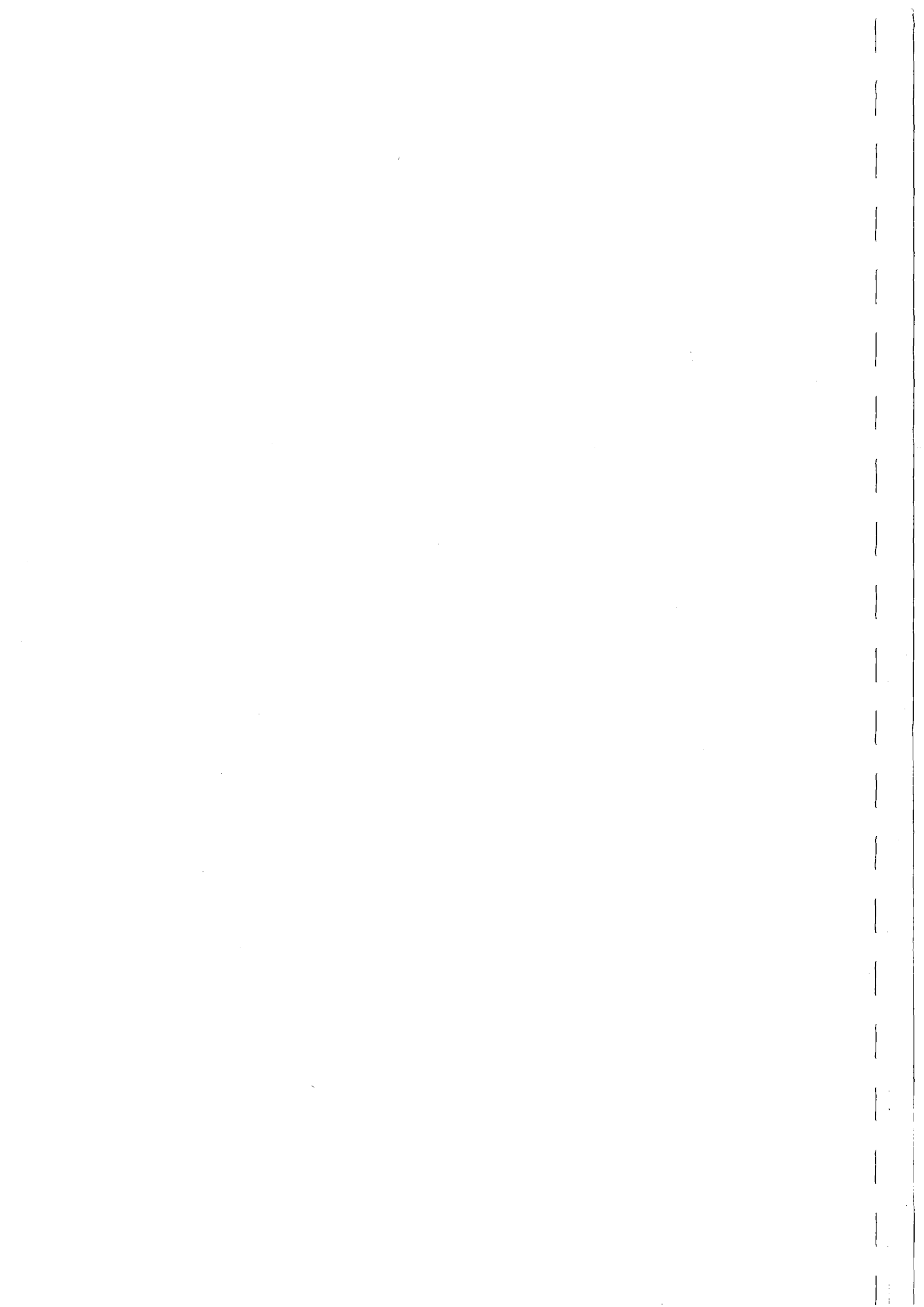


**Ornithological Survey of
Modi River Watershed Area
(Spring- 2000)**

Rajendra N. Suwal

For
Annapurna Conservation Area Project
Pokhara
Nepal



Acknowledgements

I am thankful to many people who have helped me during the survey. First of all I would like to thank Mr. Siddhartha Bajra Bajracharya, Project Director ACAP, for providing me the opportunity to carry out the ornithological survey of Modi River Watershed Area. Secondly I would like to thank Mr. Rinjen Shrestha for his kind assistance and suggestions to make this report more productive. Similarly Mr. Som Bahadur Ale deserves word of appreciation for his valuable assistance during our fieldwork. I would also like to thank Mr. Kamal Thapa, Ranger and Suresh Thapa, Ranger for their assistance during the field trip.

