailed Parrot	<i>Prioniturus platurus</i>	S	*	*	40	>146
131	Great-billed Parrot	<i>Tanygnathus megalorynchos</i>				17	22
132	Blue-backed (Muller's) Parrot	<i>Tanygnathus sumatranus</i>		*	*	6	18
133	Sulawesi Hawk-Cuckoo	<i>Cuculus crassirostris</i>	S			1	1
134	Oriental Cuckoo	<i>Cuculus saturatus</i>		*		1	1
135	Plaintive Cuckoo	<i>Cacomantis merulinus</i>				2	4
136	Indonesian Cuckoo	<i>Cacomantis sepulcralis</i>	I		*	1	4
137	Horsefield's Bronze-Cuckoo	<i>Chrysococcyx basalis</i>				1	
138	Gould's Bronze-Cuckoo	<i>Chrysococcyx russatus</i>				3	2
139	Drongo Cuckoo	<i>Surniculus lugubris</i>			*	2	5
140	Black-billed Koel	<i>Eudynamis melanorhyncha</i>	S	*		6	5
141	Channel-billed Cuckoo	<i>Scythrops novaehollandiae</i>		*	*	2	3
142	Fiery-billed Malkoha	<i>Phaenicophaeus calyornynchus</i>	S	*		9	39
143	Lesser Coucal	<i>Centropus bengalensis</i>		*	*	5	10
144	Bay Coucal	<i>Centropus celebensis</i>	S	*	*	15	12
145	Sulawesi Owl	<i>Tyto rosenbergii</i>	S			1	1
146	Sulawesi Scops-Owl	<i>Otus manadensis</i>	S			2	>5
147	Speckled Hawk-Owl	<i>Ninox punctulata</i>	S				1
148	Ochre-bellied Hawk-Owl	<i>Ninox ochracea</i>	S		*		2
149	Satanic Nightjar	<i>Eurostopodus diabolicus</i>	S				4
150	Great-eared Nightjar	<i>Eurostopodus macrotis</i>				9	12
151	Long-tailed Nightjar	<i>Caprimulgus macrurus</i>					1
152	Savanna Nightjar	<i>Caprimulgus affinis</i>				5	>3
153	Grey-rumped Tree-Swift	<i>Hemiprocne longipennis</i>			*	>50	>60
154	White-bellied Swiftlet	<i>Collocalia esculenta</i>				>100	>185
155	Moluccan Swiftlet	<i>Aerodramus infuscatus</i>				50	>35
156	Uniform Swiftlet	<i>Aerodramus vanikorensis</i>		*		>50	>133
157	White-throated Needletail	<i>Hirundapus caudacutus</i>					1
158	Purple Needletail	<i>Hirundapus celebensis</i>				20	1
159	Fork-tailed (Pacific) Swift	<i>Apus pacificus</i>				1	1
160	House Swift	<i>Apus [affinis] nipalensis</i>					>25
161	Asian Palm Swift	<i>Cypsiurus balaisiensis</i>				>50	21
162	Blue-headed Wood Kingfisher	<i>Actenoides monachus</i>	S				1
163	Ruddy Kingfisher	<i>Halcyon coromanda</i>		*	*	1	2
164	Great-billed Kingfisher	<i>Halcyon melanorhyncha</i>	S	*	*	4	3
165	Collared Kingfisher	<i>Halcyon chloris</i>		*	*	32	14
166	Sacred Kingfisher	<i>Halcyon sancta</i>			*	5	>13
167	Sulawesi Pygmy Kingfisher	<i>Ceyx fallax</i>	S				1
168	Blue-eared Kingfisher	<i>Alcedo meninting</i>				1	1
169	Common Kingfisher	<i>Alcedo atthis</i>		*	*	3	3
170	Rainbow Bee-eater	<i>Merops ornatus</i>				23	>350
171	Purple-winged Roller	<i>Coracias temminckii</i>	S	*	*	14	6
172	Broad-billed Roller (Dollarbird)	<i>Eurystomus orientalis</i>		*	*	3	7
173	Sulawesi Hornbill	<i>Penelopides exarhatus</i>	S	*	*	13	15
174	Red-knobbed Hornbill	<i>Rhyticeros cassidix</i>	S	*	*	22	23
175	Sulawesi Pygmy Woodpecker	<i>Picoides temminckii</i>	S			1	3
176	Ashy Woodpecker	<i>Mulleripicus fulvus</i>	S	*	*	7	12
177	Red-bellied Pitta	<i>Pitta erythrogaster</i>				5	6
178	Hooded Pitta	<i>Pitta sordida</i>	??				2
179	Barn Swallow	<i>Hirundo rustica</i>				2	4
180	Pacific Swallow	<i>Hirundo tahitica</i>		*	*	>20	>50
181	Pied Cuckoo-Shrike	<i>Coracina bicolor</i>	S	*	*	8	6
182	White-rumped Cuckoo-Shrike	<i>Coracina leucopygia</i>	S	*	*	14	14
183	Common Cicadabird	<i>Coracina tenuirostris</i>				4	5
184	Sulawesi Cicadabird	<i>Coracina morio</i>	S	*		10	9
185	Sulawesi Pied Triller	<i>Lalage [nigra] leucopygialis</i>	S	*		6	5
186	White-winged Triller	<i>Lalage sueurii</i>			*	4	7
187	Sooty-headed Bulbul	<i>Pycnonotus aurigaster</i>				1	
188	Yellow-vented Bulbul	<i>Pycnonotus goiavier</i>				1	

Table 5: Checklist of Species Recorded on Buton Island

	Common Name	Systematic Name	Muna#	Buton#	1995	1996
189	Hair-crested Drongo	Dicrurus hottentottus	*	*	15	>26
190	Black-naped Oriole	Oriolus chinensis	*	*	19	16
191	Slender-billed Crow	Corvus enca		*	30	>40
192	Piping Crow	Corvus typicus	S	*	6	6
193	Sulawesi Babbler	Trichastoma celebense	S	*	17	23
194	Pied Bushchat	Saxicola caprata		*	19	9
195	Red-backed Thrush	Zoothera erythronota	S		3	4
196	Golden-bellied Gerygone	Gerygone sulphurea			2	9
197	Tawny Grass-Warbler	Megalurus timoriensis			1	
198	Clamorous Reed-Warbler	Acrocephalus stentoreus				2
199	Zitting Cisticola	Cisticola juncidis			12	11
200	Golden-headed Cisticola	Cisticola exilis			2	9
201	Asian Brown Flycatcher	Muscicapa latirostris			2	9
202	Grey-streaked Flycatcher	Muscicapa griseisticta			2	1
203	Black-naped Monarch	Hypothymis azurea puella		*	11	15
204	Citrine Flycatcher	Culicicapa helianthea			9	17
205	Rusty-bellied Fantail	Rhipidura teysmanni	S			2
206	Mangrove Whistler	Pachycephala grisola				7
207	Common Pipit	Anthus novaeseelandiae			1	
208	Petchora Pipit	Anthus gustavi			1	
209	Yellow Wagtail	Motacilla flava			39	5
210	Grey Wagtail	Motacilla cinerea			12	5
211	White-breasted Woodswallow	Artamus leucorhynchus		*	50	27
212	Ivory-backed Woodswallow	Artamus monachus	S		17	19
213	Tiger Shrike	Lanius tigrinus	??			2
214	Brown Shrike	Lanius cristatus			1	
215	Short-tailed Glossy Starling	Aplonis minor	*	*		19
216	Asian Glossy Starling	Aplonis panayensis			>30?	>50
217	Sulawesi Crested Myna	Basilornis celebensis	S	*	7	11
218	White-necked Myna	Streptocitta albigollis	S	*	>10	26
219	Finch-billed Myna	Scissirostrum dubium	S	*	>200	>250
220	Brown-throated Sunbird	Antheptes malacensis		*	8	19
221	Black Sunbird	Nectarinia aspasia		*	25	12
222	Olive-backed Sunbird	Nectarinia jugularis			>30	>45
223	Crimson Sunbird	Aethopyga siparaja			12	8
224	Yellow-sided Flowerpecker	Dicaeum aureolimbatum	S	*	20	23
225	Crimson-crowned Flowerpecker	Dicaeum nehrkomi	S	*		1
226	Grey-sided Flowerpecker	Dicaeum celebicum	S		22	20
227	Lemon-bellied White-Eye	Zosterops chloris		*	>30	>31
228	Pale-bellied White-Eye	Zosterops consobrinorum	S		20	18
229	Eurasian Tree Sparrow	Passer montanus				2
230	Black-faced Munia	Lonchura molucca	I		108	>200
231	Scaly-breasted Munia	Lonchura punctulata			30	>20
232	Chestnut Munia	Lonchura malacca		*	100	>140
233	Pale-headed Munia	Lonchura pallida	I		50	>6
	Total Number of Species Recorded		70	78	187	210
	S = Sulawesi Endemic					
	I = Indonesian Endemic					
	?? = Unconfirmed Record					
	SS = Siumpu & Snake Islands Only					
	Figures for 1995 & 1996 Represent					
	Maximum Survey Counts					
	# Source White and Bruce					



#### 4: THREATENED AND NEAR-THREATENED SPECIES

A total of 19 threatened and near-threatened species have been recorded from Buton, including two species classified by IUCN (see Appendix 2) as endangered. For an island as small as Buton this represents a very significant total, and Buton could prove to be important for the conservation of some of these species. With the exception of 4 migrant and/or vagrant species (Asian Darter, Nordmann's Greenshank, Bristle-thighed Curlew and Far-Eastern Curlew), all threatened and near-threatened species are thought to be resident. Many of the Sulawesi endemics included within this group are very poorly known, and their status may change when data becomes more readily available.

Common Name	Systematic Name	Category
Nordmann's Greenshank	<i>Tringa guttifer</i>	Endangered
Yellow-crested Cockatoo	<i>Cacatua sulphura</i>	Endangered
Milky Stork	<i>Mycteria cinerea</i>	Vulnerable
Maleo	<i>Macrocephalon maleo</i>	Vulnerable
Snoring Rail	<i>Aramidopsis plateni</i>	Vulnerable
Bristle-thighed Curlew **	<i>Numenius tahitiensis</i>	Vulnerable
Satanic Nightjar *	<i>Eurostopodus diabolicus</i>	Vulnerable
Asian Darter	<i>Anhinga melanogaster</i>	N-T
Great-billed Heron	<i>Ardea sumatrana</i>	N-T
Jerdon's Baza	<i>Aviceda jerdoni</i>	N-T
Lesser Fishing-Eagle	<i>Ichthyophaga humilis</i>	N-T
Grey-headed Fishing-Eagle	<i>Ichthyophaga ichthyaetus</i>	N-T
Small Sparrowhawk	<i>Accipiter nanus</i>	N-T
Sulawesi Hawk-Eagle	<i>Spizaetus lanceolatus</i>	N-T
Tabon Scrubfowl	<i>Megapodius cumingii</i>	N-T
Malaysian Plover	<i>Charadrius peronii</i>	N-T
Far Eastern Curlew	<i>Numenius madagascariensis</i>	N-T
Pied Cuckoo-Shrike	<i>Coracina bicolor</i>	N-T
Red-backed Thrush	<i>Zosterops erythronota</i>	N-T
Pale-bellied White-eye	<i>Zosterops consobrinorum</i>	N-T
* - probable record		
** - unconfirmed record		

A number of factors are adversely affecting the status of many of the threatened or near-threatened species on Buton. In recent years large scale transmigration settlements have been established in the south and east of the island which has resulted in widespread forest destruction. Little importance is often placed on protected areas of forest and a number of transmigration sites have been established in existing forest reserves - the settlement near Lake Togomotonu is a case in point. The huge transmigration settlements in the NE of the island around Ronta have been especially devastating with large areas of old secondary and/or primary forest being clear-felled. Little work seems to be done to determine whether the sites are suitable for agriculture, and many areas have exceptionally poor soils which are often completely dominated by large coral outcrops and crevices. At the present rate of destruction it is doubtful whether much forest will survive, except on the higher and steeper slopes. Methods of timber extraction for local consumption are extremely wasteful and little effort is made to regulate this activity.

The trapping of birds for pets by local people is a major problem on the island, and the population of one parrot species has already declined dramatically. Parrots are the most commonly captured birds, but white-eyes, imperial pigeons and even rails have been observed in captivity. Hunting of birds for food is not currently widespread on Buton, although there are signs that this is changing due to the arrival of transmigrants from Java and elsewhere. Snares are regularly set for Bear Cuscus *Phalanger ursinus* and the local form of the Booted Macaque *Macaca ochreata brunnescens*, and birds are occasionally caught; species found dead in snares include Red-Knobbed Hornbills, Fiery-billed Malkoha and Bay Coucal. At present the only species which seems to be suffering from hunting and the collection of eggs is the Maleo.

#### 4.1: THREATENED SPECIES

##### ENDANGERED SPECIES

##### **NORDMANN'S GREENSHANK** *Tringa guttifer*

The total world population of this waders is thought to number c.1000, all of which breed in eastern Russia and winter in SE Asia. Not previously recorded from Wallacea, although there is a record from N Borneo, and up to 21 birds have been seen in SE Sumatra (Collar et al., 1994). Two birds were recorded from Buton during 1996; a single bird seen in fish ponds at Karing Karing on the 22/10/96 (poor photograph taken); a second bird was seen well on a beach in Square 74 on the 5/11/96. A least one, possibly three, Nordmann's Greenshanks were also recorded from fish ponds at Kendari on the 9/11/96. The number of records may indicate that the species winters more regularly in SE Sulawesi.

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##### **YELLOW-CRESTED COCKATOO** *Cacatua sulphura*

According to a recently completed status assessment by Birdlife International and the Indonesian Department of Nature Conservation (PHPA), populations of the Yellow-crested Cockatoo have crashed since the 1970s (Poole, 1996). The subspecies *sulphura* is known to have vanished from many parts of Sulawesi and the largest known population, in the Rawa Aopa Watumohai National Park, numbers only c.150 birds.

*C. s. sulphura* is an uncommon and evidently localised species on Buton, which appears to occur predominantly in the south of the island. Associated with forest, including degraded forest, where it is encountered in pairs and small groups of up to 9 birds. A total of 34 birds were recorded in 1996 from 9 squares, all in the south of the island; in 1995 19 birds were recorded from 4 squares, including the only northern record - 5 birds seen near Maligano. Fairly large areas of Buton have still to be surveyed, including extensive areas of lowland forest, and more birds may yet be found. The total Buton population of this species is probably between 50-100 birds, but numbers are decreasing due to trapping and the species is under enormous pressure. Cockatoos are still widely trapped for the pet trade despite being fully protected by Indonesian law. During a visit in November by volunteers to the only known breeding site, just outside of Bau-Bau, 2 birds were shot and injured by local trappers; both birds are now in captivity at the local police station. A number of captive cockatoos were seen throughout the island, all trapped locally. This species is readily available in the bird markets at Kendari, where birds are offered for US\$50.00.

## VULNERABLE SPECIES

### **MILKY STORK *Mycteria cinerea***

Recent studies have indicated a world population of less than c.6000 birds with the bulk of the population breeding in Indonesia; c.5000 birds occur on Sumatra (Collar, 1994). Only recently found in south Sulawesi where a small resident population is thought to occur; small numbers occur in S Sulawesi and a larger population occurs in SE Sulawesi including c.100 birds from Rawa Aopa Watumohai National Park (Wardill, 1995). Breeding has not yet been proved from Sulawesi, although there are reports of immature birds from various locations. Milky Storks are especially associated with coastal mangrove swamps, but also utilise other aquatic habitats, including fish ponds, lakes, marshes, tidal flats, saline pools and are occasionally known to visit rice fields (Hancock, 1992).

Not previously recorded from Buton, but known to occur in the mangroves between mainland Sulawesi and Muna (Wardill, 1995). Records from Buton include a single bird at Lake Ambuau, 2/11/96; 21 birds in a large isolated mangrove tree in Square 78, 5/11/96; & 4 adults and an immature in Square 74, 17/11/96. A sighting, at distance, of a very large all white bird in mangroves in Square 8 on the 25/6/96 was probably this species. Urgent surveys are needed to determine the status of this stork on Buton and to establish whether the species breeds locally. The record of an immature from Buton may indicate that the species breeds locally, although birds are known to disperse widely after breeding.

### **MALEO *Macrocephalon maleo***

The Maleo is endemic to Sulawesi where it inhabits lowland and hill forest to 1,200m. The remaining population is still thought to be quite large, but the species is vulnerable as it lays communally in traditional nesting grounds (Collar, 1994). Only 85 nesting grounds are known, but 22 have already been abandoned and others are under severe threat.

On Buton, Maleo have only been recorded from 2 squares in the north of the island near Maligano, and 5 breeding sites have been found along a 1.5 km stretch of river north of Maligano. The sites are currently surrounded by mature secondary forest, which at the end of the 1996 Survey was being selectively logged. A transmigration site has been established within 0.5 km of the Maleo sites and the logging of large trees is well underway. All breeding sites suffer from severe disturbance with trees being cut within metres of some sites; the river itself is used for transporting cut timber and loggers are known to collect eggs. Only one breeding site is regularly used with a maximum count of 26 Maleos made in late October. The nest grounds are found along a small stretch of river with thick black deposits of river sand; further upstream the banks become rocky and are thus unsuitable for nesting. No other rivers appear to be suitable on Buton. The Maleo breeding sites must be regarded as severely threatened and immediate action must be taken to eliminate disturbance and protect the surrounding forest. The Governor of SE Sulawesi has expressed an interest in the Maleo sites on Buton, and has asked officials to take action.

### **SNORING RAIL *Aramidopsis plateni***

According to Collar (1992) the Snoring Rail appears to be genuinely rare and may be vulnerable to deforestation, although its elusive habits may account to some extent for the paucity of records. This flightless rail is known from only 11 specimens and 4 sightings made between 1983 and 1992 (del Hoyo, 1996).

A rare and localised rail which is more readily heard than seen. Two birds were observed in an area of swampy thicket close to a main road and an area of lowland forest. Other birds recorded during the 1996 Survey frequented areas of wet lowland forest with dense understories of rattans. Also heard in thick secondary growth and adjacent thick growth of grasses and bushes. Generally encountered, or heard, singly or in pairs. Voice is a distinctive rather quite call *ee-orrrr*, lasting 1-2 seconds - a very brief wheeze followed by a longer snoring noise, also brief, quiet, deep sigh *hmmmm* (de Hoyo, 1996). Thought to eat crabs and lizards caught along forest streams. Some of the earlier records of this species are extremely questionable, in particular reports of large groups made during 1995; these records almost certainly refer to the widespread Buff-banded Rail *Gallirallus philippensis*.

### **BRISTLE-THIGHED CURLEW *Numenius tahitiensis***

A description of a single bird recorded on the 7/11/96 at Wakalambe fish ponds seems to fit this species. A second bird, also fitting the description of this curlew, was recorded in Kendari the following day. If confirmed these records would represent a dramatic extension to the recorded range of this species; previously known to winter only in the islands of the central Pacific, as far west as Micronesia. These records will undoubtedly represent vagrants, although it is possible that small numbers of this species occur more regularly in the region.

### **SATANIC NIGHTJAR *Eurostopodus diabolicus***

Until recently this nightjar was only definitely known from the type specimen, collected at 250 m in forest on the Minahassa peninsula, although a number of unidentified calls heard elsewhere on Sulawesi have been attributed to this species (White & Bruce, 1986). The Satanic Nightjar was rediscovered in May 1996 when 4 birds were seen at two sites in the Lore Lindu National Park in C Sulawesi (N. Cleere *in litt.* 1996). A description provided by Cleere is as follows: length c.25 cm, wing length 202 mm; there is a small white spot on the third and fourth outer primaries, situated approximately half way along the outer wing; the male has a prominent white marking around the throat, buffish in the female.

A number of unidentified nightjars, most probably this species, have been observed at altitudes of between c.250-c.280 m in secondary forest in the hills above Maligano. All birds observed flew off into the understory of the forest when disturbed. Tape recordings of this species were obtained, but birds did not respond well to play backs of their calls and were thus not caught in mist-nets. A bird was observed calling from the upper branches of a large tree adjacent to the forest road, the call resembles *tock-tock*. In 1995 a call similar to this was heard in Square 45. A bird observed on the 3/7/96 at close quarters during the middle of the day was dark chocolate brown above with little or no apparent markings. The tail in particular appeared unmarked. At the base of the primary feathers was a small conspicuous white spot. The nightjar was fairly small in size, measuring c.20 cm. The bird had been flushed from its roost in a small clearing caused by a fallen tree, alongside a forest road.

## 4.2: NEAR-THREATENED SPECIES

### ASIAN DARTER *Anhinga melanogaster*

Only recorded during the 1995 survey when 1 bird was sighted. Little suitable habitat exists on Buton for this species and the record probably represents a vagrant from the swamps around Aopa in SE Sulawesi, where this species is reasonably common (Wardill, 1995).

### GREAT-BILLED HERON *Ardea sumatrana*

An uncommon and localised species which is restricted to less disturbed stretches of coast. During 1996 this huge heron was only recorded from 4 squares (plus two further squares in the north) with a maximum count of 3 birds. This species was also recorded from Snake Island SW of Buton. During a boat trip between Maligano and Labuana in June 1996, only 6 birds were recorded, suggesting that this species is uncommon even along relatively undisturbed stretches of coast. On Hoga Island in the Tukangbesi individual birds were repeatedly seen catching Sea Crakes of the genus *Laticauda*. The sea snake was caught in the tip of the bill and then carried away from the pools of water onto dry ground before being shaken vigorously. On a couple of occasions the snake was washed repeatedly in a pool before being swallowed.

### JERDON'S BAZA *Aviceda jerdoni*

A very uncommon and elusive raptor, which was recorded from only 4 squares during 1996. Generally encountered in pairs along the forest edge or in forest clearings, usually during the early morning. Some confusion exists as to the taxonomic status of the birds on Buton Island as a description of a pair observed for some 20 minutes in August 1996 does not agree with any of the literature available. It is possible that the birds on Buton represent a distinct and previously undescribed race of this species (see Chapter 10 for a full description). During the 1995 Survey this species was found to be fairly widespread and it is possible that birds were overlooked during the 1996 Survey. However, this species is probably uncommon throughout Buton and further studies are needed to establish its status.

### LESSER FISHING-EAGLE *Ichthyophaga humilis*

Recorded from 6, widely distributed, squares during the 1996 Survey. All records were from forested rivers and streams, except for the pair around the two lakes. The latter pair were frequently encountered (generally singly) fishing over Lake Togomotonu, and were found to be nesting in a huge isolated tree next to nearby Lake Ambuau in November. The latter site is under enormous pressure from encroaching agriculture and a newly built irrigation ditch, and it is doubtful whether this site will survive. Probably fairly widespread along remaining suitable forested rivers, although lowland habitats are disappearing rapidly due to clearance for agriculture.

### GREY-HEADED FISHING-EAGLE *Ichthyophaga ichthyaetus*

Only recorded on three occasions during the 1996 Survey, all records coming from coastal areas. Two birds observed flying along the coast; one near Maligano in Square 13 and the second bird south of Bau-Bau in Square 70. The third bird was perched in a dead mangrove tree above a fish pond at Karing Karing (Square 49) and was seen clearly by all members of the group. Positively identified in 1995 at Lakes Togomotonu and Ambuau (Square 55 and Square 54 respectively). An undoubtedly uncommon and localised raptor on Buton which is easily confused with the more common and widespread *I. humilis*.

### **SMALL SPARROWHAWK *Accipiter nanus***

Practically impossible to distinguish from *A. rhodogaster* in adult plumage unless seen well. Juveniles, however, are easily identified and can not be confused with any other species. A rare species on Buton with records from only 16% of squares survey in 1996. Apparently confined to areas of old secondary growth or primary forest. Recorded from near sea-level, and thus not confined to montane forest as previously thought.

A juvenile found on the 8/9/96 was repeatedly chased by an adult Sulawesi Goshawk for some 5 minutes. The juvenile eventually flew off into thicker forest leaving the adult Sulawesi Goshawk, which proceeded to call loudly for 2-3 minutes.

### **SULAWESI HAWK-EAGLE *Spizaetus lanceolatus***

An uncommon and infrequently seen raptor, usually seen soaring above forest or the forest edge. Juveniles were more frequently encountered than adults during 1996.

Interesting observations include: an adult bird being mobbed by a pair of Piping Crows and a pair of Hair-crested Drongos. The bird was chased into the mid-canopy of a small tree above a forest track, and was observed to have a large fruit bat in its talons. The bird was startled by the observers and flew off, with the bat tightly clutched in its talons, still being mobbed. A second incident involved a juvenile being chased by a pair of Yellow-crested Cockatoos and a single White Imperial Pigeon in late September. The juvenile making a half hearted attempt to catch one of the cockatoos before flying off over the tree tops. In early September a sub-adult was sighted watching a Yellow-crested Cockatoo nest hole. The pair of cockatoos were extremely agitated, one bird repeatedly dive-bombing the raptor, while the second bird screamed continuously from nearby. After 10 minutes the eagle flew over to the nest tree landing on a large branch some 15 feet from the nest. Both cockatoos immediately flew at the raptor screeching loudly, before veering away at the last minute. They continued to fly around the tree screeching for 2-3 minutes before flying off. After 4-5 minutes the eagle flew away, returning after 3 minutes and flying low over the nest tree. At the same time the pair of cockatoos arrived back with a third individual, and gave chase. The cockatoos returned to the nest tree, but seemed wary about approaching the nest hole.

### **TABON SCRUBFOWL *Megapodius cumingi***

A very elusive, but probably widespread species in the remaining forests of Buton. There were only two definite records of this species during 1996; one bird seen in July near La Bundo-Bundo Square 45 and a second bird seen in September in Square 50. Both sites consist of good secondary forest. A single bird was recorded from Square 44 in 1995. According to local people this species is occasionally caught for food using snares.

### **MALAYSIAN PLOVER *Charadrius peronii***

A very uncommon and highly localised plover which seems to be confined to undisturbed or little disturbed sandy beaches. There is only one record from Buton of a pair and three young on a rarely used stretch of beach in Square 55. According to local people this beach is also used by nesting turtles; turtle eggs are collected by local people in November. Other records for this species include a pair on Hoga Island in the Tukangbesi, and a pair from Snake Island SW of Buton. This species may occur on other beaches around Buton, but the total population is likely to be very small; all populations are at risk from disturbance, and this species is undoubtedly threatened on Buton.

**FAR EASTERN CURLEW *Numenius madagascariensis***

Only recorded during the 1995 survey when 2 birds were observed in Square 56. During the 1996 survey 2 birds were recorded from the Kendari mudflats and adjacent fish ponds in mid-November. It is possible that small numbers of this species occur during passage on Buton. Extensive areas of mudflats exist in NE Buton near Ronta, which could hold significant populations of waders during certain periods of the year.

**PIED CUCKOO-SHRIKE *Coracina bicolor***

An uncommon species which is confined to areas of forest, particularly more mature forest, and forest edge. Usually in small groups of 4-5 birds. A nest found in late September was in a tall isolated tree overhanging a small track. The nest was placed in the fork of a bare branch some 45 feet up, and consisted of a small cup of very fine twigs, grass and cobwebs. A male was observed repairing the nest with cobwebs, and was later seen incubating. Pair observed copulating in late August. Not seen in company with the next species, and rarely common wherever the latter occurs.

**RED-BACKED THRUSH *Zosterops erythronota***

Very uncommon, elusive and easily overlooked species which is only known from three sites. Inhabits the leaf litter of mature secondary forest with little undergrowth. Birds observed rarely perched in the lower branches of undergrowth bushes. Buton birds appear to differ from mainland birds having different facial markings - face all black with with greyish-white area behind the eye, white ear-coverts and a short white malar stripe. It is possible that this represents an underscribed subspecies (see Chapter 10 for full details).

**PALE-BELLIED WHITE -EYE *Zosterops consobrinorum***

A common species which is largely confined to forested or well wooded areas; more rarely found in thick scrubby vegetation close to patches of forest. Found in pairs or small family parties. Pale-bellied White-eyes have typical white-eye habits and song. Often found in the canopy of tall forest trees, but most commonly observed in the understory and thickets along the forest edge. On two occasions this species was found to join bird parties. Unlikely to be threatened in the future as long as some forest, even degraded, remains. A nest found in early August was placed in a low bush a few metres from a main road; the nest was an untidy cup of grasses. The Pale-bellied White-eye is the only Sulawesi endemic to be restricted to the South East Peninsula of Sulawesi, and thus has a tiny global distribution.

## 5: SULAWESI ENDEMICS

A total of 52 Sulawesi endemics have been identified from Buton. Many of these endemics have proved to be common and widespread with 20 species occurring in 50% or more of the squares surveyed during 1996. A number of endemics have, however, proved extremely rare and/or elusive despite the availability of seemingly suitable habitat. Very little data is available for many of the Sulawesi endemics and effort was made to collect information on the status and behaviour of all endemic species encountered during the surveys. The information presented below represents the findings of the project to date, and has been compiled using the survey records and additional notes made by the author during 5 months of fieldwork in 1996. It is interesting to note that endemic species represented c.40% of birds recorded during all surveys in forested or wooded environments. Surveys conducted in more open and degraded habitats, however, had far fewer Sulawesi endemics, indicating that most endemics are unable to adapt to heavily degraded habitats.

### **SULAWESI SERPENT-EAGLE *Spilornis rufipectus***

Common throughout Buton, preferring the edges of forest and areas of secondary growth, but also inhabiting the interior of dense forest. Regularly observed sitting motionless on both exposed and concealed perches in the mid canopy. A vocal raptor which calls regularly when perched and while soaring above the forest. Appears to be able to tolerate human disturbance and habitat alteration, and is currently not under pressure.

### **SULAWESI GOSHAWK *Accipiter griseiceps***

An uncommon and presumably localised species with few records from mature secondary forest and forest edge. Possibly commoner and more widespread in remaining areas of forest than records indicate, as birds are easily overlooked. Single birds usually encountered sitting quietly in the mid canopy of tall forest trees. Juvenile recorded in late June. An adult was observed chasing off a juvenile Small Sparrowhawk on the 8/9/96.

### **SPOT-TAILED GOSHAWK *Accipiter trinotatus***

The commonest accipiter on Buton with records from 45% of the squares surveyed during 1996. Found to occupy a wide range of forest and wooded habitats, including primary and mature secondary forest, forest edge, mangrove forest, mature plantations, and areas of scrubby growth with forest patches. Keeps mainly to thicker cover, but will cross open country between forest patches. A highly vocal species which readily draws attention to itself once the call is learnt. Probably found throughout much of Buton, wherever forest and forest patches remain. Two pairs and a juvenile were recorded from the same small patch of dry forest near Bau-Bau in mid-October.

### **SMALL SPARROWHAWK *Accipiter nanus***

See Chapter 4 for details.

### **VINOUS-BREASTED SPARROWHAWK *Accipiter rhodogaster butonensis***

Readily confused with *A. nanus* and almost impossible to identify with confidence unless in juvenile plumage. Records from Buton suggest that this species inhabits more open secondary forest and areas of forest edge, and is thus unlikely to compete with the smaller *A. nanus*. On one occasion observed flying in the open in pursuit of a small bird.



**SULAWESI HAWK-EAGLE *Spizaetus lanceolatus***

See Chapter 4 for details.

**MALEO *Macrocephalon maleo***

See Chapter 4 for details.

**SNORING RAIL *Aramidopsis plateni***

See Chapter 4 for details.

**ISABELLINE WATERHEN *Amaurornis isabellinus***

An uncommon and elusive bird with only a handful of records from widely scattered parts of the island. Found in a wide range of habitats, including marshy areas adjacent to streams and areas of dry rank vegetation of grass and scrub well away from water. A bird walking across a dirt road only feet away from a group of volunteers was unconcerned by their presence. The bird continued to walk slowly across the road before entering thick dry scrub where it disappeared. Probably widespread on the island in small numbers. Observed foraging along vehicle tracks in areas of rank grass, and in thick aquatic vegetation exposed by the receding water at Lake Togomotonu. Generally encountered singly or in pairs. A highly vocal bird at times producing a loud, striking, discordant call ending with a loud, clear *tak-tak-tak*, most often heard at dusk.

**WHITE-FACED CUCKOO-DOVE *Turacoena manadensis***

A generally uncommon to locally common species frequenting areas of forest, secondary forest and forest edge. A vocal bird which is easily recognised by its call - reminiscent of a European Cuckoo. Observed feed in small flocks on small orange figs in the mid and upper canopy, and also on small unidentified fruits of a small bush in overgrown cultivation next to Lake Togomotonu. A quiet and unobtrusive bird when feeding. Occasionally seen walking along dirt roads in overgrown plantations and on the forest edge. A mostly shy species which keeps to cover and is difficult to approach, flying off at great speed through the trees; a very agile flyer.

**MAROON-CHINNED FRUIT-DOVE *Ptilinopus subularis***

Very rare on Buton with only four records during 1995 and 1996. Two records, 4 birds seen on the 14/10/95 and 1 bird on the 1/8/96, are from an area of old secondary forest adjacent to the Maleo breeding sites near Maligano (Square 13). There are also two records of single birds recorded from Square 18 in early October 1995. No other birds have been encountered despite repeated searches in seemingly suitable habitat. On the mainland it is common, but can be difficult to locate keeping to dense foliage in tall trees.

**WHITE-BELLIED IMPERIAL PIGEON *Ducula forsteni***

A beautiful species which is usually extremely difficult to observe, keeping to dense cover in the forest canopy. Generally noted in small flocks or singly, especially at dusk when they congregate to roost. In early August a flock of more than 30 birds was observed feeding in a huge fig tree in the early morning. A highly localised pigeon with records from only 7 squares. Appears to favour areas of hill forest, but has been recorded down to 60 m. Never found away from dense forest and could suffer from deforestation in the long term.

### **GREY-HEADED IMPERIAL PIGEON *Ducula radiata***

The rarest and most localised of all the resident imperial pigeons, being recorded from just 3 squares. Records suggest that it is restricted to areas of mature secondary forest in hilly locations. Encountered singly or in small groups in the canopy of forest trees. Probably threatened on Buton if forest destruction continues.

### **WHITE IMPERIAL PIGEON *Ducula luctuosa***

Common to locally abundant, especially in areas with fruiting fig and palm trees. In common with other imperial pigeons this species wanders widely in-search of fruiting trees. During 1996 recorded from 68% of squares surveyed. Inhabits forest, forest edge, mangroves and areas of degraded woodland, wherever there are fruiting trees present.

An aggressive species which often shows aggression towards its own kind and other species. On the 28/8/96 a single bird was viewed in a fruiting palm tree repeatedly chasing a group of 3 White Imperial Pigeons, 2 Pink-headed Imperial Pigeons and a Slender-billed Crow. All six birds finally left the tree after being repeatedly chased for 3-5 minutes. Large flocks of this species were observed at dusk flying over the hills north of Maligano towards a large area of mangrove forest, presumably to roost. Nesting activity was recorded in September and November.

### **ORNATE LORY *Trichoglossus ornatus***

An incredibly beautiful lory which is common throughout Buton wherever there are flowering trees and patches of forest. Most often seen in areas of more open woodland, secondary growth, forest edge and coconut plantations. Regularly attracted to red-flowering trees along the sea-shore. A popular and commonly kept pet in most villages throughout Buton; populations must ultimately suffer as there is no regulation of the numbers caught.

### **YELLOW-AND-GREEN LORIKEET *Trichoglossus flavoviridis***

A highly localised and very rare species with only a handful of records from areas of hill forest. Appears to be confined to areas of mature forest, and is never seen in the open. On mainland Sulawesi this species is shy and elusive, which could help explain the paucity of records on Buton. On mainland Sulawesi this parrot is confined to areas of hill and mountain forest, but it seems that mature forest not altitude is the limiting factor in the distribution of this species. Threatened by forest clearance on Buton.

### **SULAWESI HANGING-PARROT *Loriculus stigmatus***

The commonest of the two hanging-parrot species which is regularly met with around habitation, especially in coconut plantations. Birds are frequently attracted to flower trees in more open country. Inhabits a wide range of forest and wooded environments including dense forest and mangrove forest. With care it is possible to identify this species in flight once the general size and call have been recognised. Hanging-Parrots are not commonly kept as pets and only two birds were seen in captivity during 1996. Breeding has been recorded in early November - a pair feeding 2 juveniles on the 1/11/96.

### **GREEN HANGING-PARROT *Loriculus exilis***

Less common than *L. stigmatus*, being found in smaller numbers and in fewer locations around the island. This species appears to be restricted to more forested habitats than *L. stigmatus*, where it keeps to the canopy. Repeatedly confused with *L. stigmatus* during the early stages of 1996 - all Hanging-Parrots without red crowns were attributed to the latter despite the fact that juvenile and female Sulawesi Hanging-Parrots often have little or no red

on the crown. It is thus inevitable that earlier records for this species are erroneous and misleading.

**GOLDEN-MANTLED RACKET-TAILED PARROT *Prioniturus platurus***

A locally common even abundant species, frequenting areas of forest, especially in hilly areas. In one forest in the hills above Maligano over 150 birds were observed in the late afternoon flying high overhead in small (4 - 7 birds) loose flocks. Almost all birds were flying in a northerly direction presumably to roost. An extremely difficult bird to observe, being shy and very wary. Birds freeze in the foliage when approached, before exploding out of the canopy screeching loudly. Readily attracted to trees with small fruits. Active and noisy at night often flying around at height screeching continuously. Very few captive birds were seen in 1996, although this species was formerly caught in large numbers on Buton (Forshaw, 1989).

**SULAWESI HAWK-CUCKOO *Cuculus crassirostris***

A very elusive bird with only 3 sightings during the 1996 survey. All birds seen were in mature secondary forest with numerous large trees. One bird was perched in the canopy of a large bare tree, where it remained for over 10 minutes.

**BLACK-BILLED KOEL *Eudynamis melanorhyncha***

A frustratingly difficult species to observe, which keeps to dense forest cover where it is almost impossible to see. Common and widespread in all forest habitats, including fairly degraded forest patches. The haunting call of this species is one of the commonest sounds on the island (in all suitable habitats); birds calling mostly at dawn and dusk, but also during the night. The few birds observed all had black bills. In 1995 it was reported that the Common Koel *E. scolopacea* was also present on Buton (Viney, 1995), but there is no evidence to support this claim.

**FIERY-BILLED MALKOHA *Phaenicophaeus calyorhynchus***

A striking large and clumsy bird, often seen crashing through the foliage of the mid-storey. Inhabits woodland and forest where individuals search for large insects and small animals. Individuals have a habit of remaining motionless in the foliage while peering around slowly looking for prey. Almost always associated with groups of Macaques - 39 birds counted following one troop. Observed nest building in October - nest was situated inside a small mango tree. One bird was observed 'flycatching' after heavy rain in June - the bird repeatedly snatching termites from the air before crashing to the ground in a heap. Other birds have been observed catching large crickets in the foliage.

**BAY COUCAL *Centropus celebensis***

The call of this bird is characteristic of nearly all forested and wooded areas of Buton. The Bay Coucal occurs throughout the island, with records from 80% of squares surveyed during 1996. A skulking species which creeps around in dense thickets of vines and foliage, and is more often heard than seen. Especially vocal at dawn and dusk, although birds also frequently call at night. Regularly follows groups of Macaques, and frequently joins bird parties. After heavy rain has been observed catching termites from the ground, or snatching flying termites from the air.

### **SULAWESI OWL *Tyto rosenbergii***

Uncommon and elusive, although probably more widespread than records suggest. A bird seen clearly on the 6th of November, quartering low over short grassland on Snake Island, is the only definite sighting of this species during 1996. A second bird was heard in the hill forest above Maligano - the call being a typical single drawn-out barn owl screech, repeated at infrequent intervals. Appears able to tolerate a wide range of habitats from dense forest to open scrubby grassland and coconut plantations.

### **SULAWESI SCOPS OWL *Otusa manadensis***

A common and widespread little owl which occurs throughout the island, wherever there are areas of forest or scattered trees. Able to adapt to well-developed plantations of cashew-nuts and to trees around human habitation. A tame and easily approached bird which is not readily disturbed by spot lights - birds continuing to call even when spot-lit. Probably increasing in numbers due to forest clearance and the creation of more favourable habitat.

### **SPECKLED HAWK-OWL *Ninox punctulata***

Only one record from a well-wooded river valley in south Buton; Square 72. The bird was surprised while roosting in a small cave in an area of old secondary forest. No other birds have been encountered and the call has not been recognised. On mainland Sulawesi this Hawk-Owl is said to inhabit more open habitat than *N. ochracea* and is consequently increasing in numbers. Unidentified owl calls heard around Buton may represent this species.

### **OCHRE-BELLIED HAWK-OWL *Ninox ochracea***

Two birds observed in heavily degraded forest next to Lake Togomotonu are the only records of this species made by Operation Wallacea - Buton is included by White and Bruce (1986) as a location for this species, but no further details are given. Records from mainland Sulawesi indicate that this species inhabits areas of dense forest, but this has not yet been established on Buton. Calls heard at night in dense forest above La Bundo-Bundo have been tentatively attributed to this species.

### **SATANIC NIGHTJAR *Eurostopodus diabolicus***

See Chapter 4 for details.

### **BLUE-HEADED WOOD KINGFISHER *Actenoides monachus capucinus***

There are only three records of this beautiful kingfisher from widely scattered locations on Buton. All records were from areas of mature secondary forest with little undergrowth. An unobtrusive, solitary, kingfisher which is probably uncommon throughout Buton in remaining areas of dense rainforest. Threatened by forest clearance on Buton.

### **GREAT-BILLED KINGFISHER *Halcyon melanorhyncha melanorhyncha***

A locally common kingfisher along less disturbed stretches of coast. Prefers areas of mangroves or rugged stretches of coast with overhanging rocks and vegetation. A few birds were also recorded some distance away from the coast along wide rivers and their tributaries; 2 birds were recorded c.4 kilometres from the coast along a wide fast flowing river in the hills above Maligano, c200 m. Usually seen sitting motionless above the water, and nearly always found in pairs. A very wary species which rarely tolerates observers.

### **SULAWESI PYGMY KINGFISHER *Ceyx fallax***

Apparently a scarce species on Buton, which is known from only two sites; Squares 60 and 76. All birds were found in dense undergrowth of old secondary forest; the bright red bill drew attention to the presence of this tiny species in all cases. Possibly more common than the three records indicate, although it is possible that this forest kingfisher has a localised distribution.

### **PURPLE-WINGED ROLLER *Coracias temminckii***

Recorded frequently in June and from September to November, in a variety of habitats including cultivation, coconut plantations, forest edge and secondary forest. Birds were found to be more closely associated with forested habitats from July to mid-September; occurring in the forest canopy; on one occasion a pair was found in the forest understory. Readily attracted to recently felled trees along the forest edge. Usually in pairs or small family groups of up to 6 birds. Observed catching large insects on short flights, the bird returning to the same perch to consume the prey. X

### **SULAWESI HORNBILL *Penelopides exarhatus***

Less conspicuous and more rarely encountered than the much larger Red-Knobbed Hornbill; may prove to be as widespread and common as the latter species. Largely confined to mature forest, more rarely present in degraded forest. Always encountered in small family parties of 5 - 7 birds. Keeps to the forest sub-canopy where it is difficult to observe despite their characteristic calls which attract attention. All males seen had bright yellow faces - presumably stained by fruit juices. Observed crossing small open areas in order to reach adjacent patches of forest, but does not seem to be able to cross wider breaks in the forest cover. A vocal species, especially when different groups meet up.

### **RED-KOBBED HORNBILL *Rhyticeros cassidix***

A common and conspicuous bird on Buton which occurs in surprisingly high densities. This hornbill is dependent on forested areas, but is regularly seen in more open country at fruiting palm and fig trees. A single female was observed flying across a wide (c.2 km) valley. This species is under enormous pressure from forest clearance and the removal of large nesting trees. Few pairs appeared to be breeding in the south during the nesting season (August to November), as most birds encountered were in pairs. The forest in the south is under heavy pressure from large transmigration settlements, and extensive areas of forest have already been cleared. Large trees in more isolated and difficult to reach forests are now being targeted by timber cutters as few large trees exist in more readily accessible areas. X

### **SULAWESI PYGMY WOODPECKER *Picoides temminckii***

Apparently very uncommon and localised on Buton with surprisingly few records, although it is easily overlooked. Regarded as common on mainland Sulawesi. Recorded in dense secondary forest and forest edge; particularly attracted to dead trees along the forest edge. Found in pairs or small family parties of up to 4 birds. Observed searching for food on vines and small branches.

### **ASHY WOODPECKER *Mulleripicus fulvus***

Pairs and small family parties of up to 7 birds were regularly encountered in forested and wooded environments; including mangroves and coconut plantations. Not confined to dense forest, as individuals were frequently found in heavily degraded habitat, even tiny forest patches. Not particularly shy, birds allowing a close approach on occasion. Observed

feeding mostly on standing living and dead wood, also vines and even thin branches; never observed on or near the ground. Aggression between males observed on a number of occasions with birds chasing each other through the forest - two males chased each other for over 10 minutes. Males were regularly heard drumming on a dead branch or tree trunk in October and November.

**PIED CUCKOO-SHRIKE *Coracina bicolor***

See Chapter 4 for details.

**WHITE-RUMPED CUCKOO-SHRIKE *Coracina leucopygia***

A common species regularly encountered in pairs and small family groups. Occurs in the forest margins and in degraded secondary forest, but is most commonly seen in more open habitats including areas of scrub. Particularly common in areas of mangrove adjacent to plantations and woodland. A very vocal species; members of a group constantly calling to each other particularly in flight.

**SULAWESI CICADABIRD *Coracina morio***

Frequently encountered in forest habitats including secondary growth; mostly in pairs. Prefers more wooded locations to the more common *C. tenuirostris*, but both can be found together in areas of degraded secondary forest. A highly vocal bird which is more often heard than seen in dense forest.

**SULAWESI PIED TRILLER *Lalage leucopygialis***

As with the last species the Sulawesi Pied Triller has been found to prefer more wooded and forested habitats. Mostly encountered in pairs, occasionally in close proximity to *L. sueurii*. The latter tends to be more of a forest edge and savanna species and is thus more widely distributed than *L. leucopygialis*. This is an active species which searches energetically through the branches of forest trees for insects.

**PIPING CROW *Corvus typicus***

A widespread and not uncommon species which is nearly always encountered in pairs. Found to inhabit a wide range of habitats, including fringing mangrove forest, degraded secondary forest and dense forest. Occasionally seen in isolated trees in cultivated areas. In forest areas birds appear wary, although they are inquisitive and will approach the observer, before flying away through the canopy screeching loudly. Aggression towards the larger Slender-billed Crow was shown on a number of occasions. One pair were observed attacking a pair of *C. enca* at fish ponds at Karing Karing, Square 49. The pair of *C. enca* were initially attacked by one Piping Crow while perched in a tall palm tree overlooking the fish ponds. The Piping Crow dive-bombed both birds repeatedly screeching and whistling all the time. A second bird joined the first and both *C. enca* flew away across the fish ponds closely pursued by the Piping Crows. The latter broke off after some 200 m, returning to the original palm tree; both birds performing some kind of display flight with dropped and fluttering wings. Two birds watched eating small orange figs in a small tree. Pair recorded with fledgling in late June.

**SULAWESI BABBLER *Trichastoma celebense***

A ubiquitous species occurring throughout the island, where it inhabits a wide range of habitats from dense forest undergrowth to areas of grassland or scrub. Able to tolerate and even thrive in heavily degraded habitats as long as there is dense undergrowth. Generally in

pairs or small family groups. A skulking species that is not particularly shy, often being found at the observers feet. An inquisitive bird which will often approach the observer to obtain a better look, before disappearing quietly into the undergrowth again. Extremely vocal in the early morning until about 8.00 a.m, but rarely heard during the remainder of the day although some birds will call at dusk.

#### **RED-BACKED THRUSH *Zoothera erythronota***

See Chapter 4 for details.