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Acronym used

ABC	Annapurna Base Camp
ACA	Annapurna Conservation Area
ACAP	Annapurna Conservation Area Project
BPP	Biodiversity Profiles Project
CITES	Convention on International Trade of Endangered Wild species
IUCN	The World Conservation Union
KMTNC	King Mahendra Trust for Nature Conservation
MBC	Machhapuchre Base Camp
MOFSC	Ministry of Forest and Soil Conservation
MRWA	Modi River Watershed Area
NPWC	National Parks and Wildlife Conservation

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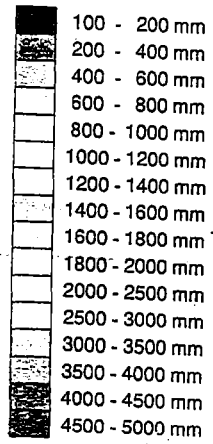
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Map No. 1 MEAN ANNUAL PRECIPITATION

STUDY AREA

Legend



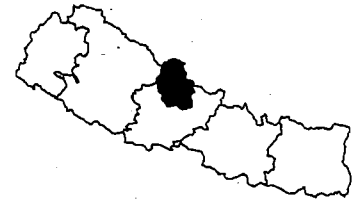
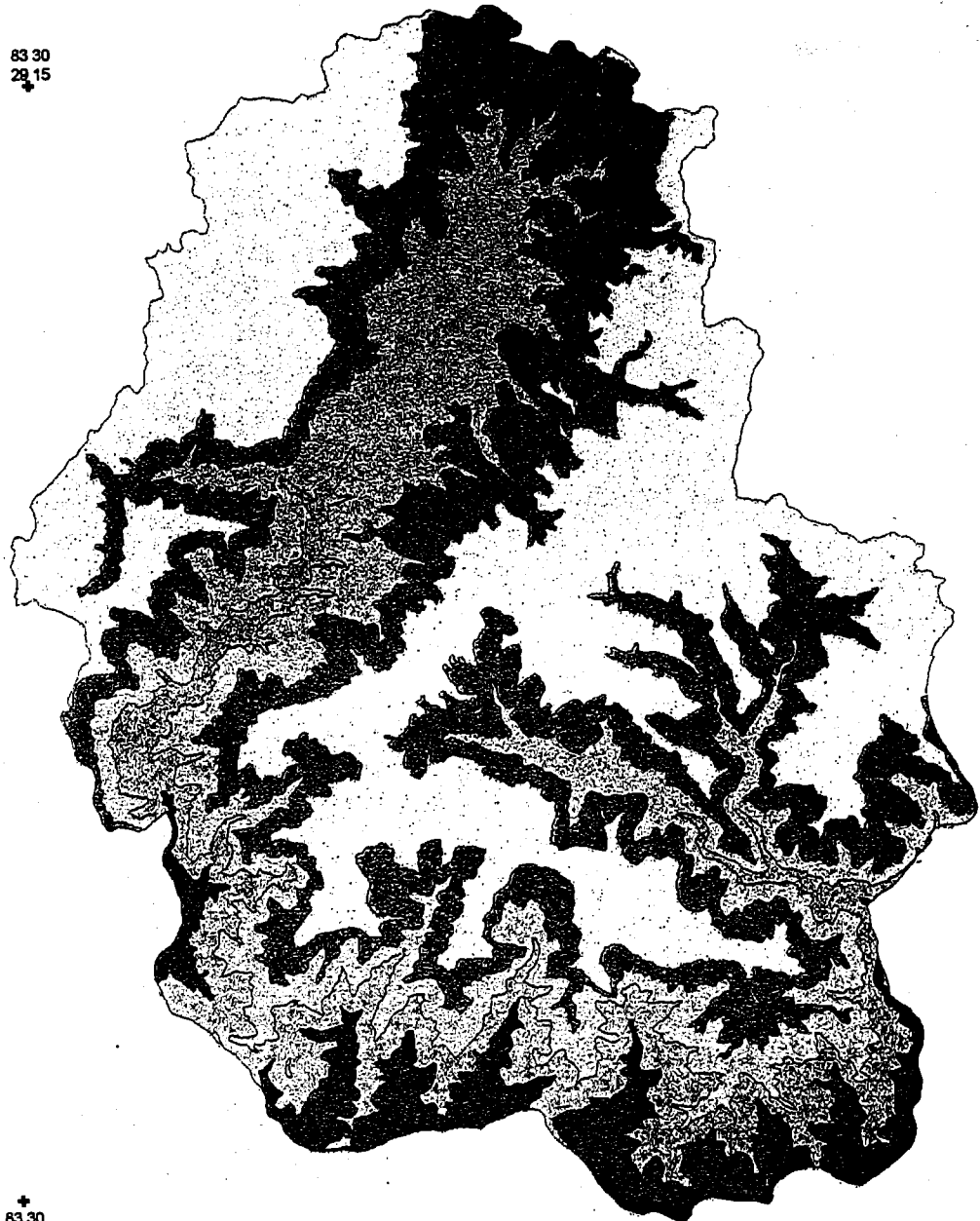
0 50 100 150 KM

Scale 1:2,000,000

 **ICIMOD**
MMR/MENRIS '96

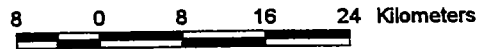
Data Source: Department of Hydrology & Meteorology, HMG, Nepal