#### **RUSTY-BELLIED FANTAIL *Rhipidura teysmanni***

There are two, unexpected, records from Buton, both from c.60 m which is considerable lower than this species has ever been recorded on the mainland. One bird was observed in an old overgrown cashew-nut plantation just outside of Pasarwajo, Square 68; the second bird was seen in old secondary forest near the Maleo breeding site, Square 13. This active species has not been found at any other location and must be extremely uncommon - probably a relict and decreasing population.

#### **IVORY-BACKED WOODSWALLOW *Artamus monachus***

Commoner in the north of the island than the drier south. Always associated with forest edge environments where it replaces the more abundant White-breasted Woodswallow. A nest was found on the 11/11/96 in a bare tree alongside a forest road in Square 66. The nest was placed in a fork about 30 feet up, and consisted of an untidy cup of twigs and mosses. One bird was sitting on the nest while two other birds were perched nearby.

#### **SULAWESI CRESTED MYNA *Basilornis celebensis***

Pairs and occasionally small groups of up to 5 birds were seen on most forest or woodland surveys. Less common than the other 2 endemic myna species, with birds keeping to the forest canopy where they are not readily noted. Groups are occasionally attracted to flowering trees in more open habitats.

#### **WHITE-NECKED MYNA *Streptocitta albigollis***

A generally common and widespread species which occurs in plantations, secondary forest, dense forest and savanna areas with forest patches. Usually in pairs or small groups. An active and noisy species, which moves around in the canopy in an acrobatic almost squirrel like manner. Individuals regularly hang upside-down to reach small figs and berries. Frequently perch at the top of isolated dead trees in cultivated areas. Nesting activity noted on the 24/10/96; nest hole c.35 feet up in a horizontal branch. Fledglings were also seen on the 20/6/96 in the company of a group of adults.

#### **FINCH-BILLED MYNA *Scissirostrum dubium***

A localised, but common species which is closely associated to its nesting trees during the breeding season. Most often encountered in or close to forest or forest edge. A number of breeding colonies were recorded during 1996 - usually number between 50 - 300 birds. Two non-breeding roost sites were also found; one was found in June in a group of palm trees in the middle of a paddy field (Square 57); the second roost was found in August in 3 tall leafless trees close to the forest edge, and comprised of c.250 Finch-billed Mynas and c.350 Rainbow Bee-eaters *Merops ornatus* (Square 49).

### **YELLOW-SIDED FLOWERPECKER *Dicaeum aureolimbatum***

A commonly encountered bird in both woodland and forest habitats. Regularly found in the canopy of dense forest, but more often seen in bushes and low trees along the forest edge. Attracted, often in large numbers, to fruiting wild cherry bushes. A highly active species which is extremely difficult to follow as it flits around constantly amongst the branches. One of the most widely distributed birds on Buton, occurring in 77% of Squares surveyed during 1996.

### **CRIMSON-CROWNED FLOWERPECKER *Dicaeum nehrkorni***

A very uncommon species which has been recorded from only 4 squares in the south of Buton - all sites at an altitude of between c.200-250 m. The altitudes recorded from Buton represent a considerable decrease in the previous lower altitudinal limit for this species (previously recorded down to 700 m). All four birds observed were male, 3 were encountered in good secondary forest, while the fourth bird was seen in an area of scrubby secondary forest adjacent to a larger area of forest.

### **GREY-SIDED FLOWERPECKER *Dicaeum celebicum***

Common, even abundant, in most habitats including savanna and areas of scrub. Appears to be more common than *D. aureolimbatum* in more scrubby habitat, but is less common in heavily wooded areas. Common in coconut plantations, including those on small neighbouring islands. A pair were observed feeding young on the 6/8/96; the nest was a straggly ball of fine grasses and twigs placed beneath a large leaf.

### **PALE-BELLIED WHITE-EYE *Zosterops consobrinorum***

See Chapter 4 for details.

## **6. INDONESIAN ENDEMIC**

A total of 9 Indonesian endemics have been identified from Buton; most are common and widespread. A number of these Indonesian endemics have very restricted ranges and comparatively little is known about their behaviour and status. Two species are small island specialists, being restricted to the small islands in the Flores and Banda Seas.

### **SPOTTED KESTREL *Falco moluccensis***

A surprisingly uncommon and localised falcon, throughout much of Buton despite the availability of suitable open habitat. Invariably encountered in pairs, occasionally singly, over open grassland or scrub. One record of 2 birds from a forested river in Square 13. The absence of Spotted Kestrel from large areas of suitable habitat, is probably due to the speed with which these habitats have been created in recent years, and birds have thus not had the opportunity to occupy these habitats.

### **SUNDA TEAL *Anas gibberifrons***

Previously regarded as a race of the Grey Teal *A. gracilis* and only recently given full species status. A wide ranging but comparatively little known species (Young, 1996), occurring throughout Indonesia from S Sumatra to Timor and Sulawesi.



On Buton found in at least 5 squares, with the highest population found around Lake Togomotonu (maximum count c.140). Smaller numbers found in paddy fields, fish ponds and adjacent mangrove forests. X ?

#### **GREY-CHEEKED GREEN PIGEON *Treron griseicauda***

Restricted to the islands of Java, Bali and Sulawesi, plus small neighbouring islands. A common even locally abundant bird on Buton which was found in 70% of all squares surveyed during 1996. Appears to be a nomadic species which wanders widely in search of fruiting trees (mainly fig). Evidence indicates that birds move between Buton and the mainland; during 1995 *T. griseicauda* was found to be less common than the Pink-necked Green Pigeon *T. vernans*; during 1996 the opposite was found to be the case. Found in a wide range of habitats, but appeared to be commoner in coastal areas, especially in more open locations and along the forest edge. Often congregating in large groups (20-60 birds) in favoured fruiting trees, where birds were often difficult to detect in the foliage. During October and November birds were more active - males chasing each other constantly through the foliage.

#### **BLUE-TAILED IMPERIAL PIGEON *Ducula concinna***

A small island specialist which is restricted to the small islands north, east and south of Sulawesi, plus small islands between Seram and the Kei Islands in the Banda Sea. An uncommon visitor to coastal areas of Buton Island; small numbers recorded during 1995 from 6 squares, while only 2 birds were seen during 1996 (Square 18). All birds seen were in woodland or forest adjacent to the coast. This species has been seen on a number of occasions on Hoga Island in the Tukangbesi. This magnificent Imperial Pigeon is not easily confused with any other imperial pigeons when seen clearly - wings, back, rump and tail shining green intermixed with dark blue, especially on wings and tail; underparts pale grey, belly white, some chestnut on vent; head and neck pale silvery grey, pale salmon-pink tinge on nape and crown; clear white area at base of bill and on forehead; under-wing entirely black (description made on Hoga Island by author 12/8/96). X

#### **PINK-HEADED IMPERIAL PIGEON *Ducula rosacea***

Restricted to small islands in the Flores and Banda Seas, plus the Lesser Sunda islands; straggler on Sulawesi (Goodwin, 1967). Some confusion still surrounds the identity of this Imperial Pigeon which is very similar in overall appearance to the more widespread Green Imperial Pigeon *D. aenea*. The following field characteristics were noted during 1995 (Sykes, 1996) and subsequently used during the 1996 surveys: The upper parts of *D. aenea* are richer green with a large coppery nuchal patch. *D. rosacea* was larger and duller in appearance, with a more extensive but paler area of coppery pink on the nuchal patch. Viney (1995) questioned the accuracy of *D. aenea* records from Buton, regarding all birds as *D. rosacea*. Photographs taken of specimens from Tring (British Museum of Natural History) were of little help being old and faded. The author is not totally satisfied with the above, and subsequent literature searches seem to indicate that all, or at least most, birds on Buton may prove to be the more widespread *D. aenea* - more work must be done on this species during 1997 in order to determine the status of this species.

A common even abundant species throughout Buton, inhabiting forested and open country wherever fruiting trees are present; recorded from 80% of squares surveyed during 1996. Attracted to isolated fruiting palm and fig trees in open country, but appears to prefer forest edge environments. Roosts communally in small groups, in large forest trees from which birds disperse in the early morning. A highly vocal species. Display flights often observed;

birds during normal flight suddenly shoot up 2-3 metres before hanging poised for a moment and then diving steeply, before levelling off or landing in a tree.

**YELLOW-CRESTED COCKATOO *Cacatua sulphurea***

See Chapter 4 for details.

**INDONESIAN CUCKOO *Cacomantis sepulcralis verescens***

A not uncommon bird, which is certainly more widespread than the records indicate; recorded from only 7 squares during 1996. More often heard than seen, being difficult to spot in the forest canopy. Appears to prefer forested locations including forest edge, secondary growth and overgrown plantations.

**BLACK-FACED MUNIA *Lonchura molucca***

Restricted to the Moluccan region of Indonesia. A locally common munia in rice fields, grassland, bushes and scrub throughout much of Buton, particularly along the edge of forest and cultivated areas. Frequently found in small numbers along the roadsides. Large numbers, more than 100 birds, regularly seen in the vicinity of rice fields. A party of 9 juveniles were noted in early July.

**PALE-HEADED MUNIA *Lonchura pallida***

Restricted to the Lesser Sunda islands, plus central and southern Sulawesi (Clement 1993). By far the most uncommon munia on Buton with very few records in either 1995 or 1996. A group of 50 birds was recorded from Square 54 during 1995, but only 6 birds were seen during the whole of 1996 (Square 44). Inhabits grassland, fallow fields and more rarely rice fields, especially along the forest margins or in forest clearings.

## 7: NEW SPECIES ADDED TO THE BUTON LIST DURING 1996

During the 1996 Bird Survey a total of 35 species were added to the Buton list, including 5 Sulawesi endemics. Included within this total are 3 species which were recorded only from Siumpu and Snake Islands SW of Buton. In addition 2 unconfirmed species were sighted and 1 species was reported which requires further data before its occurrence can be proved. Although previously recorded from Buton (White & Bruce, 1986), the Ochre-bellied Hawk-Owl was recorded for the first time by the Operation Wallacea.

Common Name	Systematic Name	
Christmas Island Frigatebird	<i>Fregata andrewsi</i>	
White-faced Heron	<i>Ardea novaehollandiae</i>	
Milky Stork	<i>Mycteria cinerea</i>	
Spotted Harrier	<i>Circus assimilis</i>	SI
Eastern Marsh Harrier	<i>Circus spilonotus</i>	
Rufous-bellied Eagle	<i>Hieraaetus pennatus</i>	1995
Pacific Black Duck	<i>Anas superciliosa</i>	
Purple Swampphen	<i>Porphyrio porphyrio</i>	
Grey Plover	<i>Pluvialis squatarola</i>	
Lesser Sand-Plover	<i>Charadrius mongolus</i>	
Malaysian Plover	<i>Charadrius peronii</i>	
Ruddy Turnstone	<i>Arenaria interpres</i>	
Curlew Sandpiper	<i>Calidris ferruginea</i>	
Dunlin	<i>Calidris alpina</i>	
Red-necked Phalarope	<i>Phalaropus lobatus</i>	
Nordmann's Greenshank	<i>Tringa guttifer</i>	
Bristle-thighed Curlew	<i>Numenius tahitiensis</i>	**
Beach Thick-Knee	<i>Esacus magnirostris</i>	SI
Oriental Pratincole	<i>Glareola maldivarum</i>	
Whiskered Tern	<i>Chlidonias hybridus</i>	
White-winged Tern	<i>Chlidonias leucopterus</i>	
Bridled Tern	<i>Sterna anaethetus</i>	
Fairy Tern	<i>Gygis alba</i>	
Zebra Dove	<i>Geopelia striata</i>	SI
Speckled Hawk-Owl	<i>Ninox punctulata</i>	
Ochre-bellied Hawk-Owl	<i>Ninox ochracea</i>	PR
Satanic Nightjar	<i>Eurostopodus diabolicus</i>	*
Long-tailed Nightjar	<i>Caprimulgus macrurus</i>	
White-throated Needletail	<i>Hirundapus caudacutus</i>	
House Swift	<i>Apus nipalensis</i>	
Blue-headed Wood-Kingfisher	<i>Actenoides monachus</i>	
Sulawesi Pygmy Kingfisher	<i>Ceyx fallax</i>	
Hooded Pitta	<i>Pitta sordida</i>	II
Clamorous Reed-Warbler	<i>Acrocephalus stentoreus</i>	
Rusty-bellied Fantail	<i>Rhipidura teysmanni</i>	
Mangrove Whistler	<i>Pachycephala grisola</i>	1995
Tiger Shrike	<i>Lanius tigrinus</i>	II
Asian Glossy Starling	<i>Aplonis panayensis</i>	1995
Crimson-crowned Flowerpecker	<i>Dicaeum nehrkorni</i>	1995
* - probable record		
II - possible sightings requiring further data		
** - unconfirmed record		
SI - recorded from Siumpu or Snake Island only		
PR - recorded from Buton prior to the 1995		
1995 - species suspected of occurring in 1995		

The addition of so many species to the Buton bird list proved something of a surprise as after the first year of survey work only a few species may have been expected to be added. The large number of new species can, however, be explained in part by the emphasis placed on previously under-surveyed habitats, especially coastal areas and areas of lowland forest.

**CHRISTMAS ISLAND FRIGATEBIRD *Fregata andrewsi***

A small group of 4 birds were seen on the 24/6/96 off shore from Maligano; the group consisted of a male, one female and two juveniles. This species is a regular visitor to the coast of north Borneo, but has not definitely been recorded from Sulawesi. Two specimens are reported from N Sulawesi but these remain unconfirmed (White & Bruce, 1986).

**WHITE-FACED HERON *Ardea novaehollandiae***

A single bird was observed in the company of 35 Little Egrets *Egretta garzetta* in an area of unplanted rice fields on the 20/8/96 (photographs were taken). A very rare migrant to Sulawesi, although this species is more regular further east. Birds are thought to represent non-breeding migrants from Australia.

**MILKY STORK *Mycteria cinerea***

See Chapter 4 for details.

**SPOTTED HARRIER *Circus assimilis***

An adult seen on the 10/9/96 on Siumpu Island SW of Buton is the only record. The bird was observed flying low over an area of open grassland and scrub. This raptor is common in SE Sulawesi, and may well be widespread on Muna which has large areas of suitable open habitat.

**EASTERN MARSH HARRIER *Circus spilonotus***

Single record of an immature quartering low over rice fields north of Bau-Bau in Square 57. An unconfirmed report was made of this species during the 1995 survey and it is possible that small numbers of this species are resident or occur occasionally as vagrants.

**RUFOUS-BELLIED EAGLE *Hieraaetus kienerii***

Reported during 1995, but only recorded with certainty during the 1996 survey. Found to be widespread, with records from 7 squares (mainly in the east and around Maligano). All records are of birds soaring above forest in hilly areas.

**PACIFIC BLACK DUCK *Anas superciliosa***

A very uncommon duck with records from the fish ponds at Karing Karing (Square 49) and Maligano. This species is also uncommon and localised on the Sulawesi mainland, and it is not known whether birds on Buton are resident or migrants from the mainland.

**PURPLE SWAMPHEN *Porphyrio porphyrio***

Four birds were observed at Lake Togomotonu in July. Suitable habitat around the lake is only present during the rainy season and birds are probably forced to migrate during the dry season, possibly to the mainland?

**GREY PLOVER** *Pluvialis squatarola*

Two birds were recorded from Buton during 1996, with a further 2 birds from nearby Snake Island.

**LESSER SAND-PLOVER** *Charadrius mongolus*

One bird recorded from an undisturbed beach in Square 55. This species has also been recorded from Hoga, and c.24 were observed at the Kendari fish ponds in mid-November.

**MALAYSIAN PLOVER** *Charadrius peronii*

See Chapter 4 for details.

**RUDDY TURNSTONE** *Arenaria interpres*

A single bird was observed on an undisturbed beach in Square 55. The bird was still in partial breeding plumage. Also recorded from Hoga Island in the Tukangbesi.

**CURLEW SANDPIPER** *Calidris ferruginea*

Two birds seen flying along a beach at Square 83 remain the only records from Buton.

**DUNLIN** *Calidris alpina*

A single bird was observed at low tide beside the pier at Maligano on the 5/11/96. Vagrants are known to reach Australia, and there are a handful of unconfirmed reports from S Sulawesi, including a recent report of 15 near Ujung Pandang in late 1989 (Baltzer, 1990).

**RED-NECKED PHALAROPE** *Phalaropus lobatus*

Large numbers observed during sea voyages during 1995 and 1996. A group of 21 birds and a second group of 8 birds were observed close to Maligano on the 10/9/96. A substantial population of this phalarope appear to over winter in the seas south and east of Buton, as all birds seen were flying towards the south and south-east.

**NORDMANN'S GREENSHANK** *Tringa guttifer*

See Chapter 4 for details.

**BRISTLE-THIGHED CURLEW** *Numenius tahitiensis*

See Chapter 4 for details.

**BEACH THICK-KNEE** *Esacus magnirostris*

A single bird observed on Snake Island SW of Buton is the only record of this species from Buton. This huge thick-knee seems to prefer undisturbed beaches and is thus absent from most coastal areas around Buton. A pair are known to be resident on Hoga Island in the Tukangbesi, where they keep to the far side of the island away from the marine base. There are only 2 recent reports of this species from Sulawesi (del Hoyo, 1996).

**ORIENTAL PRATINCOLE** *Glareola maldivarum*

Five birds seen flying overhead in Square 66 and a single bird seen at Maligano are the only records of this species.

**WHISKERED TERN *Chlidonias hybridus***

A single bird in non-breeding plumage was observed at Lake Togomotonu on the 2/11/96. The bird was observed perched on a log in the middle of the lake, plus feeding low over the water.

**WHITE-WINGED TERN *Chlidonias leucopterus***

Single birds were seen close inshore in Squares 28 and 74. This tern was seen regularly, often in large numbers, during sea voyages in October and November. Huge mixed flocks, numbering hundreds of birds, White-winged Terns, Bridled Terns and Sooty Terns *S. fuscata* were regularly seen in the striates between Wowoni Island and Buton Island during these months.

**BRIDLED TERN *Sterna anaethetus***

A single bird was recorded off-shore from Square 28 in mid-August. One of the commonest terns in the area during the months of October and November.

**FAIRY TERN *Gygis alba***

Four Fairy Terns were seen in a small mixed flock off-shore from Square 28 on the 17/9/96. During August and September a small colony of Fairy Terns was regularly observed from the Kendari - Bau-Bau Ferry on small islets near Raha on Muna. It is possible that the terns were nesting in the trees present on the islets as birds were observed constantly entering and leaving the trees.

**ZEBRA DOVE *Geopelia striata***

A pair of doves were observed sunning themselves on Siumpu Island on the 10/9/96. Both birds allowed a close approach (within 15 feet).

**SPECKLED HAWK-OWL *Ninox punctulata***

See Chapter 5 for details.

**OCHRE-BELLIED HAWK-OWL *Ninox ochracea***

See Chapter 5 for details. This species has previously been recorded from Buton, but not by Operation Wallacea (White & Bruce, 1986).

**SATANIC NIGHTJAR *Eurostopodus diabolicus***

See Chapter 4 for details.

**LONG-TAILED NIGHTJAR *Caprimulgus macrurus***

A bird was observed at close quarters along a road in an area of grassland close to Maligano. The description and call seem to be identical to this species. The race *C. m. schlegelii* is known from the Lesser Sundas and the islands of Salayar and Tanahjampea south of Sulawesi. A second form which was previously included as a subspecies of the Long-tailed Nightjar has recently been given full species status as the Sulawesi Nightjar *C. celebensis*. The latter is found in north Sulawesi and on the island of Sula. Given the proximity of the Salayar and Tanahjampea Islands to Buton and the similar habitats found on both, it is more likely that the bird seen belongs to *C. macrurus* and not to *C. celebensis*.

**WHITE-THROATED NEEDLETAIL *Hirundapus caudactutus***

A single bird was observed in the early morning in the company of a Fork-tailed Swift, a Purple Needletail and c.30 Pacific Swallows, just off the Maligano jetty on the 25/10/97.

**HOUSE SWIFT *Apus nipalensis***

Unconfirmed reports of this species from near Bau-Bau airport were made in 1995. In 1996 this species was found to be locally common along a stretch of rugged coast and beach in Square 70. A maximum count of c.25 birds was made in early August.

**BLUE-HEADED WOOD-KINGFISHER *Actenoides monachus***

See Chapter 5 for details.

**SULAWESI PYGMY KINGFISHER *Ceyx fallax***

See Chapter 5 for details.

**HOODED PITTA *Pitta sordida***

This Hooded Pitta remains a probable, but unconfirmed species, as no details were provided by the observers! A total of 3 birds were seen in the hill forest near Labuana (Square 5) in late July 1996. If these records are subsequently accepted they will represent a substantial range extension for this species - previously only recorded from N Sulawesi.

**CLAMOROUS REED-WARBLER *Acrocephalus stentoreus***

A singing bird was heard in late August at Wakalambe (Square 49) in thick vegetation adjacent to a small pond; this bird was still calling in early November. Two birds were heard and seen at Maligano in October in an area of rank grass.

**RUSTY-BELLIED FANTAIL *Rhipidura teysmanni***

See Chapter 5 for details.

**MANGROVE WHISTLER *Pachycephala grisola***

Unconfirmed reports of a whistler type bird were made in 1995 in Square 56. Observations of whistlers, made in mangroves at Lawele in July and Maligano in August, confirmed the presence of *P. grisola* on Buton. This is a significant discovery as no whistlers had been previously recorded in lowland habitats on Sulawesi. Small numbers of this species have since been heard or seen around the island, but numbers are very small and the species is obviously very uncommon and localised. This species is known from the Greater Sundas.

**TIGER SHRIKE *Lanius tigrinus***

An unconfirmed record as no details were provided by the observers. Previously recorded from N and E Sulawesi and its occurrence on Buton is thus likely. Single bird reported from Square 58 on the 3/7/96 and 2 birds from Square 49 on the 4/7/96.

**ASIAN GLOSSY STARLING *Aplonis panayensis***

A great deal of confusion existed in 1995 as to the identity of the glossy starling found on Buton. The Short-tailed Glossy Starling *A. minor* had previously been recorded on Buton by White and Bruce (1986), while *A. panayensis* was known only from N and NC Sulawesi. Both species have now been identified on Buton with *A. panayensis* being by far the commoner of the two starling species. *A. minor* appears to be uncommon and localised

with the largest concentration being in the north of the island around Labuana. Both species have been seen together around the latter location.

### **CRIMSON-CROWNED FLOWERPECKER - *Dicaeum nehrkorni***

See Chapter 5 for details.

## **8: UNCONFIRMED SPECIES ON BUTON**

A number of species were suspected, but not confirmed, of occurring on Buton during the 1995 Bird Survey. The confusion surrounding many of these species was resolved during the 1996 Bird Survey, but work carried out during this period was unable to resolve all of the queries raised during the previous year, and a number of species remain as unconfirmed and/or doubtful in some cases. Not all unconfirmed reports relate to the 1995 survey period. Mention needs to be made of the following:

**Dusky Cuckoo-Dove *Macropygia magma*** : this species was reported on a number of occasions during 1995, and although a number of 'unusual' Slender-billed Cuckoo-Doves *M. amboinensis* were sighted in 1996 none were thought to be *M. magma*. The latter species is a small island specialist which is known to occur on a chain of islands in the Flores Sea south of Sulawesi. There is some variation in the colouration of *M. amboinensis* on Buton, both between the sexes and between adults and juveniles, which may help to explain some of the confusion.

**Barred Buttonquail *Turnix suscitator*** : Confusion still surrounds the identity of the *Turnix* species on Buton Island. During the 1996 survey a number of buttonquails were recorded from various squares, but sightings were inadequate in most cases to provide a positive identification. A single Red-backed Buttonquail *T. maculosa* was identified from Square 56 and 4 birds were clearly seen on Snake Island SW of Bau-Bau on 14/11/96. 1995 reports of Barred Buttonquail *T. suscitator* remain unconfirmed.

**Bonnelli's Eagle *Hieraetus fasciatus*** : A single bird was seen at Maligano on the 27/10/95. This species is not known from Sulawesi, but a small population is known to occur on the islands of Sumba, Timor and Wetar in the Lesser Sundas (del Hoyo, 1994).

**Black-thighed Falconet *Microhierax fringillarius*** : A report of this species was made in 1995, but no further sightings have been made. The 1995 report was based on 2 birds seen on the 14/10/95 in Square 18. Both birds were observed at a distance, perched in the top of a tall dead tree on the edge of a partly felled forest. A sketch and notes were taken by Sykes who is familiar with this species. Buton is well outside the recognised range of all *Microhierax* species, although *M. fringillarius* is known to occur in both Borneo and Bali. All members of this genus are very easily overlooked and the species could well be present in small numbers in the Sulawesi region.

**Black-tailed Gull *Larus crassirostris*** : A record of this species was made on the 30/10/95 close inshore at Lasalimu (Square 48). All key identification features were noted and this record appears to be acceptable; White and Bruce (1986) include this species as an expected vagrant in the Wallacean region.



**Javanese Turtle Dove *Streptopelia bitorquata*** : Single captive bird seen on Siumpu Island on the 13/11/96. According to local people the bird had been caught locally, but no birds were seen on the island. If this species is present then the population has almost certainly been introduced. Occurs from Java through the Lesser Sundas to Timor, inhabiting open country, cultivated areas and the outskirts of villages (Goodwin, 1967).

**Red-Spotted Racket-tailed Parrot *Prioniturus flavicans*** : A number of reports of this species were made in August and September of 1995, but no sightings were made of this species in 1996. The much smaller Golden-mantled Racket-tailed Parrot *P. platurus* is locally common on Buton, and it seems unlikely that the ecologically similar *P. flavicans* will also be present. *P. flavicans* has only been recorded from N and NC Sulawesi where it inhabits montane forest, but it is little known and could conceivably occur in SE Sulawesi.

**Purple-bearded Bee-eater *Meropogon forsteni*** : A single bird reported from Square 44 in 1995 remains the only possible record of this Sulawesi endemic from Buton. This is a unobtrusive inhabitant of undisturbed and mature secondary forest in N, C and SE Sulawesi and it is possible that a small population of this species is present on Buton.

**Geomalia *Geomalia heinrichi*** : Two birds reported from Square 44 on the 4/8/95 seem highly doubtful, given the altitudinal range of this montane species; only recorded between 1700-3500 m (White & Bruce, 1986).

**Sulawesi Mountain Drongo *Dicururus [bracteatus] montanus*** : Despite a number of reports during 1995 of this species from 'high' altitude in the south, there seems to be no evidence to support the occurrence of this drongo on Buton. No birds were seen during 1996 with dark eyes despite constant checks being made, and the most likely explanation for 'dark' eyed birds is that they represent juveniles of *D. hottentottus*.

**Common Tailorbird *Orthotomus sutorius*** : 3 birds were seen in Square 18 on 15/10/95, and a single bird was seen on 11/10/95 in Square 44. A tailorbird was briefly sighted on the 25/6/96 in Square 18. As described in the commentary of the 1995 report (Sykes, 1996), Buton is well outside the accepted range of this species, although the Mountain Tailorbird *O. cuculatus* is known to occur in SE Sulawesi between 1000-2000 m.

**Reed-Warbler Species *Acrocophalus* species** : On the 26/6/96 a large unidentified reed-warbler was observed by 2 members of the group in a small patch of reeds and other aquatic vegetation along a thickly forested river in Square 5. The bird was mainly brown in colour with no supercilium, a whitish throat and upper breast, grey legs and a red-brown tail. Neither observer recognised the bird, despite being familiar with both reed-warbler species in the area - *A. orientalis* and *A. stentoreus*.

**Leaf-Warbler/Migratory Warbler *Phylloscopus* species** : A number of reports were made during 1995 (August to October) of *Phylloscopus* type warblers in Squares 19, 45 and 67. Opinion differed on whether the birds seen were Arctic Warblers *P. borealis* "a winter visitor throughout Wallacea" (White & Bruce, 1986), or the endemic Sulawesi Leaf-Warbler *P. sarasinorum* which is only known from mainland Sulawesi above 1100 m. No *Phylloscopus* type warblers were reported from Buton during the 1996 Survey, until early

November when a single bird was heard calling just south of Maligano - tape recordings were, but no identification has been made to date.

**Blue Flycatcher species :** 2 'blue flycatchers' were reported from Square 67 on 3/8/95 and a single bird was reported from Square 44 on 4/8/95. During the 1996 survey a 'blue flycatcher' was briefly sighted on 28/6/96 from Square 18. These records could relate to the endemic Rufous-throated Flycatcher *Ficedula rufigula* which may occur on Buton; this species is known to occur in SE Sulawesi (Wardill, 1995).

**Red-throated Pipit *Anthus cervinus* :** A report of this species from Square 13 on the 12/11/95 seems to be reliable. This species has previously been records from N and E Sulawesi (White & Bruce, 1986).

**Lemon-throated White-eye *Zosterops anomalus* :** Reported during 1995 and during the early part of 1996. Both *Z. anomalus* and the Pale-bellied White-eye *Z. consobrinorum* are very similar in general plumage but differ significantly in the latter having a large white-eye ring which is replaced by a black-eye ring in *Z. anomalus*. All birds observed on Buton had large white-eye rings, and it is very unlikely that *Z. anomalus* will be found on Buton, as it is restricted to the southern peninsula of Sulawesi around Ujung Pandang (White & Bruce, 1986).

### 8.1: ADDITIONAL SPECIES TO WATCH OUT FOR DURING 1997

During a recent survey of the Rawa Aopa Watumohai National Park in SE Sulawesi a number of species were recorded which have not as yet been found on Buton. Most of these species are restricted to wetland or forest habitats, and some species may be expected to occur on Buton, especially in the well forested north of the island which has not been adequately surveyed to date. Of particular interest are the 4 Sulawesi endemics which have been found in lowland forest habitats. One species, the Bald-faced Rail *Gymnocrex rosenbergii*, is an endangered species.

Common Name	Systematic Name	Sulawesi Endemics	Habitat
Nankeen Night-Heron	<i>Nycticorax caledonicus</i>		W
Yellow Bittern	<i>Ixobrychus sinensis</i>		W
Glossy Ibis	<i>Plegadis falcinellus</i>		W
Blue-breasted Quail	<i>Coturnix chinensis</i>		G
Little Curlew	<i>Numenius minutus</i>		M
Bald-faced Rail	<i>Gymnocrex rosenbergii</i>	*	LF
Sulawesi Ground-Dove	<i>Gallicolumba tristigmata</i>	*	LF
Superb Fruit-Dove	<i>Ptilinopus superbus</i>		HF
Lilac Kingfisher	<i>Cittura cyanotis</i>	*	LF
Rufous-throated Flycatcher	<i>Ficedula rufigula</i>	*	LF
W = Wetland			
M = Mud-flats			
LF = Lowland Forest			
HF = Lowland & Hill Forest			

## 9: CHANGES TO ALTITUDINAL RANGES OF SELECTED SPECIES

Buton Island is dominated by a ridge of hills running north-south down the centre of the island and by a large hilly range at the north end of the island which reaches a maximum elevation of 1100 m. As Buton does not reach any appreciable height the island's avifauna is relatively impoverished with most montane species found on the mainland being absent. In particular a number of Sulawesi montane endemics are not found on Buton due to the lack of suitable habitat. Work done during the past two years has, however, produced some unexpected results, with a number of species occurring on Buton at much lower elevations, than previously recorded on mainland Sulawesi. A feature of oceanic islands is the lowering of the altitude at which montane communities are found, but a number of changes recorded have been considerably larger than may have been expected.

Table 9: Comparison of Altitudinal Ranges for Selected Species.

Common Name	Systematic Name	Previous Recorded	Altitudes Recorded
		Altitudes	On Buton
Spot-tailed Goshawk	<i>Accipiter trinotatus</i>	250-1600m	0m
Small Sparrowhawk	<i>Accipiter nanus</i>	600-2250m	60m
Vinous-breasted Sparrowhawk	<i>Accipiter rhodogaster</i>	0-2250m	50m
Slender-billed Cuckoo-Dove	<i>Macropygia amboinensis</i>	100-2250m	0m
White-bellied Imperial Pigeon	<i>Ducula forsteri</i>	300-1500m	50m
Grey-headed Imperial Pigeon	<i>Ducula radiata</i>	1100-2400m	250m
Yellow-and-Green Lorikeet	<i>Trichoglossus flavoviridis</i>	500-2000m	100m
Sulawesi Hawk-Cuckoo	<i>Cuculus crassirostris</i>	250-1250m	150m
Satanic Nightjar	<i>Eurostopodus diabolicus</i>	125-250m	250-275m
Sulawesi Pygmy Kingfisher	<i>Ceyx fallax</i>	100-1000m	30m
Ashy Woodpecker	<i>Mulleripicus fulvus</i>	250-2250m	10m
Red-bellied Pitta	<i>Pitta erythrogaster</i>	125-1000m	10m
Red-backed Thrush	<i>Zoothera erythronota</i>	250-1000m	60m
Rusty-bellied Fantail	<i>Rhipidura teysmanni</i>	600-2500m	50m
Crimson-crowned Flowerpecker	<i>Dicaeum nehrkomi</i>	700-2600m	200-300m

The occurrence on Buton of the Crimson-crowned Flowerpecker, at elevations of 200-300 m was unexpected as this species is usually found only above 700 m on the mainland and little land exists on Buton above this altitude. This species is, however, extremely localised and uncommon on Buton, and probably represents a declining relict population. The Grey-headed Imperial Pigeon has also been found at considerably lower elevations than on the mainland, although a recent study of Rawa Aopa Watumohai National Park found this species at an altitude of only 50 m (Wardill, 1995). Further work needs to be done on the lower latitudinal limits of birds on Buton, especially on some of the endemic species. The occurrence on Buton of other species restricted to 'montane' areas can not be ruled out given the above findings.

## 10: BREEDING ACTIVITY RECORDED DURING 1996.

Notes were kept during 1995 and 1996 on breeding activities noted during the various expeditions, using the criteria established by the British Trust for Ornithology. Very little information is currently available on the breeding activities and seasonality of many Sulawesi species and it is hoped that the project may be able to provide some useful data. Wherever possible data has also been collected on the type of nests and nest sites used.

The following criteria were used:

- Bird apparently holding a territory.
- Courtship and display; or anxiety call/agitated behaviour of adults indicating the presence of young or a nest.
- Brood patch on trapped birds.
- Adult visiting probable nest site.
- Nest building (including excavating nest hole).
- Distraction display or injury feigning.
- Used nest found.
- Recently fledged young.
- Adult carrying faecal sac or food.
- Adult entering or leaving nest site in circumstances indicating occupied nest (including colonies).
- Nest with eggs found, or bird sitting but not disturbed, or eggshells found near nest.
- Nest with young; or downy young of ducks, gamebirds, waders and other nidifugous species.

A total of 93 records of breeding activity were made during 1996, involving a total of 55 different species. This compares favourably with the 19 records made during the 1995 Bird Survey, involving only 15 different species.

Significant records for 1996 include the Yellow-crested Cockatoo nest, the immature Small Sparrowhawk and the immature Milky Stork. From the scant records it seems evident that a number of small passerine species breed during the drier months from June to November, with records for sunbirds, flowerpeckers and white-eyes occurring throughout this period. Immature and sub-adult munias were also observed throughout this period and this reflects the availability of seeds, particularly rice, during the drier months. Species dependant on fruit, mainly figs, seem to breed later in the dry season (September to November), when fruiting trees are more numerous. Most raptor nests found involved species which specialised in catching fish. No nests were found for forest dependent species although immatures were noted throughout 1996. A list of all breeding records made during 1996 can be found in Appendix 3.

## 11: POSSIBLE UNDESCRIBED TAXON AND INCIDENTAL OBSERVATIONS

### 11.1: POSSIBLE UNDESCRIBED SUB-SPECIES

During the 1996 surveys a small number of birds were observed which did not appear to match the descriptions available in the literature. The differences in some of these birds are extremely marked and it is possible that they represent undescribed races or sub-species. Field descriptions were made of all birds which appeared to differ from the existing literature, but more work needs to be done on this during 1997.

#### **JERDON'S BAZA** *Aviceda jerdoni*

A pair of Bazas were observed for some 20 minutes in the large shade trees of a mature cashew nut plantation on the 6/8/96. The description taken below was made by the author and 5 other members of the team. Both birds were observed at distances of 5-30 metres, using 8 x 40 binoculars and a 20-40 x telescope.

Size c.45 cm. Male - head grey including crown as far back as the crest; crest long, black in colour. Nape to mantle brown, streaked black. Back and wings greyish-brown. Uppertail brown with two broad black bands, terminal band white. Chestnut brown breast with no markings; chin and throat browner than breast with dark grey mesial throat stripe. Mesial throat strip edged white. Distinct division between throat and breast. Belly heavily barred white and chestnut; bars continue onto thighs. Ventral area white. Undertail white with single grey band near tip, terminal band white. Underwing; flight feathers greyish-white, underwing-coverts white barred chestnut. The second bird was slightly larger - presumably the female - with a brown head and dark brown 'mask'. Crown brown, crest black; nape and mantle chestnut-brown with black streaks. Back and wings greyish-brown, slightly darker than male. Uppertail brown with black sub-terminal band. Underparts as male, but division between throat and breast not as clear. Mesial throat stripe black, only narrowly edged white. Underwing as male.

#### **ZEBRA DOVE SPECIES** *Geopelia* ?

Two unusually coloured Zebra Dove were first reported from Siumpu Island SW of Buton on the 7/8/96. A number of individuals were subsequently seen over the next 4 months with a maximum count of 3 birds being made on the 7/11/96. Two birds were observed on the 10/9/96 carrying nesting material into a small isolated tree in an area of open scrubby grassland. The nest was not found but the pair were seen in the same tree on the 7/11/96 and the 13/11/96. The ordinary Zebra Dove *G. striata* was also found on the island; a pair were sighted within 200 m of the possible nesting tree of the unidentified dove. Birds differed markedly from *G. striata* in having a broad bright yellow orbital ring (not blue as in *G. striata*), and a narrow, but conspicuous, white stripe running down the neck from behind the eye. According to Goodwin (1967) all races of *G. striata* have a blue eye ring, as does *G. s. maugei* which is often regarded as a distinct species, the Timor Zebra Dove. The latter has been recorded from Tomea in the Tukangbesi (probably introduced).

The following is a description made by the author and three other team members on the 10/9/96 of a pair of birds which were watched for some 10-15 minutes using an 8 x 30 pair of binoculars, and a 20x telescope at distances of 15-30 feet. Bright clear day. General appearance very similar to *G. striata*, but slightly larger and more brown in colour. Head grey, paler more white on forehead and pale brownish-white on crown; iris pale blue, beak

black. Broad bright yellow orbital ring around eye, with narrow very distinct white stripe from behind the eye; white strip was c.1.5 cm long and curved slightly down the neck. Hindneck, back, rump and wings greyish-brown. Hindneck narrowly barred black; feathers on wing-coverts and back faintly edged black giving a scally or barred appearance. Flight feathers rufous brown. Chin grey; neck, chest and flanks buffish white with distinct black bars. Middle of breast buff becoming whitish on lower belly. Tail long and narrow, grey on underside with black base; uppertail grey with brown wash. Feet blackish, with reddish tinge to rear.

#### **BLACK-NAPED FRUIT-DOVE *Ptilinopus melanospila***

No mention is made in the literature of the complete lack of red or yellow colouration on the ventral area of the females found on Buton.

#### **SULAWESI PYGMY KINGFISHER *Ceyx fallax***

On the 24/9/96 a single bird was observed in a wooded gully beside a dry river-bed. The bird was seen clearly by 4 members of the group at distances of only 2-3 metres. The general description is similar to the nominate form *C. f. fallax*, but the bird differed in appearing to have no black and blue colouration on the crown and forehead. The bird was observed from the back and from the side, and the colouration of the crown should have been apparent. A second bird observed at the same location (presumably the same bird) on the 17/11/96 did not have any blue or black on the crown, nor did a bird observed in Square 76 on the 12/11/96. The only other sub-species *C. f. sangirensis* from Sangihe Island (between Sulawesi and the Philippines), has larger and more lustrous blue bars on the crown (Fry et al., 1992).

#### **RED-BACKED THRUSH *Zoothera erythronota***

A single bird was observed by the author on the 26/9/96, for some 15-20 minutes at a distance of 2-5 metres at the Cockatoo site outside of Bau-Bau. The following description was made which differs particularly in the facial colouration.

Upperparts from crown to uppertail-coverts chestnut; slightly darker and browner on the crown. Wings black with 2 rows of white spots on the wing-coverts appearing as 2 white bars. Face all black with greyish-white area behind the eye, white ear-coverts and a short white malar stripe. Chin, throat and upper breast black; rest of underparts white with heavy black spots on lower breast, spots on flanks and thighs finer more brownish-black. Tail black. Beak pale horn colour; legs pinkish; iris black. A second bird was later observed in the company of this bird and appeared duller more brownish chestnut above.

#### **BROWN-THROATED SUNBIRD *Anthreptes malacebsis***

Three males were observed on Sumpu Island on the 13/11/96 differing significantly from the males normally encountered on neighbouring Buton. Sumpu birds had bright maroon backs and greater-coverts, not brown as in the Buton birds.

## 11.2: INCIDENTAL NOTES AND OBSERVATIONS

During 1996 a number of incidental observations were made for species which have not been covered in any of the previous sections of this report. A number of these are felt to be important enough to warrant some mention in this report.

**Woolly-necked Stork *Ciconia episcopus*** : On the 24/9/96 an adult was observed catching sea snakes on the mud-flats in Square 74. During a 5 minute period the bird was seen to catch and eat at least 4 small white/pale yellow and black banded Sea Crakes of the genus *Laticauda*. The stork seemed to be extremely wary of the sea snakes and great care was taken in handling and killing the snakes before they were swallowed. Each snake was seized in the middle, and was held in the tip of the bill while being vigorously and repeatedly thrashed from side to side. On two occasions the sea snake was released before the process was repeated. Similar behaviour was noted at the same site on the 5/11/96 when 2 birds were observed catching sea snakes. The only reference to this behaviour is a brief comment in Hancock et al. (1992), which states "In Sulawesi they [Woolly-necked Storks] are said to eat sea snakes". The behaviour has also been observed on Hoga Island, but involved a Great-billed Heron.

**Blue-backed Parrot *Tanygnathus sumatranus*** : An unusually coloured bird was seen on the 15/7/96 in forest near La Bundo-Bundo, Square 45. General plumage similar to ordinary Blue-backed Parrot, but differed in having a brownish wash on the breast and neck, plus rufous-brown undertail feathers; the individual had a white bill and iris. The bird was seen clearly in the canopy of a large tree in the company of a pair of Great-billed Parrots. Forshaw describes a similar bird, the Rufous-tailed Parrot *Tanygnathus heterurus* which is only known from the type specimen (Forshaw, 1989). According to Forshaw this specimen probably represent an aberrant form of *T. sumatranus*.

**Collared Kingfisher *Halcyon chloris*** : A number of individuals were recorded with aberrant plumage. Most individuals differed in the amount and extent of black and greenish-blue on the head; black extending up from mask onto the crown. One bird at Kabowa Bridge, Square 41, had a completely black crown and forehead with an area of white on the hindneck. A bird seen on Hoga Island in the Tukangbesi had a small area of white in the centre of the crown surrounded by black.

## 12: CONCLUSIONS

Prior to the work carried out by volunteers of Operation Wallacea little interest had been shown in the large islands at the southern tip of the south east peninsula of Sulawesi. This is an extremely remote part of Indonesia which has attracted few visitors and even fewer scientists in recent years. Data collected during the two years of field work (a total of 11 months field work) has shown that the avifauna of Buton Island is diverse, despite the absence of montane communities on the island. The island has been found to have in excess of 230 bird species, including over 50 Sulawesi endemics. The latter includes virtually all of the Sulawesi endemics restricted to lowland habitats, with a few notable exceptions, and a number of endemics which inhabit lower montane environments. Significant populations of many species can be found on Buton, and the island may prove important for the long term survival of certain species. Around 19 threatened and near-threatened species have been recorded from Buton and further work is urgently needed to establish the status of many of these birds. In particular further work needs to be carried out on the Milky Stork, Maleo, Yellow-crested Cockatoo, and the Red-Knobbed Hornbill, as Buton may hold important populations of these birds.

In recent years Buton has been designated as a transmigration site and a number of settlements have already been created in the south and east of the island. These settlements have been responsible for the destruction of large tracts of forest and this process will undoubtedly continue during the next few years. The selection of transmigration sites is very haphazard and a number of sites have been established in, or adjacent to, existing protected areas. Substantial areas of the proposed National Park in the north of the island have already been cleared, and it is uncertain how much forest will survive before the National Park is finally designated. The Operation has, however, been instrumental in stimulating local awareness and interest in conservation issues, and action has already been taken at a local level in a number of locations. Local interest is crucial, as many important areas of forest have only survived due to the actions of local people and officials at village level. Interest shown by the officials of the Bupati of southern Buton (local governor), and by the regional Governor of South East Sulawesi, have been especially encouraging, and it is hoped that this interest will result in further actions being taken. The local Bupati has, in particular, been quick to identify the potential benefits from small scale ecotourism and he has been largely responsible for many of the initiatives undertaken to date. Already measures are being implemented to protect the Lake Togomotonu environs and the critically important area around the Maleo breeding sites near Maligano. The work carried out by Operation Wallacea has identified a number of important sites around the island and it is hoped that with the help of local people and officials these areas will be given full protection in the near future. It is also hoped that the results generated by Operation Wallacea will help stimulate further field work in this remote region of Sulawesi, and will provide local people with the incentive to conserve their natural environment.