**Map No. 2 ELEVATION RANGE
ANNAPURNA CONSERVATION AREA**



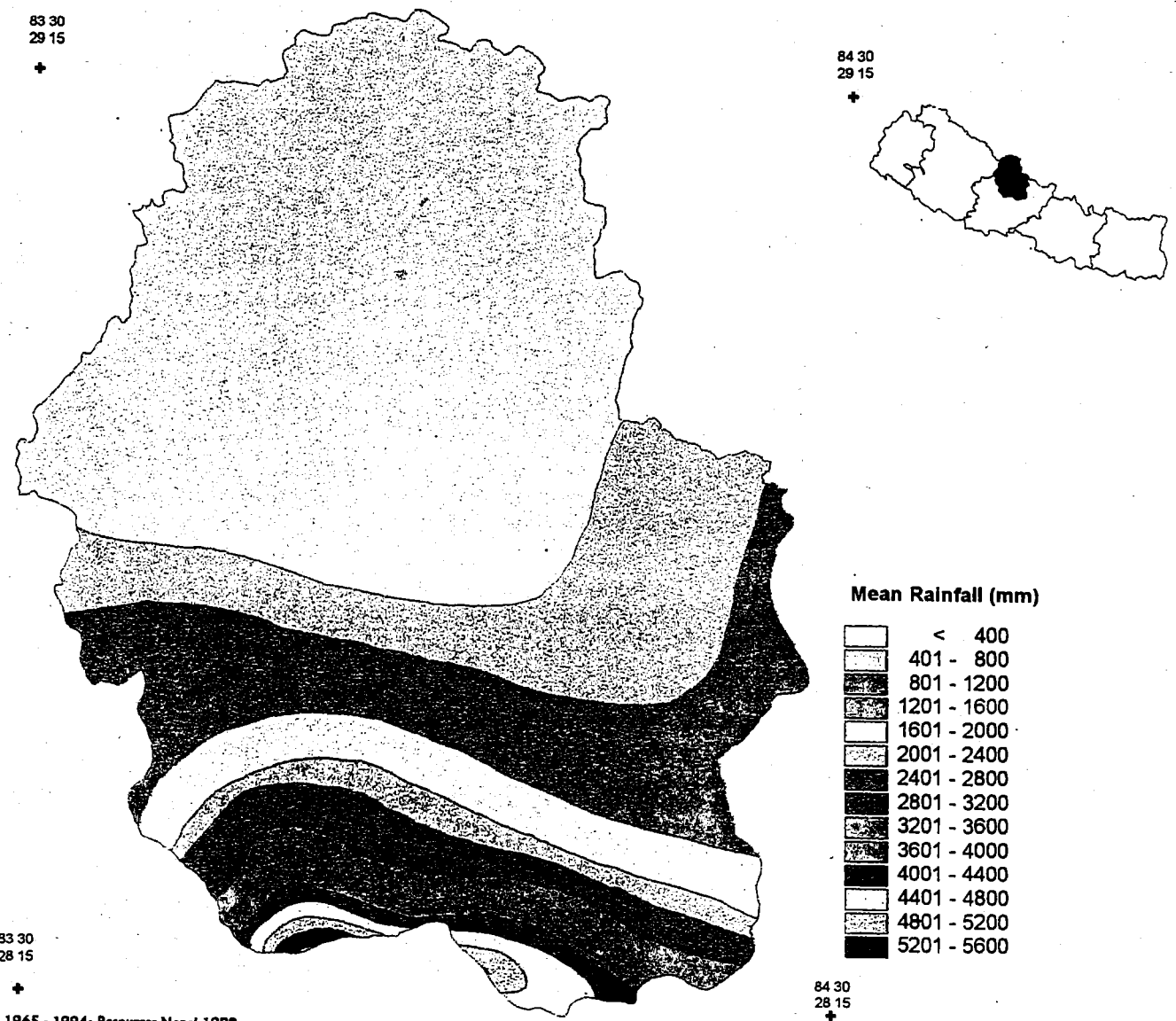
Elevation (m)	Area (sq. km)
1000-2000	458.29
2000-3000	761.64
3000-4000	1540.05
4000-5000	2163.57
> 5000	2705.45
Total	7629.00

83 30
 28 15
 Data Sources:
 Map - Topo Sheet, District Map, Department of Topographical Survey, HMG Nepal - 1986
 Boundary - ACAP Boundary Map 1996



84 30
 28 15

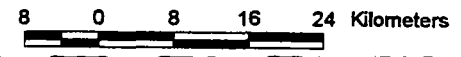
Map No. 3 RAINFALL ANNAPURNA CONSERVATION AREA



Mean Rainfall (mm)

[White box]	< 400
[Light stippled box]	401 - 800
[Medium stippled box]	801 - 1200
[Dark stippled box]	1201 - 1600
[Horizontal line pattern box]	1601 - 2000
[Vertical line pattern box]	2001 - 2400
[Diagonal line pattern box]	2401 - 2800
[Dense stippled box]	2801 - 3200
[Cross-hatch pattern box]	3201 - 3600
[Dotted pattern box]	3601 - 4000
[Dark grey box]	4001 - 4400
[Black box]	4401 - 4800
[White box]	4801 - 5200
[Black box]	5201 - 5600

Data Sources:
 Rainfall: Department of Meteorology, HMG Nepal 1965 - 1994; Resources Nepal 1998
 Boundary: Annapurna Conservation Area Project - 1996



CHAPTER I

1. Introduction

Annapurna Conservation Area is a working model of living in harmony between man and the nature. It lies in one of the world's most beautiful landscape of snow peaks, rugged mountains, the beautiful river valleys and the man made terrace farms. It is nestled among one of the world's tallest mountain (Annapurna I, 8091 m.) and the deepest valley formed by the Kali Gandaki River between Mt. Annapurna and the Mt. Dhaulagiri. It also includes the Mustang Region, the southern extension of the Tibetan Plateau (Annex I). Similarly the southern slope of Annapurna Range receive the highest precipitation in Nepal. Prior to designation as a conservation area the Annapurna Regions was proposed as a recreation area (Shakya, 1982) and a national park (Bunting and Wright, 1985 in BPP High Profiles). Modi River Watershed Area lies in the southern part of the ACA.

1.1 Bio-Geographic and Bio-Climatic Zones of MRWA

The source of River Modi originates from the glaciers of Annapurna Ranges. The melting snow of the Annapurna ranges including the Mt. Machhapuchre is the perennial source of water to Modi River. Beside the glaciers and the avalanches there are number of other tributaries of Modi River; the important tributaries are Kyunri, Kyumnu and Chomrong River. Besides the major tributaries there are number of seasonal and perennial streams and waterfalls in the catchment area. The eastern catchment of Modi receives more than 5000mm rainfall annually, the highest precipitation in Nepal.

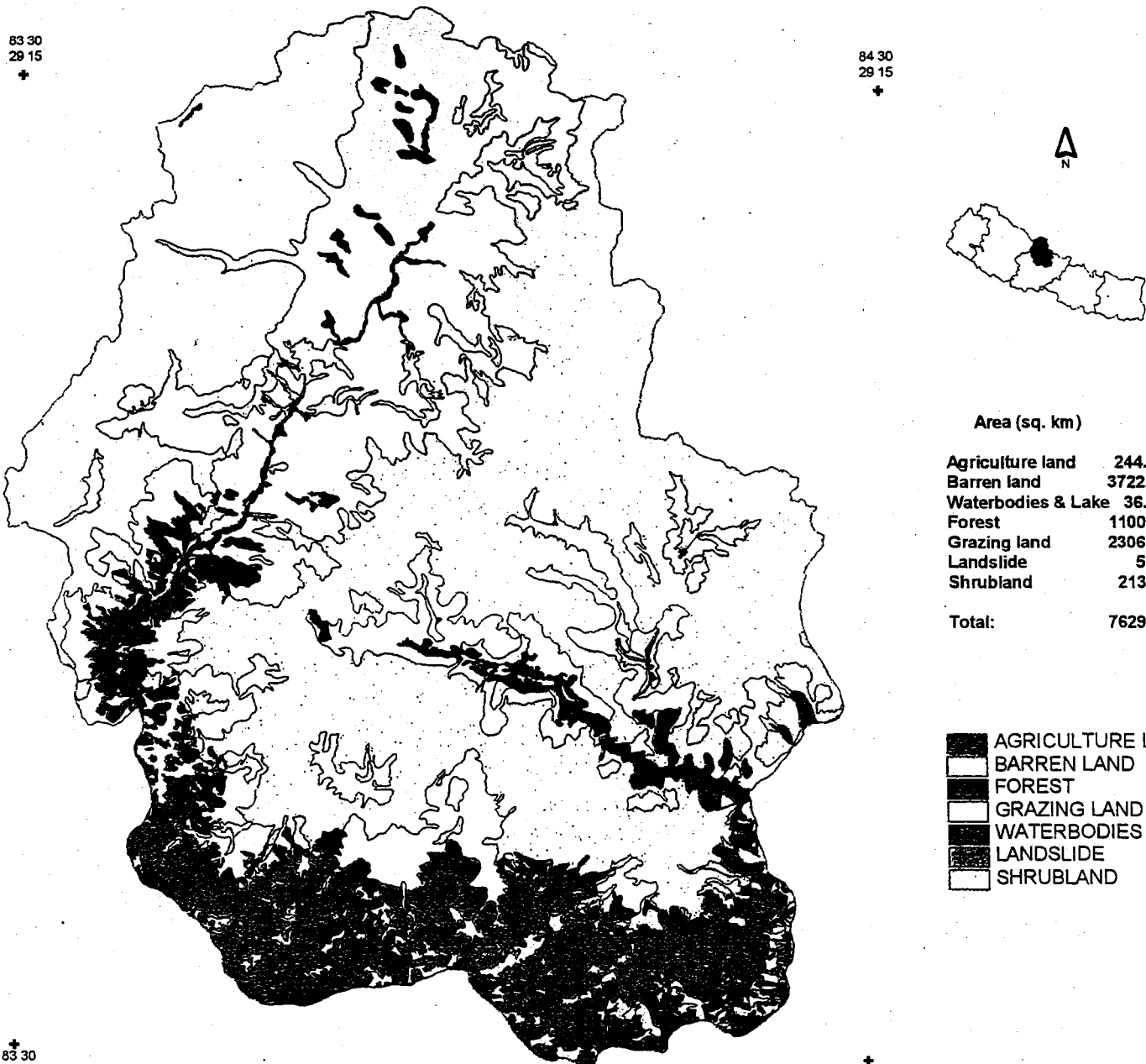
The boundary of Modi Watershed is Lumle and Chandrakot in the South, Deurali, Kogar, Keu and Machhapuchre Himal in the east, Birethanti, Mesram-Barah, Tadapani, Chuinle in the west and the Annapurna Range in the north. Accordingly the Modi Watershed is divided into three major catchments (Table 1); Western, Northern and the Eastern. Eastern catchment includes the west facing mountain slopes Chandrakot, Landruk and Devkuna. The northern catchment includes the Upper Modi River starting from the Chomrong and Modi Confluence to the Annapurna Base Camp. The Western catchment starts from Birethanti to Tadapani; that also includes Kyunri and Kyumnu streams.