APPENDIX 1: Distribution of Birds Endemic to the Sulawesi Faunal Region					
Common Name	Systematic Name	Sulawesi	Banggai	Sula	Sangihe & Talaub
Sulawesi Serpent-Eagle	<i>Spilornis rufipectus</i>	*	*	*	*
Sulawesi Goshawk	<i>Accipiter griseiceps</i>	*			
Spot-tailed Goshawk	<i>Accipiter trinotatus</i>	*			
Small Sparrowhawk	<i>Accipiter nanus</i>	*			
Vinous-breasted Sparrowhawk	<i>Accipiter rhodogaster</i>	*	*	*	
Sulawesi Hawk-Eagle	<i>Spizaetus lanceolatus</i>	*	*	*	
Sula Scrubfowl	<i>Megapodius bernsteinii</i>		*	*	
Maleo	<i>Macrocephalon maleo</i>	*			
Snoring Rail	<i>Aramidopsis plateni</i>	*			
Bald-faced Rail	<i>Gymnocrex rosenbergii</i>	*	*		
Isabelline Waterhen	<i>Amauornis isabellina</i>	*			
Sulawesi Woodcock	<i>Scolopax celebensis</i>	*			
Red-eared Fruit-Dove	<i>Ptilinopus fischeri</i>	*			
Maroon-chinned Fruit-Dove	<i>Ptilinopus subularis</i>	*	*	*	
White-bellied Imperial Pigeon	<i>Ducula forsteni</i>	*		*	
Grey-headed Imperial Pigeon	<i>Ducula radiata</i>	*			
White Imperial Pigeon	<i>Ducula luctuosa</i>	*	*	*	
Sombre Pigeon	<i>Cryptophaps poecilorrhoa</i>	*			
White-faced Cuckoo-Dove	<i>Turacoena manadensis</i>	*	*	*	
Sulawesi Ground-Dove	<i>Gallicolumba tristigmata</i>	*			
Red-and-Blue Lory	<i>Eos histrio</i>				*
Ornate Lorikeet	<i>Trichoglossus ornatus</i>	*	*		
Yellow-and-Green Lorikeet	<i>Trichoglossus flavovindes</i>	*		*	
Red-Spotted Racket-tailed Parrot	<i>Prioniturus flavicans</i>	N,C?			
Golden-mantled Racket-tailed Parrot	<i>Prioniturus platurus</i>	*	*	*	*
Sulawesi Hanging-Parrot	<i>Loriculus stigmatus</i>	*			
Sangihe Hanging-Parrot	<i>Loriculus catamene</i>			*	
Green Hanging-Parrot	<i>Loriculus exilis</i>	*			
Sulawesi Hawk-Cuckoo	<i>Cuculus crassirostris</i>	*			
Black-billed Koel	<i>Eudynamis melanorhyncha</i>	*	*	*	
Fiery-billed Malkoha	<i>Rhamphococcyx calyrorhyncha</i>	*			
Bay Coucal	<i>Centropus celebensis</i>	*			
Sulawesi Owl	<i>Tyto rosenbergii</i>	*	*		*
Minahassa Owl	<i>Tyto inexpectata</i>	N,C			*
Taliabu Masked Owl	<i>Tyto nigrobrunnea</i>	*			
Sulawesi Scops Owl	<i>Otus manadensis</i>	*			
Ochre-bellied Hawk-Owl	<i>Ninox ochracea</i>	*			
Speckled Hawk-Owl	<i>Ninox punctulata</i>	*			
Satanic Nightjar	<i>Eurostopodus diabolicus</i>	N,C			
Sulawesi Nightjar	<i>Caprimulgus celebensis</i>	N,C		*	
Blue-headed Wood Kingfisher	<i>Actenoides monachus</i>	*			
Bar-headed Wood Kingfisher	<i>Actenoides princeps</i>	*			
Lilac Kingfisher	<i>Cittura cyanotis</i>	*			Sa
Great-billed Kingfisher	<i>Halcyon melanorhyncha</i>	*	*	*	
Talaub Kingfisher	<i>Halcyon enigma</i>				Ta
Sulawesi Pygmy Kingfisher	<i>Ceyx fallax</i>	*			Sa
Purple-bearded Bee-eater	<i>Meropogon forsteni</i>	*			
Purple-winged Roller	<i>Coracias temminckii</i>	*			
Sulawesi Hornbill	<i>Penelopides exarhatus</i>	*			
Red-knobbed Hornbill	<i>Rhyticeros cassidix</i>	*			
Sulawesi Pygmy Woodpecker	<i>Dendrocopos temminckii</i>	*			
Ashy Woodpecker	<i>Mulleripicus fulvus</i>	*			
Sula Pitta	<i>Pitta doherthyi</i>		*	*	
Slaty Cuckoo-Shrike	<i>Coracina schistacea</i>		*	*	

**APPENDIX 1: Distribution of Birds Endemic to the Sulawesi Faunal Region**

Common Name	Systematic Name	Sulawesi	Banggai	Sula	Sangihe & Talaub
Caerulean Cuckoo-Shrike	<i>Coracina temminckii</i>	*			
Pied Cuckoo-Shrike	<i>Coracina bicolor</i>	*			*
White-rumped Cuckoo-Shrike	<i>Coracina leucopygia</i>	*			
Pygmy Cuckoo-Shrike	<i>Coracina abbotti</i>	*			
Sula Cicadabird	<i>Coracina sula</i>			*	
Sulawesi Cicadabird	<i>Coracina morio</i>	*			*
Sulawesi Pied Triller	<i>Lalage leucopygialis</i>	*	*	*	
Sulawesi Drongo	<i>Dicurus montanus</i>	*			
Piping Crow	<i>Corvus typicus</i>	*			
Banggai Crow	<i>Corvus unicolor</i>		*		
Sulawesi Babbler	<i>Trichastoma celebense</i>	*			
Malia	<i>Malia grata</i>	*			
Geomalia	<i>Geomalia heinrichi</i>	*			
Great Shortwing	<i>Heinrichia calligyna</i>	*			
Red-backed Thrush	<i>Zoothera erythronota</i>	*	*	*	
Sulawesi Mountain-Thrush	<i>Cataponera turdoides</i>	*			
Sulawesi Leaf-Warbler	<i>Phylloscopus sarasinorum</i>	*			
Henna-tailed Jungle Flycatcher	<i>Rhinomyias colonus</i>	*	*	*	
Rufous-throated Flycatcher	<i>Ficedula rufigula</i>	*			
Lompobattang Flycatcher	<i>Ficedula bonthaina</i>	S			
Blue-fronted Flycatcher	<i>Cyornis hoevelli</i>	C,SE			
Matinan Flycatcher	<i>Cyornis sanfordi</i>	N			
Caerulean Paradise-Flycatcher	<i>Eutrichomyia azurea</i>				Sa
Rusty-bellied Fantail	<i>Rhipidura teysmanni</i>	*		*	
Yellow-flanked Whistler	<i>Hylodictya bonensis</i>	*			
Maroon-backed Whistler	<i>Coracomis raveni</i>	*			
Sulphur-bellied Whistler	<i>Pachycephala sulfuriventer</i>	*			
Ivory-backed Woodswallow	<i>Artamus monachus</i>	*	*	*	
Sulawesi Crested Myna	<i>Basilornis celebensis</i>	*			
Helmeted Myna	<i>Basilornis galeatus</i>		*	*	
White-necked Myna	<i>Streptocitta albigollis</i>	*			
Bare-eyed Myna	<i>Streptocitta albertinae</i>			*	
Fiery-browed Myna	<i>Enodes erythrophris</i>	*			
Finch-billed Myna	<i>Scissirostrum dubium</i>	*	*		
Lesser Streaked Honeyeater	<i>Myza celebensis</i>	*			
Greater Honeyeater	<i>Myza sarasinorum</i>	*			
Sulawesi Myzomela	<i>Myzomela chloroptera</i>	*			
Elegant Sunbird	<i>Aethopyga duyvenbodei</i>				Sa
Yellow-sided Flowerpecker	<i>Dicaeum aureolimbatum</i>	*			Sa
Crimson-crowned Flowerpecker	<i>Dicaeum nehrkorni</i>	*			
Grey-sided Flowerpecker	<i>Dicaeum celebicum</i>	*	*	*	*
Pale-bellied White-eye	<i>Zosterops consobrinorum</i>	SE			
Lemon-throated White-eye	<i>Zosterops anomalus</i>	S			
Streaky-headed White-eye	<i>Zosterops squamiceps</i>	*			

### APPENDIX 3: BREEDING ACTIVITIES RECORDED DURING 1996

20/6/96

White-necked Myna - group of 10 adults and fledglings, Maligano, Square 18.

Piping Crow - 2 adults & 1 fledgling; Square 18.

26/6/96

Pacific Swallow - nest found under overhang of house near Labuana; Square 4.

Olive-backed Sunbird - male carrying nesting material into coconut palm; Square 5.

3/7/96

Sulawesi Goshawk - juvenile observed perched in forest tree, Square 18.

9/7/96

White-winged Triller - pair at nest feeding plus brooding 2 downy young; Square 57.

10/7/96

Yellow-crested Cockatoo - 2 birds seen entering nest hole in tree; hole on main trunk some 60 feet up in clump of tree ferns. Site still occupied in November; Square 65.

Sulawesi Hornbill - 5 adults in company of 1 immature; Square 65.

Scaly-breasted Munia - 4 adults with 1 immature; Square 66.

11/7/96

Osprey - pair copulating; Square 68.

Brahminy Kite - pair at nest, nest still occupied in November; Square 68.

12/7/96

Wandering Whistling Duck - mating and pairing displays observed on Lake Togomotonu.

Spotted Whistling Duck - adult with 12 fledglings on Lake Ambuau Square 54.

13/7/96

Black-faced Munia - 9 immature birds observed along roadside, Square 47.

14/7/96

Sulawesi Serpent-Eagle - immature, La Bundo-Bundo, Square 44.

Spot-tailed Goshawk - immature in forest tree, La Bundo-Bundo, Square 44.

Hair-crested Drongo - adult sitting on cup shaped nest, 40 feet above a small track. Nest made of fine fibres, very thin in places (see-through), situated in fork of exposed branch; Square 44.

18/7/96

Chestnut Munia - small group of 5 adults and 4 immature; Square 44.

5/8/96

Sulawesi Hawk-Eagle - two immature birds seen flying along side road; Square 66.

6/8/96

Grey-sided Flowerpecker - adults feeding young at nest; Square 73.

Pale-bellied White-eye - adult feeding young at nest; Square 73.

Black Sunbird - female carrying nesting material; Square 73.

8/8/96

Ashy Woodpecker - pair observed at newly excavated nest hole; Square 66.

14/8/96

Slender-billed Cuckoo-Dove - pair performing courtship display. Male perched beside female, whole body raised and lowered repeatedly, nape and back feathers raised, with repeated soft cooing; Square 68.

19/8/96

Brown-throated Sunbird - female at nest, a hanging ball of grass and leaves in tall bamboo; Square 65.

20/8/96

Asian Glossy Starling - colony collecting nesting material (strips of dried palm fronds and grass), plus building nests in palm trees at bases of palm fronds; Square 49.

Chestnut Munia - mixed flock of >60 adults, sub-adults and immature birds; Square 49.

21/8/96

Woolly-necked Stork - pair searching for possible nest site above forest canopy; Square 50.

Collared Kingfisher - adult feeding young in arboreal termitaria, some 30 feet up forest tree; Square 49.

27/8/96

Common Kingfisher - adult leaving nest hole in soil of upturned tree roots; Square 83.

28/8/96

Brown-throated Sunbird - pair taking food to nest (scruffy ball of fibres and leaves 20m up in forest canopy; Square 13.

Pied Cuckoo-Shrike - pair observed copulating; Square 13.

Pied Bushchat - male carrying food observed entering hole in dead tree; Square 13.

29/8/96

Golden-bellied Gerygone - adult with food at nest in mangrove overhanging water, about 3 metres up; fine pear shaped ball made of fine grass and cobwebs - latter plus grass trailing down beneath the nest; Square 8.

Golden-bellied Gerygone - male displaying to female; throat fluffed out while dancing around the females in tight circles, making a constant faint whistle; Square 8.

Lemon-bellied White-eye - adult incubating in coconut palm; cup of fine twigs and cobwebs just beneath an old palm frond; Square 8.

Lemon-bellied White-eye - nest found in mangrove, 2-3 metres up; Square 8.

2/9/96

Citrine Flycatcher - pair feeding fledgling; Square 66.

Black-naped Oriole - adult carrying nesting material (strips of dried palm leaves); Square 66.

Hair-crested Drongo - pair at nest in canopy, 30-40 feet up; Square 66.

4/9/96

Pink-headed Imperial Pigeon - adult building nest in canopy of tall tree; Square 55.  
Sulawesi Hanging-Parrot - female investigating nest tree cavities; Square 55.

8/9/96

Small Sparrowhawk - immature observed being chased by Sulawesi Goshawk; Square 65.

10/9/96

Zebra Dove Species - pair carrying nesting material into isolated tree; Siumpu Island.

12/9/96

Maleo - 4 active breeding sites found; all disturbed; Square 13.  
Golden-mantled Racket-tailed Parrot - adult entering and not leaving hole in a clump of tree ferns situated about 50 feet up forest tree; Square 13.

17/9/96

Ruddy Kingfisher - pair observed excavating nest hole in arboreal termitaria on an old tree stump on the edge of a small creek in mangrove; Square 33.

18/9/96

Maleo - pair digging at nest site; Square 13.  
Ornate Lory - 2 birds seen entering hole in horizontal branch of dead tree; Square 18.

19/9/96

Maleo - 4 pairs digging at 5th breeding site; Square 13.  
Brown-throated Sunbird - pair at nest; small elongated sphere of leaves, grass and cobwebs, situated beneath large leaf at top of small tree; Square 13.

21/9/96

Pied Cuckoo-Shrike - male at nest; Square 55.  
White Imperial Pigeon - bird carrying nesting material; Square 55.

22/9/96

Citrine Flycatcher - adult feeding fledgling; Square 66.  
Black-naped Fruit-Dove - female on nest; small untidy platform 15-20 feet up on bare branch next to road; Square 66.

23/9/96

White-bellied Sea-Eagle - adult at nest; huge structure of branches situated some 60 feet up a tree on a ridge top, about 0.5 km from the sea; Square 74.

24/9/96

Hair-crested Drongo - adult incubating 2 young and 1 egg; nest situated 20 feet up above path. Bird would quietly leave the nest when approached, returning once disturbance was over. Flimsy cup shaped nest of fine twigs in fork of tree; Square 60.

26/9/96

Red-Knobbed Hornbill - male feeding young at nest hole; situated some 70 feet above ground in same tree as Yellow-crested Cockatoo nest; Square 65.

Olive-backed Sunbird - pair at nest; in dense thicket close to road; Square 67.

14/10/96

Citrine Flycatcher - adult feeding fledgling; Square 65.

16/10/96

Finch-billed Myna - nesting tree with active breeding colony in dead isolated tree; Square 54.

17/10/96

White Imperial Pigeon - pair building nest in canopy of isolated tree on edge of forest; Square 54.

Malaysian Plover - pair with 3 downy chicks on undisturbed beach; Square 55.

18/10/96

Ashy Woodpecker - 2 males drumming on dead tree trunk; Lake Ambuau.

White-breasted Woodswallow - untidy nest of twigs situated in a dead isolated tree in cultivated field. Total of 9 birds seen at the nest together; Lake Ambuau.

22/10/96

Maleo - 26 birds observed at one breeding site; Square 13.

Black-naped Oriole - single bird carrying nesting material; Square 49.

24/10/96

Pacific Swallow - pair feeding 4 fledglings at fish ponds, Maligano; Square 18.

Hair-crested Drongo - pair feeding 2 fledglings; Square 18.

Hair-crested Drongo - adult at nest with at least one chick; Square 18.

Red-Knobbed Hornbill - male feeding young at nest hole in dead tree in forest clearing; Square 18.

Yellow-sided Flowerpecker - adult with 2 fledglings; Square 18.

White-necked Myna - pair at nest hole in dead palm stump; hole 35-40 feet up. One bird entered the hole and did not re-emerge; 2nd bird remained on top of the tree; Square 18.

Black-naped Oriole - adult feeding young at nest in small thickly foliated tree in coconut plantation. Nest, large hanging cup of fine grasses, situated in leaves in outer branch some 30 feet above the ground; Square 23.

Brown-throated Sunbird - pair feeding 2 young; Square 23.

29/10/96

Lemon-bellied White-eye - mist-netted bird with brood patch; Square 18.

1/11/96

Lesser Fishing-Eagle - pair at nest in huge tree in tiny isolated forest patch adjacent to Lake Ambuau. Huge untidy structure of branches in tree fork some 50-60 feet above ground.

Sulawesi Hanging-Parrot - pair feeding 2 fledglings; Lake Ambuau Square 54.

5/11/96

White-breasted Woodswallow - 3 birds constructing a nest in top of small cashew nut plant, 1.5 metres up adjacent to road; Square 78.

6/11/96

Sulawesi Babbler - mist-netted bird with well developed brood patch; Square 65.

Asian Glossy Starling - 3 adults with immature; Square 65.

7/11/96

White Imperial Pigeon - pair at nest coconut palm; small platform of twigs; Siumpu Island.

11/11/96

White-breasted Woodswallow - nest at top of dead tree trunk, some 40-50 feet up. Single bird observed incubating with 3 attendants. Purple-winged Roller landed briefly on nest but driven off by 4 White-breasted Woodswallows; Square 66.

Ivory-backed Woodswallow - untidy nest of twigs, moss etc. in fork of branch in bare tree about 30 feet up along side road. One bird sitting with 2 perched nearby; Square 66.

13/11/96

Hair-crested Drongo - small cup shaped nest of twigs and fibres in fork of branch 15 feet up tree; Siumpu Island.

14/11/96

Pied Bushchat - nesting in the top of small dead palm tree; Snake Island.

Finch-billed Myna - breeding colony (>100 birds) in dead tree adjacent to road in forest; Square 44.

15/11/96

Blue-backed Parrot - adult feeding one young; La Bundo-Bundo Square 44.

17/11/96

Milky Stork - immature seen in company of 4 adults; Square 74.

19/11/96

Red Knobbed Hornbill - male at nest hole; Square 18.

Finch-billed Myna - colony at nesting trees; Square 18.

Chestnut Munia - mixed flock of adult, sub-adults and immature birds; Square 18.

### **Additional Breeding Record**

Orange-footed Scrubfowl - *Megapodius reinwardt*: 17/11/96 adult scrubfowl seen digging at mound close to marine base. The mound was 5-6 feet high by 10-15 feet across and was situated underneath a thicket.

#### APPENDIX 4: KENDARI MARSHES, MAINLAND SULAWESI

During the 1996 Bird Surveys most expeditions were able to visit the Kendari Marshes area at the west end of the Kendari Bay, at the end of each trip. The Kendari marshes consist of an extensive area of mangroves and associated brackish marshes, plus adjacent fish ponds and extensive areas of mud-flats. No proper survey of the area was possible, but preliminary results suggest that this site could be of major importance for waders, both resident and

Table 10: Selected Species Recorded from Kendari Marshes

Common Name	Systematic Name
Little Pied Cormorant	<i>Phalacrocorax melanoleucos</i>
Oriental Darter	<i>Anhinga melanogaster</i>
Great-billed Heron	<i>Ardea sumatrana</i>
Purple Heron	<i>Ardea purpurea</i>
Great Egret	<i>Egretta alba</i>
Intermediate Egret	<i>Egretta intermedia</i>
Little Egret	<i>Egretta garzetta</i>
Cattle Egret	<i>Bubulcus ibis</i>
Javan Pond-Heron	<i>Ardeola speciosa</i>
Black-Crowned Night-Heron	<i>Nycticorax nycticorax</i>
Cinnamon Bittern	<i>Ixobrychus cinnamomeus</i>
Woolly-necked Stork	<i>Ciconia episcopus</i>
Milky Stork	<i>Mycteria cinerea</i>
Osprey	<i>Pandion haliaetus</i>
Black-Shouldered Kite	<i>Elanus caeruleus</i>
Brahminy Kite	<i>Haliastur indus</i>
Spotted Kestrel	<i>Falco moluccensis</i>
Spotted Whistling Duck	<i>Dendrocygna guttata</i>
Wandering Whistling Duck	<i>Dendrocygna arcuata</i>
Sunda Teal	<i>Anas gibberifrons</i>
Pacific Black Duck	<i>Anas superciliosa</i>
Barred Rail	<i>Gallirallus torquatus</i>
Pacific Golden Plover	<i>Pluvialis fulva</i>
Grey Plover	<i>Pluvialis squatarola</i>
Lesser Sand-Plover	<i>Charadrius mongolus</i>
Sharp-tailed Sandpiper	<i>Calidris acuminata</i>
Rufous-necked Stint	<i>Calidris ruficollis</i>
Broad-billed Sandpiper	<i>Limicola falcinellus</i>
Common Redshank	<i>Tringa totanus</i>
Common Greenshank	<i>Tringa nebularia</i>
Marsh Sandpiper	<i>Tringa stagnatilis</i>
Nordmann's Greenshank	<i>Tringa guttifer</i>
Terek Sandpiper	<i>Xenus cinereus</i>
Grey-tailed Tattler	<i>Heteroscelus brevipes</i>
Common Sandpiper	<i>Actitis hypoleucos</i>
Whimbrel	<i>Numerius phaeopus</i>
Far Eastern Curlew	<i>Numerius madagascariensis</i>
Black-tailed Godwit	<i>Limosa limosa</i>
White-headed Stilt	<i>Himantopus leucocephalus</i>
Great-billed Kingfisher	<i>Halcyon melanorhyncha</i>
Collared Kingfisher	<i>Halcyon chloris</i>
Sacred Kingfisher	<i>Halcyon sancta</i>
Common Kingfisher	<i>Alcedo atthis</i>

migrant. Some 70 species were recorded during the brief surveys including four threatened and near-threatened species. Of particular interest is the presence of a small population of Milky Storks (around 20 birds), which appear to be resident. Sizeable concentrations of



herons, egrets, pond-herons and other waterbirds were present throughout the survey period, and the mangroves were also utilised by a number of species for roosting. Between late August and November significant numbers of waders were present; flocks of several hundred waders were commonly observed in the late afternoon. The whole area is under pressure from various human activities, including clearance for fish ponds and building, and the future of the area is in doubt without some form of protection. Studies of the area are urgently needed to determine the importance of the site for waterbirds and for migrant waders. The University of Kendari is situated adjacent to the site and their participation would be particularly important.

## APPENDIX 5: CHECKLIST OF SPECIES RECORDED FROM HOGA

Hoga Island in the Tukangbesi was visited on a regular basis throughout the duration of the 1996 expeditions; most expeditions visiting the island for a day and a half during the middle of the trip. Little recent information is available on the avifauna of the Tukangbesi Islands - the last studies were made at the turn of the century (White & Bruce, 1986). A fairly marked discontinuity exists between Buton and the Tukangbesi Islands. The latter islands lie only c.25 km off the SE coast of Buton, but only one Sulawesi endemic (Grey-sided Flowerpecker *Dicaeum celebicum*) appears to have reached this small chain of islands. In addition two species (Pacific Baza *Aviceda subcristata* and Island Monarch *Monarcha cinerascens*) which are distinctly Australasian and Moluccan in origin do not reach Buton, but are present in the Tukangbesi.

Although not rich, the avifauna of Hoga Island includes a number of interesting species, including at least 4 species which are either difficult to see or do not occur on Buton. The limited number of species recorded from the island reflects the limited range of habitats available and the very small size of the island (c.2 square km). Hoga is a low lying coral island which is covered for the most part in thick scrub and coconut palms, with small patches of scrubby forest. Fig trees are abundant on the island and help explain why many fruit eating species are present. At low tide extensive mud-flats are exposed which attracted large numbers of waders in October and November. The interior of Hoga is practically impenetrable due to the thick undergrowth and the exceptionally rocky nature of the island. The island is thought to support a fairly large population of Orange-footed Scrubfowl, which are known to be resident on the island; 4 breeding mounds were located and a maximum count of 25 birds was made during one visit in October. Both Malaysian Plover and Beach Thick-Knee are resident on the island. A number of small island specialists can be found on the island on occasion, including Blue-tailed Imperial Pigeon and Great-billed Parrot. Interesting migrants recorded from the island include 2 immature Brown Shrikes and a Gray's Grasshopper-Warbler which was caught in a mist-net in October.

Interviews with local people on the nearby island of Wangiwangi (the largest island in the Tukangbesi) were carried out in late November 1996, during a brief wait at Wanci. According to local people there are numerous degraded forest patches remaining on the island, which hold a diverse avifauna. A number of local people were adamant that the Hooded Pitta *Pitta sordida* was fairly common on the island. This species is only known from N Sulawesi (Lambert, 1996); unconfirmed sightings were made of this species in July 1996 at the N end of Buton.

Table 11: Checklist of Species Recorded from Hoga Island.

Common Name	Systematic Name	Recorded	Recorded
		1995	1996
Lesser Frigatebird	<i>Fregata ariel</i>	*	*
Brown Booby	<i>Sula leucogaster</i>		*
Great-billed Heron	<i>Ardea sumatrana</i>	*	*
Little Egret	<i>Egretta garzetta</i>	*	*
Pacific Reef Heron	<i>Egretta sacra</i>	*	*
Osprey	<i>Pandion haliaetus</i>	*	
Pacific Baza	<i>Aviceda subcristata</i>	*	*
Pacific Golden Plover	<i>Pluvialis fulva</i>	*	*
Grey Plover	<i>Pluvialis squatarola</i>	*	*
Greater Sand-Plover	<i>Charadrius leschenaultii</i>	*	*
Lesser Sand-Plover	<i>Charadrius mongolus</i>	*	*
Malaysian Plover	<i>Charadrius peronii</i>	*	*
Ruddy Turnstone	<i>Arenaria interpres</i>	*	*
Rufous-necked Stint	<i>Calidris ruficollis</i>	*	*
Common Redshank	<i>Tringa totanus</i>	*	*
Common Greenshank	<i>Tringa nebularia</i>	*	*
Marsh Sandpiper	<i>Tringa stagnatilis</i>		*
Common Sandpiper	<i>Actitis hypoleucos</i>	*	*
Grey-tailed Tattler	<i>Heteroscelus brevipes</i>	*	*
Whimbrel	<i>Numenius phaeopus</i>	*	*
Eurasian Curlew	<i>Numenius arquata</i>	*	
Far Eastern Curlew	<i>Numenius madagascariensis</i>	*	
Bar-tailed Godwit	<i>Limosa lapponica</i>	*	
Beach Thick-Knee	<i>Esacus magnirostris</i>	*	*
Whiskered Tern	<i>Chlidonias hybridus</i>	*	*
Common Tern	<i>Sterna hirundo</i>	*	*
Black-naped Tern	<i>Sterna sumatrana</i>		*
Little Tern	<i>Sterna albifrons</i>		*
Great Crested Tern	<i>Sterna bergii</i>	*	*
Lesser Crested Tern	<i>Sterna bengalensis</i>		*
Orange-footed Scrubfowl	<i>Megapodius reinwardt</i>	*	*
Barred Rail	<i>Gallirallus torquatus</i>		*
Spotted Dove	<i>Streptopelia chinensis</i>	*	*
Green-winged Pigeon	<i>Chalcophaps indica</i>		*
Stephen's Dove	<i>Chalcophaps stephani</i>	*	
Pink-necked Green Pigeon	<i>Treron vernans</i>	*	*
Grey-Checked Green Pigeon	<i>Treron griseicauda</i>		*
Black-naped Fruit-Dove	<i>Ptilinopus melanospila</i>	*	*
Green Imperial Pigeon	<i>Ducula aenea</i>	*	
Blue-tailed Imperial Pigeon	<i>Ducula concinna</i>		*
Great-billed Parrot	<i>Tanygnathus megalorynchos</i>	*	
Oriental Cuckoo	<i>Cuculus saturatus</i>	*	
Channel-billed Cuckoo	<i>Scythrops novaehollandiae</i>	*	*
Great-eared Nightjar	<i>Eurostopodus macrotis</i>	*	*

Common Name	Systematic Name	Recorded	Recorded
		1995	1996
Moluccan Swiftlet	<i>Aerodramus infuscatus</i>	*	
Great-billed Kingfisher	<i>Halcyon melanorhyncha</i>		*
Sacred Kingfisher	<i>Halcyon sancta</i>	*	*
Collared Kingfisher	<i>Halcyon chloris</i>	*	*
Common Kingfisher	<i>Alcedo catthis</i>		*
Dollarbird	<i>Eurystomus orientalis</i>	*	*
Pacific Swallow	<i>Hirundo tahitica</i>	*	*
White-winged Triller	<i>Lalage sueurii</i>	*	
Hair-crested Drongo	<i>Dicrurus hottentottus</i>	*	*
Black-naped Oriole	<i>Oriolus chinensis</i>	*	*
Slender-billed Crow	<i>Corvus enca</i>	*	*
Gray's Grasshopper-Warbler	<i>Locustella fasciolata</i>		*
Asian Brown Flycatcher	<i>Muscicapa latirostris</i>		*
Grey-streaked Flycatcher	<i>Muscicapa griseisticta</i>	*	
Island Monarch	<i>Monarcha cinerascens</i>	*	*
Yellow Wagtail	<i>Motacilla flava</i>	*	
Grey Wagtail	<i>Motacilla cinerea</i>	*	*
White-breasted Woodswallow	<i>Artamus leucorhynchus</i>	*	*
Brown Shrike	<i>Lanius cristatus</i>		*
Short-tailed Glossy Starling	<i>Apaloni minor</i>	*	
Grey-sided Flowerpecker	<i>Dicaeum celebicum</i>	*	*
Olive-backed Sunbird	<i>Nectarina jugularis</i>	*	*
Black-faced Munia	<i>Lonchura molucca</i>	*	*
? - unconfirmed record 1995 only			

## APPENDIX 6: ANNOTATED CHECKLIST OF OCEANIC SPECIES

Operation Wallacea expeditions have not been designed to include surveys of seabirds as this falls largely outside the scope of the project. Little knowledge exists, however, on the status of seabirds in this area and some mention should be made where applicable. The following notes are taken mainly from the authors own notes and from a report by Clive Viney compiled in November 1995.

During the early months of the 1996 expeditions (between June and mid-August), few seabirds were seen with the exception of small numbers of Frigatebirds and Terns; on some ferry trips between Kendari and Buton only a handful of seabirds were noted. Also during this period voyages to Hoga were remarkable for their almost complete lack of seabirds away from the islands. A dramatic change occurred in late August when large numbers of terns and other pelagic species were noted; especially in the straits between mainland Sulawesi, Wowoni Island and the north end of Buton Island; and around the small rocky islets along the coast of Muna just south of Raha.

**Streaked Shearwater *Calonectris leucomelas*** : Single bird seen flying low over the water on the 24/6/96 between Raha and Maligano; another bird seen from the Wanci pier on Wangiwangi Island, Tukangbesi, on the 10/8/96.

**Christmas Island Frigatebird *Fregata andrewsi*** : 4 birds seen on the 24/6/96 between Raha and Maligano; just within Square 18. See chapter 6 for details.

**Greater Frigatebird *Fregata minor*** : Small numbers of this species were present throughout the 1996 Expeditions. 1 or 2 occasionally seen among Fareil.

**Lesser Frigatebird *Fregata ariel*** : By far the commonest sea bird during the early months - June to early September. Large concentrations seen at the north end of Buton, plus between Muna and Buton south of Raha. Several hundred, 250-400, recorded on the 10/11/96 south of Raha.

**Little Black Cormorant *Phalacrocorax sulcirostris*** : Not recorded during any sea voyages during 1996; around 30 birds seen off Square 74 in early August. In 1995 a colony of more than 20 were seen on a small islet in the Buton Strait on the 6 November.

**Little Pied Cormorant *Phalacrocorax melanoleucos*** : Large colony, 50-80 birds, seen on small islet south of Raha on the 13/10/96; a smaller colony of at least 40 birds were seen on the same islet on the 10/11/96.

**Red-footed Booby *Sula sula*** : Small numbers recorded en route to Hoga and Kendari in 1995. Small groups noted between Buton and the Tukangbesi Islands between September and November; nearly all groups noted were heading north. On the 21/10/96, 59 adults and 2 immatures were observed en route to Lasalimu from Hoga.

**Brown Booby *Sula leucogaster*** : Several birds seen on route to Kendari in November 1995. Single bird seen near Maligano on the 24/6/96. Several seen during various trips to Hoga Island.

**Milky Stork *Mycteria cinerea*** : 4 birds seen flying south along the steep mountainous coastline of the Sulawesi mainland opposite Wowoni Island.

**Brahminy Kite *Haliastur indus*** : Pairs or single birds regularly seen along the coastline between mainland Sulawesi and Wowoni, and in the straits near Bau-Bau.

**White-bellied Sea-Eagle - *Haliaeetus leucogaster*** : As the last species but more numerous.

**Grey Phalarope *Phalaropus fulicaria*** : Recorded in 1995 when 3 tight groups (14, 8 & 3 birds) in winter-plumage were seen en route to Hoga on the 16/11/95 (Viney, 1995). This species has not been previously recorded from Wallacea.

**Red-necked Phalarope *Phalaropus lobatus*** : Numerous groups seen from early August onwards in the straits between Muna and Buton; group sizes varied between 5-c.50 birds. All groups observed were heading south. Fewer groups were noted on route to Hoga; all were heading south-east.

**Pomarine Skua *Stercorarius pomarinus*** : 2 birds noted on the 16/11/96 en route to Hoga. In 1996 a single bird was seen en route to Hoga in early October.

**Whiskered Tern *Chlidonias hybridus*** : Over a hundred birds were seen on a fishing raft close to Hoga on the 16/11/95. Smaller number were observed around Hoga in late 1996.

**White-winged Tern *Chlidonias leucopterus*** : Several hundred noted in the straits between Wowoni and Buton between mid-August and late November. Always in the company of *Sterna fuscata* and *S. anaethetus*.

**Common Tern *Sterna hiundo*** : In November 1995 around 50 birds of the race *S. h. longipennis* were seen on a raft close to Hoga. Small groups of 2-30 birds were observed off Hoga in late 1996 (October-November). Small numbers seen along the Buton coast on 2 occasions.

**Black-naped Tern *Sterna sumatrana*** : Small numbers recorded throughout the 1996 survey; rare at the start of the project, but more common between August and November when groups of 10-20 were often seen, particularly around the small islets south of Raha.

**Bridled Tern *Sterna anaethetus*** : During 1996 absent until August when small numbers appeared. From late August onwards large numbers were observed in the straits between mainland Sulawesi, Wowoni and Buton; several hundred were seen at this location in mixed flocks of *S. fuscata* and *Chlidonias leucopterus* in early November.

**Sooty Tern *Sterna fuscata*** : None seen in 1996 until October. Hundreds seen in the company of *S. anaethetus* and *Chlidonias leucopterus* in early November.

**Great Crested Tern *Sterna bergii*** : One of the few terns to be present throughout the expeditions. Small numbers seen along most coasts; larger groups 50-100 birds noted in late October and November.

**Lesser Crested Tern *Sterna bengalensis*** : Small numbers seen throughout the expeditions; far less numerous than *S. bergii*.

**Fairy Tern *Gygis alba*** : Single colony noted in September 1996 on a small rocky islet south of Raha, on Muna. Colony appeared to be breeding in the large mangrove trees; the colony was still present in early November.

## APPENDIX 7: ANNOTATED CHECKLIST OF SELECTED MAMMAL SPECIES RECORDED DURING 1996.

Little data is currently available on the mammals found on Buton Island. The surveys carried out on Buton are not designed to collect data on mammal species, due in the main to a complete lack of expertise on the part of the bird leaders. Notes were only made of unusual observations or regularly encountered species. Numerous small mammals were encountered but could not be identified to species level. Bats are particularly well represented on the island with at least 6 different species having been seen. Small rodents are also well represented including various forest dwelling species. The following is a brief account of some of the species which were identified on Buton during 1996.

### **DWARF CUSCUS - *Phalanger celbensis***

The Dwarf Cuscus is a small animal (head and body only 34 cm) which feeds exclusively on fruit. This species was rarely encountered during the 1996 surveys, probably due to their nocturnal habits. Apart from being considerably smaller than the more numerous Bear Cuscus, Dwarf Cuscus have a black, not dark brown, back.

### **BEAR CUSCUS - *Phalanger ursinus***

The large (head and body 45 cm, tail 55 cm) dark brown Bear Cuscus is fairly common on Buton, where it seems to prefer more open forest especially in the south of the island. Generally encountered singly, although mothers with young were frequently seen throughout the expeditions. Bear Cuscus are slow moving marsupials which are usually found curled up in a ball in the top of an open tree. Occasionally seen eating leaves.

### **BOOTED MACAQUE - *Macaque ochreata brunnescens***

By far the most conspicuous large mammal on Buton, being regularly encountered in small noisy groups throughout the island. Found to frequent a wide range of habitats including lowland forest, degraded forest, cultivated areas and scrub; seem to prefer areas with high densities of fig trees. The exact status of the macaque on Buton has not yet been established, although it is currently under investigation. Buton macaques are mostly black in colour, except for older individuals which often show varying amounts of grey, some individuals are pure white. They are frequently caught for pets, and groups tend to be extremely wary of humans.

### **TARSIER SPECIES - *Tarsius* species**

Sulawesi Tarsier are among the world's smallest primates having a head and body length of just 10 cm plus a tail of 20 cm. Tarsiers have enormous eyes which are adapted to their nocturnal life-style. Three species of Tarsier are currently recognised from Sulawesi, but the taxonomic status of the Buton Tarsier is not known. The calls of the latter animals differ markedly from tape recordings of the other three species and it is very likely that the tarsiers on Buton represents an undescribed sub-species or even species. Currently widespread on Buton in almost all forested or wooded areas, including isolated patches, but this species is threatened by continuing deforestation.

### **SULAWESI CIVET - *Macrogalidia musschenbroeckii***

A rare and little known animal which could be more widespread than the few records suggest. A single, presumably young animal, was observed on the 25/9/96 in Square 83 in an area of forest which has now been cleared. The civet was seen well by all members of the

group, and appeared to be unconcerned by the presence of a group of humans. First observed lying quietly underneath an outcrop of coral where it remained for 2-3 minutes, before moving off slowly into the undergrowth and rocks. This is the first record of this species from Buton. The animal seen was mostly black in colour with white stripes on the throat and some white spots on the body; length c.1 m.

#### **LOWLAND ANOA - *Bubalus depressicornis***

A widespread and seemingly not uncommon mammal of forested areas. Recent signs of feeding and spoor were regularly encountered, but individuals were rarely seen. Anoa have a well-founded reputation for being aggressive, unpredictable and dangerous. Classified by IUCN as endangered.

#### **RUSA DEER - *Cervus timorensis***

This small barking deer has been introduced from Java *C.t.russa*, and is an uncommon animal in areas dominated by grass. This is one of the few mammal species which is regularly hunted on Buton and captive animals are often found in more isolated villages.

#### **SULAWESI PIG - *Sus celebensis***

This wild pig is very common throughout Buton in forests, scrub, plantations and cultivated areas. Sulawesi Wild Pigs cause extensive damage in cultivated areas and coconut plantations, but are not widely hunted. Usually found in small family groups especially at dusk.

#### **BARBIRUSA - *Babyrousa babyrousa***

There are persistent claims that this unique animal occurs or did occur on Buton, although no evidence has been found to support this. A small population may survive in the extensively forested north of the island.

#### **RED-BELLIED SQUIRREL - *Rubriciurus rubriventer***

A common and very widespread squirrel which was encountered on nearly all surveys in forested areas.

#### **MARINE MAMMALS**

Marine mammals were occasionally seen during ferry trips or during coastal surveys. Most commonly seen cetaceans include Common Dolphin *Delphinus delphis*, Tropical Spinner Dolphin *Stenella longirostris* and Pilot Whale *Globiocephala* species.

**Unidentified Cetacean:** Single individual observed off the coast in Square 83 on the 25/9/96. General appearance white or very pale grey with a blunt rounded head and a practically absent low dorsal fin (appeared as a bump). Length c.2 - 2.5 m. Watched repeatedly surfacing every 2 minutes or so, some 70-300 m off shore. Thought to be feeding near to two fishing boats. Description suggests some kind of river dolphin - possibly a pale Irrawaddy Dolphin *Orcaella brevirostris*.

**APPENDIX 8:**  
**Summary Documents of Each Square Surveyed**  
**During 1996**

Page 68 - 77 Summary Document of 1996 Bird Survey Results

Page 78 - 142 Summary Documents of 1996 Survey Results by Individual Squares



Square	COMMON NAME	SYSTEMATIC NAME	1	4	5	8	13	18	19	23	24	28	33	34	41	43	44	45	47	48	49	50	54	55	56	57
1	Little/Red-breasted Grebe	Tachybaptus ruficollis																								
2	Christmas Island Frigatebird	Fregata andrewsi																					2			
3	Great Frigatebird	Fregata minor				1		4																33		
4	Lesser Frigatebird	Fregata ariel				63		5				2														
5	Little Black Cormorant	Phalacrocorax sulcirostris																						1		
6	Little Pied Cormorant	Phalacrocorax melanoleucos																								
7	Oriental Darter	Anhinga melanogaster																								
8	Brown Booby	Sula leucogaster																								
9	Great-billed Heron	Ardea sumatrana				1						1														
10	Purple Heron	Ardea purpurea				1																				
11	White-faced Heron	Ardea novaehollandiae																								
12	Great Egret	Egretta alba																								
13	Intermediate Egret	Egretta intermedia																								
14	Little Egret	Egretta garzetta nigripes																								
15	Pacific Reef-Egret	Egretta sacra																								
16	Cattle Egret	Bubulcus ibis																								
17	Javan Pond-Heron	Ardeola speciosa																								
18	Striated Heron	Butorides striatus																								
19	Cinnamon Bittern	Ixobrychus cinnamomeus						5																		
20	Black Bittern	Ixobrychus flavicollis																								
21	Woolly-necked Stork	Ciconia episcopus																								
22	Milky Stork	Mycteria cinerea																								
23	Osprey	Pandion haliaetus																								
24	Jerdon's Beza	Aviceda jerdoni																								
25	Barred Honey-Buzzard	Pernis ptilorhynchus																								
26	Black-shouldered Kite	Elaenius caeruleus																								
27	Brahminy Kite	Haliaastur indus																								
28	White-bellied Sea-Eagle	Haliaeetus leucogaster																								
29	Lesser Fish-Eagle	Ichthyophaga humilis																								
30	Grey-headed Fish-Eagle	Ichthyophaga ichthyaeus																								
31	Sulawesi Serpent-Eagle	Spirornis rufipectus																								
32	Spotted Harrier	Circus assimilis																								
33	Eastern Marsh Harrier	Circus spilonotus																								
34	Sulawesi Goshawk	Accipiter griseiceps																								
35	Chinese Goshawk	Accipiter soloensis																								
36	Spot-tailed Goshawk	Accipiter trinitatus																								
37	Small Sparrowhawk	Accipiter nanus																								
38	Vinous-breasted Sparrowhawk	Accipiter rhodogaster																								
39	Grey-faced Buzzard	Buteo indicus																								
40	Black Eagle	Ichneutes malayensis																								
41	Rufous-bellied Eagle	Hieraaetus kienersi																								
42	Sulawesi Hawk-Eagle	Spizaetus lanceolatus																								
43	Spotted Kestrel	Falco moluccensis																								
44	Oriental Hobby	Falco severus																								
45	Peregrine Falcon	Falco peregrinus																								
46	Spotted Whistling-Duck	Dendrocygna guttata																								
47	Wandering Whistling-Duck	Dendrocygna arcuata																								
48	Sunda Teal	Anas gibberifrons																								
49	Pacific Black Duck	Anas superciliosa																								
50	Tarabon Scrubfowl	Megapodius cumingi																								
51	Melao	Macrocephalon maleo																								
52	Red Junglefowl	Gallus gallus																								

Square	COMMON NAME	SYSTEMATIC NAME	58	59	60	62	63	65	66	67	68	69	70	72	73	74	75	76	78	79	80	83	90	91	Max
1	Little/Red-throated Grebe	<i>Tachybaptus ruficollis</i>																							Count
2	Christmas Island Frigatebird	<i>Fregata andrewsi</i>																							33
3	Great Frigatebird	<i>Fregata minor</i>																							4
4	Lesser Frigatebird	<i>Fregata ariel</i>																							1
5	Little Black Cormorant	<i>Phalacrocorax sulcirostris</i>																							63
6	Little Pied Cormorant	<i>Phalacrocorax melanoleucos</i>																							>8
7	Oriental Darter	<i>Anhinga melanogaster</i>																							>60
8	Brown Booby	<i>Sula leucogaster</i>																							
9	Great-billed Heron	<i>Ardea sumatrana</i>															3	1							3
10	Purple Heron	<i>Ardea purpurea</i>																							2
11	White-faced Heron	<i>Ardea novaehollandiae</i>																							1
12	Great Egret	<i>Egretta alba</i>																							1
13	Intermediate Egret	<i>Egretta intermedia</i>																							24
14	Little Egret	<i>Egretta garzetta nigripes</i>																							24
15	Pacific Reef-Egret	<i>Egretta sacra</i>															190								35
16	Cattle Egret	<i>Bubulcus ibis</i>															1								190
17	Javan Pond-Heron	<i>Ardeola speciosa</i>																							5
18	Striated Heron	<i>Butorides striatus</i>																							2
19	Cinnamon Bittern	<i>Ixobrychus cinnamomeus</i>																							2
20	Black Bittern	<i>Ixobrychus flavicollis</i>																							2
21	Woolly-necked Stork	<i>Ciconia episcopus</i>																							>25
22	Milky Stork	<i>Mycteria cinerea</i>																							5
23	Osprey	<i>Pandion haliaetus</i>																							1
24	Jerdon's Baza	<i>Aviceda jerdoni</i>																							7
25	Barréd Honey-Buzzard	<i>Perms celebensis</i>																							1
26	Black-shouldered Kite	<i>Elanus caeruleus</i>																							21
27	Brahminy Kite	<i>Haliastur indus</i>																							3
28	White-bellied Sea-Eagle	<i>Haliaeetus leucogaster</i>																							2
29	Lesser Fish-Eagle	<i>Ichthyophaga humilis</i>																							2
30	Grey-headed Fish-Eagle	<i>Ichthyophaga ichthyaetus</i>																							9
31	Sulawesi Serpent-Eagle	<i>Spilornis rufipectus</i>																							3
32	Spotted Harrier	<i>Circus assimilis</i>																							2
33	Eastern Marsh Harrier	<i>Circus spilontus</i>																							1
34	Sulawesi Goshawk	<i>Accipiter griseiceps</i>																							1
35	Chinese Goshawk	<i>Accipiter soloensis</i>																							1
36	Spot-tailed Goshawk	<i>Accipiter trinitatus</i>																							3
37	Small Sparrowhawk	<i>Accipiter nanus</i>																							2
38	Vinous-breasted Sparrowhawk	<i>Accipiter rhodogaster</i>																							2
39	Grey-faced Buzzard	<i>Buteo indicus</i>																							3
40	Black Eagle	<i>Ictinaetus malayensis</i>																							3
41	Rufous-bellied Eagle	<i>Hieraeetus minor</i>																							3
42	Sulawesi Hawk-Eagle	<i>Spizaetus lanceolatus</i>																							1
43	Spotted Kestrel	<i>Falco moluccensis</i>																							1
44	Oriental Hobby	<i>Falco severus</i>																							5
45	Peregrine Falcon	<i>Falco peregrinus</i>																							1
46	Spotted Whistling-Duck	<i>Dendrocygna guttata</i>																							1
47	Wandering Whistling-Duck	<i>Dendrocygna arcuata</i>																							35
48	Sunda Teal	<i>Anas gibberifrons</i>																							116
49	Pacific Black Duck	<i>Anas superciliosa</i>																							141
50	Tabon Scrubfowl	<i>Megapodius cumingii</i>																							4
51	Maleo	<i>Macrocephalon maleo</i>																							1
52	Red Junglefowl	<i>Gallus gallus</i>																							26

Square	COMMON NAME	SYSTEMATIC NAME	1	4	5	6	8	13	16	18	19	23	24	28	33	34	41	43	44	45	47	48	49	50	54	55	56	57
53	Red-backed Buttonquail	<i>Turnix maculosa</i>																										
54	Buff-banded Rail	<i>Gallirallus philippensis</i>																										
55	Barred Rail	<i>Gallirallus torquatus</i>			4				4											15								
56	Slaty-breasted Rail	<i>Gallirallus striatus</i>										2								2		8	1					
57	Snoring Rail	<i>Aramidopsis platani</i>							1											1		2						
58	Isabelline Waterhen	<i>Amaurornis isabellinus</i>							2													1						
59	White-breasted Waterhen	<i>Amaurornis pheoniceurus</i>							4	4										6		3			1	4		
60	Bailon's Crane	<i>Porzana pusilla</i>										2													1	4		
61	Ruddy-breasted Crane	<i>Porzana fusca</i>							1																	2		
62	White-browed Crane	<i>Porzana cinerea</i>																		3						6		
63	Purple Swamphen	<i>Porphyrho porphyrio</i>																								4		
64	Common Moorhen	<i>Gallinula chloropus</i>																		2						27		
65	Dusky Moorhen	<i>Gallinula tenebrosa</i>																								25		
66	Comb-crested Jacana	<i>Irediparra gallinacea</i>																								16		
67	Pacific Golden Plover	<i>Pluvialis fulva</i>																					21					
68	Grey Plover	<i>Pluvialis squatarola</i>												1														
69	Lesser Sand-Plover	<i>Charadrius mongolus</i>																								1		
70	Malayan Plover	<i>Charadrius peronii</i>																								1		
71	Ruddy Turnstone	<i>Arenaria interpres</i>																								5		
72	Great Knot	<i>Calidris tenuirostris</i>																								1		
73	Sharp-tailed Sandpiper	<i>Calidris acuminata</i>																										
74	Rufous-necked Stint	<i>Calidris ruficollis</i>																										
75	Curlew Sandpiper	<i>Calidris ferruginea</i>																					3					
76	Dunlin	<i>Calidris alpina</i>							1																			
77	Red-necked Phalarope	<i>Phalaropus lobatus</i>																										
78	Common Redshank	<i>Tringa totanus</i>							1																			
79	Common Greenshank	<i>Tringa nebularia</i>																								8		
80	Nordmann's Greenshank	<i>Tringa guttifer</i>																								5		
81	Marsh Sandpiper	<i>Tringa stagnatilis</i>																										
82	Green Sandpiper	<i>Tringa ochropus</i>																										
83	Wood Sandpiper	<i>Tringa glareola</i>																										
84	Grey-tailed Tattler	<i>Heteroscelus brevipes</i>																										
85	Common Sandpiper	<i>Actitis hypoleucos</i>																								4		
86	Whimbrel	<i>Numenius phaeopus</i>							4	1	5									1						1		
87	Bristle-thighed Curlew	<i>Numenius tahitiensis</i>																								2	8	
88	Far Eastern Curlew	<i>Numenius madagascariensis</i>																								1		
89	Swinhoe's Snipe	<i>Gallinago megala</i>																										
90	Beach Thick-knee	<i>Esacus magnirostris</i>																										
91	Oriental Pratincole	<i>Glareola maldivarum</i>																										
92	Long-legged Pratincole	<i>Sillia isabellia</i>							1																			
93	Whiskered Tern	<i>Chlidonias hybridus</i>																										
94	White-winged Tern	<i>Chlidonias leucopterus</i>																									1	
95	Gull-billed Tern	<i>Gelochelidon nilotica</i>																										
96	Common Tern	<i>Sterna hirundo</i>																										
97	Black-naped Tern	<i>Sterna sumatrana</i>																										
98	Bridled Tern	<i>Sterna anaethetus</i>																										
99	Little Tern	<i>Sterna albifrons</i>																										
100	Great Crested Tern	<i>Sterna bergii</i>																										
101	Lesser Crested Tern	<i>Sterna bengalensis</i>																										
102	Fairy Tern	<i>Gygis alba</i>							4																			
103	Feral Pigeon	<i>Columba livia</i>																										
104	Spotted Dove	<i>Streptopelia chinensis</i>	2	1	9	1	5	5	5	5	2	2	2							3	2	2	4	2	11	4	4	6