Table 1: Site locations according to the catchments

Western Catchment	Northern Catchment	Eastern Catchment
Ghandruk and Kyunri Catchment: Birethanti, Tadapani, Kumrong Kyumnu Catchment: Chuinle, Ghurjung, Dhikleu, Taulung, Jhinu	Upper Modi Catchment: Chomrong, Sinuwa Bamboo, Deurali, MBC, ABC	Lumle, Chandrakot, Tankchowk, Bhichowk, Tolka, Landruk, Pachaun, Poong, Phlamu, Devkuna, Dond, Kogar, Deurali




The lowest altitude of MRWA lies on the south at Birethanti (1025m) and the highest is 8091m the Annapurna I in the north. The MRWA study area starts from the subtropical to the Nival bio-climatic zones, or in other words it spreads into Midhills, High Mountains and the High

Map No. 4 LANDUSE PATTERN ANNAPURNA CONSERVATION AREA

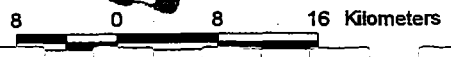


Area (sq. km)

Agriculture land	244.83
Barren land	3722.62
Waterbodies & Lake	36.23
Forest	1100.60
Grazing land	2306.11
Landslide	5.04
Shrubland	213.57
Total:	7629.00

-  AGRICULTURE LAND
-  BARREN LAND
-  FOREST
-  GRAZING LAND
-  WATERBODIES & LAKE
-  LANDSLIDE
-  SHRUBLAND

Data Sources:
 Land Utilization Map (LRMP) - Kenton Earth Sciences and HMG Nepal - 1986
 by: Ann. Conserv. Area Proj. 6



84 30
28 15

Himalayan Physiographic Zones (Table 2). During the survey we covered Sub-tropical, Temperate and the Sub-alpine bio-climatic zones.

Table 2: MRWA's bio-climatic zones, altitude and the corresponding physiographic zones

Bio-climatic Zones (Dobremez, 1972)	Altitude variation		Corresponding Physiographic zone
	Lower range (m)	Upper range (m)	
Sub-tropical	1000 – 1500	1501 - 2000	Midhills
Temperate	2001 – 2500	2501 - 3000	
Sub-alpine	3001 – 3500	3501 - 4000	High Mountains
Alpine	4001 – 4500	4501 - 5000	
Nival	Above 5001m		High Himalaya

Source: LRMP. 1983; IUCN 1994

1.2 Landuse and Vegetation Type of MRWA

Annapurna Conservation Area represents from 1000m – 8000+m elevations above sea level within 120-kilometer distance. But in MRWA this altitudinal distance can be found within 40-kilometer stretch between Birethanti to the Annapurna Range. Within this cross section we can find all the landuse type defined for ACA.

More than 49% of the ACA is covered by Barren-land (Snow, ice and rocks) followed by grassland and meadows or also termed as Grazing land (30%). Forest covers about 14% of the land area. The minor landuse type include the Agriculture and Shrub-land by 3% each followed by water-body (0.7%) and landslides (.3 %) respectively (Resources Nepal, 2000).

The vegetation type of MRWA between 1000 – 2000m includes Sub-tropical mixed broad-leafed forest. The dominant species includes *Schima wallichii*, *Castanopsis indica*, *Alnus nepalensis*, and *Pinus Roxburghii*. Higher up between 2000 – 3000m it is succeeded by Temperate mixed broad-leafed forest with oaks such as *Quercus lamellosa*, *Q. lanata*, *Q. semecarpifolia*, *Rhododendron arboreum* and *Arundinaria* sps. Conifer tree grows between 3000 – 4000m; the dominant species includes *Abies spectabilis*, *Tsuga dumosa*, *Pinus wallichii*, *Taxus baccata* and *Betula utilis* forest. At 4000m and above there are alpine shrubs such as *Caragana* and grasslands.

1.3 Major Settlements

The major settlements in MRWA are Ghandruk, the largest Gurung village, Landruk, Tanchok, Kimche, Lumle, Taulung, and Chomrong. The important tourist destinations are Ghandruk, Tadapani, Landruk, Jhinu, Chomrong, MBC and ABC. The settlements above 3000 m are of temporary nature. The livestock owner uses the sub-alpine grassland meadows for grazing during summer.

1.4 Landuse Pattern

The lower reaches of Modi between 1000m altitude to 2000m are primarily used for cultivation. The significant cultivated lands are found between Birethanti to Chane, Chandrakot to Landruk, Ghandruk, Taulung, Chandrakot, Tanchowk, Huwanri, Bhichowk, Tolka and Landruk. They

grow corn, rice, wheat, buckwheat and Mustard. The mountain slope near the settlement that is difficult to cultivate is covered by scrub forest. A large area of MRWA area is covered by vegetation, that includes grassland, scrub forest, degraded forest and healthy forests. And the rest by cliffs, rocky surface and snow.