Square	COMMON NAME	SYSTEMATIC NAME	58	59	60	62	63	65	66	67	68	69	70	72	73	74	75	76	78	79	80	83	90	91	Max
53	Red-backed Butonquail	<i>Turnix maculosa</i>																						Count	
54	Buff-banded Rail	<i>Gallirallus philippensis</i>																					4	4	
55	Barred Rail	<i>Gallirallus torquatus</i>						1																15	
56	Slaty-breasted Rail	<i>Gallirallus striatus</i>																4	1					8	
57	Sporing Rail	<i>Aramidopsis platani</i>																						1	
58	Isabelline Waterhen	<i>Amaurornis isabellinus</i>							1															2	
59	White-breasted Waterhen	<i>Amaurornis phoenicurus</i>							2															2	
60	Balilon's Crane	<i>Porzana pusilla</i>						1					1					2					7	7	
61	Ruddy-breasted Crane	<i>Porzana fusca</i>																						2	
62	White-browed Crane	<i>Porzana cinerea</i>																						1	
63	Purple Swamphen	<i>Porphyrio porphyrio</i>																						6	
64	Common Moorhen	<i>Gallinula chloropus</i>																						4	
65	Dusky Moorhen	<i>Gallinula tenebrosa</i>																						27	
66	Comb-crested Jacana	<i>Irediparra gallinacea</i>																						25	
67	Pacific Golden Plover	<i>Pluvialis fulva</i>																						16	
68	Grey Plover	<i>Pluvialis squatarola</i>											5											21	
69	Lesser Sand-Plover	<i>Charadrius mongolus</i>																						2	
70	Malaysian Plover	<i>Charadrius peronii</i>																						1	
71	Ruddy Turnstone	<i>Arenaria interpres</i>																						5	
72	Great Knot	<i>Calidris tenuirostris</i>																						1	
73	Sharp-tailed Sandpiper	<i>Calidris acuminata</i>																							
74	Rufous-necked Stint	<i>Calidris ruficollis</i>																						3	
75	Curlew Sandpiper	<i>Calidris ferruginea</i>																				2		2	
76	Dunlin	<i>Calidris alpina</i>																				2		2	
77	Red-necked Phalarope	<i>Phalaropus lobatus</i>																						31	
78	Common Redshank	<i>Tringa totanus</i>																						>40	
79	Common Greenshank	<i>Tringa nebularia</i>					1											6						5	
80	Nordmann's Greenshank	<i>Tringa guttifer</i>																						1	
81	Marsh Sandpiper	<i>Tringa stagnatilis</i>																						1	
82	Green Sandpiper	<i>Tringa ochropus</i>																						2	
83	Wood Sandpiper	<i>Tringa glareola</i>																						49	
84	Grey-tailed Tattler	<i>Heteroscelus brevipes</i>																						7	
85	Common Sandpiper	<i>Actitis hypoleucos</i>																						7	
86	Whimbrel	<i>Numenius phaeopus</i>																						8	
87	Bristle-thighed Curlew	<i>Numenius tahitiensis</i>																						28	
88	Far Eastern Curlew	<i>Numenius madagascariensis</i>																						1	
89	Swinhoe's Snipe	<i>Gallinago megala</i>																						1	
90	Beach Thick-knee	<i>Esacus magnirostris</i>																						1	
91	Oriental Pratincole	<i>Glaucola maldivarum</i>																						5	
92	Long-legged Pratincole	<i>Stiltia isabellia</i>							5															5	
93	Whiskered Tern	<i>Chlidonias hybridus</i>																						1	
94	White-winged Tern	<i>Chlidonias leucopterus</i>																						1	
95	Gull-billed Tern	<i>Gelocheidon nilotica</i>																						1	
96	Common Tern	<i>Sterna hirundo</i>																						7	
97	Black-naped Tern	<i>Sterna sumatrana</i>																						1	
98	Bridled Tern	<i>Sterna anaethetus</i>																						1	
99	Little Tern	<i>Sterna albifrons</i>																						1	
100	Great Crested Tern	<i>Sterna bergii</i>																						1	
101	Lesser Crested Tern	<i>Sterna bergalensis</i>																						32	
102	Fairy Tern	<i>Gygis alba</i>																						4	
103	Feral Pigeon	<i>Columba livia</i>																						1	
104	Spotted Dove	<i>Streptopelia chinensis</i>																						>8	
									3	1			2		1									11	



Square	COMMON NAME	SYSTEMATIC NAME	1	4	5	8	13	16	19	23	24	28	33	34	41	43	44	45	47	48	49	50	54	55	56	57
105	Slender-billed Cuckoo-Dove	<i>Macropygia amboinensis</i>			5	6	6	9	9	5	2		13		3		8	7			4	2	9	3	1	
106	White-faced Cuckoo-Dove	<i>Turacoena manadensis</i>	*		3	3	6	3	3	3					2		8	6			6	4	11	3	1	
107	Green-winged Pigeon	<i>Chalcophaps indica</i>			1	2	1	1	1	1					1		3	1			1					
108	Stephan's Pigeon	<i>Chalcophaps stephantii</i>			2	2	1	1	1	1					1		1				1					
109	Zebra Dove	<i>Geopelia striata</i>																								
110	Pink-necked Green Pigeon	<i>Treron vernans</i>		2	7	6	7	1							11	8	4	10			11		11	3		
111	Grey-cheeked Green Pigeon	<i>Treron griseicauda</i>	**		12	12	22	25	5	4	1	3			26	2	11	>15			16	>30	>15	>40	2	
112	Maroon-chinned Fruit-Dove	<i>Ptilinopus subularis</i>	*				1																			
113	Black-naped Fruit-Dove	<i>Ptilinopus melanospila</i>	*	1	18	15	18	14	9	5			12		15	11	20	14		3	14	4	5	>15	1	
114	White-bellied Imperial Pigeon	<i>Ducula forsteri</i>	*			3	8	>30									5						1			
115	Grey-headed Imperial Pigeon	<i>Ducula radiata</i>	*				2	2									1									
116	Green Imperial Pigeon	<i>Ducula aenea</i>	**																							
117	Blue-tailed Imperial Pigeon	<i>Ducula concinna</i>	**				2																			
118	Pink-headed Imperial Pigeon	<i>Ducula rosacea</i>	**	1	>10	25	>27	30	26						26	18	22	2			13	9	17	>25	9	
119	Pied Imperial Pigeon	<i>Ducula bicolor</i>	*		3		12																			
120	White Imperial Pigeon	<i>Ducula lactosa</i>	*		>20	7	>79	3	24	4	2				4	2	10	10	1	3	7	1	23	16	2	
121	Yellow-crested Cuckoo	<i>Cacatua sulphurea</i>	**												4		9				8	4	13	5	2	
122	Ornate Lorikeet	<i>Trichoglossus ornatus</i>	*	1	>24	6	10	14	>20	4			4		>3	14	3				8	4	13	5	2	
123	Yellow-and-Green Lorikeet	<i>Trichoglossus flavoviridis</i>	*				1																			
124	Sulawesi Hanging-Parrot	<i>Loriculus flaviventris</i>	*																							
125	Green Hanging-Parrot	<i>Loriculus exilis</i>	*	4	9	10	9	14	4	10	1	3	7		3	12	9	4			3	6	4	9	5	
126	Golden-mantled Racket-tailed Parrot	<i>Prioniturus platurus</i>	*	4	>30	1	4	15	7	4				1	5	1	20	1			15	2	3	2	8	
127	Great-billed Parrot	<i>Tanygnathus megalorhynchus</i>	*	4	>1	34	34	37	>146	7	2			20	31	33					9	>16	26	15		
128	Blue-backed (Miller's) Parrot	<i>Tanygnathus sumatranus</i>	*		10		10	10	9					9	14	22					2	7	8			
129	Sulawesi Hawk-Cuckoo	<i>Cuculus crassirostris</i>	*		10		5	6	12					4	17	18							7	12		
130	Oriental Cuckoo	<i>Cuculus saturatus</i>	*				1	1							1											
131	Plainive Cuckoo	<i>Cacomantis merulinus</i>	*	2	2		4	3	1	1				2	2	4					2			3	2	
132	Indonesian Cuckoo	<i>Cacomantis sepirostris</i>	**				1	1															1	1		
133	Horsfield's Bronze-Cuckoo	<i>Chrysococcyx basalis</i>	*																							
134	Gould's Bronze-Cuckoo	<i>Chrysococcyx russatus</i>	*																							
135	Drongo Cuckoo	<i>Surniculus lugubris</i>	*		2	2	5	2	2					1	1	2	1				2			2		
136	Black-billed Koel	<i>Eudynamis melanorhyncha</i>	*		1		3	3	2	2				4	1	3	3				1	1	4	5		
137	Channel-billed Cuckoo	<i>Scythrops novaehollandiae</i>	*		2																					
138	Fery-billed Malkoha	<i>Phaenicophaeus calyptorhynchus</i>	*	1	2	2	5	5	2	4				4	5	>16	5				4	2	3	3	1	
139	Lesser Coucal	<i>Centropus bengalensis</i>	*	2	3	1	4	5	1	5	2			2	3	>5	10				1	6	3	5	6	
140	Bay Coucal	<i>Centropus celebensis</i>	*		5	2	11	9	8	4	2			2	8	4	>12	12			3	10	8	6	2	
141	Sulawesi Owl	<i>Tyto rosenbergii</i>	*					1																		
142	Sulawesi Scops-Owl	<i>Otus manadenis</i>	*					3	3								5	1			1	4	1	>5		
143	Speckled Hawk-Owl	<i>Ninox punctulata</i>	*																							
144	Ochre-billed Hawk-Owl	<i>Ninox ochracea</i>	*														2	7						2		
145	Salatic Nightjar	<i>Eurostopodus diabolus</i>	*				2	1	4																	
146	Great-eared Nightjar	<i>Eurostopodus macrotis</i>	*				1	1																		
147	Long-tailed Nightjar	<i>Caprimulgus macurus</i>	*																			12				
148	Savanna Nightjar	<i>Caprimulgus affinis</i>	*														1									
149	Grey-rumped Tree-Swift	<i>Hemiprocne longipennis</i>	*	19	>60	11	18	>60	24	7	9		>5	2	4	23	51	15			4	30	8	11	15	
150	White-bellied Swiftlet	<i>Collocalia esculenta</i>	*	>10	>20		>18	>20	12				6	3	5	7	6				>30	17	4	14	4	
151	Moluccan Swiftlet	<i>Aerodramus infuscatus</i>	*				>35						>30								2				>15	
152	Uniform Swiftlet	<i>Aerodramus vanikorensis</i>	*	>10	>100	17	>52	>133	>38	15	6		>28		>50	6	>100				25	12	>27	5	>11	
153	White-throated Noddytail	<i>Hirundapus caudacutus</i>	*				1																			
154	Purple Noddytail	<i>Hirundapus pacificus</i>	*				1																			
155	Fork-tailed (Pacific) Swift	<i>Apus nipalensis</i>	*				1																			

Square	COMMON NAME	SYSTEMATIC NAME	58	59	60	62	63	65	66	67	68	69	70	72	73	74	75	76	78	79	80	83	90	91	Max
105	Slender-billed Cuckoo-Dove	<i>Macropygia amboinensis</i>																							Count
106	White-faced Cuckoo-Dove	<i>Turacoena manadensis</i>	*	1	4	1	8	6	2	4	3	1	4	2	1	2	4	4		2		4	1		15
107	Green-winged Pigeon	<i>Chalcophaps indica</i>														2	4	8			2				11
108	Stephan's Pigeon	<i>Chalcophaps stephani</i>														2	1	1		1	2	2	1		3
109	Zebra Dove	<i>Geopelia striata</i>														1	3						2		3
110	Pink-necked Green Pigeon	<i>Treron vernans</i>																					2		2
111	Grey-cheeked Green Pigeon	<i>Treron griseicauda</i>	**	6	5	2	>12	7	3	9	1	1	1			>39	9	>52	1	2		>10		11	
112	Maroon-chinned Fruit-Dove	<i>Ptilinopus subularis</i>	*																			>57	1		>57
113	Black-naped Fruit-Dove	<i>Ptilinopus melanospila</i>	*	2	8	6	3	6	20	5	11	2	2	4	1	21	>51	3	17		>26	5	5		>51
114	White-bellied Imperial Pigeon	<i>Ducula forsteri</i>	*																						>30
115	Grey-headed Imperial Pigeon	<i>Ducula radiata</i>	*																						>30
116	Green Imperial Pigeon	<i>Ducula aenea</i>	**						6				2				1								5
117	Blue-tailed Imperial Pigeon	<i>Ducula concinna</i>	**																						6
118	Pink-headed Imperial Pigeon	<i>Ducula rosacea</i>	**	15	4	6	8	15	4	3	6				9	18	8	1	5		7				>27
119	Pied Imperial Pigeon	<i>Ducula bicolor</i>	*	1												5	11	3		1		>30	2		>79
120	White Imperial Pigeon	<i>Ducula luctuosa</i>	*	21	11	3	3	12	2	9	5				5	11	3		2						9
121	Yellow-crested Cockatoo	<i>Cacatua sulphurea</i>	**	5	2			3	10	2					11	27	6		14						27
122	Ornate Lorikeet	<i>Trichoglossus ornatus</i>	*																						27
123	Yellow-and-Green Lorikeet	<i>Trichoglossus flavoviridis</i>	*																						1
124	Sulawesi Hanging-Parrot	<i>Loriculus exilis</i>	*	3									2		1	>27	10	1	2	2	4	3			>27
125	Green Hanging-Parrot	<i>Loriculus exilis</i>	*	2											1	7	1								>30
126	Golden-mantled Racket-tailed Parrot	<i>Prioniturus platurus</i>	*	4	11			4	>10																>146
127	Great-billed Parrot	<i>Tanygnathus megalonychos</i>	*	2	2			3	4	2	2	6		1	7	3				5					22
128	Blue-backed (Miller's) Parrot	<i>Tanygnathus sumatranus</i>	*	6				3	6	3			4	4	8					3					18
129	Sulawesi Hawk-Cuckoo	<i>Cuculus crassirostris</i>	*																						1
130	Oriental Cuckoo	<i>Cuculus saturatus</i>	*																						1
131	Plain-tive Cuckoo	<i>Cacomantis merulinus</i>	**					1	1	3				3		1	1	1	1						1
132	Indonesian Cuckoo	<i>Cacomantis sepulchralis</i>	**					1																	4
133	Horsefield's Bronze-Cuckoo	<i>Chrysococcyx basalis</i>	*																						4
134	Gould's Bronze-Cuckoo	<i>Chrysococcyx russatus</i>	*					2																	2
135	Drongo Cuckoo	<i>Surniculus lugubris</i>	*					1	2	3			1	1		1	2			1					5
136	Black-billed Koel	<i>Eudynamis melanorhyncha</i>	*					3																	5
137	Channel-billed Cuckoo	<i>Scythrops novaehollandiae</i>	*					2						2		1	1								3
138	Fiery-billed Malkoha	<i>Phaenicophaeus calyphorhynchus</i>	*	1	2	8	2	39	6	1	2	1	4	4	>9	>7	2	5	1	6	6				39
139	Lesser Coucal	<i>Centropus bengalensis</i>	*	3	1			2	4	9	2	1	6	1	2	4	7	2	2	2	2				10
140	Bay Coucal	<i>Centropus celebensis</i>	*	3	10	5	4	6	3	6	4	2		6	1	8	4	2	4	4	11				12
141	Sulawesi Owl	<i>Tyto rosenbergii</i>	*																						1
142	Sulawesi Scops-Owl	<i>Otus manadensis</i>	*					4	3							1									>5
143	Speckled Hawk-Owl	<i>Ninox punctulata</i>	*											1											1
144	Ochre-billed Hawk-Owl	<i>Ninox ochracea</i>	*																						2
145	Satanic Nightjar	<i>Eurostoopodus diabolicus</i>	*																						4
146	Great-eared Nightjar	<i>Eurostoopodus macrotis</i>	*																						4
147	Long-tailed Nightjar	<i>Caprimulgus macrurus</i>	*														1								12
148	Savanna Nightjar	<i>Caprimulgus affinis</i>	*																						1
149	Grey-rumped Tree-Swift	<i>Hemiproone longipennis</i>	*	33	>30	19	10	25	9	>49	1	1	37	2	5	39	43			7	7	9			>3
150	White-bellied Swiftlet	<i>Collocalia esculenta</i>	5	11	2	>40	>15	18	7	4	>50	50	13	>100	>185	5	5	8		8	>34	13			>80
151	Moluccan Swiftlet	<i>Aerodramus infuscatus</i>						16		14															>185
152	Uniform Swiftlet	<i>Aerodramus vanikorensis</i>		1	5			>5	70	>15			5	25		106	>42	4							>95
153	White-throated Needletail	<i>Hirundapus caudacutus</i>																							>133
154	Purple Needletail	<i>Hirundapus celebensis</i>																							1
155	Fork-tailed (Pacific) Swift	<i>Apus pacificus</i>																							1
156	House Swift	<i>Apus nipalensis</i>											>25												>25

Square	COMMON NAME	SYSTEMATIC NAME	1	4	5	8	13	18	19	23	24	28	33	34	41	43	44	45	47	48	49	50	54	55	56	57
157	Asian Palm Swift																									
158	Blue-headed Wood Kingfisher	Cypselurus balaiensis	6	>20			21	2												20						1
159	Ruddy Kingfisher	Actenoides monachus		1																						
160	Great-billed Kingfisher	Halcyon melanorhyncha				1				1		2														
161	Collared Kingfisher	Halcyon chloris		1	2	2	2	1	1	1								3			2	1			3	
162	Sacred Kingfisher	Halcyon sancta	1	>5	7	4	12	1	7	9	4	5	5	5	6	5	7	7	1	4	12	3	4	6	6	14
163	Sulawesi Pygmy Kingfisher	Ceyx fallax	1			1		4											2	2	>13					4
164	Blue-eared Kingfisher	Alcedo mentinting	1	1	1	1	1	1	1																	
165	Common Kingfisher	Alcedo affinis		1	1	1	1	1	1											1	1	1				
166	Rainbow Bee-eater	Merops ornatus		1	1	1	1	1	1											1	1	1				
167	Purple-winged Roller	Coracias temminckii		50		>50	>25	>4		1																
168	Broad-billed Roller (Dollarbird)	Coracias leucopygia	1	4	4	3	5	2	3	1																
169	Sulawesi Hornbill	Eurystomus orientalis		6	1	1	1	1																		
170	Red-knobbed Hornbill	Penelopides exarhatus		2	2	5	6	1																		
171	Sulawesi Pygmy Woodpecker	Rhyticeros casidix	1	13	13	18	17	9	6	1																
172	Ashy Woodpecker	Picoides temminckii		6	1	7	5	5	3																	
173	Red-billed Pitta	Mulleripicus fulvus		6	1	4	2	2	1																	
174	Hooded Pitta	Pitta sordida		2		4	2	2	1																	
175	Barn Swallow	Hirundo rustica					4																			
176	Pacific Swallow	Hirundo tahitica																								
177	Pied Cuckoo-Shrike	Coracina bicolor	10	>6	>20		>30																			
178	White-rumped Cuckoo-Shrike	Coracina leucopygia		4	4	5	6	4																		
179	Common Cuckoo-Shrike	Coracina tenuirostris	1	8	9	8	10	5	10																	
180	Sulawesi Cicadabird	Coracina morio		3	3	3	5	4	2	1																
181	Sulawesi Pied Triller	Lalage nigra leucopygialis		4	4	6	5	3	6																	
182	White-winged Triller	Lalage sueurii		4	2	2	2	2	2																	
183	Sooty-headed Bulbul	Pycnonotus aurigaster		2		1	1																			
184	Yellow-vented Bulbul	Pycnonotus goiavier																								
185	Hair-crested Drongo	Dicrurus hottentottus	1	3	14	2	9	11	6	2																
186	Black-naped Oriole	Oriolus chinensis	4	1	8	6	11	9	9	11	1															
187	Slender-billed Crow	Corvus enca		3	9	3	11	10	4																	
188	Piping Crow	Corvus typicus		2	2	1	5	2	2																	
189	Sulawesi Babbler	Trichastoma celebensis	1	12	1	15	11	6	18																	
190	Pied Bushchat	Saxicola caprata		1		3	3																			
191	Red-backed Thrush	Zoothera erythronota																								
192	Golden-billed Gerygone	Gerygone sulphurea		2	6	1	2																			
193	Tawny Grass-Warbler	Megalururus timoriensis																								
194	Clamorous Reed-Warbler	Acrocephalus stentoreus																								
195	Zitting Cisticola	Cisticola junco																								
196	Golden-headed Cisticola	Cisticola exilis																								
197	Asian Brown Flycatcher	Muscicapa latirostris																								
198	Grey-streaked Flycatcher	Muscicapa griseisticta																								
199	Black-naped Monarch	Hypothymis azurea puella																								
200	Chirine Flycatcher	Culicicapa helianthea	2	6	1	8	9	5	5	2																
201	Rusty-bellied Fantail	Rhipidura leysmanni	1	4	4	7	4	4																		
202	Common Pipit	Anthus novaeseelandiae																								
203	Petchora Pipit	Anthus gustavi																								
204	Mangrove Whistler	Pachycephala grisola	2																							
205	Yellow Wagtail	Motacilla flava																								
206	Grey Wagtail	Motacilla cinerea																								
207	White-breasted Woodswallow	Artamus leucorhynchus		5	>20	9	12	25	10	19	5	2	6	4	22	8	9	10								
210	Ivory-backed Woodswallow	Artamus monachus		15	15	5	13	3	1																	

Square	COMMON NAME	SYSTEMATIC NAME	58	59	60	62	63	65	66	67	68	69	70	72	73	74	75	76	78	79	80	83	90	91	Max
157	Asian Palm Swift	Cypselurus balaisensis			1	1	1	12	1					30		12	2	3							21
158	Blue-headed Wood Kingfisher	Actenoides monachus	*			1																			1
159	Ruddy Kingfisher	Halcyon coromanda	*					1																	2
160	Great-billed Kingfisher	Halcyon melanorhyncha	*																						2
161	Collared Kingfisher	Halcyon chloris		5	10	7	2	3	4	12	6	7	1	4	12	5	5	7	5	7	9	2	2		14
162	Sacred Kingfisher	Halcyon sancta	*																						>13
163	Sulawesi Pygmy Kingfisher	Ceyx fallax	*			1	1											1							1
164	Blue-eared Kingfisher	Alcedo merulino												2											1
165	Common Kingfisher	Alcedo atthis					1																		3
166	Rainbow Bee-eater	Merops ornatus		8	>10	9		>4	12	33	2		1	12			16	12		>18			15		>350
167	Purple-winged Roller	Coracias temminckii	*			1	5	3	3																6
168	Broad-billed Roller (Dollarbird)	Eurystomus orientalis	*			1	3																		7
169	Sulawesi Hornbill	Penelopides exarhatus	*			5	2	6	6	>3	2		4												15
170	Red-knobbed Hornbill	Rhyticeros cassidix	*			11	7	2	6	4	23	7	2	10			8	8							23
171	Sulawesi Pygmy Woodpecker	Picoides temminckii	*																						3
172	Ashy Woodpecker	Mulleripicus fulvus	*	2	4	2	4	2	3	4	1	1					4	5		2					12
173	Red-bellied Pitta	Pitta erythrogaster	*					3	4								2	2							6
174	Hooded Pitta	Pitta sordida																							2
175	Barn Swallow	Hirundo rustica																							4
176	Pacific Swallow	Hirundo tahitica				2	2	3	15		>10		8		8	>24	7	1	7	3	6	5	2		>50
177	Pied Cuckoo-Shrike	Coracina bicolor	*			3	3	2																	6
178	White-rumped Cuckoo-Shrike	Coracina leucopygia	*	5	3	4	2	3	4	6	4		4	3	6	6	6	6	8		6	5			14
179	Common Cicadabird	Coracina tenuirostris	*			5		3	5								5	2		1					5
180	Sulawesi Cicadabird	Coracina morio	*			4	3	2	9								3	5		1					9
181	Sulawesi Pied Triller	Lalage (nigral) leucopygialis	*	2				1	4					3	2	2	3	5							5
182	White-winged Triller	Lalage suerri		6					4									2							7
183	Sooty-headed Bulbul	Pycnonotus aurigaster																							
184	Yellow-vented Bulbul	Pycnonotus goiavier																							
185	Hair-crested Drongo	Dicrurus hottentottus				9	4	3	11	>26	5		6	6	2	8	8			9					>26
186	Black-naped Oriole	Oriolus chinensis		2		11	4	7	7	11	8		3	14	1	4	15	9	2	15	3	8	4		16
187	Slender-billed Crow	Corvus enca	*	4		7			20				7	1	2	2	3	2	2	3	2	8	2		>40
188	Piping Crow	Corvus typicus	*			1	2	4	3	3				4	2	3	5	2	2	4	2	2			6
189	Sulawesi Babbler	Trichastoma celebensis	*	4		10	7	8	>15	20	23		1	>20	7	6	12	14	11	14					23
190	Pied Bushchat	Saxicola caprata	*					2	2	9			4	4	1	2	1	4	2	3					9
191	Red-backed Thrush	Zosterops erythronota	*					4																	4
192	Golden-bellied Gerygone	Gerygone sulphurea															1	1	3	2	3				4
193	Tawny Grass-Warbler	Megalurus timoriensis																							1
194	Clamorous Reed-Warbler	Acrocephalus stentoreus																							9
195	Zitting Cisticola	Cisticola lunoides																							2
196	Golden-headed Cisticola	Cisticola exilis																							2
197	Asian Brown Flycatcher	Muscicapa latirostris																							11
198	Grey-streaked Flycatcher	Muscicapa griseiceps																							9
199	Black-naped Monarch	Hypothymis azurea puella				5	2	3	5	8	5		1	2	5	9	2	2	4	2	6	4			1
200	Citrine Flycatcher	Culicicapa helianthea	*	1		1	2	1	3	7	1			2			11								17
201	Rusty-bellied Fantail	Rhipidura teysmanni	*																						2
202	Common Pipit	Anthus novaeseelandiae																							
203	Petchora Pipit	Anthus gustavi																							
204	Mangrove Whistler	Pachycephala griseola																							
205	Yellow Wagtail	Motacilla flava																							7
206	Grey Wagtail	Motacilla cinerea																							5
207	White-breasted Woodswallow	Artamus leucorhynchus	*	8	2	6		14	4	10	8		10	7	4	18	5	6	9	5	4				27
210	Ivory-backed Woodswallow	Artamus monachus	*	1		2	10	3	6	19															19



Square	COMMON NAME	SYSTEMATIC NAME	1	4	5	8	13	18	19	23	24	28	33	34	41	43	44	45	47	48	49	50	54	55	56	57
211	Tiger Shrike	<i>Lanius tigrinus</i>																								
212	Brown Shrike	<i>Lanius cristatus</i>																			2					
213	Short-tailed Glossy Starling	<i>Aplonis minor</i>		7	7		3	3	5												3					
214	Asian Glossy Starling	<i>Aplonis panayensis</i>	25		>9	5	>30	3	6	6	2	15	13	4	9	4	9	4	2		>50	14	12	9	4	2
215	Sulawesi Crested Myna	<i>Basilornis celebensis</i>	*		7	3	7	13	2			4	7	1	11	7	2					4	8			
216	White-necked Myna	<i>Streptocitta albigulis</i>	*		6	1	6	26	3	5	4		3	2	14	7	25	5			3	5	3	13		4
217	Finch-billed Myna	<i>Scissirostrum dubium</i>	*		>100		>100	>68	15						37	>107	5				>250	>45	>93	22	5	14
218	Brown-throated Sunbird	<i>Antheptes malacensis</i>	8		17	12	7	6	4	9		1	7		3	19	7	5	2	4	5	4	5	5		
219	Black Sunbird	<i>Nectarinia aspasia</i>		2	6	7	10	11	10	5	3	1	1	2	5	6	6	11		3	6	5	3	5	3	2
220	Olive-backed Sunbird	<i>Nectarinia jugularis</i>	11	5	14	15	4	14	2	5		11	2	12	8	11	4	12	15	13	2	1	3	11	4	
221	Crimson Sunbird	<i>Aethopyga siparaja</i>		1	3	1	2	3	4	5		2	2	2	4	8	1				8	3	1	3		1
222	Yellow-sided Flowerpecker	<i>Dicaeum aureolimbatum</i>	*	2	>20	4	15	21	10	9		14	3	7	10	11	7	2	4	4	4	6	7	6		
223	Crimson-crowned Flowerpecker	<i>Dicaeum nehrkorni</i>	*												1											
224	Grey-sided Flowerpecker	<i>Dicaeum celebicum</i>	*		6	11	7	13	4	7					9	20	17	5		2	9	5	2	9		2
225	Lemon-bellied White-Eye	<i>Zosterops chloris</i>	11	25	16	10	>31	5	12	1	7	3	12	4	14	3				7	10	3	2	6	13	>30
226	Pale-bellied White-Eye	<i>Zosterops consobrinorum</i>	*	5	18	9	>14	>5	8			4	2	14	5	18	8	1		2	5	2	2			
227	Eurasian Tree Sparrow	<i>Passer montanus</i>					2	2																		
228	Black-faced Munia	<i>Lonchura molucca</i>	**		30	10	23		6	5						>100				>9	>200		5	10		>20
229	Scaly-breasted Munia	<i>Lonchura punctulata</i>			>20		3		2									8			>10		>15	1	9	
230	Chestnut Munia	<i>Lonchura malacca</i>			50		>15	>67	15				4				>100	>125			>62		>50	>140		
231	Pale-headed Munia	<i>Lonchura pallida</i>	**																							

Square	COMMON NAME	SYSTEMATIC NAME	58	59	60	62	63	65	66	67	68	69	70	72	73	74	75	76	78	79	80	83	90	91	Max Count	
211	Tiger Shrike	<i>Lanius tigrinus</i>	17																						2	
212	Brown Shrike	<i>Lanius cristatus</i>																								
213	Short-tailed Glossy Starling	<i>Aplonis minor</i>	5	14	7			4	15						2	>6	16	6	13	4	3		>50		19	
214	Asian Glossy Starling	<i>Aplonis panayensis</i>				2	2	2	7						2	4	2	4	4	4	3	3				11
215	Sulawesi Crested Myna	<i>Basilornis celebensis</i>	*					6	8	9		3		4		3	9	10	3	6	2				26	
216	White-necked Myna	<i>Streptocitta albigollis</i>	*	2	>21	>68	2	>25	36	>88		3		>50	15	8	35	7	4	4					>250	
217	Finch-billed Myna	<i>Scisirostrum dubium</i>						4	8	5		1	3	6	2	5	13	4	6	2	4	5	12	1	19	
218	Brown-throated Sunbird	<i>Anthreptes malacensis</i>	2	2	5	3	2	2	10	8	2	2	1	6	1	2	10	6	1	12	9	4	4		12	
219	Black Sunbird	<i>Nectarinia aspasia</i>	3	2	4	9	4	4	11	7		6	11	1	7	8	8	2	11	6			>10	>45	8	
220	Olive-backed Sunbird	<i>Nectarinia jugularis</i>	8	4	4	2	2	2	7	6		1	4	1	1	2	4			1	4	4			23	
221	Crimson Sunbird	<i>Aethopygia siparaja</i>	6	1	1	1	2	2	7	6		2	5	1	6	5	11	1	9	8	10	2			8	
222	Yellow-sided Flowerpecker	<i>Dicaeum aureolimbatum</i>	*		23	3	6	14	10	1		2													23	
223	Crimson-crowned Flowerpecker	<i>Dicaeum neriorni</i>	*					1	1	1															1	
224	Grey-sided Flowerpecker	<i>Dicaeum celebicum</i>	*		8	3	1	6	13	11		2	1	5	1	5	14			15	5	6	9		20	
225	Lemon-bellied White-Eye	<i>Zosterops chloris</i>	15	5	8	2	1	17	15				1	24	1	14	8	6		11	6			>19	>31	
226	Pale-bellied White-Eye	<i>Zosterops consobrinorum</i>	*	2	9	1	6	13	13				5	6	3	>15	7		>4	>7	2				18	
227	Eurasian Tree Sparrow	<i>Passer montanus</i>																							2	
228	Black-faced Munia	<i>Lonchura molucca</i>	**		>8			5	1								14			2			>15	4	2	
229	Scaly-breasted Munia	<i>Lonchura punctulata</i>						2	12																>200	
230	Chestnut Munia	<i>Lonchura malacca</i>						3																	>140	
231	Pale-headed Munia	<i>Lonchura pallida</i>	**																						>6	

SQUARE	1		
DATE		31/7	Max Count
SURVEY TIME		60m	
COMMON NAME	SYSTEMATIC NAME		
Whimbrel	<i>Numenius phaeopus</i>	1	1
Spotted Dove	<i>Streptopelia chinensis</i>	2	2
Black-naped Fruit-Dove	<i>Ptilinopus melanospila</i>	1	1
Pink-headed Imperial Pigeon	<i>Ducula rosacea</i>	** 1	1
Sulawesi Hanging-Parrot	<i>Loriculus stigmatus</i>	* 4	4
Golden-mantled Racket-tailed Parrot	<i>Prioniturus platurus</i>	* 4	4
Lesser Coucal	<i>Centropus bengalensis</i>	2	2
Grey-rumped Tree-Swift	<i>Hemiprocne longipennis</i>	19	19
White-bellied Swiftlet	<i>Collocalia esculenta</i>	>10	>10
Uniform Swiftlet	<i>Aerodramus vanikorensis</i>	>10	>10
Asian Palm-Swift	<i>Cypsiurus balasiensis</i>	6	6
Collared Kingfisher	<i>Halcyon chloris</i>	1	1
Sacred Kingfisher	<i>Halcyon sancta</i>	1	1
Blue-eared Kingfisher	<i>Alcedo meninting</i>	1	1
Red-knobbed Hornbill	<i>Rhyticeros cassidix</i>	* 1	1
Pacific Swallow	<i>Hirundo tahitica</i>	10	10
White-rumped Cuckoo-Shrike	<i>Coracina leucopygia</i>	* 1	1
Hair-crested Drongo	<i>Dicrurus hottentottus</i>	1	1
Black-naped Oriole	<i>Oriolus chinensis</i>	4	4
Sulawesi Babbler	<i>Trichastoma celebense</i>	* 1	1
Mangrove Whistler	<i>Pachycephala grisola</i>	2	2
Asian Glossy Starling	<i>Aplonis panayensis</i>	25	25
Brown-throated Sunbird	<i>Anthreptes malacensis</i>	8	8
Olive-backed Sunbird	<i>Nectarinia jugularis</i>	11	11
Lemon-bellied White-Eye	<i>Zosterops chloris</i>	** 11	11
TOTAL SPECIES: 25			
SULAWESI ENDEMICS: 5			
INDONESIAN ENDEMICS: 2			
TOTAL TIME: 1h			
TEAMS: 1			

SQUARE	4		
DATE		27/06	Max Count
SURVEY TIME		50m	
COMMON NAME	SYSTEMATIC NAME		
Brahminy Kite	Haliastur indus	1	1
Spotted Kestrel	Falco moluccensis	** 1	1
Spotted Dove	Streptopelia chinensis	1	1
Pink-necked Green Pigeon	Treron vernans	2	2
Grey-cheeked Green Pigeon	Treron griseicauda	** 12	12
Ornate Lorikeet	Trichoglossus ornatus	* 1	1
Green Hanging-Parrot	Loriculus exilis	* 3	3
Golden-mantled Racket-tailed Parrot	Prioniturus platurus	* >1	>1
Plaintive Cuckoo	Cacomantis merulinus	2	2
Fiery-billed Malkoha	Phaenicophaeus calyrorhynchus	* 1	1
Collared Kingfisher	Halycon chloris	>5	>5
Blue-eared Kingfisher	Alcedo meninting	1	1
Purple-winged Roller	Coracias temminckii	* 1	1
Hair-crested Drongo	Dicrurus hottentottus	3	3
Black-naped Oriole	Oriolus chinensis	1	1
Slender-billed Crow	Corvus enca	3	3
Black-naped Monarch	Hypothymis azurea puella	2	2
Citrine Flycatcher	Culicicapa helianthea	1	1
White-breasted Woodswallow	Artamus leucorhynchus	5	5
Short-tailed Glossy Starling	Aplonis minor	7	7
Black Sunbird	Nectarinia aspasia	2	2
Olive-backed Sunbird	Nectarinia jugularis	5	5
Crimson Sunbird	Aethopyga siparaja	1	1
Yellow-sided Flowerpecker	Dicaeum aureolimbatum	* 2	2
Pale-bellied White-Eye	Zosterops consobrinorum	* 5	5
TOTAL SPECIES: 25			
SULAWESI ENDEMICS: 7			
INDONESIAN ENDEMICS: 2			
TOTAL TIME: 50m			
TEAMS: 1			

SQUARE	5													
DATE	26/6	26/6	27/6	27/7	27/7	28/7	28/7	29/7	29/7	30/7	30/7	Max		
SURVEY TIME	270m	170m	50m	330m	90m	360m	110m	330m	180m	210m	80m	Count		
COMMON NAME	SYSTEMATIC NAME													
Striated Heron								1				1		
Osprey					1	2	2					2		
Barred Honey-Buzzard									1			1		
Brahminy Kite		2	2	1		2				2		2		
Sulawesi Serpent-Eagle	*	1	1	1	2		1		3	1	2	3		
Spot-tailed Goshawk	*	1										1		
Little Sparrowhawk	*					1						1		
Black Eagle		2		1		1						2		
Spotted Kestrel	**	1	1	1		2	1	1	3	1		3		
Barred Rail			4								2	4		
Feral Pigeon			3									3		
Spotted Dove		1		4		3	2		7		2	9		
Slender-billed Cuckoo-Dove		5	2	2		1	2	2		1		5		
White-faced Cuckoo-Dove	*	1	3	1		1					1	3		
Green-winged Pigeon									1			1		
Stephan's Pigeon		2				1						2		
Pink-necked Green Pigeon		5		7								7		
Grey-cheeked Green Pigeon	**	2		12					2	3		12		
Black-naped Fruit-Dove		4			5	2	6	1	5	18	4	18		
Pink-headed Imperial Pigeon	**	5	7				2	>10	6	6	2	>10		
Pied Imperial Pigeon			3									3		
White Imperial Pigeon	*	4	7	8				>20				>20		
Ornate Lorikeet	*	6	1	2	3	5	>24	4	14	6		4		
Sulawesi Hanging-Parrot	*	9	1	2	4		5	5	3		3	9		
Green Hanging-Parrot	*	>30	1	3	11	2	12	10	9	2	6	>30		
Golden-mantled Racket-tailed Parrot	*	>30	>20	25		34	25	2	15	12	27	20		
Great-billed Parrot				2					10	4	1	10		
Blue-backed (Muller's) Parrot		10	9						2	2		10		
Plaintive Cuckoo				2	2	1	1		2	2		2		
Drongo Cuckoo		1										1		
Black-billed Koel	*		1									1		
Channel-billed Cuckoo					2							2		
Fiery-billed Malkoha	*	1		2		1					2	1		
Lesser Coucal		1			1	2	1	1	3	2	3	3		
Bay Coucal	*	1			1	2	5		3		5	1		
Grey-rumped Tree-Swift			6	18				>60	15		9	>60		
White-bellied Swiftlet		>15		10	1	>20	2	>10	>20	>20	>10	>20		
Uniform Swiftlet		>10	>30	35		>100	>15	>25	>20	>20	>40	>100		
Asian Palm-Swift		>10	>2			>20						>20		
Blue-headed Wood Kingfisher	*	1										1		
Great-billed Kingfisher	*								1			1		
Collared Kingfisher		7	2	>5		3	4	2	6	2	3	7		
Blue-eared Kingfisher		1		1								1		
Common Kingfisher									1			1		
Rainbow Bee-eater		10	8	50		2		2	4		2	5		
Purple-winged Roller	*	4	2	3			4		4			4		
Broad-billed Roller (Dollarbird)			6						1			6		
Sulawesi Hornbill	*				2		2					2		
Red-knobbed Hornbill	*	4			8	6	13	7	1	6	7	13		
Ashy Woodpecker	*	1	2		2		1		6	1		6		
[Hooded Pitta]							2		1			2		
Pacific Swallow			>6						5			>6		
Pied Cuckoo-Shrike	*			2			4	1				4		
White-rumped Cuckoo-Shrike	*	8	3	4			3	2	6	4	6	3		
Common Cicadabird		3					2	2			2	3		
Sulawesi Cicadabird	*	2			2	2	3	1	2	4	4	4		
Sulawesi Pied Triller	*	2					4		1			4		
White-winged Triller				2								2		
Hair-crested Drongo		14		3	4	3	4	6	6	5	7	14		
Black-naped Oriole		6		4		2	6	6	6	4	8	2		
Slender-billed Crow		3	1	3	2	1	1		7		6	9		
Piping Crow	*	1	2				1		2			2		
Sulawesi Babbler	*	12	10	4	6		6		4		4	12		
Pied Bushchat											1	1		
Golden-bellied Gerygone						1			2			2		
Golden-headed Cisticola			1									1		
Black-naped Monarch		3		3	2	2	6	2	6	1	3	1		
Citrine Flycatcher		2		1	4		3		1		1	4		
White-breasted Woodswallow		2	15	5					>20		1	10		
Ivory-backed Woodswallow	*		12	15		6	3		8	6	9	15		
Short-tailed Glossy Starling				7								7		
Asian Glossy Starling			>9			9					1	>9		
Sulawesi Crested Myna	*	7			3		6	6	1			7		
White-necked Myna	*	4	2	4		3	6	2	3	2	2	6		
Finch-billed Myna		4	1		>50	>20	>100	4	>25	4	2	4		
Brown-throated Sunbird		17	1	5			1	1	8		5	17		
Black Sunbird		3	2	2	3	2	3	2	6	2	3	1		

SQUARE	5													
DATE		26/6	26/6	27/6	27/7	27/7	28/7	28/7	29/7	29/7	30/7	30/7	Max	
SURVEY TIME		270m	170m	50m	330m	90m	360m	110m	330m	180m	210m	80m	Count	
COMMON NAME	SYSTEMATIC NAME													
Olive-backed Sunbird	<i>Nectarinia jugularis</i>	6	9	10	4	>10	8	1	14	5	10	11	14	
Crimson Sunbird	<i>Aethopyga siparaja</i>	1	3	2	1		3		3	2			3	
Yellow-sided Flowerpecker	<i>Dicaeum aureolimbatum</i>	*	4	2	8	>20	8		2	3	2	5	>20	
Grey-sided Flowerpecker	<i>Dicaeum celebicum</i>	*	3	5	3		6	2	4	4	3		6	
Lemon-bellied White-Eye	<i>Zosterops chloris</i>	**	25	1	6	2	4	4	6	23	9	3	7	
Pale-bellied White-Eye	<i>Zosterops consobrinorum</i>	*	15	1	5		6	12	12			18	18	
Black-faced Munia	<i>Lonchura molucca</i>	**	9		30		5		>20			17	30	
Scaly-breasted Munia	<i>Lonchura punctulata</i>		5	2					>20		3		>20	
Chestnut Munia	<i>Lonchura malacca</i>				50								50	
Reed-Warbler species	<i>Acrecephalus species</i>		1										1	
TOTAL SPECIES: 87														
SULAWESI ENDEMIC: 30														
INDONESIAN ENDEMIC: 5														
TOTAL TIME: 22h40m														
TEAMS: 2														

SQUARE	8				
DATE		29/8	29/8	29/8	Max
SURVEY TIME		120m	240m	30m	Count
COMMON NAME	SYSTEMATIC NAME				
Greater Frigatebird	Fregata minor			1	1
Lesser Frigatebird	Fregata ariel	9	17	63	63
Great-billed Heron	Ardea sumanatrana		1		1
Purple Heron	Ardea purpurea		1		1
Striated Heron	Butorides striatus		2		2
Osprey	Pandion haliaetus	1			1
Brahminy Kite	Haliastur indus	2	3		3
White-bellied Sea-Eagle	Haliaeetus leucogaster	1	3		3
Sulawesi Serpent-Eagle	Spilornis rufipectus	*	1	1	1
Spot-tailed Goshawk	Accipiter trinotatus	*		1	1
Marsh Sandpiper	Tringa stagnatilis		2		2
Common Sandpiper	Actitis hypoleucos	4			4
Great Crested Tern	Sterna bergii		32	>15	32
Spotted Dove	Streptopelia chinensis		1		1
Slender-billed Cuckoo-Dove	Macropygia amboinensis		6		6
Pink-necked Green Pigeon	Treron vernans	1	6		6
White Imperial Pigeon	Ducula luctuosa	*	7		7
Ornate Lorikeet	Trichoglossus ornatus	*	6		6
Sulawesi Hanging-Parrot	Loriculus stigmatus	*	10		10
Green Hanging-Parrot	Loriculus exilis	*	1		1
Fiery-billed Malkoha	Phaenicophaeus calyorrhynchus	*	2		2
Lesser Coucal	Centropus bengalensis		1		1
Bay Coucal	Centropus celebensis	*	2		2
Grey-rumped Tree-Swift	Hemiprocne longipennis		11		11
Uniform Swiftlet	Aerodramus vanikorensis		17		17
Great-billed Kingfisher	Halcyon melanorhyncha	*	2	2	2
Collared Kingfisher	Halcyon chloris		3	4	4
Sacred Kingfisher	Halcyon sancta		1		1
Broad-billed Roller (Dollarbird)	Eurystomus orientalis	1			1
Ashy Woodpecker	Mulleripicus fulvus	*		1	1
Pacific Swallow	Hirundo tahitica			>20	>20
White-rumped Cuckoo-Shrike	Coracina leucopygia	*	1	9	9
Hair-crested Drongo	Dicrurus hottentottus		2		2
Black-naped Oriole	Oriolus chinensis		6		6
Slender-billed Crow	Corvus enca		3		3
Sulawesi Babbler	Trichastoma celebense	*		1	1
Golden-bellied Gerygone	Gerygone sulphurea	1	6		6
Zitting Cisticola	Cisticola juncidis		2		2
Golden-headed Cisticola	Cisticola exilis		3		3
Black-naped Monarch	Hypothymis azurea puella		1		1
Mangrove Whistler	Pachycephala grisola		7		7
White-breasted Woodswallow	Artamus leucorhynchus		9		9
White-necked Myna	Streptocitta albigollis	*	1		1
Brown-throated Sunbird	Anthreptes malacensis	3	12		12
Black Sunbird	Nectarinia aspasia		7		7
Olive-backed Sunbird	Nectarinia jugularis	1	15		15
Crimson Sunbird	Aethopyga siparaja	1			1
Yellow-sided Flowerpecker	Dicaeum aureolimbatum	*		4	4
Grey-sided Flowerpecker	Dicaeum celebicum	*		11	11
Lemon-bellied White-Eye	Zosterops chloris	**	2	16	16
TOTAL SPECIES: 50					
SULAWESI ENDEMICS: 15					
INDONESIAN ENDEMICS: 1					
TOTAL TIME: 6h30m					
TEAMS: 1					