1.5 Socio-economic Conditions

Most of the people living in the MRWA are subsistence farmers and livestock owners. Few households are involved in tourism business. A greater number of the male members from Gurung and Magar community serve in the Royal Nepalese Army, British Gurkha and Indian Gurkha Army.

1.6 Scope of the Study

The ornithological survey is part of the study designed to establish a firm biodiversity database so that it can be used to monitor the impact of proposed micro-hydel on the species diversity of the region over a time period. The specific objectives of this study are to:

- undertake floral and faunal mapping of the MRWA,
- assess the species diversity and in each identified vegetation and/or habitat types and review the population status of Himalayan Thar ,
- document the current resource use pattern, and
- discuss the possible impacts on species diversity due to the current resource use practices.

1.6.1 Objectives of Ornithological Study.

- Prepare bird checklist and map their distribution in Modi Khola watershed
- Identify the important bird sighting sites along the trekking routes leading to Annapurna base camp and Ghorepani from Landruk.
- Identify bird communities according to altitude variation (at 500 m intervals)
- Identify bird communities according to migratory and resident or breeding status.
- Identify bird communities according to the land-use type of Modi Khola watershed area.
- Categorize bird communities according to feeding eco-groups.
- Identify threatened group of birds found in the Modi Khola watershed area
- Identify conservation issues and recommend management measures for bird conservation in Modi Khola watershed area.

1.7 Limitations of the Study

This study will help to find the occurrence of bird species in the spring season of 2000 in the MRWA area. The limited time and manpower to travel the diverse topography is a limiting factor. However the author and the team visited most of the important ornithological sites. The rain and foggy conditions hampered at times to watch the birds.

CHAPTER II

2.1 Methodology

Local trials were followed for significant bird habitat and existing literature referred for species occurrence information. Checklist prepared by Biodiversity Database Survey (1993) and the H. S. Nepali (1997) were referred to update the ACAP Bird checklist. Sites were visited on foot to different ornithological important sites and tourist trails. Identification of birds was made possible with the help of Nikon Binocular 7 x 35 and Bushnell telescope 20 x 20 – 45mm zoom. Auto-focus camera 50 - 300 mm zoom lens was used to record visuals of some birds and the habitat. Bird observation routes were planned according to trails, elevation, catchment, vegetation types etc. A book on the Birds of the Indian Sub-continent (Grimmet et. al., 1998) was referred for field identification, distribution and description of the species. The Red Data Book of Nepal (BPP, 1995) was referred to define the threatened status of birds.

Spring season is chosen due to its importance as a breeding season of the passerines. Bird were observed from April 2nd till May 11 with a break in between (21 April to 28 April, 2000)

Bird movement status

Resident: Birds are defined as residents if they spend all year round in the Modi River Watershed Area. They may move up and down the mountains or they may have diurnal or seasonal altitudinal movements

Summer Migratory: Some bird species make a periodic annual movements to MRWA. These are the ones arriving during spring and stay through out the summer for breeding.

Winter Migratory: These species arrives periodically during the fall and may stay through out the winter or as a passage migrant. The leave during the onset of the breeding season or in March./April.

The bird observation started from Birethanti at 1015meter above sea level and traveled up-to 4130 meter to the Annapurna base camp. We spent most of the duration in between the higher and the lower reaches of MRWA (Table3). Most of the time was spent at 1500 - 2000m (10 days) followed by 2000 -2500 m (8 days) and 2500 - 3000 meter (7 days). There was about a feet of snow at 4000m at the Annapurna Base Camp during first week of May.

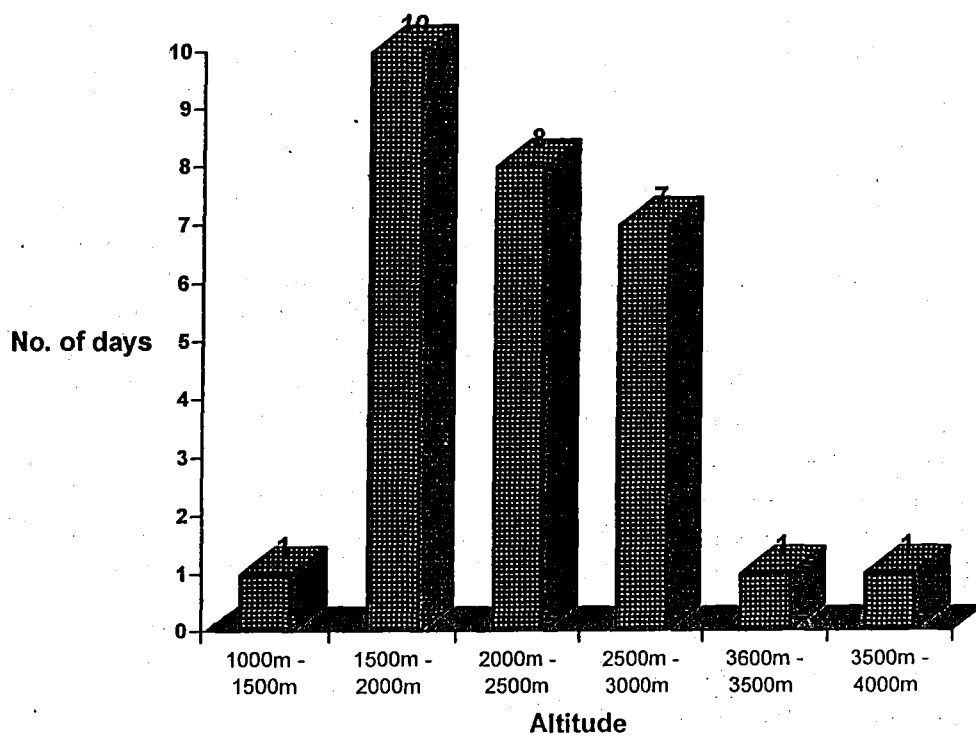
The boundary of observation is as follows:

- North = Annapurna Base camp and Macchapuchre Base Camp
- East = Deurali, Dond and Kogar
- West = Tadapani, Chuinle (and Ghorepani)
- South = Lumle, Chandrakot and Birethanti

Table 3: No. of days spent in different elevations for bird observation

Symbol	Altitude range	No. of days spent	(%)
A	1000m - 1500m	1	(3.6%)
B	1500m - 2000m	10	(35.7%)
C	2000m - 2500m	8	(28.5%)
D	2500m - 3000m	7	(25.0%)
E	3600m - 3500m	1	(3.6%)
F	3500m - 4000m	1	(3.6%)
	Total	28	(100%)

Graph No. 1 No. of days spent at different altitudes



CHAPTER III

3. Findings of the Survey

3.1 General:

Altogether 210 bird species have been recorded during the survey period, which is 43.7% of the entire bird species (474 species) occurring at ACA. Total observation in the field was 28 days, and 40 species in average was observed per day. Highest number (58) of species was recorded between the route Chandrakot to Landruk (1565 - 1580m) and Bamboo to Kumrong River (2335 - 1780m) (Table 4) (Annex II & V).

Table 4: Bird observation data of MRWA

No. of Bird species observed during the survey	210 sps.
Total days of bird data collection	28 days
Average bird species observed per day	40 sps. (19.3%)
Highest No. of species/ day	58 sps.

3.2 Bird Observation Status

The local observation status was based on the frequency of daily observation basis. There are six categories from Common, where there is a more than 80% chances to see this particular species and the scarce where there is a less than 16% chances to see this bird (Table 5). A globally rare bird may be a common species in MRWA and similarly a common species elsewhere may be rare in MRWA due to different local condition.

Majority or nearly 60% of the bird observed were categorized as scarce, because they were observed less than 16% or less than 3 days during the entire survey. It was followed by Rare category (21%) or observed for less than 8 times. Similarly 19% are uncommon, 18% of bird species are occasional. Only two species each are categorized are Fairly Common and Common species. Fairly common species are Blue Whistling Thrush and White throated Laughing Thrush. Blue Whistling Thrush lives in the streams and the adjoining forest, where as the White throated Laughing Thrush lives in forest and shrubs. Long-tailed Minivet and the Jungle Crow are the most common species. The flashy minivet lives in the forest, forest edge and also visits adjoining cultivation. Jungle Crow are found from the lowest elevation the Birethanti at 1025 to the ABC at 4130m and utilizes almost all the landuse types found in MRWA. They are one of the most aggressive species of bird found in MRWA. They are often observed chasing eagles and vultures.

Table 5: Bird Observation Status at MRWA

Observation category (frequency %)	Number of species (%)
Scarce (<16%)	125 (59.5%)
Rare (< 30%)	44 (21%)
Uncommon (< 45%)	19 (9%)
Occasional (< 65%)	18 (8.6%)
Fairly Common (< 80%)	2 (.95%)
Common (> 80%)	2 (.95%)