SQUARE	13													Max
DATE	25/7	01/8	28/8	12/9	18/9	19/9	22/10	23/10	29/10	31/10	06/11	21/11		Count
SURVEY TIME	240m	575m	315m	405m	300m	240m	330m	255m	280m	170m	300m	330m		
COMMON NAME	SYSTEMATIC NAME													
Woolly-necked Stork														
Black-shouldered Kite	1	3	1	4										4
Brahminy Kite											1			1
White-bellied Sea-Eagle		1												1
Lesser Fish-Eagle						1								1
Grey-headed Fish-Eagle			1											1
Sulawesi Serpent-Eagle	*	3	2	2	3	3	1		1	1	2			3
Sulawesi Goshawk	*								1	1				1
Spot-tailed Goshawk	*				1									1
Little Sparrowhawk	*		2											2
Vinous-breasted Sparrowhawk	*													1
Rufous-bellied Eagle	**		1											1
Spotted Kestrel	*		2	2	2	8	26	15	4	10	4	2		2
Maleo	*										1			1
Red Junglefowl														26
Isabelline Waterhen														1
White-breasted Waterhen	*		1											1
Ruddy-breasted Crane				1		4	2	2						4
Common Sandpiper								1						1
Spotted Dove		2	2	1				5	5		2	2		5
Slender-billed Cuckoo-Dove	1	1	2	6	2	3	4				2	4		6
White-faced Cuckoo-Dove	*	1	1	1	3	2	1	2		3	1	3		3
Green-winged Pigeon			2			1								2
Stephan's Pigeon		1	2		2			1						2
Pink-necked Green Pigeon			7											7
Grey-cheeked Green Pigeon	**		2			5	22	7	2		4			22
Maroon-chinned Fruit-Dove	*													1
Black-naped Fruit-Dove		2	6	11	6	5	9	14			15	12		15
White-bellied Imperial Pigeon	*		3	2	3	3			1			2		3
Pink-headed Imperial Pigeon	**	6	12	19	25	15	16		16	14	22	17	>17	25
White Imperial Pigeon	*								2	2	3	4	2	7
Ornate Lorikeet	*	6		5	10	3	5	2	8	2	3	5	2	10
Sulawesi Hanging-Parrot	*		3	2	2	3			2	8	2	9		9
Green Hanging-Parrot	*		1	2	1				2	2	4			4
Golden-mantled Racket-tailed Parrot	*	9	6	18	34	>14	8	>15	9	15	16	12		34
Great-billed Parrot	1		4		2		2		4	5	10			10
Blue-backed (Muller's) Parrot				5					2	2	1			5
Oriental Cuckoo				1										1
Plainive Cuckoo	4		1			1	1	2	3	2	2			4
Indonesian Cuckoo	**		1		1		1	1						1
Drongo Cuckoo			2	5	1	1	1	1	2	1		2		5



SQUARE	13													Max Count
DATE	25/7	01/8	28/8	12/8	18/9	19/9	22/10	23/10	29/10	31/10	06/11	21/11		
SURVEY TIME	240m	575m	315m	405m	300m	240m	330m	255m	280m	170m	300m	330m		
COMMON NAME	SYSTEMATIC NAME													
Black-billed Koel			1	3	2	3	2	2	2	2	3	3	3	3
Fly-catched Malkoha	4	5	3	1	1	1				5	2			5
Lesser Coucal	1				1	2	2	3	2	3	4	4	4	4
Bay Coucal	4	2	6	8	10	4	2	4	4	11	6	6	11	11
Satanic Nightjar							2?							27
Grey-rumped Tree-Swift	8	3	9	6	9	6			11	18	14	>9	18	18
White-bellied Swiftlet	2			5	>18	3			9					>18
Moluccan Swiftlet					>35									>35
Uniform Swiftlet	>50				>52		9	5	5		3			>52
Ruddy Kingfisher			1								1			1
Great-billed Kingfisher					2									2
Collared Kingfisher	7	4	6	4	2	3	3	2	4	5	4	3	7	7
Blue-eared Kingfisher														1
Common Kingfisher				1				1			1			1
Rainbow Bee-eater	>10	>50	7		4						1			1
Purple-winged Roller			3				2		2	2	2	1		>50
Broad-billed Roller (Dollarbird)	1													1
Sulawesi Hornbill	1								2					1
Red-knobbed Hornbill	5	4	14	18	7		5	3	6		10	5	18	18
Ashy Woodpecker	5	5	2	1	3	1	2	4	1	6	7		7	7
Red-bellied Pitta							1	1	1	2	4	1	4	4
Pied Cuckoo-Shrike	5	2	4			1	2	4		3	4	1	5	5
White-rumped Cuckoo-Shrike	5	3	7	6	8	4	6	3	4	4	6	3	8	8
Common Cicadabird	1			1	2				3			1	3	3
Sulawesi Cicadabird			3	3	4	4	3	3	2	6	1	2	6	6
Sulawesi Pied Triller			2						2	1			2	2
Hair-crested Drongo	6	2	9	9	8	7	3	5	9	9	5	5	9	9
Black-naped Oriole	4	1	6	9	11	7	7	7	4	2			11	11
Slender-billed Crow	11	10	2		4	2	5	2	2	4			11	11
Piping Crow							1		1	1			1	1
Sulawesi Babbler			>12	9	8	>10	10	9	6	15	11	>12	15	15
Pied Bushchat			1		3			2					3	3
Golden-bellied Gerygone														1
Golden-headed Cisticola			1											1
Asian Brown Flycatcher								3					3	3
Black-naped Monarch														3
Citrine Flycatcher	8		6	5	3	3		4	1	3	5	3	8	8
Rusty-bellied Fantail			3	7	5	3	2	4	4	4	5	3	7	7
Yellow Wagtail							3						1	1
Grey Wagtail													1	1
White-breasted Woodswallow	12		10		2	2		10	9	9	11		12	12

SQUARE	13													Max
DATE	25/7	01/8	28/8	12/9	18/9	19/9	22/10	23/10	29/10	31/10	06/11	21/11	Count	
SURVEY TIME	240m	575m	315m	405m	300m	240m	330m	255m	280m	170m	300m	330m		
COMMON NAME	SYSTEMATIC NAME													
Ivory-backed Woodswallow			3		1					5	4		5	
Asian Glossy Starling	4		4					5	5				5	
Sulawesi Crested Myna			2	3				2	2	2			3	
White-necked Myna	4		2	6	5		2	2	2				6	
Finch-billed Myna	10		8	9	10		26	3	15	17	8		26	
Brown-throated Sunbird	4		7	2	5	7		6	2	3	4	2	7	
Black Sunbird	3	2	10	2	2		1	1	1	2			10	
Olive-backed Sunbird	4		4	4	3		1	4			6		4	
Crimson Sunbird	2	2	2	2			1		1				2	
Yellow-sided Flowerpecker		1	4	4	2				3	15	5	5	15	
Grey-sided Flowerpecker	4		3	4	2		5	3	5	4	7	4	7	
Lemon-bellied White-Eye	4		7	4	7		2	3	5	4	7	4	7	
Pale-bellied White-Eye			9	2	4		2		6		10	5	10	
Black-faced Munia	1		2							8			9	
Chestnut Munia	10		2	2			3	3				9	10	
							>15	13				9	>15	
TOTAL SPECIES: 97														
SULAWESI ENDEMIC: 37														
INDONESIAN ENDEMIC: 6														
TOTAL TIME: 62h20m														
TEAMS: 7														

SURVEY TIME	18																					
	19/6	19/6	20/6	20/6	28/6	28/6	29/6	01/7	02/7	02/7	03/7	04/7	24/7	25/7	31/7	14/8	16/9	16/9	18/9	24/10	24/10	
Christmas Island Frigatebird																						
Lesser Frigatebird																						
Woolly-necked Stork																						
Osprey																						
Brahminy Kite																						
Sulawesi Serpent-Eagle																						
Sulawesi Goshawk																						
Vinous-breasted Sparrowhawk																						
Rufous-bellied Eagle																						
Spotted Keatrel																						
Oriental Hobby																						
Peregrine Falcon																						
Red Junglefowl																						
Barrd Rail																						
Snoring Rail																						
Isabelline Waterhen																						
White-breasted Waterhen																						
Dunlin																						
Red-necked Phalarope																						
Common Redshank																						
Common Sandpiper																						
Oriental Pratincole																						
Common Tern																						
Great Crested Tern																						
Lesser Crested Tern																						
Spotted Dove																						
Slender-billed Cuckoo-Dove																						
White-faced Cuckoo-Dove																						
Green-winged Pigeon																						
Stephan's Pigeon																						
Pink-necked Green Pigeon																						
Grey-cheeked Green Pigeon																						
Black-naped Fruit-Dove																						
White-bellied Imperial Pigeon																						
Grey-headed Imperial Pigeon																						
Blue-tailed Imperial Pigeon																						
Pink-headed Imperial Pigeon																						
Pied Imperial Pigeon																						
White Imperial Pigeon																						
Ornate Lorikeet																						
Yellow-brid-Green Lorikeet																						
Sulawesi Hanging-Parrot																						
Green Hanging-Parrot																						
Golden-mantled Racket-tailed Parrot																						
Great-billed Parrot																						
Blue-backed (Muller's) Parrot																						
Sulawesi Hawk-Cuckoo																						

SQUARE	18										Max Count	
	DATE	25/10	25/10	28/10	30/10	06/11	07/11	19/11	20/11	20/11		
SURVEY TIME	05m	300m	120m	170m	180m	250m	120m	120m	20m	20m		
COMMON NAME	SYSTEMATIC NAME											
Christmas Island Frigatebird												4
Lesser Frigatebird												5
Striated Heron			5				5		1			5
Woolly-necked Stork			1									2
Osprey												1
Black-shouldered Kite												1
Brahminy Kite			3	2								3
Sulawesi Serpent-Eagle	*				1	1						2
Sulawesi Goshawk	*											1
Vinous-breasted Sparrowhawk	*											1
Black Eagle												1
Rufous-bellied Eagle												1
Spotted Kestrel	**	5	5			1						5
Oriental Hobby												1
Peregrine Falcon												1
Red Junglefowl		1		2	1	1						2
Barred Rail		4										4
Snoring Rail												4
Isabelline Waterhen	*											1
White-breasted Waterhen	*	1				4			1			2
Dunlin												4
Red-necked Phalarope												1
Common Redshank												31
Common Sandpiper									1			1
Oriental Pratincole		5							3	2		5
Common Tern									1			1
Great Crested Tern										7		7
Lesser Crested Tern										7		7
Spotted Dove										4		4
Slender-billed Cuckoo-Dove		1						4				4
White-faced Cuckoo-Dove	*	5	7	2	1	6	3	3	1			9
Green-winged Pigeon	*	2	4	3	3	5			1			6
Stephan's Pigeon												1
Pink-necked Green Pigeon				1								1
Grey-cheeked Green Pigeon	**								1			1
Black-naped Fruit-Dove		>12			25		>15	4				25
White-bellied Imperial Pigeon	*	6	5	11	5	2	3	5				16
Grey-headed Imperial Pigeon	*			5	2							6
Blue-tailed Imperial Pigeon	**											2
Pink-headed Imperial Pigeon	**	19	13	15	23	14	11	7				>27
Pied Imperial Pigeon	*	16			9	5	2					12
White Imperial Pigeon	*	2	2	9	9	8		7	2			>79
Ornate Lorikeet	*											14
Yellow-and-Green Lorikeet	*	4	14	4	10	9	12	4				1
Sulawesi Hanging-Parrot	*	6	10	5	3	2	15					14
Green Hanging-Parrot	*	10	16	22	21	18	14	9				15
Golden-mantled Racket-tailed Parrot	*		9	10	6	9	2					37
Great-billed Parrot	*	2	2	6				1				10
Blue-backed (Muller's) Parrot	*											6
Sulawesi Hawk-Cuckoo	*											1

SQUARE		18																						
DATE		19/6	19/6	20/6	20/6	28/6	28/6	29/6	01/7	02/7	02/7	03/7	04/7	24/7	25/7	31/7	14/8	16/9	16/9	16/9	18/9	24/10	24/10	
SURVEY TIME		60m	160m	220m	195m	330m	180m	120m	300m	330m	90m	390m	255m	150m	150m	90m	150m	330m	135m	90m	120m	135m		
COMMON NAME	SYSTEMATIC NAME																							
Plaintive Cuckoo	<i>Cacomantis merulinus</i>	2	1									1												
Indonesian Cuckoo	<i>Cacomantis sepulcralis</i>							1											1					
Drongo Cuckoo	<i>Surniculus lugubris</i>								1										2	1	3	1	1	
Black-billed Koel	<i>Eudynamis melanorhyncha</i>				3														2	2				
Fiery-billed Malkoha	<i>Phaenicophaeus calyptorhynchus</i>							1											2	2				
Lesser Coucal	<i>Centropus bengalensis</i>	1	1	1															1	1	1	3	5	
Bay Coucal	<i>Centropus celebensis</i>	3	1	3	4	2		3	1	3	3	4	5		1		>3	5	4	2	2	2	6	
Sulawesi Scops-Owl	<i>Otus manadensis</i>																							
Satanic Nighthjar	<i>Eurostopodus diabolicus</i>																							
Great-eared Nighthjar	<i>Eurostopodus macrotis</i>																							
Long-tailed Nighthjar	<i>Caprimulgus macrurus</i>																							
Savanna Nighthjar	<i>Caprimulgus affinis</i>																							
Grey-rumped Tree-Swift	<i>Hemiprocne longipennis</i>			>60	20	>5					4	2	6	>50	2	2	2	13	9	>31	2	2	2	
White-bellied Swiftlet	<i>Collocalia esculenta</i>		>20	>20				>9		>10	4			1						4	5	>15		
Uniform Swiftlet	<i>Aerodramus vanikorensis</i>			>105	>20			5				>10												
White-throated Needletail	<i>Hirundapus caudacutus</i>																							
Purple Needletail	<i>Hirundapus celebensis</i>																							
Fork-tailed (Pacific) Swift	<i>Apus pacificus</i>																							
Asian Palm-Swift	<i>Cypsiurus balaisiensis</i>																							
Collared Kingfisher	<i>Halcyon chloris</i>	11	4	5	4	3	2	1	12															
Sacred Kingfisher	<i>Halcyon sancta</i>																							
Blue-eared Kingfisher	<i>Alcedo menting</i>																							
Common Kingfisher	<i>Alcedo atthis</i>	1																						
Rainbow Bee-eater	<i>Merops ornatus</i>	2																						
Purple-winged Roller	<i>Coracias temminckii</i>				5																			
Broad-billed Roller (Dollarbird)	<i>Eurystomus orientalis</i>																							
Sulawesi Hornbill	<i>Peneolopides exarhatus</i>																							
Red-knobbed Hornbill	<i>Rhyticeros cassidix</i>		6	12	4	1	13	6		5	>9	>10	9	3	6	12	2							
Sulawesi Pigmy Woodpecker	<i>Picoides temminckii</i>					2																		
Ashy Woodpecker	<i>Mulleripicus fulvus</i>	3		1	3	2																		
Red-bellied Pitta	<i>Pitta erythrogastr</i>			1																				
Barn Swallow	<i>Hirundo rustica</i>																							
Pacific Swallow	<i>Hirundo tahitica</i>																							
Pied Cuckoo-Shrike	<i>Coracina bicolor</i>		6	4	1	2		>5	3															
White-rumped Cuckoo-Shrike	<i>Coracina leucopygia</i>		4	1	5	3	2	7	1	3	1													
Common Cleadabird	<i>Coracina tenuirostris</i>		1	1	2	2			1	1	2													
Sulawesi Cleadabird	<i>Coracina morio</i>							2	2	2	1													
Sulawesi Pied Triller	<i>Lalage [nigra] leucopygialis</i>				2	2				2	2													
White-winged Triller	<i>Lalage suerii</i>																							
Hair-crested Drongo	<i>Dicrurus noteniottus</i>	7	2	2	2	2			5	3	2	6	4	1	1									
Black-naped Oriole	<i>Oriolus chinensis</i>	2		3	5				2	2	2	2	2	2	2									
Slender-billed Crow	<i>Corvus enca</i>	2				1			6	6														
Piping Crow	<i>Corvus typicus</i>					5	2			2	2													
Sulawesi Babbler	<i>Trichastoma celebensis</i>		8	>4	3	3																		
Pied Bushchat	<i>Saxicola caprata</i>							1	2															
Red-backed Thrush	<i>Zoothora erythronota</i>																							
Golden-bellied Gerygone	<i>Gerygone sulphurea</i>				2																			
Clamorous Reed-Warbler	<i>Acrocephalus stentoreus</i>																							
Zitting Cisticola	<i>Cisticola juncidis</i>						1																	
Golden-headed Cisticola	<i>Cisticola exilis</i>																					2	1	



SQUARE	18												Max Count
	DATE	25/10	26/10	28/10	30/10	06/11	07/11	19/11	20/11	20/11	20/11	20/11	
SURVEY TIME	05m	300m	120m	170m	180m	250m	120m	120m	120m	120m	20m	20m	
COMMON NAME	SYSTEMATIC NAME												
Plaintive Cuckoo		1	1	2	2	3	2					3	
Indonesian Cuckoo						1						1	
Drongo Cuckoo			1	2	1	1						2	
Black-billed Koel		3	2	2	2	2	2					3	
Fiery-billed Malkoha					3	5	2					5	
Lesser Coucal		2	1	5	2	2	4					5	
Bay Coucal		2	6	4	2	9	4					9	
Sulawesi Scops-Owl												3	
Satanic Nighthjar												1	
Great-eared Nighthjar							4					4	
Long-tailed Nighthjar												1	
Savanna Nighthjar												1	
Grey-rumped Tree-Swift		12	20	14	10	12	>8					>60	
White-bellied Swiftlet		10		4			>5					>20	
Uniform Swiftlet		>67			15		>20					>133	
White-throated Needletail	1											1	
Purple Needletail	1											1	
Fork-tailed (Pacific) Swift	1											1	
Asian Palm-Swift												1	
Collared Kingfisher				3	6							21	
Sacred Kingfisher		4				4	3	6	1			12	
Blue-eared Kingfisher												4	
Common Kingfisher		1										2	
Rainbow Bee-eater		2		2	2	2						2	
Purple-winged Roller		5	2	2	2	2						>25	
Broad-billed Roller (Dollarbird)												5	
Sulawesi Hornbill			2	5	5							1	
Red-knobbed Hornbill			17	8	12	15	>3					17	
Sulawesi Pygmy Woodpecker												2	
Ashy Woodpecker		3		5	2	3	1	1				5	
Red-bellied Pitta				2	2							2	
Barn Swallow												2	
Pacific Swallow												4	
Pied Cuckoo-Shrike		>30	8								>15	>30	
White-rumped Cuckoo-Shrike			3	2	9	6	9	2	2			6	
Common Cicadabird												10	
Sulawesi Cicadabird		1	5	3	2	2						5	
Sulawesi Pied Triller			2	2	2	2						5	
White-winged Triller												2	
Hair-crested Drongo		6	2	7		9	3					1	
Black-naped Oriole		4	4	5	5	2	4					11	
Slender-billed Crow		6										9	
Piling Crow		2	1	5	1	3				1		10	
Sulawesi Babbler		11	2	2	2	6						5	
Pied Bushchat		2			2	2						11	
Red-backed Thrush												3	
Golden-billed Gerygone		2										1	
Clamorous Reed-Warbler		1							1			2	
Zitting Cisticola												1	
Golden-headed Cisticola		2										2	

SURVEY TIME	19/6	19/6	20/6	20/6	20/6	28/6	28/6	28/6	28/6	29/6	01/7	02/7	02/7	03/7	04/7	24/7	25/7	31/7	14/8	16/9	16/9	16/9	18/9	24/10	24/10
DATE	80m	180m	220m	195m	330m	180m	120m	300m	330m	300m	330m	90m	330m	390m	255m	150m	150m	90m	150m	330m	135m	90m	120m	135m	
COMMON NAME																									
SYSTEMATIC NAME																									
Asian Brown Flycatcher																									
Black-naped Monarch	7		4	5			4							1	3					9	1			4	
Citrine Flycatcher	1																			2	1			1	
Yellow Wagtail																									
Grey Wagtail																									
White-breasted Woodswallow	5	12	3	5	2	12	4	25	3	3					6	10	5	5		7	2	5	8	13	
Ivory-backed Woodswallow	2			9			5		13						6	5	5	3		4	3	10	6		
Short-tailed Glossy Starling																									
Asian Glossy Starling	2					>30		5									10	2							
Sulawesi Crested Myna	2		3				1							4											
White-necked Myna			26	5	7			3						1											
Finch-billed Myna	15	>100	>35		>3	4	>12							>42			4								
Brown-throated Sunbird	3		1			1		2									3							>12	
Black Sunbird																									
Olive-backed Sunbird	4			4	1	2	2	7							2		1								
Crimson Sunbird	1			2												4	1	14						6	
Yellow-sided Flowerpecker																									
Grey-sided Flowerpecker	9	1	3	2	>10		3							3			1							1	
Lemon-bellied White-Eye	2		2	2	2		2							2			2							9	
Eurasian Tree Sparrow			2				3	8	2								9	9						3	
Pale-bellied White-Eye	6	1	7	>14	1		5	5						1		7	1							3	
Black-faced Munia	23		11	3												2	>20								
Scaly-breasted Munia						2																			
Chestnut Munia						>5	>15																	3	>67
Snipe Pintail/Swinhoe's																									
Glossy Starling species																									
Buttonquill species																									
TOTAL SPECIES: 126																									
SULAWESI ENDEMIC: 38																									
INDONESIAN ENDEMIC: 7																									
TOTAL TIME: 91h45m																									
TEAMS: 9																									

SQUARE DATE	SURVEY TIME	COMMON NAME	SYSTEMATIC NAME	18										Max Count
				25/10	28/10	30/10	06/11	07/11	19/11	20/11	20/11	20/11	20/11	
				05m	300m	120m	170m	180m	250m	120m	120m	120m	20m	
		Asian Brown Flycatcher	Muscicapa latirostris			3	9		1					9
		Black-naped Monarch	Hypothymis azurea puella	2	1	2			6					9
		Citrine Flycatcher	Culicicapa holianthea	1		1			4	2				4
		Yellow Wagtail	Motacilla flava	1		1								1
		Grey Wagtail	Motacilla cinerea											1
		White-breasted Woodswallow	Artamus leucorhynchus	7	18	2	12	9	24	9	24	7	9	25
		Ivory-backed Woodswallow	Artamus monachus	*	2	3	5	6	7					13
		Short-tailed Glossy Starling	Aplonis minor											3
		Asian Glossy Starling	Aplonis panayensis	3			3	9	11	5				>30
		Sulawesi Crested Myna	Basilornis celebensis	1	6	7	3	3	3	2				7
		White-necked Myna	Streptocitta albigollis	2	2	4	2	8	8					26
		Finch-billed Myna	Scissirostrum dubium	6	7	7	15	29	14					>100
		Brown-throated Sunbird	Anthreptes malacensis	5		1				2				6
		Black Sunbird	Nectarinia aspasia	5	11	1				2	1			11
		Olive-backed Sunbird	Nectarinia jugularis	8		2				>10	8			14
		Crimson Sunbird	Aethopyga siparaja	1		1			2					3
		Yellow-sided Flowerpecker	Dicaeum aureolimbatum	11	11	8			7					21
		Grey-sided Flowerpecker	Dicaeum celebicum	5	3	6	3	8	8	2	1			13
		Lemon-bellied White-Eye	Passer montanus	**	8	2	14	7		2	>31	12		>31
		Eurasian Tree Sparrow	Zosterops chloris	*										2
		Pale-bellied White-Eye	Zosterops consobrinorum	*		6	5	8	7	5				>14
		Black-faced Munia	Lonchura molucca	**										23
		Scaly-breasted Munia	Lonchura punctulata											3
		Chestnut Munia	Lonchura malacca	5				14	16	>50	2			>67
		Shrike Pintail/Swinhoe's	Gallinago sternura/megala								1			1
		Glossy Starling species	Aplonis minor/panayensis											>10
		Butorquail species	Turnix species			1								1
		TOTAL SPECIES:	126											
		SULAWESI ENDEMIC:	38											
		INDONESIAN ENDEMIC:	7											
		TOTAL TIME:	9h45m											
		TEAMS:	9											



SQUARE		19												
DATE		01/8	12/8	14/8	14/8	14/8	14/8	15/8	19/8	23/10	20/11		Max	
SURVEY TIME		120m	180m	175m	120m	20m	120m	90m	160m	240m	105m	120m	Count	
COMMON NAME	SYSTEMATIC NAME													
Barred Honey-Buzzard	<i>Pernis celebensis</i>								1				1	
Brahminy Kite	<i>Haliastur indus</i>						1						1	
Lesser Fish-Eagle	<i>Ichthyophaga humilis</i>		1										1	
Sulawesi Serpent-Eagle	<i>Spilornis rufpectus</i>	*		1					1	1			1	
Sulawesi Goshawk	<i>Accipiter griseiceps</i>	*								1			1	
Spot-tailed Goshawk	<i>Accipiter trinotatus</i>	*									1		1	
Spotted Kestrel	<i>Falco moluccensis</i>	**	1										1	
Peregrine Falcon	<i>Falco peregrinus</i>				1								1	
Red Junglefowl	<i>Gallus gallus</i>											1	1	
Slender-billed Cuckoo-Dove	<i>Macropygia amboinensis</i>		5	1	1		3			7	9	3	9	
White-faced Cuckoo-Dove	<i>Turacoena manadensis</i>	*	2							2	3	1	3	
Grey-cheeked Green Pigeon	<i>Treron griseicauda</i>	**									5		5	
Black-naped Fruit-Dove	<i>Ptilinopus melanospila</i>		14	10	4	1	5	1	2	6	7	5	14	
White-bellied Imperial Pigeon	<i>Ducula forsteni</i>	*	2	2	1			4	1	20	5	>30	>30	
Grey-headed Imperial Pigeon	<i>Ducula radiata</i>	*										2	2	
Pink-headed Imperial Pigeon	<i>Ducula rosacea</i>	**	6	2			1	2		11	9	30	30	
White Imperial Pigeon	<i>Ducula iuctuosa</i>	*										3	3	
Ornate Lorikeet	<i>Trichoglossus ornatus</i>	*	5		2				>20	16	2		>20	
Sulawesi Hanging-Parrot	<i>Loriculus stigmatus</i>	*	2	1				2	2	4		1	4	
Green Hanging-Parrot	<i>Loriculus exilis</i>	*	7		1		4		2	5	1		7	
Golden-mantled Racket-tailed Parrot	<i>Prioniturus platurus</i>	*	32	7	11				2	5	1		4	
Great-billed Parrot	<i>Tanygnathus megalorhynchus</i>		9		1		>146			20	78	25	>146	
Blue-backed (Muller's) Parrot	<i>Tanygnathus sumatranus</i>										2		9	
Sulawesi Hawk-Cuckoo	<i>Cuculus crassirostris</i>	*										12	12	
Plaintive Cuckoo	<i>Cacomantis merulinus</i>									1	1		1	
Drongo Cuckoo	<i>Surniculus lugubris</i>				1				1	2			2	
Black-billed Koel	<i>Eudynamis melanorhyncha</i>	*			2					1	2	1	2	
Fiery-billed Malkoha	<i>Phaenicophaeus calyrorhynchus</i>	*		2		2				2			2	
Lesser Coucal	<i>Centropus bengalensis</i>				1								1	
Bay Coucal	<i>Centropus celebensis</i>	*	2	2	8			3	5			4	8	
Sulawesi Owl	<i>Tyto rosenbergii</i>	*										1	1	
Sulawesi Scops-Owl	<i>Otus manadensis</i>	*			1						3		3	
Satanic Nightjar	<i>Eurostopodus diabolicus</i>	*									4		4	
Great-eared Nightjar	<i>Eurostopodus macrotis</i>										1		1	
Savanna Nightjar	<i>Caprimulgus affinis</i>				3								3	
Grey-rumped Tree-Swift	<i>Hemiprocne longipennis</i>		6	15	10	15	1	24	5	10			24	
White-bellied Swiftlet	<i>Collocalia esculenta</i>		5					12					12	
Uniform Swiftlet	<i>Aerodramus vanikorensis</i>		>18		10	10	3		14	11	>38	8	>38	
Asian Palm-Swift	<i>Cypsiurus balasienis</i>		1							2		1	2	
Great-billed Kingfisher	<i>Halcyon melanorhyncha</i>	*		1									1	
Collared Kingfisher	<i>Halcyon chloris</i>				1								1	
Blue-eared Kingfisher	<i>Alcedo meninting</i>			1									1	
Rainbow Bee-eater	<i>Merops ornatus</i>			>4	4								>4	
Purple-winged Roller	<i>Coracias temminckii</i>	*						2				2	2	
Sulawesi Hornbill	<i>Penelopides exarhatus</i>	*		4	1			3	2	6			6	
Red-knobbed Hornbill	<i>Rhyticeros cassidix</i>	*	8	4	9	8	6	5	9	6	8	5	9	
Ashy Woodpecker	<i>Mullenipicus fulvus</i>	*	3	3	1			1	1	1		5	5	
Red-bellied Pitta	<i>Pitta erythrogastrer</i>										1	2	2	
Pied Cuckoo-Shrike	<i>Coracina bicolor</i>	*			2			1	2			4	4	
White-rumped Cuckoo-Shrike	<i>Coracina leucopygia</i>	*	5	3				2					5	
Common Cicadabird	<i>Coracina tenuirostris</i>	*	2	1	4			1		2			4	
Sulawesi Cicadabird	<i>Coracina morio</i>	*		3	1			1		2		2	3	
Sulawesi Pied Triller	<i>Lalage [nigra] leucopygialis</i>	*			2		1	1					2	
Hair-crested Drongo	<i>Dicrurus hottentottus</i>		8	5	2		1		2	4	2	3	8	
Black-naped Oriole	<i>Oriolus chinensis</i>	*	7	3	1			3	2	5		9	9	
Piping Crow	<i>Corvus typicus</i>	*	2							1			2	
Sulawesi Babbler	<i>Trichastoma celebensis</i>	*	2		2					6	3	2	6	
Black-naped Monarch	<i>Hypothymis azurea puella</i>		4		1						1	5	5	
Citrine Flycatcher	<i>Culicicapa helianthea</i>		3	2	1					3	1	4	4	
White-breasted Woodswallow	<i>Artamus leucorhynchus</i>			3	10								10	
Ivory-backed Woodswallow	<i>Artamus monachus</i>				2	2	1			3		3	3	
Sulawesi Crested Myna	<i>Basilornis celebensis</i>	*				2	4			11	1	13	13	
White-necked Myna	<i>Streptocitta albicollis</i>	*		2							2		3	
Finch-billed Myna	<i>Scissirostrum dubium</i>		34	15					3				3	
Brown-throated Sunbird	<i>Antheptes malacensis</i>		2	1	2		1			12	>68		>68	
Black Sunbird	<i>Nectarinia aspasia</i>		5		2	2	2	1	10	2	1	4	4	
Olive-backed Sunbird	<i>Nectarinia jugularis</i>		2	2			2			2		2	2	
Crimson Sunbird	<i>Aethopyga siparaja</i>		1	1	1					4		1	4	
Yellow-sided Flowerpecker	<i>Dicaeum aureolimbatum</i>	*	1	2			1		9	6	7	10	10	
Grey-sided Flowerpecker	<i>Dicaeum celebicum</i>	*	4		1				3		1		4	
Lemon-bellied White-Eye	<i>Zosterops chloris</i>	**	2		1		2			5			5	
Pale-bellied White-Eye	<i>Zosterops consobrinorum</i>	*	1					>5					>5	
Nightjar species	<i>Caprimulgus species</i>					4							4	
TOTAL SPECIES: 72														
SULAWESI ENDEMIC: 35														
INDONESIAN ENDEMIC: 4														
TOTAL TIME: 24h10m														
TEAMS: 4														

SQUARE	23					
DATE		14/8	15/8	07/11	24/11	Max
SURVEY TIME		190m	210m	160m	120m	Count
COMMON NAME	SYSTEMATIC NAME					
Brahminy Kite	<i>Haliastur indus</i>	3		1	2	3
Sulawesi Serpent-Eagle	<i>Spilornis rufipectus</i>	* 2		1	5	5
Sulawesi Hawk-Eagle	<i>Spizaetus lanceolatus</i>	* 1				1
Barred Rail	<i>Gallirallus torquatus</i>	2			2	2
White-breasted Waterhen	<i>Amaurornis phoenicurus</i>				2	2
Great Crested Tern	<i>Sterna bergii</i>	2				2
Spotted Dove	<i>Streptopelia chinensis</i>	2			2	2
Slender-billed Cuckoo-Dove	<i>Macropygia amboinensis</i>	3		3	5	5
White-faced Cuckoo-Dove	<i>Turacoena manadensis</i>	*		1	3	3
Green-winged Pigeon	<i>Chalcophaps indica</i>	1				1
Stephan's Pigeon	<i>Chalcophaps stephani</i>		1			1
Grey-cheeked Green Pigeon	<i>Treron griseicauda</i>	**		4	2	4
Black-naped Fruit-Dove	<i>Ptilinopus melanospila</i>	5	2	3	9	9
Pink-headed Imperial Pigeon	<i>Ducula rosacea</i>	** 14	1	26		26
White Imperial Pigeon	<i>Ducula luctuosa</i>	* 1		24	11	24
Ornate Lorikeet	<i>Trichoglossus ornatus</i>	* 2	4	2	2	4
Sulawesi Hanging-Parrot	<i>Loriculus stigmatus</i>	* 7		2	10	10
Green Hanging-Parrot	<i>Loriculus exilis</i>	* 1		2	4	4
Golden-mantled Racket-tailed Parrot	<i>Prioniturus platurus</i>	*		7		7
Plaintive Cuckoo	<i>Cacomantis merulinus</i>				1	1
Gould's Bronze-Cuckoo	<i>Chrysococcyx russatus</i>	1				1
Black-billed Koel	<i>Eudynamis melanorhyncha</i>	*		2	1	2
Fiery-billed Malkoha	<i>Phaenicophaeus calyborhynchus</i>	*	4			4
Lesser Coucal	<i>Centropus bengalensis</i>		1	1	5	5
Bay Coucal	<i>Centropus celebensis</i>	*	4	2	2	4
Grey-rumped Tree-Swift	<i>Hemiprocne longipennis</i>	4	3		7	7
Uniform Swiftlet	<i>Aerodramus vanikorensis</i>			15		15
Ruddy Kingfisher	<i>Halcyon coromanda</i>		1			1
Great-billed Kingfisher	<i>Halcyon melanorhyncha</i>	*			1	1
Collared Kingfisher	<i>Halcyon chloris</i>	7	1		4	7
Common Kingfisher	<i>Alcedo atthis</i>		1	1		1
Rainbow Bee-eater	<i>Merops ornatus</i>		>8			>8
Purple-winged Roller	<i>Coracias temminckii</i>	*	3			3
Sulawesi Hornbill	<i>Peneiopides exarhatus</i>	*	1			1
Red-knobbed Hornbill	<i>Rhyticeros cassidix</i>	* 2	6	3	2	6
Ashy Woodpecker	<i>Mulleripicus fulvus</i>	* 1	1	3		3
Red-bellied Pitta	<i>Pitta erythrogaster</i>				1	1
Pacific Swallow	<i>Hirundo tahitica</i>	>7				>7
White-rumped Cuckoo-Shrike	<i>Coracina leucopygia</i>	* 10		9	9	10
Common Cicadabird	<i>Coracina tenuirostris</i>	1			2	2
Sulawesi Cicadabird	<i>Coracina morio</i>	*	1		6	6
White-winged Triller	<i>Lalage sueurii</i>		1			1
Hair-crested Drongo	<i>Dicrurus hottentottus</i>	2	2		2	2
Black-naped Oriole	<i>Oriolus chinensis</i>	11		2	6	11
Slender-billed Crow	<i>Corvus enca</i>	4	4	2	1	4
Piping Crow	<i>Corvus typicus</i>	**		2		2
Sulawesi Babbler	<i>Trichastoma celebense</i>	* 18	4	2		18
Golden-bellied Gerygone	<i>Gerygone sulphurea</i>	1			1	1
Golden-headed Cisticola	<i>Cisticola exilis</i>	2			9	9
Black-naped Monarch	<i>Hypothymis azurea puella</i>	5		1	1	5
White-breasted Woodswallow	<i>Artamus leucorhynchus</i>	19	6	12	9	19
Ivory-backed Woodswallow	<i>Artamus monachus</i>	*	1			1
Short-tailed Glossy Starling	<i>Apionis minor</i>				5	5
Asian Glossy Starling	<i>Apionis panayensis</i>			4	6	6
Sulawesi Crested Myna	<i>Basilornis celebensis</i>	*		2		2
White-necked Myna	<i>Streptocitta albigollis</i>	*	1	5		5
Finch-billed Myna	<i>Scissirostrum dubium</i>	2		15		15
Brown-throated Sunbird	<i>Anthreptes malacensis</i>	4	4		9	9
Black Sunbird	<i>Nectarinia aspasia</i>	5		3	5	5
Olive-backed Sunbird	<i>Nectarinia jugularis</i>	5		5		5
Crimson Sunbird	<i>Aethopyga siparaja</i>	1		1	5	5
Yellow-sided Flowerpecker	<i>Dicaeum aureolimbatum</i>	* 5	5	9	3	9
Grey-sided Flowerpecker	<i>Dicaeum celebicum</i>	* 7	2	4	7	7
Lemon-bellied White-Eye	<i>Zosterops chloris</i>	** 12		12		12
Pale-bellied White-Eye	<i>Zosterops consobrinorum</i>	* 2		8	4	8
Black-faced Munia	<i>Lonchura molucca</i>	** 6				6
Scaly-breasted Munia	<i>Lonchura punctulata</i>	2				2
Chestnut Munia	<i>Lonchura malacca</i>			12	15	15
Frigatebird species	<i>Fregata species</i>			25		25
Small Sparrowhawk species	<i>Accipiter nanus/rhodogaster</i>	*	1			1
TOTAL SPECIES: 70						
SULAWESI ENDEMICS: 27						
INDONESIAN ENDEMICS: 4						
TOTAL TIME: 11h20m						
TEAMS: 3						

SQUARE	24			
DATE		20/11	21/11	Max Count
SURVEY TIME		60m	05m	
COMMON NAME	SYSTEMATIC NAME			
Woolly-necked Stork	<i>Ciconia episcopus</i>	4		4
Sulawesi Serpent-Eagle	<i>Spilornis rufipectus</i>	*	2	2
Rufous-bellied Eagle	<i>Hieraaetus kienerii</i>		1	1
Slender-billed Cuckoo-Dove	<i>Macropygia amboinensis</i>		2	2
Grey-cheeked Green Pigeon	<i>Treron griseicauda</i>	**	1	1
Black-naped Fruit-Dove	<i>Ptilinopus melanospila</i>		5	5
White Imperial Pigeon	<i>Ducula luctuosa</i>	*	4	4
Sulawesi Hanging-Parrot	<i>Loriculus stigmatus</i>	*	1	1
Golden-mantled Racket-tailed Parrot	<i>Prioniturus platurus</i>	*	2	2
Lesser Coucal	<i>Centropus bengalensis</i>		2	2
Bay Coucal	<i>Centropus celebensis</i>	*	2	2
Grey-rumped Tree-Swift	<i>Hemiprocne longipennis</i>		9	9
Moluccan Swiftlet	<i>Aerodramus infuscatus</i>		6	6
Collared Kingfisher	<i>Halcyon chloris</i>		9	9
Purple-winged Roller	<i>Coracias lemminkii</i>	*	1	1
Red-knobbed Hornbill	<i>Rhyticeros cassidix</i>	*	1	1
Common Cicadabird	<i>Coracina tenuirostris</i>		1	1
Black-naped Oriole	<i>Oriolus chinensis</i>		1	1
Black-naped Monarch	<i>Hypothymis azurea puella</i>		2	2
White-breasted Woodswallow	<i>Artamus leucorhynchus</i>		5	5
Asian Glossy Starling	<i>Aplonis panayensis</i>		6	6
White-necked Myna	<i>Streptocitta albicollis</i>	*	4	4
Black Sunbird	<i>Nectarinia aspasia</i>		3	3
Lemon-bellied White-Eye	<i>Zosterops chloris</i>	**	1	1
Black-faced Munia	<i>Lonchura molucca</i>	**	5	5
TOTAL SPECIES: 25				
SULAWESI ENDEMICS: 8				
INDONESIAN ENDEMICS: 3				
TOTAL TIME: 1h05m				
TEAMS: 2				

SQUARE	28			
DATE		17/9	Max	
			Count	
SURVEY TIME		60m		
COMMON NAME	SYSTEMATIC NAME			
Lesser Frigatebird	<i>Fregata ariel</i>	2	2	
Great-billed Heron	<i>Ardea sumatrana</i>	** 1	1	
Woolly-necked Stork	<i>Ciconia episcopus</i>	1	1	
Brahminy Kite	<i>Haliastur indus</i>	1	1	
Grey Plover	<i>Pluvialis squatarola</i>	1	1	
Grey-tailed Tattler	<i>Heteroscelus brevipes</i>	1	1	
Common Sandpiper	<i>Actitis hypoleucos</i>	1	1	
Whimbrel	<i>Numenius phaeopus</i>	1	1	
White-winged Tern	<i>Chlidonias leucopterus</i>	1	1	
Bridled Tern	<i>Sterna anaethetus</i>	1	1	
Great Crested Tern	<i>Sterna bergii</i>	5	5	
Fairy Tern	<i>Gygis alba</i>	>3	>3	
Grey-cheeked Green Pigeon	<i>Treron griseicauda</i>	** 3	3	
White Imperial Pigeon	<i>Ducula luctuosa</i>	* 2	2	
Sulawesi Hanging-Parrot	<i>Loriculus stigmatus</i>	* 3	3	
Collared Kingfisher	<i>Halcyon chloris</i>	4	4	
Pacific Swallow	<i>Hirundo tahitica</i>	>5	>5	
White-rumped Cuckoo-Shrike	<i>Coracina leucopygia</i>	* 4	4	
White-breasted Woodswallow	<i>Artamus leucorhynchus</i>	2	2	
Asian Glossy Starling	<i>Aplonis panayensis</i>	5	5	
Brown-throated Sunbird	<i>Anthreptes malacensis</i>	1	1	
Black Sunbird	<i>Nectarinia aspasia</i>	1	1	
Grey-sided Flowerpecker	<i>Dicaeum celebicum</i>	* 1	1	
Lemon-bellied White-Eye	<i>Zosterops chloris</i>	** 7	7	
TOTAL SPECIES: 24				
SULAWESI ENDEMICS: 4				
INDONESIAN ENDEMICS: 3				
TOTAL TIME: 1h				
TEAMS: 1				

SQUARE	33		
DATE		17/9	Max
SURVEY TIME		180m	Count
COMMON NAME	SYSTEMATIC NAME		
Osprey	<i>Pandion haliaetus</i>	1	1
Barred Honey-Buzzard	<i>Pernis celebensis</i>	* 1	1
Brahminy Kite	<i>Haliastur indus</i>	2	2
Sulawesi Serpent-Eagle	<i>Spilornis rufipectus</i>	* 2	2
Slender-billed Cuckoo-Dove	<i>Macropygia amboinensis</i>	13	13
Black-naped Fruit-Dove	<i>Ptilinopus melanospila</i>	12	12
Ornate Lorikeet	<i>Trichoglossus ornatus</i>	* 4	4
Sulawesi Hanging-Parrot	<i>Loriculus stigmatus</i>	* 7	7
Oriental Cuckoo	<i>Cuculus saturatus</i>	1	1
Fiery-billed Malkoha	<i>Phaenicophaeus calyorrhynchus</i>	* 3	3
Lesser Coucal	<i>Centropus bengalensis</i>	2	2
Bay Coucal	<i>Centropus celebensis</i>	* 2	2
Grey-rumped Tree-Swift	<i>Hemiprocne longipennis</i>	>5	>5
White-bellied Swiftlet	<i>Collocalia esculenta</i>	8	8
Moluccan Swiftlet	<i>Aerodramus infuscatus</i>	>30	>30
Uniform Swiftlet	<i>Aerodramus vanikorensis</i>	>28	>28
Ruddy Kingfisher	<i>Halcyon coromanda</i>	2	2
Collared Kingfisher	<i>Halcyon chloris</i>	5	5
Common Kingfisher	<i>Alcedo atthis</i>	1	1
Rainbow Bee-eater	<i>Merops ornatus</i>	>40	>40
Red-knobbed Hornbill	<i>Rhyticeros cassidix</i>	* 1	1
Ashy Woodpecker	<i>Mulleripicus fulvus</i>	* 1	1
White-rumped Cuckoo-Shrike	<i>Coracina leucopygia</i>	* 6	6
Hair-crested Drongo	<i>Dicrurus hottentottus</i>	2	2
Black-naped Oriole	<i>Oriolus chinensis</i>	9	9
Slender-billed Crow	<i>Corvus enca</i>	2	2
Piping Crow	<i>Corvus typicus</i>	* 2	2
Sulawesi Babbler	<i>Trichastoma celebense</i>	* 2	2
Golden-bellied Gerygone	<i>Gerygone sulphurea</i>	1	1
Black-naped Monarch	<i>Hypothymis azurea puella</i>	2	2
Mangrove Whistler	<i>Pachycephala grisola</i>	1	1
White-breasted Woodswallow	<i>Artamus leucorhynchus</i>	6	6
Ivory-backed Woodswallow	<i>Artamus monachus</i>	* 2	2
Asian Glossy Starling	<i>Aplonis panayensis</i>	15	15
Sulawesi Crested Myna	<i>Basilornis celebensis</i>	* 4	4
White-necked Myna	<i>Streptocitta albigollis</i>	* 3	3
Brown-throated Sunbird	<i>Anthreptes malacensis</i>	7	7
Black Sunbird	<i>Nectarinia aspasia</i>	1	1
Olive-backed Sunbird	<i>Nectarinia jugularis</i>	11	11
Crimson Sunbird	<i>Aethopyga siparaja</i>	2	2
Yellow-sided Flowerpecker	<i>Dicaeum aureolimbatum</i>	* 14	14
Grey-sided Flowerpecker	<i>Dicaeum celebicum</i>	* 9	9
Lemon-bellied White-Eye	<i>Zosterops chloris</i>	** 3	3
Pale-bellied White-Eye	<i>Zosterops consobrinorum</i>	* 4	4
Chestnut Munia	<i>Lonchura malacca</i>	4	4
TOTAL SPECIES: 45			
SULAWESI ENDEMIC: 17			
INDONESIAN ENDEMIC: 1			
TOTAL TIME: 3h			
TEAMS: 1			

SQUARE	34			
DATE		1777	Max	
			Count	
SURVEY TIME		85m		
COMMON NAME	SYSTEMATIC NAME			
Brahminy Kite	<i>Haliastur indus</i>	1	1	
Sulawesi Serpent-Eagle	<i>Spilornis rufipectus</i>	* 1	1	
Spotted Kestrel	<i>Falco moluccensis</i>	** 2	2	
Spotted Dove	<i>Streptopelia chinensis</i>	2	2	
Green Hanging-Parrot	<i>Loriculus exilis</i>	* 1	1	
Lesser Coucal	<i>Centropus bengalensis</i>	2	2	
Bay Coucal	<i>Centropus celebensis</i>	* 2	2	
Collared Kingfisher	<i>Halcyon chloris</i>	5	5	
Red-knobbed Hornbill	<i>Rhyticeros cassidix</i>	* 4	4	
Pacific Swallow	<i>Hirundo tahitica</i>	7	7	
White-rumped Cuckoo-Shrike	<i>Coracina leucopygia</i>	* 5	5	
Sulawesi Cicadabird	<i>Coracina morio</i>	* 2	2	
Hair-crested Drongo	<i>Dicrurus hottentottus</i>	2	2	
Black-naped Oriole	<i>Oriolus chinensis</i>	4	4	
Slender-billed Crow	<i>Corvus enca</i>	5	5	
White-breasted Woodswallow	<i>Artamus leucorhynchus</i>	4	4	
Ivory-backed Woodswallow	<i>Artamus monachus</i>	* 1	1	
Sulawesi Crested Myna	<i>Basilornis celebensis</i>	* 7	7	
White-necked Myna	<i>Streptocitta albigollis</i>	* 2	2	
Black Sunbird	<i>Nectarinia aspasia</i>	2	2	
Olive-backed Sunbird	<i>Nectarinia jugularis</i>	2	2	
Crimson Sunbird	<i>Aethopyga siparaja</i>	2	2	
Yellow-sided Flowerpecker	<i>Dicaeum aureolimbatum</i>	* 3	3	
Grey-sided Flowerpecker	<i>Dicaeum celebicum</i>	* 4	4	
Pale-bellied White-Eye	<i>Zosterops consobrinorum</i>	* 2	2	
TOTAL SPECIES: 25				
SULAWESI ENDEMICS: 12				
INDONESIAN ENDEMICS: 1				
TOTAL TIME: 1h25m				
TEAMS: 1				



SQUARE	41	17/7	22/9	03/11	Max
DATE		110m	90m	105m	Count
SURVEY TIME					
COMMON NAME	SYSTEMATIC NAME				
Osprey	Pandion haliaetus		1		1
Brahminy Kite	Haliaeetus indus	3	1		3
White-bellied Sea-Eagle	Haliaeetus leucogaster	1	1		1
Sulawesi Serpent-Eagle	Spilornis rufipectus	*	1	1	1
Black Eagle	Ictinaetus malayensis			1	1
Sulawesi Hawk-Eagle	Spizaetus lanceolatus	*	1		1
Spotted Kestrel	Falco moluccensis	**	2	1	2
Snoring Rail	Gallirallus platani	*	2		2
Spotted Dove	Streptopelia chinensis		2	2	2
Slender-billed Cuckoo-Dove	Macropygia amboinensis	*	3	1	3
White-faced Cuckoo-Dove	Turacoena manadensis	*	2	1	2
Pink-necked Green Pigeon	Treron vernans		11		11
Grey-cheeked Green Pigeon	Treron griseicauda	**	10	26	26
Black-naped Fruit-Dove	Ptilinopus melanospila	*	1	15	15
Pink-headed Imperial Pigeon	Ducula rosacea	**	7	26	26
White Imperial Pigeon	Ducula luctuosa	*	4	4	4
Yellow-crested Cockatoo	Cacatua sulphurea	**	4		4
Ornate Lorikeet	Trichoglossus ornatus	*	>3	3	>3
Sulawesi Hanging-Parrot	Loriculus stigmatus	*		3	3
Green Hanging-Parrot	Loriculus exilis	*	1	5	5
Golden-mantled Racket-tailed Parrot	Pioniturus platurus	*	20	19	19
Great-billed Parrot	Tanygnathus megalorhynchus	*	6	9	9
Blue-backed (Muller's) Parrot	Tanygnathus sumatranus	*	3	4	4
Plaintive Cuckoo	Cacomantis merulinus			2	2
Drongo Cuckoo	Surniculus lugubris			1	1
Black-billed Koel	Eudynamis melanorhyncha	*	4	4	4
Fiery-billed Malkoha	Phaenicophaeus calyrorhynchus	*	4	3	4
Lesser Coucal	Centropus bengalensis	*	3	1	3
Bay Coucal	Centropus celebensis	*	4	4	8
Grey-rumped Tree-Swift	Hemiprocne longipennis	*	4		4
White-bellied Swiftlet	Collocalia esculenta	*	2	3	3
Great-billed Kingfisher	Halcyon melanorhyncha	*		1	1
Collared Kingfisher	Halcyon chloris	*	6	2	2
Purple-winged Roller	Coracias temminckii	*	5	3	3
Sulawesi Hornbill	Penelopides exarhatus	*	3	7	7
Red-knobbed Hornbill	Rhyticeros cassidix	**		2	5
Ashy Woodpecker	Mulleripicus fulvus	*	2	7	7
Pied Cuckoo-Shrike	Coracina bicolor	*	2		2
White-rumped Cuckoo-Shrike	Coracina leucopygia	**	8		8
Common Cicadabird	Coracina tenuirostris	*	1	1	1
Sulawesi Cicadabird	Coracina morio	*	1	2	2
Hair-crested Drongo	Dicrurus hottentotus	*	6	10	10
Black-naped Oriole	Oriolus chinensis	*	11	11	11
Slender-billed Crow	Corvus enca	*	2	3	3
Piping Crow	Corvus typicus	*	2	2	2
Sulawesi Babbler	Trichastoma celebensis	*	9	8	3
Asian Brown Flycatcher	Muscicapa latirostris	*		3	3
Black-naped Monarch	Hypothymis azurea puella	*	4	2	4
Citrine Flycatcher	Culicicapa helianthea	*		7	7
White-breasted Woodswallow	Artamus leucorhynchus	*	22		22
Ivory-backed Woodswallow	Artamus monachus	*	6	3	6
Asian Glossy Starling	Aplonis panayensis	*	10		13
Sulawesi Crested Myna	Basilornis celebensis	*		1	1
White-necked Myna	Streptocitta albigollis	**	14	9	9
Finch-billed Myna	Scissirostrum dubium	*	37	3	11
Brown-throated Sunbird	Anthreptes malacensis	*	3	2	3
Black Sunbird	Nectarinia aspasia	*	3	5	4
Olive-backed Sunbird	Nectarinia jugularis	*	5	3	12
Yellow-sided Flowerpecker	Dicaeum aureolimbatum	**	7		6
Crimson-crowned Flowerpecker	Dicaeum nehrkorni	*			1
Grey-sided Flowerpecker	Dicaeum celebicum	*	9	9	9
Lemon-bellied White-Eye	Zosterops chloris	**		4	12
Paie-bellied White-Eye	Zosterops consobrinorum	*	7		14
TOTAL SPECIES: 63					
SULAWESI ENDEMICS: 29					
INDONESIAN ENDEMICS: 4					
TOTAL TIME: 5h05m					
TEAMS: 3					

SQUARE	43			
DATE		09/8	22/8	Max Count
SURVEY TIME		300m	240m	
COMMON NAME	SYSTEMATIC NAME			
Osprey	<i>Pandion haliaetus</i>		1	1
Barred Honey-Buzzard	<i>Pernis celebensis</i>	1		1
Spot-tailed Goshawk	<i>Accipiter trinitatus</i>	*	1	1
Small Sparrowhawk	<i>Accipiter nanus</i>	*	1	1
Sulawesi Hawk-Eagle	<i>Spizaetus lanceolatus</i>	*	1	1
Pink-necked Green Pigeon	<i>Treron vernans</i>		8	8
Grey-cheeked Green Pigeon	<i>Treron griseicauda</i>	**	2	2
Black-naped Fruit-Dove	<i>Ptilinopus melanospila</i>		11	11
White Imperial Pigeon	<i>Ducula luctuosa</i>	*	2	2
Sulawesi Hanging-Parrot	<i>Loriculus stigmatus</i>	*	12	12
Green Hanging-Parrot	<i>Loriculus exilis</i>	*	1	1
Drongo Cuckoo	<i>Surniculus lugubris</i>		1	1
Black-billed Koel	<i>Eudynamis melanorhyncha</i>	*	1	1
Fiery-billed Malkoha	<i>Phaenicophaeus calyrorhynchus</i>	*	5	5
Bay Coucal	<i>Centropus celebensis</i>	*	4	4
Grey-rumped Tree-Swift	<i>Hemiprocne longipennis</i>		23	23
White-bellied Swiftlet	<i>Collocalia esculenta</i>	5		5
Uniform Swiftlet	<i>Aerodramus vanikorensis</i>		>50	>50
Collared Kingfisher	<i>Halcyon chloris</i>	5	3	5
Rainbow Bee-eater	<i>Merops ornatus</i>		19	19
Purple-winged Roller	<i>Coracias temminckii</i>	*	1	1
Knobbed Hornbill	<i>Rhyticeros cassidix</i>	*	4	4
Pacific Swallow	<i>Hirundo tahitica</i>	1	3	3
White-rumped Cuckoo-Shrike	<i>Coracina leucopygia</i>	*	2	4
Sulawesi Cicadabird	<i>Coracina morio</i>	*	1	1
Hair-crested Drongo	<i>Dicrurus hottentottus</i>		4	4
Black-naped Oriole	<i>Oriolus chinensis</i>	1	12	12
Sulawesi Babbler	<i>Trichastoma celebense</i>	*	7	7
Pied Bushchat	<i>Saxicola caprata</i>		1	1
Black-naped Monarch	<i>Hypothymis azurea puella</i>	1	5	5
White-breasted Woodswallow	<i>Artamus leucorhynchus</i>	5	8	8
Ivory-backed Woodswallow	<i>Artamus monachus</i>	*	1	1
Asian Glossy Starling	<i>Aplonis panayensis</i>		4	4
White-necked Myna	<i>Streptocitta albicollis</i>	*	1	7
Brown-throated Sunbird	<i>Anthreptes malacensis</i>		19	19
Black Sunbird	<i>Nectarinia aspasia</i>	2	6	6
Olive-backed Sunbird	<i>Nectarinia jugularis</i>	7	8	8
Crimson Sunbird	<i>Aethopyga siparaja</i>		4	4
Yellow-sided Flowerpecker	<i>Dicaeum aureolimbatum</i>	*	10	3
Grey-sided Flowerpecker	<i>Dicaeum celebicum</i>	*	10	20
Lemon-bellied White-Eye	<i>Zosterops chloris</i>	**	1	4
Pale-bellied White-Eye	<i>Zosterops consobrinorum</i>	*	5	5
TOTAL SPECIES: 42				
SULAWESI ENDEMICS: 19				
INDONESIAN ENDEMICS: 2				
TOTAL TIME: 4h				
TEAMS: 2				



DATE	44											Max Count						
	13/6	13/6	14/7	16/7	16/7	17/7	18/7	11/8	22/9	19/10	20/10		02/11	02/11	04/11	14/11	15/11	
SURVEY TIME	145m	140m	360m	180m	175m	45m	310m	135m	300m	270m	210m	150m	255m	135m	225m	300m		
COMMON NAME	SYSTEMATIC NAME																	
Osprey																		Pandion haliaetus
Jerdon's Baza																	1	Aviceda jerdoni
Brahminy Kite				2			1		1								2	Haliastur indus
Sulawesi Serpent-Eagle			4	4			1		6		1				4	2	6	Spilornis rufipectus
Spot-tailed Goshawk									2						1		2	Accipiter trinotatus
Little Sparrowhawk			1														1	Accipiter nanus
Vinous-breasted Sparrowhawk			2		1		3										3	Accipiter rhodogaster
Black Eagle															1		3	Ichneutes malayensis
Rufous-bellied Eagle															1		1	Hieraetus kienersi
Sulawesi Hawk-Eagle											1						1	Spizaetus lanceolatus
Spotted Kestrel																	1	Falco moluccensis
Red Junglefowl			2		1												2	Gallus gallus
Spotted Dove															1		2	Streptopelia chinensis
Slender-billed Cuckoo-Dove			1	2			1		4	1		8	8	3	6		3	Macropygia amboinensis
White-faced Cuckoo-Dove			3	3			3		2	2	1			2	8		8	Turacoena manadensis
Green-winged Pigeon			2	1					3								3	Chalcophaps indica
Stephan's Pigeon											1						1	Chalcophaps stephani
Pink-necked Green Pigeon					2										4		4	Treron vernans
Grey-cheeked Green Pigeon									3		1	3	11				11	Treron griseicauda
Black-naped Fruit-Dove			5		3	7	20		14	4	4	13	16	6	5	1	20	Phinopus melanospila
Grey-headed Imperial Pigeon									5								5	Ducula radiata
Green Imperial Pigeon																	1	Ducula aenea
Pink-headed Imperial Pigeon			4	9	11		16		5	18	7	13	18	18	6	3	18	Ducula rosacea
White Imperial Pigeon							2		3				10		1	2	10	Ducula lactosa
Yellow-crested Cuckatoo			1	9													9	Cacatua sulphurea
Ornate Lorikeet			4	8						5		14	6	11			14	Trichoglossus ornatus
Sulawesi Hanging-Parrot												5	9		3		9	Loriculus stigmatus
Green Hanging-Parrot					2		2					20	2				20	Loriculus exilis
Golden-mantled Racket-tailed Parrot			15	9			>17				5	20	31	9		5	31	Prioniturus platurus
Great-billed Parrot			1				13				7	12	14	13			14	Tanygnathus megalorhynchus
Blue-backed (Muller's) Parrot							1				5	7	12	14			17	Tanygnathus sumatranus
Sulawesi Hawk-Cuckoo												17	10	3			17	Cuculus crassirostris
Oriental Cuckoo					1												1	Cuculus saturatus
Plethive Cuckoo																	2	Cacomantis merulinus
Gould's Bronze-Cuckoo																	1	Chrysocolaptes russatus
Drongo Cuckoo					1												1	Surpiculus lugubris
Black-billed Koel																	2	Eudynamis melanorhyncha
Channel-billed Cuckoo																	2	Scythrops novaehollandiae
Fiery-billed Malkoha			2		3		>16		3	1	7			2			2	Phainopepla nitens
Lesser Coucal					2		1										>16	Centropus bengalensis
Bay Coucal					2		1										>5	Centropus celebensis
Sulawesi Scops-Owl			4	4	2	4	>12		10	>8	1	7	8	2	13	>2	5	Otus manadensis
Ochre-bellied Hawk-Owl					2		5										2	Ninox ochracea
Savanna Nighthawk						1	2?										2	Caprimulgus affinis
Grey-rumped Tree-Swift			>15	4	6		51		6		5	9	6	6	1	51	1	Hemiprocne longipennis
White-bellied Swiftlet				3			3							5	2		7	Collocalia esculentia
Uniform Swiftlet							4							8	7		8	Aerodramus vanikorensis
Collared Kingfisher			1	6	4		7	2	3	1		3	3				7	Halcyon chloris

SURVEY TIME	13/6	13/6	14/7	16/7	16/7	17/7	18/7	11/8	22/9	19/10	20/10	02/11	04/11	14/11	15/11	Max Count	
	145m	140m	360m	180m	175m	45m	310m	135m	300m	270m	210m	150m	135m	225m	300m		
COMMON NAME	SYSTEMATIC NAME																
Common Kingfisher																	1
Rainbow Bee-eater				>11													>30
Purple-winged Roller																	>5
Sulawesi Hornbill		2	4	5	5												>5
Red-knobbed Hornbill		8	8	2	4												15
Sulawesi Pygmy Woodpecker																	16
Ashy Woodpecker		1															1
Red-bellied Pitta		2	6														12
Pacific Swallow																	6
Pied Cuckoo-Shrike				4													4
White-rumped Cuckoo-Shrike		2	5														4
Common Cuckoo-Shrike		3	3	2	6												5
Sulawesi Cicadabird		1	2	2													14
Sulawesi Cicadabird			2														5
Sulawesi Pied Triller																	9
White-winged Triller			3														3
Hair-crested Drongo		6	3	15	9	8											3
Black-naped Oriole		2	8	13	5	4											>20
Slender-billed Crow					4												15
Piping Crow			2	4	3												5
Sulawesi Babbler			2	2	8	7											4
Golden-headed Cisticola		5	2	6	8	7											>20
Asian Brown Flycatcher																	>20
Black-naped Monarch		4	1	8	5	5											2
Citrine Flycatcher		5	1	9													1
White-breasted Woodswallow																	15
Ivory-backed Woodswallow		3		2													16
Asian Glossy Starling				7	3												9
Sulawesi Crested Myna																	7
White-necked Mya			3	5	2												9
Finch-billed Mya		2	4	18	2	4											11
Brown-throated Sunbird		16		>50	5												25
Black Sunbird				7	3	2											>107
Olive-backed Sunbird		3		5	1												7
Crimson Sunbird		2		1													6
Yellow-sided Flowerpecker		1	3	8													11
Crimson-crowned Flowerpecker		1	1	8	6	5											8
Grey-sided Flowerpecker		4	1	1	15												11
Lemon-bellied White-Eye					4	4											12
Pale-bellied White-Eye				6	8												17
Black-faced Munia																	14
Chestnut Munia																	18
Pale-headed Munia																	>100
																	>100
																	>6
TOTAL SPECIES: 90																	
SULAWESI ENDEMICS: 36																	
INDONESIAN ENDEMICS: 7																	
TOTAL TIME: 55h35m																	
TEAMS: 7																	

SQUARE	45											
DATE	13/7	15/7	11/8	12/8	21/9	22/9	23/9	19/10	03/11	14/11		Max
SURVEY TIME	165m	210m	360m	210m	120m	120m	165m	105m	160m	105m		Count
COMMON NAME	SYSTEMATIC NAME											
Little Pied Cormorant									1	1		1
Great-billed Heron						1						1
Purple Heron										1		1
Little Egret								1				1
Javan Pond-Heron					1							1
Striated Heron						4						4
Cinnamon Bittern					1			1	1			1
Woolly-necked Stork					2	1			2			2
Osprey						3	1					3
Brahminy Kite						1						1
White-bellied Sea-Eagle						1	1					1
Sulawesi Serpent-Eagle						2						2
Spot-tailed Goshawk		1					2					2
Black Eagle							1					1
Sulawesi Hawk-Eagle				1								1
Spotted Whistling Duck					2							2
Sunda Teal	2				4				3			4
Tabon Scrubfowl	1											1
Red Junglefowl							1			1		1
Buff-banded Rail	1				15			9	10			15
Barred Rail	2											2
Snoring Rail	1											1
White-breasted Waterhen	1				6							6
White-browed Crane					3							3
Common Moorhen					2							2
Common Sandpiper						1						1
Spotted Dove				2								2
Slender-billed Cuckoo-Dove		1					7					7
White-faced Cuckoo-Dove			1				2			6		6
Green-winged Pigeon		1										1
Pink-necked Green Pigeon								10				10
Grey-cheeked Green Pigeon	>15		2			2	11	2	2			>15
Black-naped Fruit-Dove		>10	8		2	3	14	5	5			14
Pink-headed Imperial Pigeon	5	12	2		7		22	12	15	8		22
White Imperial Pigeon		6	10		2		1		4	6		10
Ornate Lorikeet							2		3			3
Sulawesi Hanging-Parrot		2	2				4	2				4
Green Hanging-Parrot		1				1		1				1
Golden-mantled Racket-tailed Parrot		12					33	2	17	7		33
Great-billed Parrot		4				1	1	22	11	3		22
Blue-backed (Muller's) Parrot		6	1		18		6					18
Plaintive Cuckoo							4		1			4
Indonesian Cuckoo							4					4
Drongo Cuckoo		1										1
Black-billed Koel					2		3		3	2		3
Fiery-billed Malkoha			5	1	1	2	2					5
Lesser Coucal	10				3			5	3			10
Bay Coucal		11	12	2	4		11	2	4			12
Sulawesi Scops-Owl										1		1
Grey-rumped Tree-Swift	8	15	2	4		14	6			>6		15
White-bellied Swiftlet		5					6			3		6
Moluccan Swiftlet	>15											>15
Uniform Swiftlet	>80	1		>100						5		>100
Great-billed Kingfisher						3						3
Collared Kingfisher	7		3	1	5	2		3	4			7
Sacred Kingfisher						1						1
Blue-eared Kingfisher								1				1
Common Kingfisher					2				1			2
Rainbow Bee-eater	>8				3		3					>8
Purple-winged Roller							3					3
Sulawesi Hornbill		3			2		3			2		3
Red-knobbed Hornbill		5	1		5		7	4	5	3		7
Sulawesi Pygmy Woodpecker							3					3
Ashy Woodpecker		11	4	2		2	7		2	1		11
Red-bellied Pitta										6		6
Pacific Swallow						1						1
Pied Cuckoo-Shrike		2	3	4			4					4
White-rumped Cuckoo-Shrike					2	1	4		4			4
Common Cicadabird							2					2
Sulawesi Cicadabird			3	2			2					3
Sulawesi Pied Triller				1								1
Hair-crested Drongo	1	24	11			2	14			7		24
Black-naped Oriole		9	6	4	2	2	16	2	2	6		16
Slender-billed Crow									6			6
Piping Crow		2	2			2	4	1	2			4
Sulawesi Babbler		6					7	1	5	3		7
Black-naped Monarch		2	8			2	3					8

SQUARE	45												
DATE		13/7	15/7	11/8	12/8	21/9	22/9	23/9	19/10	03/11	14/11	Max	
SURVEY TIME		165m	210m	360m	210m	120m	120m	165m	105m	160m	105m	Count	
COMMON NAME	SYSTEMATIC NAME												
Citrine Flycatcher	Culicicapa helianthea		8	6	1			17				17	
Mangrove Whistler	Pachycephala grisola						1					1	
Yellow Wagtail	Motacilla flava								5			5	
White-breasted Woodswallow	Artamus leucorhynchus		6	2		4	10	5		2		10	
Ivory-backed Woodswallow	Artamus monachus	*						4		8		8	
Asian Glossy Starling	Apionis panayensis					1		3	2	4		4	
Sulawesi Crested Myna	Basilornis celebensis	*		1				3		2	1	3	
White-necked Myna	Streptocitta albigollis	*		7	6	2		2		2	1	7	
Finch-billed Myna	Scissirostrum dubium									5		5	
Brown-throated Sunbird	Anthreptes malacensis		1			1	3	5	4			5	
Black Sunbird	Nectarinia aspasia			5		1	1	11	1			11	
Olive-backed Sunbird	Nectarinia jugularis					1		1		4		4	
Crimson Sunbird	Aethopyga siparaja			1				1		1		1	
Yellow-sided Flowerpecker	Dicaeum aureolimbatum	*		6	7	3		2	5			7	
Grey-sided Flowerpecker	Dicaeum celebicum	*	1	2	2	2	1	2	4	1	5	5	
Lemon-bellied White-Eye	Zosterops chloris	**				2		3				3	
Pale-bellied White-Eye	Zosterops consobrinorum	**			1			8		2		8	
Scaly-breasted Munia	Lonchura punctulata		8									8	
Chestnut Munia	Lonchura malacca					>125				25		>125	
Small Sparrowhawk species	Accipiter nanus/rhodogaster	*					1					1	
Tern species									6			6	
TOTAL SPECIES: 98													
SULAWESI ENDEMICS: 34													
INDONESIAN ENDEMICS: 6													
TOTAL TIME: 28h40m													
TEAMS: 6													

SQUARE	47			
DATE			13/7	Max Count
SURVEY TIME			50m	
COMMON NAME	SYSTEMATIC NAME			
Pink-headed Imperial Pigeon	<i>Ducula rosacea</i>	**	2	2
White Imperial Pigeon	<i>Ducula luctuosa</i>	*	1	1
Collared Kingfisher	<i>Halcyon chloris</i>		1	1
Red-knobbed Hornbill	<i>Rhyticeros cassidix</i>	*	6	6
Ashy Woodpecker	<i>Mulleripicus fulvus</i>	*	2	2
White-rumped Cuckoo-Shrike	<i>Coracina leucopygia</i>	*	1	1
Hair-crested Drongo	<i>Dicrurus hottentottus</i>		1	1
Black-naped Oriole	<i>Oriolus chinensis</i>		2	2
Citrine Flycatcher	<i>Culicicapa helianthea</i>		1	1
Sulawesi Crested Myna	<i>Basilornis celebensis</i>	*	2	2
Brown-throated Sunbird	<i>Antheptes malacensis</i>		2	2
Olive-backed Sunbird	<i>Nectarinia jugularis</i>		12	12
Yellow-sided Flowerpecker	<i>Dicaeum aureolimbatum</i>	*	2	2
Pale-bellied White-Eye	<i>Zosterops consobrinorum</i>	*	1	1
TOTAL SPECIES: 14				
SULAWESI ENDEMICS: 7				
INDONESIAN ENDEMICS: 1				
TOTAL TIME: 50m				
TEAMS: 1				

SQUARE	48		
DATE		13/7	Max Count
SURVEY TIME		60m	
COMMON NAME	SYSTEMATIC NAME		
Osprey	<i>Pandion haliaetus</i>	2	2
Spotted Dove	<i>Streptopelia chinensis</i>	2	2
Black-naped Fruit-Dove	<i>Ptilinopus melanospila</i>	3	3
White Imperial Pigeon	<i>Ducula luctuosa</i>	* 3	3
Lesser Coucal	<i>Centropus bengalensis</i>	1	1
Bay Coucal	<i>Centropus celebensis</i>	* 3	3
Grey-rumped Tree-Swift	<i>Hemiprocne longipennis</i>	4	4
Collared Kingfisher	<i>Halcyon chloris</i>	4	4
Sacred Kingfisher	<i>Halcyon sancta</i>	2	2
Common Kingfisher	<i>Alcedo atthis</i>	1	1
Pacific Swallow	<i>Hirundo tahitica</i>	>19	>19
Sulawesi Pied Triller	<i>Lalage [nigra] leucopygialis</i>	* 1	1
Black-naped Oriole	<i>Oriolus chinensis</i>	2	2
Black-naped Monarch	<i>Hypothymis azurea puella</i>	3	3
White-breasted Woodswallow	<i>Artamus leucorhynchus</i>	8	8
Brown-throated Sunbird	<i>Anthreptes malacensis</i>	4	4
Black Sunbird	<i>Nectarinia aspasia</i>	3	3
Olive-backed Sunbird	<i>Nectarinia jugularis</i>	15	15
Yellow-sided Flowerpecker	<i>Dicaeum aureolimbatum</i>	* 4	4
Grey-sided Flowerpecker	<i>Dicaeum celebicum</i>	* 2	2
Lemon-bellied White-Eye	<i>Zosterops chloris</i>	** 7	7
Pale-bellied White-Eye	<i>Zosterops consobrinorum</i>	* 2	2
Black-faced Munia	<i>Lonchura molucca</i>	** >9	>9
Wader species		1	1
TOTAL SPECIES: 24			
SULAWESI ENDEMICS: 6			
INDONESIAN ENDEMICS: 2			
TOTAL TIME: 1h			
TEAMS: 1			



SQUARE DATE	49										Max Count	
SURVEY TIME	12/6	04/7	09/7	23/7	07/8	07/8	08/8	09/8	20/8	21/8	22/10	7/11
	120m	120m	120m	230m	150m	80m	210m	180m	210m	90m	60m	30m
COMMON NAME												
SYSTEMATIC NAME												
Little Pied Cormorant												
Purple Heron			4	3						1		
White-faced Heron					1				1			
Great Egret												
Intermediate Egret					17							
Little Egret									35	4		
Javan Pond-Heron									1			
Striated Heron									4	2	2	
Cinnamon Bittern	4		>10	6					4	2	9	
Woolly-necked Stork	2				3				7			
Osprey			2	1					2			
Black-shouldered Kite			1						1	1		
Brahminy Kite									1			
White-bellied Sea-Eagle	1			2	1	1			2			
Grey-headed Fish-Eagle												
Sulawesi Serpent-Eagle												
Spot-tailed Goshawk	*		1	3	1	2	4			1		
Vinous-breasted Sparrowhawk	*							3		1		
Sulawesi Hawk-Eagle	*		1									
Spotted Kestrel	**											
Spotted Whistling Duck				10		1	3					
Sunda Teal	35		7	8	2				2	17		
Pacific Black Duck									4			
Tabon Scrubfowl												
Red Junglefowl								1				
Barred Rail								2				
Shoring Rail			1		8				2			
Isabelline Waterhen	*		2									
White-breasted Waterhen	*											
Pacific Golden Plover					3				1			
Rufous-necked Stint									21			
Common Redshank			2							3		
Common Greenshank			5	2					1	8		
Wood Sandpiper			1									
Common Sandpiper			4						49			
Whimbrel			2	2					2	6		
Bristle-thighed Curlew			3							1		
Spotted Dove												
Slender-billed Cuckoo-Dove	2		2	4				2			1	
White-faced Cuckoo-Dove	*		1	4			1	3		2	1	
Green-winged Pigeon			6	1			2	2			1	
Stephan's Pigeon			1				1	1				
Pink-necked Green Pigeon	8									8		
				11								



SQUARE DATE	12/6	04/7	09/7	23/7	07/8	07/8	08/8	09/8	09/8	20/8	21/8	22/10	7/11	Max Count
<b>SURVEY TIME</b>	120m	120m	120m	230m	150m	80m	210m	180m	60m	210m	90m	60m	30m	
<b>COMMON NAME</b>														
<b>SYSTEMATIC NAME</b>														
Grey-cheeked Green Pigeon	**		16					>6		2				16
Black-naped Fruit-Dove		8	2	2	2		11	14						14
Pink-headed Imperial Pigeon	**	2	3	1	6	6	13	10			1			13
White Imperial Pigeon	*									7	5			7
Ornate Lorikeet	*		4				8	7						8
Sulawesi Hanging-Parrot	*	4		1	2		3	1		3		1		4
Green Hanging-Parrot	*	1	2	1	15		3	2						15
Golden-mantled Racket-tailed Parrot	*	5					9			4				9
Great-billed Parrot				1	1		2	1		1				2
Tanygnathus megalonychos				1										2
Plaintive Cuckoo		1	2	1						1				2
Cacomantis merulinus									2					2
Gould's Bronze-Cuckoo														2
Chrysococcyx russatus									1					1
Drongo Cuckoo												1		1
Surniculus lugubris														1
Eudynamis melanorhyncha	*													1
Phaenicophaeus calyorrhynchus	*	1	3	3	1	4	4	4						4
Black-billed Koel	*	1	3	3	1	4	4	4						4
Fiery-billed Malkoha	*	1	3	3	1	4	4	4						4
Lesser Coucal	*	1	3	3	1	4	4	4						4
Bay Coucal	*	2	4	2	4	2	10	9		2	2			6
Sulawesi Scops-Owl	*													10
Great-eared Nightjar														1
Eurostopodus macrolis							12	>10						12
Grey-rumped Tree-Swift		>20	9	3	1	30	22	1		6				30
Hemiprocne longipennis		>20	>10	>25	2	>30	20	17	>3	2				>30
Collocalia esculenta														2
Aerodramus infuscatus														2
Mouucan Swiftlet		25	3	3	>20									25
Aerodramus vanikorensis		20	2	2								>9		20
Uniform Swiftlet														2
Cypselurus balasiensis														2
Asian Palm-Swift	*													2
Great-billed Kingfisher		7	6	12	5	6	1	2	2	7	3	1	4	12
Collared Kingfisher		9	6	12	5	6	1	2	2	7	3	1	4	12
Halcyon chloris		9	6	12	5	6	1	2	2	7	3	1	4	12
Halcyon sancta				>13	4					8		2		>13
Sacred Kingfisher														1
Alcedo atthis														1
Common Kingfisher														1
Rainbow Bee-eater		25	>20	6	12	>41	>100	>47	4	5	20	>350		>350
Merops ornatus									7					7
Broad-billed Roller (Dollarbird)														7
Eurystomus orientalis	*													>7
Penelopides exarhatus	*													>7
Sulawesi Hornbill	*													1
Red-knobbed Hornbill	*													1
Rhyticeros cassidix	*	5	4	4										12
Ashy Woodpecker	*			2	1	1	9	3						9
Mulleripicus fulvus	*			2	1	1	9	3						9
Pacific Swallow	*			>10	20	>30	>15							>50
Hirundo tahitica	*	4	2	7	10	2	1	6		1	>50	8		10
White-rumped Cuckoo-Shrike	*	4	2	7	10	2	1	6						10
Common Cicadabird	*	4	4	4	4	1	2	2						4
Coracina tenuirostris	*	4	4	4	4	1	4	2						4
Sulawesi Cicadabird	*	4	2	4	4	1	4	2						4
Coracina morio	*	4	2	4	4	1	4	2						4
Lalage [nigra] leucopygialis	*	4	2	4	4	1	4	2						4
Lalage suerii	*	4	2	4	4	1	4	2						4
White-winged Triller				3										3
Hair-crested Drongo		8	10	7	6	1	2	10	15			2		15
Dicrurus hottentottus		6	6	2	5	4	7	8		1		3		8
Black-naped Oriole		6	6	2	5	4	7	8		1		3		8
Slender-billed Crow	*			2	2	2				1				4
Piping Crow	*			6	4	4	3	2				1		6
Corvus typicus	*	8	12	4	4	7	9	8				5		12
Sulawesi Babbler	*	8	12	4	4	7	9	8				5		12
Trichastoma celebensis	*	8	12	4	4	7	9	8				5		12



SQUARE	50								
DATE			18/7	08/8	21/8	21/8			Max
SURVEY TIME			105m	150m	450m	180m			Count
COMMON NAME	SYSTEMATIC NAME								
Woolly-necked Stork	<i>Ciconia episcopus</i>					2			2
Jerdon's Baza	<i>Aviceda jerdoni</i>			2					2
Brahminy Kite	<i>Haliastur indus</i>				1				1
Sulawesi Serpent-Eagle	<i>Spilornis rufipectus</i>	*	1	3	2	2			3
Spot-tailed Goshawk	<i>Accipiter trinotatus</i>	*	1						1
Black Eagle	<i>Ictinaetus malayensis</i>	*	1						1
Spotted Kestrel	<i>Falco moluccensis</i>	**				1			1
Oriental Hobby	<i>Falco severus</i>	*	1						1
Tabon Scrubfowl	<i>Megapodius cumingii</i>					1			1
Red Junglefowl	<i>Gallus gallus</i>			2		1			2
Barred Rail	<i>Gallirallus torquatus</i>		1						1
Slender-billed Cuckoo-Dove	<i>Macropygia amboinensis</i>		1		2				2
Grey-cheeked Green Pigeon	<i>Treron griseicauda</i>	**	>30						>30
Black-naped Fruit-Dove	<i>Ptilinopus melanospila</i>		1	1		4			4
Pink-headed Imperial Pigeon	<i>Ducula rosacea</i>	**	4	9					9
White Imperial Pigeon	<i>Ducula luctuosa</i>	*	1						1
Ornate Lorikeet	<i>Trichoglossus ornatus</i>	*		3		4			4
Sulawesi Hanging-Parrot	<i>Loriculus stigmatus</i>	*	6	1					6
Green Hanging-Parrot	<i>Loriculus exilis</i>	*		2					2
Golden-mantled Racket-tailed Parrot	<i>Prioniturus platurus</i>	*		>16	2	6			>16
Black-billed Koel	<i>Eudynamis melanorhyncha</i>	*				1			1
Fiery-billed Malkoha	<i>Phaenicophaeus calyborhynchus</i>	*	2		2	2			2
Bay Coucal	<i>Centropus celebensis</i>	*	8			2			8
Sulawesi Scops-Owl	<i>Otus manadensis</i>	*				4			4
Grey-rumped Tree-Swift	<i>Hemiprocne longipennis</i>		8	7	5				8
White-bellied Swiftlet	<i>Collocalia esculenta</i>		>8	17	9				17
Uniform Swiftlet	<i>Aerodramus vanikorensis</i>				12				12
Blue-headed Wood Kingfisher	<i>Actenoides monachus</i>	*		1					1
Great-billed Kingfisher	<i>Halcyon melanorhyncha</i>	*	1						1
Collared Kingfisher	<i>Halcyon chloris</i>		3		3				3
Blue-eared Kingfisher	<i>Alcedo meninting</i>		1		1				1
Rainbow Bee-eater	<i>Merops ornatus</i>		>6	>13	>5				>13
Sulawesi Hornbill	<i>Penelopides exarhatus</i>	*		4		3			4
Red-knobbed Hornbill	<i>Rhyticeros cassidix</i>	*	8	5	3	2			8
Ashy Woodpecker	<i>Mulleripicus fulvus</i>	*			2	2			2
Pacific Swallow	<i>Hirundo tahitica</i>				7				7
Pied Cuckoo-Shrike	<i>Coracina bicolor</i>	*		3					3
Sulawesi Cicadabird	<i>Coracina morio</i>	*	2		1	2			2
Sulawesi Pied Triller	<i>Lalage [nigra] leucopygialis</i>	*	2						2
Hair-crested Drongo	<i>Dicrurus hottentottus</i>		6	8	4	2			8
Black-naped Oriole	<i>Oriolus chinensis</i>		3	6	6	2			6
Piping Crow	<i>Corvus typicus</i>	*	1	4					4
Sulawesi Babbler	<i>Trichastoma celebense</i>	*	2	2	6				6
Black-naped Monarch	<i>Hypothymis azurea puella</i>		2	6	2	3			6
Citrine Flycatcher	<i>Culicicapa helianthea</i>			5	2	5			5
White-breasted Woodswallow	<i>Artamus leucorhynchus</i>				3				3
Asian Glossy Starling	<i>Aplonis panayensis</i>		14						14
White-necked Myna	<i>Streptocitta albigollis</i>	*	3	2	5	2			5
Finch-billed Myna	<i>Scissirostrum dubium</i>			>45	2	3			>45
Black Sunbird	<i>Nectarinia aspasia</i>		1	1	5	1			5
Olive-backed Sunbird	<i>Nectarinia jugularis</i>		1	1	2	1			2
Crimson Sunbird	<i>Aethopyga siparaja</i>		1	3	3				3
Yellow-sided Flowerpecker	<i>Dicaeum aureolimbatum</i>	*	2		4	6			6
Grey-sided Flowerpecker	<i>Dicaeum celebicum</i>	*	2		5				5
Lemon-bellied White-Eye	<i>Zosterops chloris</i>	**	1		3				3
Pale-bellied White-Eye	<i>Zosterops consobrinorum</i>	*	1	1	2				2
Small Sparrowhawk species	<i>Accipiter nanus/rhodogaster</i>	*	1						1
Buttonquail species	<i>Turnix species</i>		1						1
TOTAL SPECIES: 58									
SULAWESI ENDEMICS: 26									
INDONESIAN ENDEMICS: 4									
TOTAL TIME: 14h45m									
TEAMS: 3									

SQUARE		54								
DATE		12/7	12/7	16/10	17/10	18/10	01/11			
SURVEY TIME		45m	105m	135m	225m	165m	135m		Max Count	
COMMON NAME	SYSTEMATIC NAME									
Little Grebe	Tachybaptus ruficollis									
Little Pied Cormorant	Phalacrocorax melanoleucos	2								
Milky Stork	Mycteria cinerea	1								
Osprey	Pandion haliaetus					1			1	
Black-shouldered Kite	Elanus caeruleus	1	1				1		1	
Brahminy Kite	Haliastur indus						2		2	
Lesser Fish-Eagle	Ichthyophaga humilis				1	2	2		2	
Sulawesi Serpent-Eagle	Spilornis rufipectus	*				1	2		2	
Spot-tailed Goshawk	Accipiter trinotatus	*			1				1	
Spotted Whistling Duck	Dendrocygna guttata			1	2	1			2	
Sunda Teal	Anas gibberifrons	13								
Red Junglefowl	Gallus gallus	**	6	12					12	
White-breasted Waterhen	Amaurornis pheoniceus				1				1	
Common Sandpiper	Actitis hypoleucos					1			1	
Spotted Dove	Streptopelia chinensis					2			2	
Slender-billed Cuckoo-Dove	Macropygia amboinensis				1				1	
White-faced Cuckoo-Dove	Turacoena manadensis	*		9	5				9	
Grey-cheeked Green Pigeon	Treron griseicauda	**		4	1				4	
Black-naped Fruit-Dove	Ptilinopus melanospila				6	>15	>10		>15	
White-bellied Imperial Pigeon	Ducula forsteri	*		5	3	4			5	
Pink-headed Imperial Pigeon	Ducula rosacea	**			1				1	
White Imperial Pigeon	Ducula luctuosa	*	5	17	13		>12		17	
Ornate Lorikeet	Trichoglossus ornatus	*	23	8	7	10	7		23	
Sulawesi Hanging-Parrot	Loriculus stigmatus	*	2	13	9	>8			13	
Green Hanging-Parrot	Loriculus exilis	*	1	1	3	1	4		4	
Golden-mantled Racket-tailed Parrot	Prioniturus platurus	*		3	2				3	
Great-billed Parrot	Tanygnathus megalorynchos	*	19	26	21				26	
Blue-backed (Muller's) Parrot	Tanygnathus sumatranus	*		7	5	4			7	
Indonesian Cuckoo	Cacomantis sepulcralis	**		7	4	1			7	
Drongo Cuckoo	Surniculus lugubris			1					1	
Black-billed Koel	Eudynamis melanorhyncha	*		1	2				2	
Channel-billed Cuckoo	Scythrops novaehollandiae	*	2	4	4	2	2		4	
Fiery-billed Malkoha	Phaenicophaeus calyorrhynchus	*					1		1	
Lesser Coucal	Centropus bengalensis	*	1	3		1			3	
Bay Coucal	Centropus celebensis	*	1	3	2	2			3	
Sulawesi Scops-Owl	Otus manadensis	*	4	7	8				8	
Great-eared Nightjar	Eurostopodus macrotis	*		1					1	
Grey-rumped Tree-Swift	Hemiprocne longipennis	*		1		1			1	
White-bellied Swiftlet	Collocalia esculenta	*	5	5	11	6			11	
Uniform Swiftlet	Aerodramus vanikorensis	*		2	4				4	
Collared Kingfisher	Halcyon chloris	*			>27				>27	
Sacred Kingfisher	Halcyon sancta	*	2	3	4	4	2		4	
Common Kingfisher	Alcedo atthis	*					2		2	
Rainbow Bee-eater	Merops ornatus	*	1			1			1	
Sulawesi Hornbill	Penelopides exarhatus	*	3						3	
Red-knobbed Hornbill	Rhyticeros cassidix	*			4	2			4	
Sulawesi Pygmy Woodpecker	Picoides temminckii	*		2	8	6			8	
Ashy Woodpecker	Mulleripicus fulvus	*	2				1		1	
Red-bellied Pitta	Pitta erythrogaster	*		2	1	2	1		2	
Pacific Swallow	Hirundo tahitica	*		1					1	
Pied Cuckoo-Shrike	Coracina bicolor	*			5				5	
White-rumped Cuckoo-Shrike	Coracina leucopygia	*			6				6	
Common Cicadabird	Coracina tenuirostris	*		3	6	4			6	
Sulawesi Cicadabird	Coracina morio	*	1	1		1			1	
Sulawesi Pied Triller	Lalage [nigra] leucopygialis	*			2	6		1	6	
Hair-crested Drongo	Dicrurus hottentottus	*				2			2	
Black-naped Oriole	Oriolus chinensis	*		6	9	1			9	
Slender-billed Crow	Corvus enca	*		4	10	1			10	
Piping Crow	Corvus typicus	*					6		6	
Sulawesi Babbler	Trichastoma celebense	*		2	1	2			2	
Asian Brown Flycatcher	Muscicapa latirostris	*	1	1	5	2			5	
Grey-streaked Flycatcher	Muscicapa griseisticta	*			1				1	
Black-naped Monarch	Hypothymis azurea puella	*				1			1	
Citrine Flycatcher	Culicicapa helianthea	*	1	3	2				3	
Grey Wagtail	Motacilla cinerea	*			7				7	
White-breasted Woodswallow	Artamus leucorhynchus	*	1		3				3	
			5	3	7	7			7	

SQUARE	54																
DATE			12/7	12/7	16/10	17/10	18/10	01/11				Max Count					
SURVEY TIME			45m	105m	135m	225m	165m	135m									
COMMON NAME	SYSTEMATIC NAME																
Asian Glossy Starling	Aplonis panayensis											12	12				
Sulawesi Crested Myna	Basilornis celebensis *											4	2	2	1	4	
White-necked Myna	Streptocitta albigollis *											3				3	
Finch-billed Myna	Scissirostrum dubium											>20	>50	>93		>93	
Brown-throated Sunbird	Anthreptes malacensis											1	4			4	
Black Sunbird	Nectarinia aspasia											1	1	2	3	3	
Olive-backed Sunbird	Nectarinia jugularis											1				1	
Crimson Sunbird	Aethopyga siparaja											1	1			1	
Yellow-sided Flowerpecker	Dicaeum aureolimbatum *											7	1	2	4	1	7
Grey-sided Flowerpecker	Dicaeum celebicum *											1	2	2		2	
Lemon-bellied White-Eye	Zosterops chloris **											2				2	
Pale-bellied White-Eye	Zosterops consobrinorum *											2			1	2	
Black-faced Munia	Lonchura molucca **											5					
Scaly-breasted Munia	Lonchura punctulata											>15				>15	
Chestnut Munia	Lonchura malacca													>50		>50	
TOTAL SPECIES: 81																	
SULAWESI ENDEMICS: 28																	
INDONESIAN ENDEMICS: 6																	
TOTAL TIME: 13h30m																	
TEAMS: 3																	



SQUARE DATE	COMMON NAME	SYSTEMATIC NAME	12/7	09/8	10/8	23/8	03/9	04/9	05/9	05/9	20/8	21/9	15/10	15/10	16/10	01/11	01/11	15/11	Max Count
			240m	105m	75m	90m	210m	225m	195m	270m	90m	210m	10m	150m	285m	150m	130m	135m	
	Little Grebe	Tachybaptus rufocollis	>20	10		17	33			1	>16			3		17		22	33
	Lesser Frigatebird	Fregata ariel																	1
	Little Pied Cormorant	Phalacrocorax melanoleucos																	2
	Purple Heron	Ardea purpurea	2	2	2	1	2	1	1		1			1		1	1		2
	Striated Heron	Butorides siratus																	2
	Cinnamon Bittern	Ixobrychus cinnamomeus																	1
	Black Bittern	Ixobrychus flavicollis	4	3	1	5	5		2		4			1				1	5
	Woolly-necked Stork	Ciconia episcopus					2		1								1		1
	Osprey	Pandion haliaetus	1						1		1	6		4	2	2	2	2	6
	Black-shouldered Kite	Elanus caeruleus								1	1	3							3
	Brahminy Kite	Haliaeetus indus									1	2			1				2
	White-bellied Sea-Eagle	Haliaeetus leucogaster	3	1		1	1					3							3
	Lesser Fish-Eagle	Ichthyophaga humilis							1										1
	Sulawesi Serpent-Eagle	Spilornis rufpectus	1			1	1												1
	Sulawesi Goshawk	Accipiter griseiceps																	1
	Spot-tailed Goshawk	Accipiter trinotatus																	1
	Vinous-breasted Sparrowhawk	Accipiter rhodogaster																	1
	Black Eagle	Ictinaetus malayensis									1								1
	Spotted Whistling-Duck	Dendrocygna guttata	32	35	11	24	29		28			1		1					1
	Wandering Whistling-Duck	Dendrocygna arcuata	67	33	10	12	116			61				27	8	22	23	35	
	Sunda Teal	Anas gibberifrons	12	29	14	36	48			42				2	1		2	116	
	Red Junglefowl	Gallus gallus								49				38		141	130	141	
	Buff-banded Rail	Gallirallus philippensis																	1
	Barred Rail	Gallirallus torquatus								1									1
	Slaty-breasted Rail	Gallirallus striatus																	1
	Isabelline Waterhen	Amaurornis isabellinus																	1
	White-breasted Waterhen	Amaurornis phoenicurus								2									2
	Bailon's Crane	Porzana pusilla								4				4	3		4	3	4
	White-browed Crane	Porzana cinerea																	2
	Purple Swamphen	Porphyrio porphyrio								6				2				2	6
	Common Moorhen	Gallinula chloropus	2																4
	Dusky Moorhen	Gallinula tenebrosa	10	>6	4	10	14							8					4
	Comb-crested Jacana	Irediparra gallinacea	12	>12	17	10	15		21					9					27
	Grey Plover	Pluvialis equatarola		3	3	3	9		6					8					25
	Lesser Sand-Plover	Charadrius mongolus					1												16
	Malaysian Plover	Charadrius peronii								1									1
	Ruddy Turnstone	Arenaria interpres							2										1
	Wood Sandpiper	Tringa glareola							1										2
	Grey-tailed Tattler	Heteroscelus brevipes																	1
	Common Sandpiper	Actitis hypoleucos																	4
	Whimbrel	Numenius phaeopus					1		8		1								1
	Swinhoe's Snipe	Gallinago megala							1					1					8
	Whiskered Tern	Chlidonias hybridus																	1

SURVEY TIME	12/7	09/8	10/8	23/8	03/9	04/9	05/9	05/9	20/9	21/9	15/10	15/10	16/10	01/11	01/11	15/11	Max Count
DATE	240m	105m	75m	90m	210m	225m	195m	270m	90m	210m	10m	150m	285m	150m	130m	135m	
COMMON NAME																	
SYSTEMATIC NAME																	
Gull-billed Tern																	
Spotted Dove																	
Slender-billed Cuckoo-Dove				11	5	6											1
White-faced Cuckoo-Dove																	
Stephan's Pigeon		1	4	1	11	3	3	2	1	3	3	3			2	1	11
Pink-necked Green Pigeon																	
Grey-cheeked Green Pigeon																	
Black-naped Fruit-Dove		>40	20	2	6	>33	7	13	8	9							1
Green Imperial Pigeon				6	15	>15	15		3	4							11
Pink-headed Imperial Pigeon		1															>40
White Imperial Pigeon		2	7														>15
Yellow-crested Cuckatoo		4		11	15	15	>25										1
Ornate Lorikeet				4	9	16	14	2	15	12							>25
Sulawesi Hanging-Parrot				1		1		1		2							16
Green Hanging-Parrot																	7
Golden-mantled Racket-tailed Parrot																	3
Great-billed Parrot				2		4		4		2							2
Blue-backed (Muller's) Parrot		8	11	6	9	7	6	2		1							5
Plainive Cuckoo			4	8	6				13	15							9
Indonesian Cuckoo		12	10	10		5		7	4	6							2
Dongo Cuckoo									4	4							15
Black-billed Koel									4	4							8
Channel-billed Cuckoo									1	2							12
Fiery-billed Malkoha																	3
Lesser Coucal																	1
Bay Coucal																	3
Sulawesi Scops-Owl																	1
Ochre-billed Hawk-Owl																	1
Savanna Nighthjar																	2
Grey-rumped Tree-Swift																	2
White-bellied Swiftlet																	2
Uniform Swiftlet		6	1														2
Great-billed Kingfisher																	2
Coilared Kingfisher				11													2
Sacred Kingfisher																	15
Common Kingfisher		1	3	1	3	4	5	5	3	5							14
Rainbow Bee-eater			1	1	2	2			6	3							5
Purple-winged Roller				3					1	1							3
Sulawesi Hornbill		4	22						2	1							6
Red-knobbed Hornbill				7	16	>29											2
Ashy Woodpecker		1	2	2	4	5	4	6	6	4							>29
Red-bellied Pitta		4	5	2	2	6	7	12	5	5							6
Barn Swallow				2	6	7	12		5	5							6
Pacific Swallow		1				1			1	2							12
		>30	>20	>10	>20	>17	9	>26	6								3
																	1
																	>30



SURVEY TIME	12/7	09/8	10/8	23/8	03/9	04/9	05/9	05/9	20/9	21/9	15/10	15/10	16/10	01/11	01/11	15/11	Max Count
	2:40m	105m	75m	90m	210m	225m	195m	270m	90m	210m	10m	150m	285m	150m	130m	135m	
55																	
COMMON NAME																	
SYSTEMATIC NAME																	
Pied Cuckoo-Shrike																	
White-rumped Cuckoo-Shrike																	
Common Cuckoo-Shrike																	
Sulawesi Cicadabird																	
Sulawesi Pied Triller																	
Half-crested Drongo																	
Black-naped Oriole																	
Slender-billed Crow																	
Piping Crow																	
Sulawesi Babbler																	
Pied Bushchat																	
Golden-headed Cisticola																	
Black-headed Monarch																	
Citrine Flycatcher																	
White-breasted Woodswallow																	
Ivory-backed Woodswallow																	
Asian Glossy Starling																	
Sulawesi Crested Myna																	
White-necked Myna																	
Finch-billed Myna																	
Brown-throated Sunbird																	
Black Sunbird																	
Olive-backed Sunbird																	
Crimson Sunbird																	
Yellow-sided Flowerpecker																	
Grey-sided Flowerpecker																	
Lemon-bellied White-Eye																	
Black-faced Munia																	
Scaly-breasted Munia																	
Chestnut Munia																	
TOTAL SPECIES: 117																	
SULAWESI ENDEMIC: 32																	
INDONESIAN ENDEMIC: 7																	
TOTAL TIME: 42h50m																	
TEAMS: 8																	

SQUARE	56				
DATE			03/7	03/7	Max
SURVEY TIME			60m	45m	Count
COMMON NAME	SYSTEMATIC NAME				
Little Egret	<i>Egretta garzetta nigripes</i>		4		4
Striated Heron	<i>Butorides striatus</i>		4		4
Woolly-necked Stork	<i>Ciconia episcopus</i>		4		4
Brahminy Kite	<i>Haliastur indus</i>		1		1
Sunda Teal	<i>Anas gibberifrons</i>	**	7	4	7
Red-backed Buttonquail	<i>Tumix maculosa</i>		1		1
Snoring Rail	<i>Gallirallus plateni</i>	*	2		2
Spotted Dove	<i>Streptopelia chinensis</i>		4	1	4
White-faced Cuckoo-Dove	<i>Turacoena manadensis</i>	*	3		3
Pink-necked Green Pigeon	<i>Treeron vernans</i>		3		3
Black-naped Fruit-Dove	<i>Ptilinopus melanospila</i>		1		1
Pink-headed Imperial Pigeon	<i>Ducula rosacea</i>	**	9		9
White Imperial Pigeon	<i>Ducula luctuosa</i>	*	2		2
Ornate Lorikeet	<i>Trichoglossus ornatus</i>	*	2	2	2
Sulawesi Hanging-Parrot	<i>Loriculus stigmatus</i>	*		5	5
Green Hanging-Parrot	<i>Loriculus exilis</i>	*	8	7	8
Plaintive Cuckoo	<i>Cacomantis merulinus</i>		2		2
Grey-rumped Tree-Swift	<i>Hemiprocne longipennis</i>			3	3
White-bellied Swiftlet	<i>Collocalia esculenta</i>		4		4
Collared Kingfisher	<i>Halcyon chloris</i>		8	3	8
Sacred Kingfisher	<i>Halcyon sancta</i>		4		4
Rainbow Bee-eater	<i>Merops ornatus</i>		>20		>20
Ashy Woodpecker	<i>Mulleripicus fulvus</i>	*		1	1
Pacific Swallow	<i>Hirundo tahitica</i>		8	6	8
White-rumped Cuckoo-Shrike	<i>Coracina leucopygia</i>	*	3		3
Hair-crested Drongo	<i>Dicrurus hottentottus</i>		1		1
Black-naped Oriole	<i>Oriolus chinensis</i>		2		2
Sulawesi Babbler	<i>Trichastoma celebense</i>	*	5		5
Golden-bellied Gerygone	<i>Gerygone sulphurea</i>		4	9	9
Black-naped Monarch	<i>Hypothymis azurea puella</i>		3		3
White-breasted Woodswallow	<i>Artamus leucorhynchus</i>		3	3	3
Asian Glossy Starling	<i>Aplonis panayensis</i>		4		4
Finch-billed Myna	<i>Scissirostrum dubium</i>		5		5
Brown-throated Sunbird	<i>Anthreptes malacensis</i>			5	5
Black Sunbird	<i>Nectarinia aspasia</i>		2	3	3
Olive-backed Sunbird	<i>Nectarinia jugularis</i>		5	11	11
Lemon-bellied White-Eye	<i>Zosterops chloris</i>	**	13	8	13
Scaly-breasted Munia	<i>Lonchura punctulata</i>		9		9
TOTAL SPECIES: 38					
SULAWESI ENDEMICS: 9					
INDONESIAN ENDEMICS: 3					
TOTAL TIME: 1h45m					
TEAMS: 1					

SQUARE		57							
DATE						09/7	23/7	20/8	Max
SURVEY TIME						125m	155m	10m	Count
COMMON NAME	SYSTEMATIC NAME								
Black Eagle	<i>Ictinaetus malayensis</i>					1			1
Barred Rail	<i>Gallirallus torquatus</i>					1	2		2
Snoring Rail	<i>Gallirallus plateni</i>	*				1			1
Isabelline Waterhen	<i>Amaurornis isabellinus</i>	*				1			1
Spotted Dove	<i>Streptopelia chinensis</i>					6			6
Slender-billed Cuckoo-Dove	<i>Macropygia amboinensis</i>					1	1		1
White-faced Cuckoo-Dove	<i>Turacoena manadensis</i>	*				1	1		1
Grey-cheeked Green Pigeon	<i>Treron griseicauda</i>	**				2			2
Pink-headed Imperial Pigeon	<i>Ducula rosacea</i>	**					2		2
Yellow-crested Cockatoo	<i>Cacatua sulphurea</i>	**						2	2
Ornate Lorikeet	<i>Trichoglossus ornatus</i>	*						2	2
Sulawesi Hanging-Parrot	<i>Loriculus stigmatus</i>	*					2		2
Green Hanging-Parrot	<i>Loriculus exilis</i>	*					6		6
Fiery-billed Malkoha	<i>Phaenicophaeus calyorrhynchus</i>	*				1	1		1
Lesser Coucal	<i>Centropus bengalensis</i>						1		1
Bay Coucal	<i>Centropus celebensis</i>	*				6	4		6
Grey-rumped Tree-Swift	<i>Hemiprocne longipennis</i>	*					2		2
White-bellied Swiftlet	<i>Collocalia esculenta</i>					13			13
Uniform Swiftlet	<i>Aerodramus vanikorensis</i>					2	>15		>15
Asian Palm-Swift	<i>Cypsiurus balasienis</i>					>11			>11
Collared Kingfisher	<i>Halcyon chloris</i>						1		1
Rainbow Bee-eater	<i>Merops ornatus</i>					14	4		14
Ashy Woodpecker	<i>Mulleripicus fulvus</i>	*				>136	19		>136
Pacific Swallow	<i>Hirundo tahitica</i>						1		1
Sulawesi Pied Triller	<i>Lalage [nigra] leucopygialis</i>	*				5	1		5
White-winged Triller	<i>Lalage sueurii</i>					2	3		3
Black-naped Oriole	<i>Oriolus chinensis</i>					7			7
Pied Bushchat	<i>Saxicola caprata</i>					2	2		2
Golden-bellied Gerygone	<i>Gerygone sulphurea</i>					8			8
Black-naped Monarch	<i>Hypothymis azurea puella</i>						2		2
White-breasted Woodswallow	<i>Artamus leucorhynchus</i>						2		2
Ivory-backed Woodswallow	<i>Artamus monachus</i>					6	2		6
Asian Glossy Starling	<i>Aplonis panayensis</i>	*				5			5
White-necked Myna	<i>Streptocitta albigollis</i>	*				2			2
Finch-billed Myna	<i>Scissirostrum dubium</i>					4	2		4
Black Sunbird	<i>Nectarinia aspasia</i>						14		14
Olive-backed Sunbird	<i>Nectarinia jugularis</i>						2		2
Crimson Sunbird	<i>Aethopyga siparaja</i>					4	2		4
Grey-sided Flowerpecker	<i>Dicaeum celebicum</i>	*					1		1
Lemon-bellied White-Eye	<i>Zosterops chloris</i>	**					2		2
Black-faced Munia	<i>Lonchura molucca</i>	**				>30	2		>30
		**				>20			>20
Buttonquail species	<i>Tumix species</i>					1			1
TOTAL SPECIES: 42									
SULAWESI ENDEMICS: 13									
INDONESIAN ENDEMICS: 5									
TOTAL TIME: 4h50m									
TEAMS: 3									

SQUARE	60			
DATE		24/9	17/11	Max
SURVEY TIME				Count
		315m	180m	
COMMON NAME	SYSTEMATIC NAME			
Woolly-necked Stork	<i>Ciconia episcopus</i>	2		2
Brahminy Kite	<i>Haliastur indus</i>	1		1
White-bellied Sea-Eagle	<i>Haliaeetus leucogaster</i>	2		2
Sulawesi Serpent-Eagle	<i>Spilornis rufipectus</i>	* 3	1	3
Spot-tailed Goshawk	<i>Accipiter trinotatus</i>	* 1		1
Black Eagle	<i>Ictinaetus malayensis</i>		1	1
Slender-billed Cuckoo-Dove	<i>Macropygia amboinensis</i>	5	1	5
White-faced Cuckoo-Dove	<i>Turacoena manadensis</i>	* 4		4
Stephan's Pigeon	<i>Chalcophaps stephani</i>	1		1
Grey-cheeked Green Pigeon	<i>Treron griseicauda</i>	** 2	6	6
Black-naped Fruit-Dove	<i>Ptilinopus melanospila</i>	8	3	8
Pink-headed Imperial Pigeon	<i>Ducula rosacea</i>	** 15	3	15
White Imperial Pigeon	<i>Ducula luctuosa</i>	* 21	>15	21
Ornate Lorikeet	<i>Trichoglossus ornatus</i>	* 5		5
Sulawesi Hanging-Parrot	<i>Loriculus stigmatus</i>	* 4	5	5
Green Hanging-Parrot	<i>Loriculus exilis</i>	* 2	1	2
Golden-mantled Racket-tailed Parrot	<i>Prioniturus platurus</i>	* 4		4
Great-billed Parrot	<i>Tanygnathus megalorynchos</i>		2	2
Blue-backed (Muller's) Parrot	<i>Tanygnathus sumatranus</i>	6		6
Channel-billed Cuckoo	<i>Scythrops novaehollandiae</i>		2	2
Fiery-billed Malkoha	<i>Phaenicophaeus calyortynchus</i>	* 2		2
Lesser Coucal	<i>Centropus bengalensis</i>	1		1
Bay Coucal	<i>Centropus celebensis</i>	* 10	3	10
Grey-rumped Tree-Swift	<i>Hemiprocne longipennis</i>	33	6	33
White-bellied Swiftlet	<i>Collocalia esculenta</i>	11		11
Uniform Swiftlet	<i>Aerodramus vanikorensis</i>		5	5
Asian Palm-Swift	<i>Cypsiurus balasiensis</i>	1		1
Blue-headed Wood Kingfisher	<i>Actenoides monachus</i>	* 1		1
Collared Kingfisher	<i>Halcyon chloris</i>	7	2	7
Sulawesi Pygmy Kingfisher	<i>Ceyx fallax</i>	* 1	1	1
Rainbow Bee-eater	<i>Merops ornatus</i>	9		9
Broad-billed Roller (Dollarbird)	<i>Eurystomus orientalis</i>	1		1
Sulawesi Hornbill	<i>Penelopides exarhatus</i>	* 5		5
Red-knobbed Hornbill	<i>Rhyticeros cassidix</i>	* 6	11	11
Ashy Woodpecker	<i>Mulleripicus fulvus</i>	* 2	4	4
Pacific Swallow	<i>Hirundo tahitica</i>	2		2
White-rumped Cuckoo-Shrike	<i>Coracina leucopygia</i>	* 4	2	4
Common Cicadabird	<i>Coracina tenuirostris</i>	5		5
Sulawesi Cicadabird	<i>Coracina morio</i>	* 4		4
Hair-crested Drongo	<i>Dicrurus hottentottus</i>	9	2	9
Black-naped Oriole	<i>Oriolus chinensis</i>	11	2	11
Slender-billed Crow	<i>Corvus enca</i>	7		7
Sulawesi Babbler	<i>Trichastoma celebense</i>	* 10	3	10
Black-naped Monarch	<i>Hypothymis azurea puella</i>	5	1	5
Citrine Flycatcher	<i>Culicicapa helianthea</i>		1	1
White-breasted Woodswallow	<i>Artamus leucorhynchus</i>	6	2	6
Ivory-backed Woodswallow	<i>Artamus monachus</i>	* 2		2
Asian Glossy Starling	<i>Aplonis panayensis</i>	7		7
White-necked Myna	<i>Streptocitta albigollis</i>	* 7	4	7
Finch-billed Myna	<i>Scissirostrum dubium</i>	>68	7	>68
Brown-throated Sunbird	<i>Anthreptes malacensis</i>	4	1	4
Black Sunbird	<i>Nectarinia aspasia</i>	5	3	5
Olive-backed Sunbird	<i>Nectarinia jugularis</i>	2	4	4
Crimson Sunbird	<i>Aethopyga siparaja</i>	1	1	1
Yellow-sided Flowerpecker	<i>Dicaeum aureolimbatum</i>	* 23	2	23
Grey-sided Flowerpecker	<i>Dicaeum celebicum</i>	* 8	5	8
Lemon-bellied White-Eye	<i>Zosterops chloris</i>	** 2	8	8
Pale-bellied White-Eye	<i>Zosterops consobrinorum</i>	* 9		9
Black-faced Munia	<i>Lonchura molucca</i>	** >8		>8
TOTAL SPECIES: 59				
SULAWESI ENDEMICS: 23				
INDONESIAN ENDEMICS: 4				
TOTAL TIME: 8h55m				
TEAMS: 2				

SQUARE	62			
DATE			18/10	Max
SURVEY TIME			255m	Count
COMMON NAME	SYSTEMATIC NAME			
Woolly-necked Stork	<i>Ciconia episcopus</i>		2	2
Sulawesi Serpent-Eagle	<i>Spilornis rufipectus</i>	*	1	1
Spot-tailed Goshawk	<i>Accipiter trinotatus</i>	*	1	1
Black Eagle	<i>Ictinaetus malayensis</i>		1	1
Oriental Hobby	<i>Falco severus</i>		1	1
Red Junglefowl	<i>Gallus gallus</i>		1	1
Slender-billed Cuckoo-Dove	<i>Macropygia amboinensis</i>		5	5
White-faced Cuckoo-Dove	<i>Turacoena manadensis</i>	*	1	1
Stephan's Pigeon	<i>Chalcophaps stephani</i>		1	1
Grey-cheeked Green Pigeon	<i>Treron griseicauda</i>	**	5	5
Black-naped Fruit-Dove	<i>Ptilinopus melanospila</i>		6	6
White-bellied Imperial Pigeon	<i>Ducula forsteni</i>	*	5	5
Pink-headed Imperial Pigeon	<i>Ducula rosacea</i>	**	4	4
White Imperial Pigeon	<i>Ducula luctuosa</i>	*	11	11
Ornate Lorikeet	<i>Trichoglossus ornatus</i>	*	2	2
Sulawesi Hanging-Parrot	<i>Loriculus stigmatus</i>	*	2	2
Golden-mantled Racket-tailed Parrot	<i>Prioniturus piaturus</i>	*	11	11
Great-billed Parrot	<i>Tanygnathus megalorynchos</i>		2	2
Drongo Cuckoo	<i>Surniculus lugubris</i>		1	1
Black-billed Koel	<i>Eudynamis melanorhyncha</i>	*	3	3
Fiery-billed Malkoha	<i>Phaenicophaeus calyornhynchus</i>	*	8	8
Bay Coucal	<i>Centropus celebensis</i>	*	5	5
Grey-rumped Tree-Swift	<i>Hemiprocne longipennis</i>		>30	>30
Blue-headed Wood Kingfisher	<i>Actenoides monachus</i>	*	1	1
Collared Kingfisher	<i>Halcyon chloris</i>		2	2
Purple-winged Roller	<i>Coracias temminckii</i>	*	1	1
Sulawesi Hornbill	<i>Penelopides exarhatus</i>	*	2	2
Red-knobbed Hornbill	<i>Rhyticeros cassidix</i>	*	7	7
Sulawesi Pygmy Woodpecker	<i>Picoides temminckii</i>		1	1
Ashy Woodpecker	<i>Mulleripicus fulvus</i>	*	2	2
Pied Cuckoo-Shrike	<i>Coracina bicolor</i>	*	3	3
White-rumped Cuckoo-Shrike	<i>Coracina leucopygia</i>	*	2	2
Sulawesi Cicadabird	<i>Coracina morio</i>	*	3	3
Hair-crested Drongo	<i>Dicrurus hottentottus</i>		7	7
Black-naped Oriole	<i>Oriolus chinensis</i>		4	4
Piping Crow	<i>Corvus typicus</i>	*	1	1
Sulawesi Babbler	<i>Trichastoma celebense</i>	*	7	7
Black-naped Monarch	<i>Hypothymis azurea puella</i>		2	2
Citrine Flycatcher	<i>Culicicapa helianthea</i>		2	2
Ivory-backed Woodswallow	<i>Artamus monachus</i>	*	10	10
Sulawesi Crested Myna	<i>Basilornis celebensis</i>	*	2	2
White-necked Myna	<i>Streptocitta albicollis</i>	*	4	4
Brown-throated Sunbird	<i>Anthreptes malacensis</i>		1	1
Crimson Sunbird	<i>Aethopyga siparaja</i>		1	1
Grey-sided Flowerpecker	<i>Dicaeum celebicum</i>	*	3	3
TOTAL SPECIES: 45				
SULAWESI ENDEMICS: 25				
INDONESIAN ENDEMICS: 2				
TOTAL TIME: 4h15m				
TEAMS: 1				

SQUARE	63		
DATE		21/9	Max
SURVEY TIME		180m	Count
COMMON NAME	SYSTEMATIC NAME		
Striated Heron	<i>Butorides striatus</i>	2	2
Woolly-necked Stork	<i>Ciconia episcopus</i>	2	2
Sulawesi Serpent-Eagle	<i>Spilornis rufipectus</i>	* 2	2
Spot-tailed Goshawk	<i>Accipiter trinitatus</i>	* 1	1
Common Redshank	<i>Tringa totanus</i>	1	1
Grey-tailed Tattler	<i>Heteroscelus brevipes</i>	2	2
Common Sandpiper	<i>Actitis hypoleucos</i>	5	5
Whimbrel	<i>Numenius phaeopus</i>	2	2
Slender-billed Cuckoo-Dove	<i>Macropygia amboinensis</i>	2	2
Grey-cheeked Green Pigeon	<i>Treron griseicauda</i>	** 2	2
Black-naped Fruit-Dove	<i>Ptilinopus melanospila</i>	3	3
Pink-headed Imperial Pigeon	<i>Ducula rosacea</i>	** 6	6
White Imperial Pigeon	<i>Ducula luctuosa</i>	* 3	3
Sulawesi Hanging-Parrot	<i>Loriculus stigmatus</i>	* 3	3
Green Hanging-Parrot	<i>Loriculus exilis</i>	* 1	1
Blue-backed (Muller's) Parrot	<i>Tanygnathus sumatranus</i>	3	3
Gould's Bronze-Cuckoo	<i>Chrysococcyx russatus</i>	2	2
Drongo Cuckoo	<i>Surniculus lugubris</i>	2	2
Fiery-billed Malkoha	<i>Phaenicophaeus calyorrhynchus</i>	* 2	2
Bay Coucal	<i>Centropus celebensis</i>	* 4	4
Grey-rumped Tree-Swift	<i>Hemiprocne longipennis</i>	19	19
Great-billed Kingfisher	<i>Halcyon melanorhyncha</i>	* 2	2
Collared Kingfisher	<i>Halcyon chloris</i>	3	3
Common Kingfisher	<i>Alcedo atthis</i>	1	1
Purple-winged Roller	<i>Coracias temminckii</i>	* 5	5
Broad-billed Roller (Dollarbird)	<i>Eurystomus orientalis</i>	3	3
Red-knobbed Hornbill	<i>Rhyticeros cassidix</i>	* 2	2
Pacific Swallow	<i>Hirundo tahitica</i>	2	2
Pied Cuckoo-Shrike	<i>Coracina bicolor</i>	* 3	3
White-rumped Cuckoo-Shrike	<i>Coracina leucopygia</i>	* 3	3
Hair-crested Drongo	<i>Dicrurus hottentottus</i>	3	3
Black-naped Oriole	<i>Oriolus chinensis</i>	7	7
Piping Crow	<i>Corvus typicus</i>	* 2	2
Sulawesi Babbler	<i>Trichastoma celebense</i>	* 8	8
Golden-bellied Gerygone	<i>Gerygone sulphurea</i>	1	1
Black-naped Monarch	<i>Hypothymis azurea puella</i>	3	3
Citrine Flycatcher	<i>Culicicapa helianthea</i>	1	1
Mangrove Whistler	<i>Pachycephala grisola</i>	3	3
White-breasted Woodswallow	<i>Artamus leucorhynchus</i>	14	14
White-necked Myna	<i>Streptocitta albigollis</i>	* 2	2
Brown-throated Sunbird	<i>Anthreptes malacensis</i>	8	8
Black Sunbird	<i>Nectarinia aspasia</i>	3	3
Olive-backed Sunbird	<i>Nectarinia jugularis</i>	9	9
Crimson Sunbird	<i>Aethopyga siparaja</i>	2	2
Yellow-sided Flowerpecker	<i>Dicaeum aureolimbatum</i>	* 3	3
Grey-sided Flowerpecker	<i>Dicaeum celebicum</i>	* 1	1
Lemon-bellied White-Eye	<i>Zosterops chloris</i>	** 2	2
Pale-bellied White-Eye	<i>Zosterops consobrinorum</i>	* 1	1
TOTAL SPECIES: 48			
SULAWESI ENDEMICS: 18			
INDONESIAN ENDEMICS: 3			
TOTAL TIME: 2h			
TEAMS: 1			



SQUARE	65											
DATE	10/6	10/7	22/7	02/9	08/9	20/9	26/9	14/10	06/11	11/11	Max	
SURVEY TIME	125m	120m	240m	120m	120m	180m	195m	135m	225m	90m	Count	
COMMON NAME	SYSTEMATIC NAME											
Osprey			2	1							2	
White-bellied Sea-Eagle					1						1	
Sulawesi Serpent-Eagle	*	1	1	1		1		1	1	1	1	
Sulawesi Goshawk	*				1						1	
Spot-tailed Goshawk	*			1	1						1	
Little Sparrowhawk	*							3		1	3	
Vinous-breasted Sparrowhawk	*					1					1	
Black Eagle								1			1	
Sulawesi Hawk-Eagle	*				1						1	
Red Junglefowl					1		1				1	
Barred Rail			1								1	
White-breasted Waterhen			1								1	
Slender-billed Cuckoo-Dove				1							1	
White-faced Cuckoo-Dove	*	2	1	4	4	2		2	5	2	5	
Stephan's Pigeon	*	2		3	3	6	1	1	8	1	8	
Pink-necked Green Pigeon			2								2	
Grey-cheeked Green Pigeon	**					2					2	
Black-naped Fruit-Dove	*			>12	3					2	>12	
Pink-headed Imperial Pigeon	**	4		1	5		3	2	3	4	6	
Yellow-crested Cockatoo	**		4	4	1			3	4	4	8	
Ornate Lorikeet	**	2	2	3	1	2	2	3	1		3	
Sulawesi Hanging-Parrot	*							3			3	
Green Hanging-Parrot	*		5							1	5	
Golden-mantled Racket-tailed Parrot	*		2								2	
Great-billed Parrot	*									4	4	
Blue-backed (Muller's) Parrot	*		1					3		3	3	
Plaintive Cuckoo	*			6			2		3		6	
Indonesian Cuckoo	**		1								1	
Drongo Cuckoo	*								1		1	
Black-billed Koei	*			1					2	1	2	
Fiery-billed Malkoha	*					2		1	1		2	
Lesser Coucal	*		5		39	2		2		2	39	
Bay Coucal	*	2	1								2	
Sulawesi Scops-Owl	*	2	2	6	1	4	2	4	4	4	6	
Grey-rumped Tree-Swift	*						4	2			4	
White-bellied Swiftlet	*	10		4		6					10	
Uniform Swiftlet	*	2	2						6		2	
Asian Palm-Swift	*	>5	4					3			>5	
Ruddy Kingfisher	*		1								1	
Collared Kingfisher	*					1				1	1	
Rainbow Bee-eater	*	2	4		1				1		4	
Purple-winged Roller	*	3	2	4	>4						>4	
Sulawesi Hornbill	*		2					1	1	3	3	
Red-knobbed Hornbill	*	1	6	1	1			1	2		6	
Ashy Woodpecker	*	6	1				1	1	1	1	6	
Red-bellied Pitta	*	2	3	2	1	1		2	1	3	3	
Pacific Swallow	*							3		1	3	
White-rumped Cuckoo-Shrike	*		3								3	
Common Cicadabird	*		2	4	3		2	1			4	
Sulawesi Cicadabird	*		3	1	1			1	1		3	
Sulawesi Pied Triller	*	2				1		1			2	
Hair-crested Drongo	*		1								1	
Black-naped Oriole	*	1	2	9	11	5				5	11	
Piping Crow	*	3	1	7	3	2	1	1	4	2	7	
Sulawesi Babbler	*	3	2	4	2	2	2	2	2	2	4	
Pied Bushchat	*	4	2	12	2	5	11	2	>15	2	>15	
Red-backed Thrush	*		2								2	
Black-naped Monarch	*						4	2			4	
Citrine Flycatcher	*	1	5	3		3			2	2	5	
Grey Wagtail	*		2	2		1	1	2	3	1	3	
White-breasted Woodswallow	*								1		1	
Ivory-backed Woodswallow	*		4							4	4	
Asian Glossy Starling	*		3								3	
Sulawesi Crested Myna	*							4			4	
White-necked Myna	*	2								2	2	
Finch-billed Myna	*	4	3	2	6			3	2		6	
Brown-throated Sunbird	*				>25					3	>25	
Black Sunbird	*		4	1		1					4	
Olive-backed Sunbird	*		1	2		1				1	2	
Crimson Sunbird	*	2	4								4	
Yellow-sided Flowerpecker	*		2					1	1		2	
Grey-sided Flowerpecker	*		1	6		3					6	
Lemon-bellied White-Eye	**		6		2	5		2	5		6	
Pale-bellied White-Eye	*								1		1	
		6						4			6	



SQUARE	65											
DATE	10/6	10/7	22/7	02/9	08/9	20/9	26/9	14/10	06/11	11/11		Max
SURVEY TIME	125m	120m	240m	120m	120m	180m	195m	135m	225m	90m		Count
COMMON NAME	SYSTEMATIC NAME											
Scaly-breasted Munia	Lonchura punctulata											2
Chestnut Munia	Lonchura malacca											3
Small Sparrowhawk species	Accipiter nanus/rhodogaster											1
TOTAL SPECIES: 76												
SULAWESI ENDEMIC: 31												
INDONESIAN ENDEMIC: 5												
TOTAL TIME: 25h50m												
TEAMS: 8												

SQUARE	66											
DATE	10/6	16/6	08/7	08/7	10/7	22/7	02/9	14/10	11/11	16/11	Max	
SURVEY TIME	233m	205m	240m	120m	120m	130m	180m	240m	225m	105m	Count	
COMMON NAME	SYSTEMATIC NAME											
Little Egret					>20						>20	
Woolly-necked Stork								1			1	
Osprey							1				1	
Jerdon's Baza							2				2	
Barred Honey-Buzzard							1				1	
Black-shouldered Kite					1						1	
Brahminy Kite		1		1			1				1	
Sulawesi Serpent-Eagle	*		1	1			2	1	2		2	
Sulawesi Goshawk	*					1		1			1	
Spot-tailed Goshawk	*								1		1	
Little Sparrowhawk	*		1			1					1	
Vinous-breasted Sparrowhawk	*	1									1	
Black Eagle						1					1	
Sulawesi Hawk-Eagle	*	1									1	
Isabelline Waterhen	*									2	2	
Oriental Pratincole									5		5	
Spotted Dove									3		3	
Slender-billed Cuckoo-Dove		15		1	1	1		11	10	9	15	
White-faced Cuckoo-Dove	*	2	1	2		1	1	6	6	3	4	
Stephan's Pigeon			1								1	
Grey-cheeked Green Pigeon	**						4	7	6		7	
Black-naped Fruit-Dove		20	17	12			2	10	14	7	10	
Green Imperial Pigeon		6									6	
Pink-headed Imperial Pigeon	**		12	2	5	2	>10	15	12	11	5	
White Imperial Pigeon	*	9	6				2	5	11	12	1	
Ornate Lorikeet	*	2	4		2		10		4	5	10	
Sulawesi Hanging-Parrot	*	6	2	2	6	2	6	6	14	6	14	
Green Hanging-Parrot	*	4		4	6		2			2	6	
Golden-mantled Racket-tailed Parrot	*	>10	10				2	7	7		>10	
Great-billed Parrot			2				4		3		4	
Blue-backed (Muller's) Parrot									3		3	
Plaintive Cuckoo						1		1			1	
Drongo Cuckoo							3	2	1		3	
Black-billed Koel	*	1						1	3	2	3	
Fiery-billed Malkoha	*	2	2	5	1		2	2	6	2	6	
Lesser Coucal			1		3	1	1	4		1	4	
Bay Coucal	*	8	4	5	1		8	7	8	8	4	
Sulawesi Scops-Owl	*			3							2	
Great-eared Nightjar		3									1	
Savanna Nightjar			2			>3					>3	
Grey-rumped Tree-Swift		12			2		>19	5	25	8	5	
White-bellied Swiftlet		>30	25	>30	>40		5	5	>14	15	4	
Moluccan Swiftlet			16								16	
Uniform Swiftlet		32	32	>15	3		>10	2	>35	16	70	
Asian Palm-Swift			12	1			8				12	
Collared Kingfisher		4	6	2	12	2	5		6	1	3	
Rainbow Bee-eater		4	4		12		8	11			12	
Purple-winged Roller	*		2				1		2	3	2	
Sulawesi Hornbill	*	2					1				2	
Red-knobbed Hornbill	*	4	2	2				6	2	1	1	
Ashy Woodpecker	*	2	2	4			2	2	2	2	1	
Red-bellied Pitta										4	2	
Pacific Swallow									15		15	
Pied Cuckoo-Shrike	*							2			2	
White-rumped Cuckoo-Shrike	*	3	6		1		4	6		2	6	
Common Cicadabird		1	5	1			1	4	3		5	
Sulawesi Cicadabird	*	3	2	1				4	2	9	9	
Sulawesi Pied Triller	*							4		1	4	
White-winged Triller					4			2			4	
Hair-crested Drongo		12	5	>26	3		7	11	12	8	>26	
Black-naped Oriole		8	2	7			6	11	9	8	2	
Slender-billed Crow		1	2	3	20		2	1	2		1	
Piping Crow	*	3	3			2	3	2		2	2	
Sulawesi Babbler	*	12	20	>13		2	6	12	8	6	20	
Black-naped Monarch		4	3	2		4	4	8	5	4	2	
Citrine Flycatcher		4	1	3				7	5	5	7	
White-breasted Woodswallow		10			10		2	5	5	9	10	
Ivory-backed Woodswallow	*	6				2	6	4	5	3	6	
Asian Glossy Starling				14					2	15	15	
Sulawesi Crested Myna	*	2		3			7	4	4	6	7	
White-necked Myna	*	4	6	5			2	4	5	8	8	
Finch-billed Myna		25	22	2		36	9	>12	>17		36	
Brown-throated Sunbird		8	11	3				2	8	5	11	
Black Sunbird		7	3	5		3	3	10	3	2	10	
Olive-backed Sunbird		5	2		4	3	2	2	6	11	11	

DATE	67	06/9	26/9	Max
SURVEY TIME		180m	210m	Count
COMMON NAME	SYSTEMATIC NAME			
Masked Honey-Buzzard	<i>Pernis ptilorhynchus</i>		1	1
Black-winged Kite	<i>Haliastur indus</i>	2	2	2
Java Serpent-Eagle	<i>Spilornis rufipectus</i>	* 5		5
Black-tailed Goshawk	<i>Accipiter trinitatus</i>	* 1		1
Black-bellied Eagle	<i>Hieraaetus kienerii</i>		1	1
Red-tailed Kestrel	<i>Falco moluccensis</i>	**	2	2
Red-tailed Dove	<i>Streptopelia chinensis</i>		1	1
Black-billed Cuckoo-Dove	<i>Macropygia amboinensis</i>		15	2
Black-faced Cuckoo-Dove	<i>Turacoena manadensis</i>	* 1	2	2
Black-cheeked Green Pigeon	<i>Treron griseicauda</i>	**	3	3
Black-naped Fruit-Dove	<i>Ptilinopus melanospila</i>		2	5
Black-bellied Imperial Pigeon	<i>Ducula forsteni</i>	* 1	1	1
Black-headed Imperial Pigeon	<i>Ducula rosacea</i>	** 1	4	4
Black Imperial Pigeon	<i>Ducula luctuosa</i>	* 1	2	2
Black-billed Lorikeet	<i>Trichoglossus ornatus</i>	* 1	2	2
Black-billed Parrot	<i>Tanygnathus megalorhynchus</i>		2	2
Black-billed Cuckoo	<i>Cacomantis merulinus</i>		3	3
Black-billed Malkoha	<i>Phaenicophaeus calyrorhynchus</i>	* 1		1
Black-billed Coucal	<i>Centropus bengalensis</i>		9	9
Black-billed Coucal	<i>Centropus celebensis</i>	* 6	6	6
Black-rumped Tree-Swift	<i>Hemiprocne longipennis</i>		9	3
Black-bellied Swiftlet	<i>Collocalia esculenta</i>		>15	3
Black-bellied Swiftlet	<i>Aerodramus vanikorensis</i>		>15	>15
Black-bellied Palm-Swift	<i>Cypsiurus balasienis</i>		1	1
Black-bellied Kingfisher	<i>Halcyon chloris</i>		5	6
Black-bellied Bee-eater	<i>Merops ornatus</i>			33
Black-bellied Hornbill	<i>Penelopides exarhatus</i>	* >3		>3
Black-knobbed Hornbill	<i>Rhyticeros cassidix</i>	* 1	23	23
Black-billed Woodpecker	<i>Mullenipicus fulvus</i>	* 1	1	1
Black-rumped Cuckoo-Shrike	<i>Coracina leucopygia</i>	* 2	4	4
Black-crested Drongo	<i>Dicrurus hottentottus</i>		2	5
Black-naped Oriole	<i>Ornolus chinensis</i>		8	6
Black-billed Crow	<i>Corvus typicus</i>	* 3	2	3
Black-billed Babbler	<i>Trichastoma celebensis</i>	* 7	23	23
Black-billed Bushchat	<i>Saxicola caprata</i>		9	9
Black-bellied Gerygone	<i>Gerygone sulphurea</i>		3	3
Black-billed Cisticola	<i>Cisticola juncidis</i>		3	3
Black-naped Monarch	<i>Hypothymis azurea puella</i>		1	5
Black-billed Flycatcher	<i>Culicicapa helianthea</i>		1	1
Black-breasted Woodswallow	<i>Artamus leucorhynchus</i>		1	8
Black-backed Woodswallow	<i>Artamus monachus</i>	* 1	19	19
Black-necked Myna	<i>Streptocitta albigollis</i>	* 6	9	9
Black-billed Myna	<i>Scissirostrum dubium</i>	>68	3	>68
Black-throated Sunbird	<i>Anthreptes malacensis</i>		1	5
Black-billed Sunbird	<i>Nectarinia aspasia</i>		1	8
Black-backed Sunbird	<i>Nectarinia jugularis</i>		3	7
Black-billed Sunbird	<i>Aethopyga siparaja</i>		6	5
Black-sided Flowerpecker	<i>Dicaeum aureolimbatum</i>	* 5	10	10
Black-crowned Flowerpecker	<i>Dicaeum nehrkorni</i>	* 1		1
Black-sided Flowerpecker	<i>Dicaeum celebicum</i>	* 6	11	11
Black-bellied White-Eye	<i>Zosterops chloris</i>	** 4	15	15
Black-bellied White-Eye	<i>Zosterops consobrinorum</i>	* 8	13	13
Black-faced Munia	<i>Lonchura molucca</i>	** 1		1
Black-bellied Quail species	<i>Turnix sp</i>		2	2
TOTAL SPECIES: 54				
AWESI ENDEMICS: 20				
INDONESIAN ENDEMICS: 5				
TOTAL TIME: 6h30m				
MS: 2				

SQUARE	68							
DATE		17/6	11/7	06/9	Max			
SURVEY TIME		120m	15m	240m	Count			
COMMON NAME	SYSTEMATIC NAME							
Woolly-necked Stork	<i>Ciconia episcopus</i>			1	1			
Osprey	<i>Pandion haliaetus</i>		2	1	2			
Brahminy Kite	<i>Haliastur indus</i>		1	1	1			
Lesser Fish-Eagle	<i>Ichthyophaga humilis</i>			1	1			
Sulawesi Serpent-Eagle	<i>Spilornis rufipectus</i>	*		1	1			
Small Sparrowhawk	<i>Accipiter nanus</i>	*		1	1			
Oriental Hobby	<i>Falco severus</i>		1		1			
Red Junglefowl	<i>Gallus gallus</i>			2	2			
Snoring Rail	<i>Gallirallus plateni</i>	*	1		1			
Common Sandpiper	<i>Actitis hypoleucos</i>			5	5			
Slender-billed Cuckoo-Dove	<i>Macropygia amboinensis</i>			12	12			
White-faced Cuckoo-Dove	<i>Turacoena manadensis</i>	*		4	4			
Stephan's Pigeon	<i>Chaicophaps stephani</i>		1		1			
Pink-necked Green Pigeon	<i>Treron vernans</i>		1		1			
Grey-cheeked Green Pigeon	<i>Treron griseicauda</i>	**	9		9			
Black-naped Fruit-Dove	<i>Ptilinopus melanospila</i>			11	11			
Pink-headed Imperial Pigeon	<i>Ducula rosacea</i>	**		3	3			
White Imperial Pigeon	<i>Ducula luctuosa</i>	*		9	9			
Sulawesi Hanging-Parrot	<i>Loriculus stigmatus</i>	*	2	10	10			
Green Hanging-Parrot	<i>Loriculus exilis</i>	*		3	3			
Great-billed Parrot	<i>Tanygnathus megalorynchos</i>			2	2			
Indonesian Cuckoo	<i>Cacomantis sepulcralis</i>	**		1	1			
Drongo Cuckoo	<i>Surniculus lugubris</i>			1	1			
Fiery-billed Malkoha	<i>Phaenicophaeus calyborhynchus</i>	*	2		2			
Lesser Coucal	<i>Centropus bengalensis</i>			2	2			
Bay Coucal	<i>Centropus celebensis</i>	*		4	4			
Savanna Nightjar	<i>Caprimulgus affinis</i>			>2	>2			
Grey-rumped Tree-Swift	<i>Hemiprocne longipennis</i>			>49	>49			
White-bellied Swiftlet	<i>Collocalia esculenta</i>		>6	18	18			
Moluccan Swiftlet	<i>Aerodramus infuscatus</i>			14	14			
Great-billed Kingfisher	<i>Halcyon melanorhyncha</i>	*		2	2			
Collared Kingfisher	<i>Halcyon chloris</i>		7	7	7			
Common Kingfisher	<i>Alcedo atthis</i>			2	2			
Rainbow Bee-eater	<i>Merops ornatus</i>			2	2			
Sulawesi Hornbill	<i>Penelopides exarthatus</i>	*		2	2			
Red-knobbed Hornbill	<i>Rhyticeros cassidix</i>	*		7	7			
Ashy Woodpecker	<i>Mullenipicus fulvus</i>	*		1	1			
Pacific Swallow	<i>Hirundo tahitica</i>		4	>10	>10			
White-rumped Cuckoo-Shrike	<i>Coracina leucopygia</i>	*	4	2	4			
Common Cicadabird	<i>Coracina tenuirostris</i>			1	1			
Sulawesi Pied Triller	<i>Lalage [nigra] leucopygialis</i>	*		2	2			
White-winged Triller	<i>Lalage sueurii</i>			1	1			
Hair-crested Drongo	<i>Dicrurus hottentottus</i>			14	14			
Black-naped Oriole	<i>Oriolus chinensis</i>			19	19			
Slender-billed Crow	<i>Corvus enca</i>		2	1	2			
Sulawesi Babbler	<i>Trichastoma celebensis</i>	*		7	7			
Golden-bellied Gerygone	<i>Gerygone sulphurea</i>		2		1			
Black-naped Monarch	<i>Hypothymis azurea puella</i>		5	6	6			
Citrine Flycatcher	<i>Culicicapa helianthea</i>			2	2			
Rusty-bellied Fantail	<i>Rhipidura teysmanni</i>	*	1		1			
White-breasted Woodswallow	<i>Artamus leucorhynchus</i>			12	12			
Short-tailed Glossy Starling	<i>Aplonis minor</i>		1		1			
Asian Glossy Starling	<i>Aplonis panayensis</i>		5	19	19			
Sulawesi Crested Myna	<i>Basilornis celebensis</i>	*		2	2			
White-necked Myna	<i>Streptocitta albigollis</i>	*		6	6			
Finch-billed Myna	<i>Scissirostrum dubium</i>			>6	>6			
Brown-throated Sunbird	<i>Anthreptes malacensis</i>		1	3	3			
Black Sunbird	<i>Nectarinia aspasia</i>			6	6			
Olive-backed Sunbird	<i>Nectarinia jugularis</i>		5	7	7			
Crimson Sunbird	<i>Aethopyga siparaja</i>			1	1			
Yellow-sided Flowerpecker	<i>Dicaeum aureolimbatum</i>	*	4	5	5			
Grey-sided Flowerpecker	<i>Dicaeum celebicum</i>	*	5	7	7			
Lemon-bellied White-Eye	<i>Zosterops chloris</i>	**	2	2	2			
Pale-bellied White-Eye	<i>Zosterops consobrinorum</i>	*		3	3			
TOTAL SPECIES: 64								
SULAWESI ENDEMICS: 22								
INDONESIAN ENDEMICS: 4								
TOTAL TIME: 6h15m								
TEAMS: 3								

SQUARE	69			
DATE			25/9	Max Count
SURVEY TIME			90m	
COMMON NAME	SYSTEMATIC NAME			
Sulawesi Serpent-Eagle	<i>Spilornis rufipectus</i>	*	1	1
Slender-billed Cuckoo-Dove	<i>Macropygia amboinensis</i>		2	2
White-faced Cuckoo-Dove	<i>Turacoena manadensis</i>	*	3	3
Stephan's Pigeon	<i>Chalcophaps stephani</i>		1	1
Black-naped Fruit-Dove	<i>Ptilinopus melanospila</i>		2	2
Pink-headed Imperial Pigeon	<i>Ducula rosacea</i>	**	6	6
White Imperial Pigeon	<i>Ducula luctuosa</i>	*	5	5
Yellow-crested Cockatoo	<i>Cacatua sulphurea</i>	**	1	1
Great-billed Parrot	<i>Tanygnathus megalorhynchus</i>		6	6
Fiery-billed Malkoha	<i>Phaenicophaeus calyorrhynchus</i>	*	1	1
Bay Coucal	<i>Centropus celebensis</i>	*	2	2
Grey-rumped Tree-Swift	<i>Hemiproctus longipennis</i>		1	1
White-bellied Swiftlet	<i>Collocalia esculenta</i>		7	7
Collared Kingfisher	<i>Halcyon chloris</i>		1	1
Common Kingfisher	<i>Alcedo atthis</i>		1	1
Red-knobbed Hornbill	<i>Rhyticeros cassidix</i>	*	2	2
White-rumped Cuckoo-Shrike	<i>Coracina leucopygia</i>	*	4	4
Hair-crested Drongo	<i>Dicrurus hottentottus</i>		6	6
Black-naped Oriole	<i>Oriolus chinensis</i>		3	3
Black-naped Monarch	<i>Hypothymis azurea puella</i>		1	1
White-necked Myna	<i>Streptocitta albicollis</i>	*	3	3
Brown-throated Sunbird	<i>Anthreptes malacensis</i>		1	1
Black Sunbird	<i>Nectarinia aspasia</i>		2	2
Yellow-sided Flowerpecker	<i>Dicaeum aureolimbatum</i>	*	2	2
Grey-sided Flowerpecker	<i>Dicaeum celebicum</i>	*	2	2
TOTAL SPECIES: 25				
SULAWESI ENDEMICS: 10				
INDONESIAN ENDEMICS: 2				
TOTAL TIME: 1h30m				
TEAMS: 1				

SQUARE	70				
DATE		07/8	18/8	07/9	Max
SURVEY TIME		240m	60m	90m	Count
COMMON NAME	SYSTEMATIC NAME				
Striated Heron	<i>Butorides striatus</i>	3		1	1
Osprey	<i>Pandion haliaetus</i>		1	1	1
Brahminy Kite	<i>Haliastur indus</i>	1			1
Grey-headed Fish-Eagle	<i>Ichthyophaga ichthyaetus</i>		1		1
Spotted Kestrel	<i>Falco moluccensis</i>	** 1		1	1
Pacific Golden Plover	<i>Pluvialis fulva</i>			5	5
Common Sandpiper	<i>Actitis hypoleucos</i>			1	1
Whimbrel	<i>Numenius phaeopus</i>			1	1
Spotted Dove	<i>Streptopelia chinensis</i>	2			2
White-faced Cuckoo-Dove	<i>Turacoena manadensis</i>	*		1	1
Grey-cheeked Green Pigeon	<i>Trepon griseicauda</i>	** 1		1	1
Black-naped Fruit-Dove	<i>Ptilinopus melanospila</i>	2			2
Sulawesi Hanging-Parrot	<i>Loriculus stigmatus</i>	*		2	2
Black-billed Koel	<i>Eudynamis melanorhyncha</i>	* 1			1
Fiery-billed Malkoha	<i>Phaenicophaeus calyborhynchus</i>	* 1			1
Lesser Coucal	<i>Centropus bengalensis</i>	1			1
Grey-rumped Tree-Swift	<i>Hemiprocne longipennis</i>	1			1
White-bellied Swiftlet	<i>Collocalia esculenta</i>	4			4
Uniform Swiftlet	<i>Aerodramus vanikorensis</i>			5	5
House Swift	<i>Apus nipalensis</i>		2	>25	>25
Great-billed Kingfisher	<i>Halcyon melanorhyncha</i>	*		1	1
Collared Kingfisher	<i>Halcyon chloris</i>	2		4	4
Purple-winged Roller	<i>Coracias temminckii</i>	** 1			1
Pacific Swallow	<i>Hirundo tahitica</i>	8		6	8
Black-naped Oriole	<i>Oriolus chinensis</i>	3			3
Slender-billed Crow	<i>Corvus enca</i>	7			7
Sulawesi Babbler	<i>Trichastoma celebense</i>	* 2		1	1
Pied Bushchat	<i>Saxicola caprata</i>	4			4
White-breasted Woodswallow	<i>Artamus leucorhynchus</i>	13		10	10
Short-tailed Glossy Starling	<i>Aplonis minor</i>	19			19
Asian Glossy Starling	<i>Aplonis panayensis</i>	3			3
Brown-throated Sunbird	<i>Anthreptes malacensis</i>	3		2	3
Black Sunbird	<i>Nectarinia aspasia</i>			1	1
Olive-backed Sunbird	<i>Nectarinia jugularis</i>	4		6	6
Crimson Sunbird	<i>Aethopyga siparaja</i>			1	1
Grey-sided Flowerpecker	<i>Dicaeum celebicum</i>	* 1			1
Lemon-bellied White-Eye	<i>Zosterops chloris</i>	** 1			1
Pale-bellied White-Eye	<i>Zosterops consobrinorum</i>	* 1		5	5
TOTAL SPECIES: 38					
SULAWESI ENDEMICS: 8					
INDONESIAN ENDEMICS: 4					
TOTAL TIME: 6h30m					
TEAMS: 3					



SQUARE	72										
DATE			11/6	11/6	06/8	06/8	06/8			Max	
SURVEY TIME			190m	120m	200m	180m	20m			Count	
COMMON NAME	SYSTEMATIC NAME										
Jerdon's Baza	Aviceda jerdoni						2			2	
Barred Honey-Buzzard	Pernis celebensis				1					1	
Brahminy Kite	Haliastur indus		2							2	
Sulawesi Serpent Eagle	Spilornis rufipectus	*	2	1						2	
Black Eagle	Ictinaetus malayensis		1		1	1				1	
Sulawesi Hawk-Eagle	Spizaetus lanceolatus	*		1						1	
Red Junglefowl	Gallus gallus			2		1				2	
White-breasted Waterhen	Amaurornis phoenicurus					1				1	
Slender-billed Cuckoo-Dove	Macropygia amboinensis				1	2				2	
White-faced Cuckoo-Dove	Turacoena manadensis	*	1		4	2				4	
Pink-necked Green Pigeon	Treron vernans					1				1	
Black-naped Fruit-Dove	Ptilinopus melanospila			1	4					4	
Green Imperial Pigeon	Ducula aenea		2							2	
Great-billed Parrot	Tanygnathus megalorhynchus				1					1	
Blue-backed (Muller's) Parrot	Tanygnathus sumatranus				1	4				4	
Plaintive Cuckoo	Cacomantis merulinus				2	3				3	
Drongo Cuckoo	Surniculus lugubris				2	3				3	
Black-billed Koel	Eudynamis melanorhyncha	*		1						1	
Channel-billed Cuckoo	Scythrops novaehollandiae		2							2	
Fiery-billed Malkoha	Phaenicophaeus calyorhynchus	*	2	3	4	3				4	
Lesser Coucal	Centropus bengalensis		1		6	2				6	
Bay Coucal	Centropus celebensis	*	5	9	8					9	
Speckled Hawk-Owl	Ninox punctulata	*	1							1	
Grey-rumped Tree-Swift	Hemiprocne longipennis		37	>30	7	5				37	
White-bellied Swiftlet	Collocalia esculenta		>50	>30	15	24				>50	
Uniform Swiftlet	Aerodramus vanikorensis		25		1	5				25	
Asian Palm Swift	Cypsiurus balaisiensis		30	5						30	
Collared Kingfisher	Halcyon chloris		2	4	12	7				12	
Blue-eared Kingfisher	Alcedo meninting		2							2	
Rainbow Bee-eater	Merops ornatus				12					12	
Purple-winged Roller	Coracias temminckii	*		1						1	
Sulawesi Hornbill	Penelopides exarhatus	*	3	3	4					4	
Red-knobbed Hornbill	Rhyticeros cassidix	*	10	2	5					10	
White-rumped Cuckoo-Shrike	Coracina leucopygia	*		4	3	1				4	
Sulawesi Pied Triller	Lalage [nigra] leucopygialis	*				3				3	
Hair-crested Drongo	Dicrurus hottentottus		6	3	6	4				6	
Black-naped Oriole	Oriolus chinensis		4	4	14	9				14	
Slender-billed Crow	Corvus enca		1							1	
Piping Crow	Corvus typicus	*	4	2		1				4	
Sulawesi Babbler	Trichastoma celebense	*	10	3	>20	20				>20	
Pied Bushchat	Saxicola caprata				4					4	
Black-naped Monarch	Hypothymis azurea puella		3	7	2	1				7	
Citrine Flycatcher	Cuculicapa helianthea		2							2	
White-breasted Woodswallow	Artamus leucorhynchus				7	4				7	
Short-tailed Glossy Starling	Aplonis minor				2					2	
Asian Glossy Starling	Aplonis panayensis					2				2	
Sulawesi Crested Myna	Basilornis celebensis	*	2							2	
White-necked Myna	Streptocitta albicollis	*	4	1	4					4	
Finch-billed Myna	Scissirostrum dubium				>50					>50	
Brown-throated Sunbird	Anthreptes malacensis		3	6		2				6	
Black Sunbird	Nectarinia aspasia		2	6	2	3				6	
Olive-backed Sunbird	Nectarinia jugularis			6	11	8				11	
Crimson Sunbird	Aethopyga siparaja		4	3	2	1				4	
Yellow-sided Flowerpecker	Dicaeum aureolimbatum	*	5	3	5	1				5	
Grey-sided Flowerpecker	Dicaeum celebicum	*	5	5	2	4				5	
Lemon-bellied White-Eye	Zosterops chloris	**			24	1				24	
Pale-bellied White-Eye	Zosterops consobrinorum	*		13		6				13	
Black-faced Munia	Lonchura molucca		2							2	
Scaly-breasted Munia	Lonchura punctulata					6				6	
TOTAL SPECIES: 69											
SULAWESI ENDEMICS: 19											
INDONESIAN ENDEMICS: 1											
TOTAL TIME: 11h50m											
TEAMS: 2											



SQUARE	73			
DATE		06/8		Max
				Count
SURVEY TIME		120m		
COMMON NAME	SYSTEMATIC NAME			
Snoring Rail	<i>Aramidopsis plateni</i>	*	1	1
Slender-billed Cuckoo-Dove	<i>Macropygia amboinensis</i>		1	1
Lesser Coucal	<i>Centropus bengalensis</i>		1	1
Grey-rumped Tree-Swift	<i>Hemiprocne longipennis</i>		2	2
White-bellied Swiftlet	<i>Collocalia esculenta</i>		50	50
Black-naped Oriole	<i>Oriolus chinensis</i>		1	1
Piping Crow	<i>Corvus typicus</i>	*	2	2
Pied Bushchat	<i>Saxicola caprata</i>		1	1
White-breasted Woodswallow	<i>Artamus leucorhynchus</i>		4	4
Asian Glossy Starling	<i>Aplonis panayensis</i>		2	2
Finch-billed Myna	<i>Scissirostrum dubium</i>		15	15
Brown-throated Sunbird	<i>Anthreptes malacensis</i>		2	2
Black Sunbird	<i>Nectarinia aspasia</i>		1	1
Olive-backed Sunbird	<i>Nectarinia jugularis</i>		1	1
Crimson Sunbird	<i>Aethopyga siparaja</i>		1	1
Yellow-sided Flowerpecker	<i>Dicaeum aureolimbatum</i>	*	1	1
Grey-sided Flowerpecker	<i>Dicaeum celebicum</i>	*	1	1
Lemon-bellied White-Eye	<i>Zosterops chloris</i>	**	1	1
TOTAL SPECIES: 18				
SULAWESI ENDEMICS: 4				
INDONESIAN ENDEMICS: 1				
TOTAL TIME: 2h				
TEAMS: 1				

SQUARE	74										
DATE		05/09	23/9	24/9	04/11	05/11	16/11	17/11		Max	
SURVEY TIME		90m	135m	135m	90m	150m	120m	120m		Count	
COMMON NAME	SYSTEMATIC NAME										
Little Black Cormorant	Phalacrocorax sulcirostris	>8								>8	
Little Pied Cormorant	Phalacrocorax melanoleucos					1		>60		>60	
Great-billed Heron	Ardea sumatrana			3		2				3	
Great Egret	Egretta alba					24				24	
Little Egret	Egretta garzetta nigripes			190		172				190	
Pacific Reef-Egret	Egretta sacra					1				1	
Striated Heron	Butorides striatus		1	6	1	7				7	
Milky Stork	Mycteria cinerea				1			5		5	
Woolly-necked Stork	Ciconia episcopus			2		4				4	
Osprey	Pandion haliaetus			2	1					2	
Brahminy Kite	Haliaeetus indus	1								1	
White-bellied Sea-Eagle	Haliaeetus leucogaster		2				2			2	
Spot-tailed Goshawk	Accipiter trinotatus	*	1							1	
Sulawesi Hawk-Eagle	Spizaetus lanceolatus	*	1							1	
Snoring Rail	Aramidopsis plateni	*						1		1	
Isabelline Waterhen	Amaurornis isabellinus	*			2					2	
Common Redshank	Tringa totanus			>40		3				>40	
Nordmann's Greenshank	Tringa guttifer					1				1	
Grey-tailed Tattler	Heteroscelus brevipes				2	7				7	
Common Sandpiper	Actitis hypoleucos		4	4	1	3				4	
Whimbrel	Numenius phaeopus		5	28	1	7				28	
White-winged Tern	Chlidonias leucopterus			1						1	
Lesser Crested Tern	Sterna bengalensis			2						2	
Feral Pigeon	Columba livia					>8				>8	
Spotted Dove	Streptopelia chinensis			1						1	
Slender-billed Cuckoo-Dove	Macropygia amboinensis		2							2	
White-faced Cuckoo-Dove	Turacoena manadensis	*	2							2	
Green-winged Pigeon	Chalcophaps indica		2	1						2	
Stephan's Pigeon	Chalcophaps stephani						1			1	
Grey-cheeked Green Pigeon	Treron griseicauda	**	>39				>15	2		>39	
Black-naped Fruit-Dove	Ptilinopus melanospila			1			1			1	
Pink-headed Imperial Pigeon	Ducula rosacea	**	4				9			9	
White Imperial Pigeon	Ducula luctuosa	*	1	5			2			5	
Yellow-crested Cockatoo	Cacatua sulphurea	**	2				5			5	
Ornate Lorikeet	Trichoglossus ornatus	*	11							11	
Sulawesi Hanging-Parrot	Loriculus stigmatus	*		1						1	
Green Hanging Parrot	Loriculus exilis	*	1							1	
Great-billed Parrot	Tanygnathus megalorynchos		4				5			7	
Blue-backed (Muller's) Parrot	Tanygnathus sumatranus		8							8	
Plaintive Cuckoo	Cacomantis merulinus		1				1			1	
Channel-billed Cuckoo	Scythrops novaehollandiae						1			1	
Fiery-billed Malkoha	Phaenicophaeus calyrorhynchus	*	7	1		>9	1			>9	
Lesser Coucal	Centropus bengalensis		1	2	1		2	2		2	
Bay Coucal	Centropus celebensis	*	1				1			1	
Sulawesi Scops-Owl	Otus manadensis	*	1							1	
Grey-rumped Tree-Swift	Hemiprocne longipennis							5		5	
White-bellied Swiftlet	Collocalia esculenta		13		1		>10			13	
Asian Palm Swift	Cypsiurus balasiensis		12							12	
Great-billed Kingfisher	Halcyon melanorhyncha	*		1						1	
Collared Kingfisher	Halcyon chloris		5	4	5	2	1	3		5	
Common Kingfisher	Alcedo atthis				1		3			3	
Purple-winged Roller	Coracias temminckii	*					2			2	
Broad-billed Roller (Dollarbird)	Eurystomus orientalis		1				1			1	
Ashy Woodpecker	Mulleripicus fulvus	*		1			1			1	
Red-bellied Pitta	Pitta erythrogaster						1			1	
Pacific Swallow	Hirundo tahitica		2		8					8	
White-rumped Cuckoo-Shrike	Coracina leucopygia	*	3	6	6	1	3	4	5	6	
Sulawesi Cicadabird	Coracina morio	*					2			2	
Sulawesi Pied Triller	Lalage [nigra] leucopygialis	*	1	1	1		1	2		2	
White-winged Triller	Lalage sueurii			1						1	
Hair-crested Drongo	Dicrurus hottentottus			2			2			2	
Black-naped Oriole	Oriolus chinensis		1	4	1		3	2		4	
Slender-billed Crow	Corvus enca		1		2		2	2		2	
Piping Crow	Corvus typicus	*		3				1		3	

SQUARE	74									
DATE	05/09	23/9	24/9	04/11	05/11	16/11	17/11	Max		
SURVEY TIME	90m	135m	135m	90m	150m	120m	120m	Count		
COMMON NAME	SYSTEMATIC NAME									
Sulawesi Babbler	Trichastoma celebense	*	2	7	2	5	2	1	7	
Pied Bushchat	Saxicola caprata		2				2	1	2	
Golden-bellied Gerygone	Gerygone sulphurea		1	1					1	
Black-naped Monarch	Hypothymis azurea puella		5	1	1	3			5	
White-breasted Woodswallow	Artamus leucorhynchus		10	4	14	2	4	18	18	
Asian Glossy Starling	Aplonis panayensis		6			>6	2		>6	
White-necked Myna	Streptocitta albigollis	*	1	3	2	3	2		3	
Black-billed Myna	Scissirostrum dubium	*		8					8	
Brown-throated Sunbird	Anthreptes malacensis		5	5	4	2	2	2	5	
Black Sunbird	Nectarinia aspasia		2	1		1	1	2	2	
Olive-backed Sunbird	Nectarinia jugularis		7	3	6	1	1	5	7	
Crimson Sunbird	Aethopyga siparaja		1			1			1	
Yellow-sided Flowerpecker	Dicaeum aureolimbatum	*	6					3	6	
Grey-sided Flowerpecker	Dicaeum celebicum	*	4	3	5	2	2	3	5	
Red-bellied White-Eye	Zosterops chloris	**		1	2		5	14	14	
Black-bellied White-Eye	Zosterops consobrinorum	*	3				3		3	
Common species			>20						>20	
TOTAL SPECIES: 80										
SULAWESI ENDEMICS: 25										
INDONESIAN ENDEMICS: 4										
TOTAL TIME: 14h										
TEAMS: 4										

SQUARE	75				
DATE		07/8	08/8	09/8	Max Count
SURVEY TIME		120m	210m	345m	
COMMON NAME	SYSTEMATIC NAME				
Striated Heron	<i>Butorides striatus</i>		1	1	1
Woolly-necked Stork	<i>Ciconia episcopus</i>		1	1	1
Sulawesi Serpent-Eagle	<i>Spilornis rufipectus</i>	*		1	1
Spot-tailed Goshawk	<i>Accipiter trinotatus</i>	*		1	1
Black Eagle	<i>Ictinaetus malayensis</i>			1	1
Sulawesi Hawk-Eagle	<i>Spizaetus lanceolatus</i>	*	1		1
Peregrine Falcon	<i>Falco peregrinus</i>			1	1
Red Junglefowl	<i>Gallus gallus</i>			3	3
Slender-billed Cuckoo-Dove	<i>Macropygia amboinensis</i>			4	4
White-faced Cuckoo-Dove	<i>Turacoena manadensis</i>	*	3	2	4
Grey-cheeked Green Pigeon	<i>Treron griseicauda</i>	**		9	6
Black-naped Fruit-Dove	<i>Ptilinopus melanospila</i>		1	3	21
Green Imperial Pigeon	<i>Ducula aenea</i>			1	1
Pink-headed Imperial Pigeon	<i>Ducula rosacea</i>	**		3	18
Pied Imperial Pigeon	<i>Ducula bicolor</i>			5	5
White Imperial Pigeon	<i>Ducula luctuosa</i>	*	7	11	2
Ornate Lorikeet	<i>Trichoglossus ornatus</i>	*		27	25
Sulawesi Hanging-Parrot	<i>Loriculus stigmatus</i>	*		10	>27
Green Hanging-Parrot	<i>Loriculus exilis</i>	*	2	7	4
Great-billed Parrot	<i>Tanygnathus megalorhynchus</i>			3	2
Drongo Cuckoo	<i>Surniculus lugubris</i>			1	1
Fiery-billed Malkoha	<i>Phaenicophaeus calyorrhynchus</i>	*		2	>7
Bay Coucal	<i>Centropus celebensis</i>	*	3	6	8
Great-eared Nightjar	<i>Eurostopodus macrotis</i>			1	1
Grey-rumped Tree-Swift	<i>Hemiprocne longipennis</i>		6	12	39
White-bellied Swiftlet	<i>Collocalia esculenta</i>		10	10	>100
Uniform Swiftlet	<i>Aerodramus vanikorensis</i>		30	15	106
Asian Palm-Swift	<i>Cypsiurus balasienis</i>				2
Collared Kingfisher	<i>Halycon chloris</i>		1	4	5
Common Kingfisher	<i>Alcedo atthis</i>			2	1
Rainbow Bee-eater	<i>Merops ornatus</i>				16
Red-knobbed Hornbill	<i>Rhyticeros cassidix</i>	*		1	8
Ashy Woodpecker	<i>Mulleripicus fuivus</i>	*	1	1	4
Pacific Swallow	<i>Hirundo tahitica</i>				>24
White-rumped Cuckoo-Shrike	<i>Coracina leucopygia</i>	*	6	6	3
Common Cicadabird	<i>Coracina tenuirostris</i>				5
Sulawesi Cicadabird	<i>Coracina morio</i>	*		3	3
Hair-crested Drongo	<i>Dicrurus hottentottus</i>		2	8	6
Black-naped Oriole	<i>Oriolus chinensis</i>		2	11	15
Piping Crow	<i>Corvus typicus</i>	*	1	5	3
Sulawesi Babbler	<i>Trichastoma celebense</i>	*	1	5	6
Golden-bellied Gerygone	<i>Gerygone sulphurea</i>			1	1
Black-naped Monarch	<i>Hypothymis azurea puella</i>			8	9
Citrine Flycatcher	<i>Culicicapa helianthea</i>				11
Grey Wagtail	<i>Motacilla cinerea</i>				1
White-breasted Woodswallow	<i>Artamus leucorhynchus</i>		2	4	5
Asian Glossy Starling	<i>Aplonis panayensis</i>			1	16
Sulawesi Crested Myna	<i>Basilornis celebensis</i>	*			2
White-necked Myna	<i>Streptocitta albigollis</i>	*	9	8	9
Finch-billed Myna	<i>Scissirostrum dubium</i>				35
Brown-throated Sunbird	<i>Anthreptes malacensis</i>			13	6
Black Sunbird	<i>Nectarinia aspasia</i>			10	8
Olive-backed Sunbird	<i>Nectarinia jugularis</i>			3	8
Crimson Sunbird	<i>Aethopyga siparaja</i>				2
Yellow-sided Flowerpecker	<i>Dicaeum aureolimbatum</i>	*		5	2
Grey-sided Flowerpecker	<i>Dicaeum celebicum</i>	*		3	5
Lemon-bellied White-Eye	<i>Zosterops chloris</i>	**	2	7	8
Pale-bellied White-Eye	<i>Zosterops consobrinorum</i>	*			>15
TOTAL SPECIES: 58					
SULAWESI ENDEMICS: 21					
INDONESIAN ENDEMICS: 3					
TOTAL TIME: 11h15m					
TEAMS: 2					

SQUARE	76					
DATE		09/9	12/11	12/11	12/11	Max Count
SURVEY TIME		150m	180m	60m	275m	
COMMON NAME	SYSTEMATIC NAME					
Great-billed Heron	Ardea sumatrana	1		1		1
Striated Heron	Butorides striatus	4		8		8
Brahminy Kite	Haliastur indus	4		1		4
White-bellied Sea-Eagle	Haliaeetus leucogaster	1				1
Lesser Fish-Eagle	Ichthyophaga humilis		1		1	1
Sulawesi Serpent-Eagle	Spilornis rufipectus	*	1	1	2	2
Black Eagle	Ictinaetus malayensis	3			1	3
Red Junglefowl	Gallus gallus				1	1
Barred Rail	Gallirallus torquatus	4				4
White-breasted Waterhen	Amaurornis pheoniceus		2		2	2
Common Redshank	Tringa totanus	2		6		6
Grey-tailed Tattler	Heterosceus brevipes			6		6
Common Sandpiper	Actitis hypoleucos	1	1	3		3
Whimbrel	Numenius phaeopus	1		7		7
Black-naped Tern	Sterna sumatrana			1		1
Great Crested Tern	Sterna bergii			8		8
Spotted Dove	Streptopelia chinensis	2				2
Slender-billed Cuckoo-Dove	Macropygia amboinensis		4		3	4
White-faced Cuckoo-Dove	Turacoena manadensis	* 8	5		1	8
Green-winged Pigeon	Chalcophaps indica		1			1
Stephan's Pigeon	Chalcophaps stephani	3				3
Grey-cheeked Green Pigeon	Treron griseicauda	** >52			18	>52
Black-naped Fruit-Dove	Ptilinopus melanospila	>51	9		17	>51
Pink-headed Imperial Pigeon	Ducula rosacea	**	8	2	2	8
White Imperial Pigeon	Ducula luctuosa	*			3	3
Yellow-crested Cockatoo	Cacatua sulphurea	**	6		5	6
Ornate Lorikeet	Trichoglossus ornatus	* 2		2	6	6
Sulawesi Hanging-Parrot	Loriculus stigmatus	* 10		1	3	10
Green Hanging-Parrot	Loriculus exilis	*			1	1
Golden-mantled Racket-tailed Parrot	Prioniturus platurus	*			2	2
Plaintive Cuckoo	Cacomantis merulinus	1			1	1
Drongo Cuckoo	Surniculus lugubris		2	1	1	2
Black-billed Koel	Eudynamis melanorhyncha	* 1	1		1	1
Fiery-billed Malkoha	Phaenicophaeus calyrorhynchus	* 2	2		1	2
Lesser Coucal	Centropus bengalensis	3	4	1	4	4
Bay Coucal	Centropus celebensis	*	4		3	4
Grey-rumped Tree-Swift	Hemiprocne longipennis	43				43
White-bellied Swiftlet	Collocalia esculenta	>161	>185		25	>185
Uniform Swiftlet	Aerodramus vanikorensis	>42	>33	5		>42
Asian Palm-Swift	Cypsiurus balasienis		3			3
Collared Kingfisher	Halcyon chloris	7	3	2	1	7
Sulawesi Pygmy Kingfisher	Ceyx fallax	*			1	1
Common Kingfisher	Alcedo atthis	1	2			2
Rainbow Bee-eater	Merops ornatus	12			5	12
Red-knobbed Hornbill	Rhyticeros cassidix	* 7	6		8	8
Ashy Woodpecker	Mulleripicus fulvus	* 2			5	5
Red-bellied Pitta	Pitta erythrogaster				2	2
Pacific Swallow	Hirundo tahitica	7		2		7
White-rumped Cuckoo-Shrike	Coracina leucopygia	* 6		2	4	6
Common Cicadabird	Coracina tenuirostris	2				2
Sulawesi Cicadabird	Coracina morio	* 2	4		5	5
White-winged Triller	Laiage suerii			2		2
Hair-crested Drongo	Dicrurus hottentottus		8	1		8
Black-naped Oriole	Oriolus chinensis	8	6	1	9	9
Slender-billed Crow	Corvus enca			2		2
Piping Crow	Corvus typicus	* 2		1	1	2
Sulawesi Babbler	Trichastoma celebense	*	12	2	7	12
Pied Bushchat	Saxicola caprata	1				1
Golden-bellied Gerygone	Gerygone sulphurea			3		3
Black-naped Monarch	Hypothymis azurea puella	1	1	1	2	2
Yellow Wagtail	Motacilla flava		1		2	2
White-breasted Woodswallow	Artamus leucorhynchus	6	3	6		6
Ivory-backed Woodswallow	Artamus monarchus	* 2			2	2
Asian Glossy Starling	Aplonis panayensis	6			3	6

SQUARE	76						
DATE		09/9	12/11	12/11	12/11		Max Count
SURVEY TIME		150m	180m	60m	275m		
COMMON NAME	SYSTEMATIC NAME						
Sulawesi Crested Myna	<i>Basilornis celebensis</i>	*	4	3		2	4
White-necked Myna	<i>Streptocitta albigollis</i>	*	6	10		5	10
Finch-billed Myna	<i>Scissirostrum dubium</i>		7			4	7
Brown-throated Sunbird	<i>Anthreptes malacensis</i>		4		2	2	4
Black Sunbird	<i>Nectarinia aspasia</i>		6	2		1	6
Olive-backed Sunbird	<i>Nectarinia jugularis</i>		8	5	3	8	8
Crimson Sunbird	<i>Aethopyga siparaja</i>		2	4		1	4
Yellow-sided Flowerpecker	<i>Dicaeum aureolimbatum</i>	*	11	6		9	11
Grey-sided Flowerpecker	<i>Dicaeum celebicum</i>	*	11	14		6	14
Lemon-bellied White-Eye	<i>Zosterops chloris</i>	**	6	2	2	3	6
Pale-bellied White-Eye	<i>Zosterops consobrinorum</i>	*	8	3		7	7
Black-faced Munia	<i>Lonchura molucca</i>	**	14				14
Sparrowhawk species	<i>Accipiter sp</i>	*				1	1
TOTAL SPECIES: 77							
SULAWESI ENDEMICS: 24							
INDONESIAN ENDEMICS: 5							
TOTAL TIME: 11h05m							
TEAMS: 2							

SQUARE	78		
DATE		05/11	Max Count
SURVEY TIME		120m	
COMMON NAME	SYSTEMATIC NAME		
Little Egret	<i>Egretta garzetta nigripes</i>	13	13
Striated Heron	<i>Butorides striatus</i>	4	4
Woolly-necked Stork	<i>Ciconia episcopus</i>	2	2
Milky Stork	<i>Mycteria cinerea</i>	21	21
Brahminy Kite	<i>Haliastur indus</i>	1	1
White-bellied Sea-Eagle	<i>Haliaeetus leucogaster</i>	1	1
Whimbrel	<i>Numenius phaeopus</i>	19	19
Spotted Dove	<i>Streptopelia chinensis</i>	1	1
Grey-cheeked Green Pigeon	<i>Treron griseicauda</i>	** 1	1
Black-naped Fruit-Dove	<i>Ptilinopus melanospila</i>	3	3
Pink-headed Imperial Pigeon	<i>Ducula rosacea</i>	** 1	1
Sulawesi Hanging-Parrot	<i>Loriculus stigmatus</i>	* 1	1
Oriental Cuckoo	<i>Cuculus saturatus</i>	1	1
Plaintive Cuckoo	<i>Cacomantis merulinus</i>	1	1
Fiery-billed Malkoha	<i>Phaenicophaeus calyborhynchus</i>	* 5	5
Lesser Coucal	<i>Centropus bengalensis</i>	7	7
Bay Coucal	<i>Centropus celebensis</i>	* 2	2
White-bellied Swiftlet	<i>Collocalia esculenta</i>	5	5
Uniform Swiftlet	<i>Aerodramus vanikorensis</i>	4	4
Collared Kingfisher	<i>Halcyon chloris</i>	5	5
Pacific Swallow	<i>Hirundo tahitica</i>	1	1
White-rumped Cuckoo-Shrike	<i>Coracina leucopygia</i>	* 6	6
Black-naped Oriole	<i>Oriolus chinensis</i>	2	2
Slender-billed Crow	<i>Corvus enca</i>	3	3
Sulawesi Babbler	<i>Trichastoma celebense</i>	* 14	14
Pied Bushchat	<i>Saxicola caprata</i>	4	4
Golden-bellied Gerygone	<i>Gerygone sulphurea</i>	2	2
Black-naped Monarch	<i>Hypothymis azurea puella</i>	2	2
White-breasted Woodswallow	<i>Artamus leucorhynchus</i>	9	9
White-necked Myna	<i>Streptocitta albigollis</i>	* 3	3
Brown-throated Sunbird	<i>Anthreptes malacensis</i>	6	6
Black Sunbird	<i>Nectarinia aspasia</i>	1	1
Olive-backed Sunbird	<i>Nectarinia jugularis</i>	2	2
Yellow-sided Flowerpecker	<i>Dicaeum aureolimbatum</i>	* 1	1
Pale-bellied White-Eye	<i>Zosterops consobrinorum</i>	* >4	>4
TOTAL SPECIES: 35			
SULAWESI ENDEMICS: 8			
INDONESIAN ENDEMICS: 2			
TOTAL TIME: 2h			
TEAMS: 1			



SQUARE	79			
DATE		08/9	12/11	Max Count
SURVEY TIME		120m	80m	
COMMON NAME	SYSTEMATIC NAME			
Black Eagle	<i>Ictinaetus malayensis</i>		1	1
Barred Rail	<i>Gallirallus torquatus</i>	1		1
Spotted Dove	<i>Streptopelia chinensis</i>	1		1
Slender-billed Cuckoo-Dove	<i>Macropygia amboinensis</i>	2		2
Stephan's Pigeon	<i>Chalcophaps stephani</i>	1		1
Grey-cheeked Green Pigeon	<i>Treron griseicauda</i>		2	2
Black-naped Fruit-Dove	<i>Ptilinopus melanospila</i>	17	3	17
Pink-headed Imperial Pigeon	<i>Ducula rosacea</i>	**	5	5
White Imperial Pigeon	<i>Ducula luctuosa</i>	*	1	1
Yellow-crested Cockatoo	<i>Cacatua sulphurea</i>	**	2	2
Ornate Lorikeet	<i>Trichoglossus ornatus</i>	*	14	2
Sulawesi Hanging-Parrot	<i>Loriculus stigmatus</i>	*	2	2
Green Hanging-Parrot	<i>Loriculus exilis</i>	*		1
Great-billed Parrot	<i>Tanygnathus megalorhynchus</i>		5	2
Blue-backed (Muller's) Parrot	<i>Tanygnathus sumatranus</i>			3
Drongo Cuckoo	<i>Sumiculus lugubris</i>		1	
Fiery-billed Malkoha	<i>Phaenicophaeus calyrorhynchus</i>	*		1
Lesser Coucal	<i>Centropus bengalensis</i>	*	2	1
Bay Coucal	<i>Centropus celebensis</i>	*	4	
Grey-rumped Tree-Swift	<i>Hemiprocne longipennis</i>	*	2	7
White-bellied Swiftlet	<i>Collocalia esculenta</i>		5	
Collared Kingfisher	<i>Halcyon chloris</i>		7	3
Rainbow Bee-eater	<i>Merops ornatus</i>		>18	
Ashy Woodpecker	<i>Mulleripicus fulvus</i>	*	2	
Pacific Swallow	<i>Hirundo tahitica</i>		7	6
White-rumped Cuckoo-Shrike	<i>Coracina leucopygia</i>	*	8	2
Common Cicadabird	<i>Coracina tenuirostris</i>		1	
Sulawesi Cicadabird	<i>Coracina morio</i>	*	1	
Sulawesi Pied Triller	<i>Lalage [nigra] leucopygialis</i>	*	2	
Hair-crested Drongo	<i>Dicrurus hottentottus</i>		9	
Black-naped Oriole	<i>Oriolus chinensis</i>		15	2
Slender-billed Crow	<i>Corvus enca</i>		2	
Piping Crow	<i>Corvus typicus</i>	*	4	
Sulawesi Babbler	<i>Trichastoma celebense</i>	*	11	
Pied Bushchat	<i>Saxicola caprata</i>			2
Golden-bellied Gerygone	<i>Gerygone sulphurea</i>			3
Black-naped Monarch	<i>Hypothymis azurea puella</i>		4	
White-breasted Woodswallow	<i>Artamus leucorhynchus</i>		5	5
Ivory-backed Woodswallow	<i>Artamus monachus</i>	*		3
Asian Glossy Starling	<i>Aplonis panayensis</i>		13	
Sulawesi Crested Myna	<i>Basilornis celebensis</i>	*	4	
White-necked Myna	<i>Streptocitta albigollis</i>	*	6	3
Finch-billed Myna	<i>Scissirostrum dubium</i>		4	
Brown-throated Sunbird	<i>Anthreptes malacensis</i>		2	2
Black Sunbird	<i>Nectarinia aspasia</i>		12	1
Olive-backed Sunbird	<i>Nectarinia jugularis</i>		11	8
Crimson Sunbird	<i>Aethopyga siparaja</i>		1	
Yellow-sided Flowerpecker	<i>Dicaeum aureolimbatum</i>	*	9	3
Grey-sided Flowerpecker	<i>Dicaeum celebicum</i>	*	15	5
Lemon-bellied White-Eye	<i>Zosterops chloris</i>	**	11	5
Pale-bellied White-Eye	<i>Zosterops consobrinorum</i>	*	>7	3
Black-faced Munia	<i>Lonchura molucca</i>	**	2	
TOTAL SPECIES: 52				
SULAWESI ENDEMICS: 18				
INDONESIAN ENDEMICS: 4				
TOTAL TIME: 3h20m				
TEAMS: 2				

SQUARE	80		
DATE		08/9	Max Count
SURVEY TIME		105m	
COMMON NAME	SYSTEMATIC NAME		
White-bellied Sea-Eagle	<i>Haliaeetus leucogaster</i>	2	2
Green-winged Pigeon	<i>Chalcophaps indica</i>	2	2
Sulawesi Hanging-Parrot	<i>Loriculus stigmatus</i>	* 2	2
Lesser Coucal	<i>Centropus bengalensis</i>	2	2
Grey-rumped Tree-Swift	<i>Hemiprocne longipennis</i>	7	7
Collared Kingfisher	<i>Halcyon chloris</i>	9	9
Pacific Swallow	<i>Hirundo tahitica</i>	3	3
Black-naped Oriole	<i>Oriolus chinensis</i>	3	3
Piping Crow	<i>Corvus typicus</i>	* 2	2
Pied Bushchat	<i>Saxicola caprata</i>	3	3
Black-naped Monarch	<i>Hypothymis azurea puella</i>	2	2
White-breasted Woodswallow	<i>Artamus leucorhynchus</i>	4	4
Sulawesi Crested Myna	<i>Basilornis celebensis</i>	* 3	3
Brown-throated Sunbird	<i>Anthreptes malacensis</i>	4	4
Black Sunbird	<i>Nectarinia aspasia</i>	9	9
Olive-backed Sunbird	<i>Nectarinia jugularis</i>	6	6
Crimson Sunbird	<i>Aethopyga siparaja</i>	4	4
Yellow-sided Flowerpecker	<i>Dicaeum aureolimbatum</i>	* 8	8
Grey-sided Flowerpecker	<i>Dicaeum celebicum</i>	* 5	5
Lemon-bellied White-Eye	<i>Zosterops chloris</i>	** 6	6
Pale-bellied White-Eye	<i>Zosterops consobrinorum</i>	* 2	2
Buttonquail species	<i>Turnix sp</i>	1	1
TOTAL SPECIES: 22			
SULAWESI ENDEMICS: 6			
INDONESIAN ENDEMICS: 1			
TOTAL TIME: 1h45m			
TEAMS: 1			

SQUARE	83		
DATE		25/9	Max
			Count
SURVEY TIME		300m	
COMMON NAME	SYSTEMATIC NAME		
Pacific Reef-Egret	<i>Egretta sacra</i>	1	1
Striated Heron	<i>Butorides striatus</i>	2	2
Osprey	<i>Pandion haliaetus</i>	2	2
Sulawesi Serpent-Eagle	<i>Spilornis rufipectus</i>	* 3	3
Spot-tailed Goshawk	<i>Accipiter trinotatus</i>	* 1	1
Curlew Sandpiper	<i>Calidris ferruginea</i>	2	2
Common Sandpiper	<i>Actitis hypoleucos</i>	7	7
Whimbrel	<i>Numenius phaeopus</i>	1	1
Slender-billed Cuckoo-Dove	<i>Macropygia amboinensis</i>	4	4
White-faced Cuckoo-Dove	<i>Turacoena manadensis</i>	* 2	2
Green-winged Pigeon	<i>Chalcophaps indica</i>	2	2
Grey-cheeked Green Pigeon	<i>Treron griseicauda</i>	** >57	>57
Black-naped Fruit-Dove	<i>Ptilinopus melanospila</i>	>26	>26
Pink-headed Imperial Pigeon	<i>Ducula rosacea</i>	** 7	7
White Imperial Pigeon	<i>Ducula luctuosa</i>	* >30	>30
Sulawesi Hanging-Parrot	<i>Loriculus stigmatus</i>	* 4	4
Fiery-billed Malkoha	<i>Phaenicophaeus calyorrhynchus</i>	* 6	6
Bay Coucal	<i>Centropus celebensis</i>	* 11	11
Grey-rumped Tree-Swift	<i>Hemiprocne longipennis</i>	9	9
White-bellied Swiftlet	<i>Collocalia esculenta</i>	8	8
Uniform Swiftlet	<i>Aerodramus vanikorensis</i>	1	1
Great-billed Kingfisher	<i>Halcyon melanorhyncha</i>	* 1	1
Collared Kingfisher	<i>Halcyon chloris</i>	2	2
Common Kingfisher	<i>Alcedo atthis</i>	3	3
Sulawesi Hornbill	<i>Penelopides exarhatus</i>	* 5	5
Red-knobbed Hornbill	<i>Rhyticeros cassidix</i>	* 1	1
Ashy Woodpecker	<i>Mulleripicus fulvus</i>	* 4	4
Pacific Swallow	<i>Hirundo tahitica</i>	6	6
White-rumped Cuckoo-Shrike	<i>Coracina leucopygia</i>	* 6	6
Common Cicadabird	<i>Coracina tenuirostris</i>	2	2
Hair-crested Drongo	<i>Dicrurus hottentottus</i>	9	9
Black-naped Oriole	<i>Oriolus chinensis</i>	8	8
Piping Crow	<i>Corvus typicus</i>	* 2	2
Sulawesi Babbler	<i>Trichastoma celebense</i>	* 14	14
Black-naped Monarch	<i>Hypothymis azurea puella</i>	6	6
Citrine Flycatcher	<i>Culicicapa helianthea</i>	9	9
Sulawesi Crested Myna	<i>Basilornis celebensis</i>	* 3	3
White-necked Myna	<i>Streptocitta albigollis</i>	* 2	2
Brown-throated Sunbird	<i>Anthreptes malacensis</i>	5	5
Black Sunbird	<i>Nectarinia aspasia</i>	4	4
Crimson Sunbird	<i>Aethopyga siparaja</i>	4	4
Yellow-sided Flowerpecker	<i>Dicaeum aureolimbatum</i>	* 10	10
Grey-sided Flowerpecker	<i>Dicaeum celebicum</i>	* 6	6
TOTAL SPECIES: 43			
SULAWESI ENDEMIC: 18			
INDONESIAN ENDEMIC: 2			
TOTAL TIME: 5h			
TEAMS: 1			

SQUARE	90 (SIUMPU ISLAND)					
DATE		07/8	10/9	07/11	13/11	Max Count
SURVEY TIME		40m	180m	225m	240m	
COMMON NAME	SYSTEMATIC NAME					
Pacific Reef-Egret	<i>Egretta sacra</i>				5	5
Brahminy Kite	<i>Haliastur indus</i>	1	9			9
White-bellied Sea-Eagle	<i>Haliaeetus leucogaster</i>		1		1	1
Sulawesi Serpent-Eagle	<i>Spilornis rufipectus</i>	*	1			1
Spotted Harrier	<i>Circus assimilis</i>		1			1
Spotted Kestrel	<i>Falco moluccensis</i>	**		1	3	3
Common Sandpiper	<i>Actitis hypoleucos</i>			1		1
Great Crested Tern	<i>Sterna bergii</i>		1			1
Spotted Dove	<i>Streptopelia chinensis</i>		3	2		3
Slender-billed Cuckoo-Dove	<i>Macropygia amboinsis</i>		1			1
Green-winged Pigeon	<i>Chalcophaps indica</i>		1			1
Zebra Dove	<i>Geopelia striata</i>		2			2
Pink-necked Green Pigeon	<i>Treron vernans</i>				>10	>10
Grey-cheeked Green Pigeon	<i>Treron griseicauda</i>	**		1		1
Black-naped Fruit-Dove	<i>Phinopus melanospila</i>		3	5	2	5
Pied Imperial Pigeon	<i>Ducula bicolor</i>		2			2
White Imperial Pigeon	<i>Ducula luctuosa</i>	*	2	2		2
Sulawesi Hanging-Parrot	<i>Loriculus stigmatus</i>	*		3	1	3
Oriental Cuckoo	<i>Cuculus saturatus</i>			1		1
Plaintive Cuckoo	<i>Cacomantis merulinus</i>			2	3	3
Lesser Coucal	<i>Centropus bengalensis</i>			2	4	4
White-bellied Swiftlet	<i>Collocalia esculenta</i>		9	>15	>34	>34
Uniform Swiftlet	<i>Aerodramus vanikorensis</i>				>8	>8
Collared Kingfisher	<i>Halcyon chloris</i>		2			2
Sacred Kingfisher	<i>Halcyon sancta</i>		3			3
Rainbow Bee-eater	<i>Merops ornatus</i>		15			15
Purple-winged Roller	<i>Coracias temminckii</i>	*	2	4	1	4
Pacific Swallow	<i>Hirundo tahitica</i>		5			5
White-rumped Cuckoo-Shrike	<i>Coracina leucopygia</i>	*	2	5	1	5
Hair-crested Drongo	<i>Dicrurus hottentottus</i>		7	3	8	8
Black-naped Oriole	<i>Oriolus chinensis</i>		1	4	4	4
Slender-billed Crow	<i>Corvus enca</i>		8	2	6	8
Pied Bushchat	<i>Saxicola caprata</i>		3	2	9	9
Zitting Cisticola	<i>Cisticola juncidis</i>			3	7	7
Golden-headed Cisticola	<i>Cisticola exilis</i>				4	4
Black-naped Monarch	<i>Hypothymis azurea puella</i>		1	4	2	4
White-breasted Woodswallow	<i>Artamus leucorhynchus</i>		3	5	5	5
Asian Glossy Starling	<i>Aplonis panayensis</i>		14	8	>33	>50
Brown-throated Sunbird	<i>Anthreptes malacensis</i>		2	7	6	12
Black Sunbird	<i>Nectarinia aspasia</i>			4		4
Olive-backed Sunbird	<i>Nectarinia jugularis</i>		6	9	>10	>10
Yellow-sided Flowerpecker	<i>Dicaeum aureolimbatum</i>	*	2			2
Grey-sided Flowerpecker	<i>Dicaeum celebicum</i>	*		7	9	9
Black-faced Munia	<i>Lonchura molucca</i>	**		>5	>15	>15
Zebra Dove species			1	2	3	2
TOTAL SPECIES: 44 + 1?						
SULAWESI ENDEMICS: 7						
INDONESIAN ENDEMICS: 3						
TOTAL TIME: 11h25m						
TEAMS: 4						

SQUARE	91 (SNAKE ISLAND)			
DATE		07/11	14/11	Max Count
SURVEY TIME		180m	225m	
COMMON NAME	SYSTEMATIC NAME			
Lesser Frigatebird	Fregata ariel		1	1
Great-billed Heron	Ardea sumatrana	1	1	1
Pacific Reef-Egret	Egretta sacra	2		2
Striated Heron	Butorides striatus	12	>25	>25
Osprey	Pandion haliaetus	1		1
Red-backed Buttonquail	Turnix maculosa		4	4
White-breasted Waterhen	Amauromis pheoncurus		7	7
Pacific Golden Plover	Pluvialis fulva		2	2
Grey Plover	Pluvialis equatarola		2	2
Malaysian Plover	Charadrius peronii	5	1	5
Grey-tailed Tattler	Heteroscelus brevipes	2	3	3
Common Sandpiper	Actitis hypoleucos	7	2	7
Whimbrel	Numenius phaeops	5	2	5
Beach Thick-Knee	Esacus magnirostris		1	1
Black-naped Fruit-Dove	Ptilinopus melanospila		5	5
Lesser Coucal	Centropus bengalensis	3	1	3
Sulawesi Barn Owl	Tyto rosenbergii	*	1	1
White-bellied Swiftlet	Collocalia esculenta	13	8	13
Uniform Swiftlet	Aerodramus vanikorensis	10	>5	10
Pacific Swallow	Hirundo tahitica		2	2
Slender-billed Crow	Corvus enca	2	2	2
Pied Bushchat	Saxicola caprata	9	9	9
Golden-bellied Gerygone	Gerygone sulphurea		1	1
Zitting Cisticola	Cisticola juncidis	6	11	11
White-breasted Woodswallow	Artamus leucorhynchus	25	16	25
Brown-throated Sunbird	Anthreptes malacensis		1	1
Olive-backed Sunbird	Nectarinia jugularis	8	>45	>45
Lomon-bellied White-Eye	Zosterops chloris	**	18	>19
Black-faced Munia	Lonchura molucca	**	4	4
Partridge species ?			4?	4?
TOTAL SPECIES: 29				
SULAWESI ENDEMICS: 1				
INDONESIAN ENDEMICS: 2				
TOTAL TIME:				
TEAMS: 2				

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