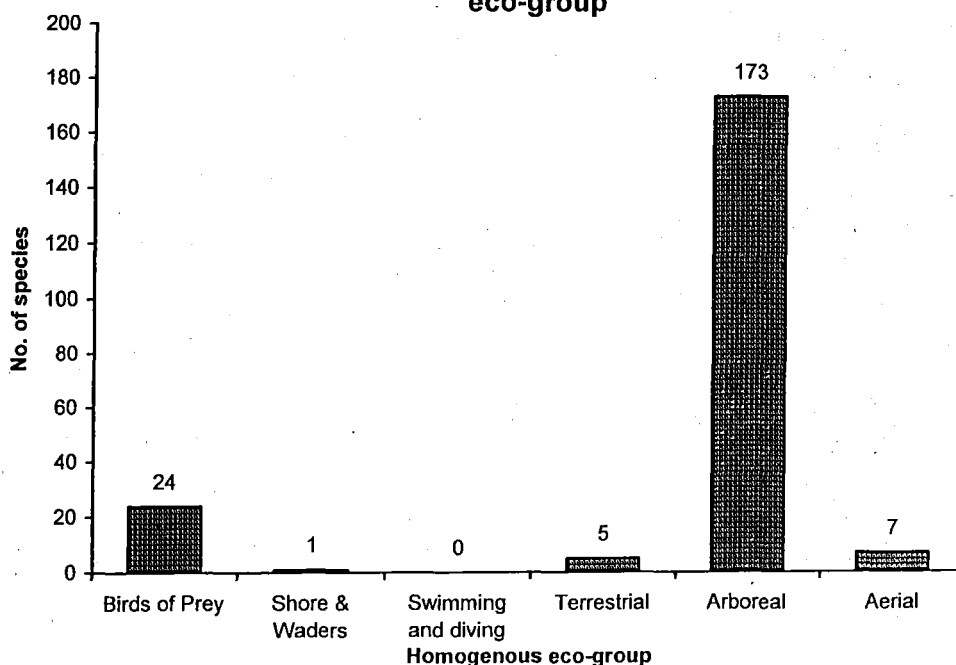
3.3 Status of Homogenous Eco-groups

Birds were classified into homogenous eco-groups according to the feeding habits (Annex III). They include birds of prey, swimming/diving, shore/waders, followed by, terrestrial, arboreal and the aerial (Table 6). Arboreal denotes the bird species that require tree for foraging. Arboreal is the major eco groups that consisted more than 82%. Birds of prey hunt or feed upon the carrion. This is the second major group (11.43%) occurring during the survey. The others are aerials (3.33%) that mostly acquire food by hunting in the air for the flying insects. And the terrestrial or the game birds (2.38 %) that feeds only in the ground. And a single species belonging to shore and waders, an Eurasian Wood Cock was recorded at Mesram- Barah, (3000 m). We were not able to record any swimming and diving birds.

Table 6: Bird species according to homogenous eco- groups and movement status

Eco-group	No. of species (%)	Resident	Migratory (Summer)	Migratory (Winter)
Birds of Prey	24 (11.43)	20	-	4
Shore & Waders	1 (0.48)	-	1	-
Swimming and diving	- (0)	-	-	-
Terrestrial	5 (2.38)	5	-	-
Arboreal	173 (82.38)	160	12	1
Aerial	7 (3.33)	4	3	-
Total	210(100)	189 (90%)	16(7.6%)	5(2.4%)

Graph No. 2 No. of bird species according to homogenous eco-group



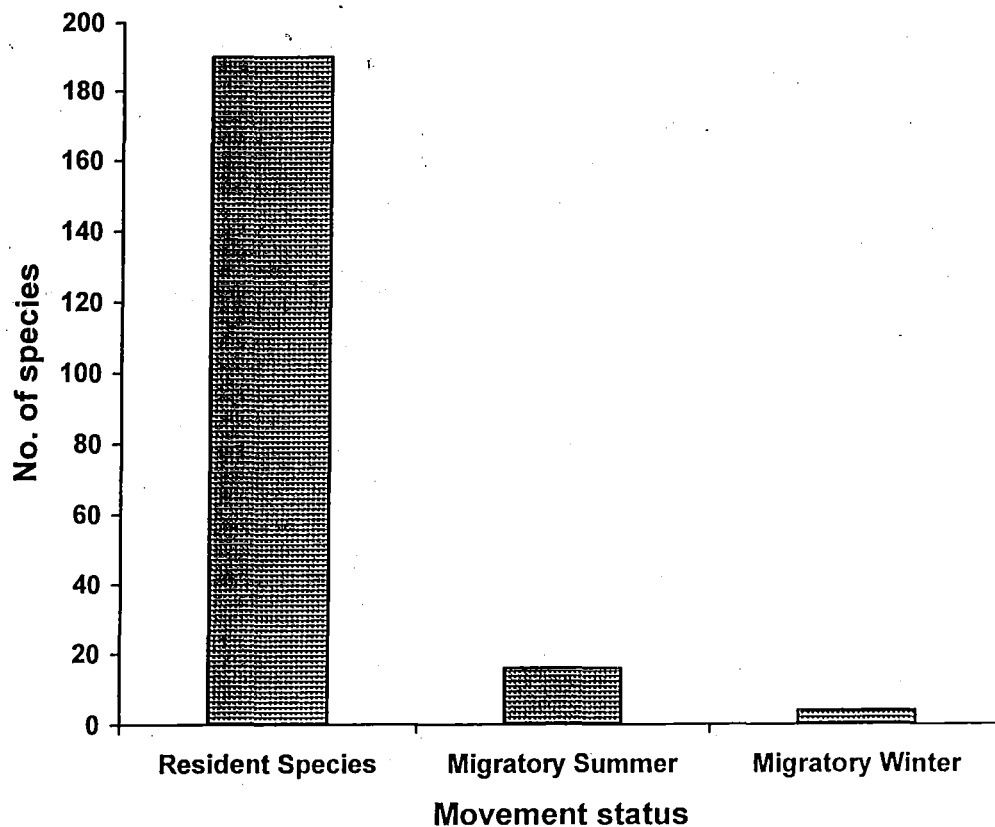
3.4 Movement Status

Majority of the bird species recorded at MRWA were resident (90.5%) having some altitudinal movement followed by summer migrants (7.6%) and few winter migrants (1.9%) (Table 7). The reason behind the occurrence of 90.5% resident species is that the survey was conducted during breeding season of passerines. Most of the wintering passerine species have left to their breeding grounds. The summer migrants includes the cuckoos, swifts, woodcock, a flycatcher, pipit and the wagtail that comes for breeding in MRWA. The winter migrant recorded in MRWA includes mostly the birds of Prey and a Thrush (Black-throated). They are probably on the way to their breeding grounds. The wintering birds of prey include Eurasian Black Vulture, Hen Harrier, and Steppe Eagle.

Table 7: Movement status of MRWA Birds (percentage in parentheses)

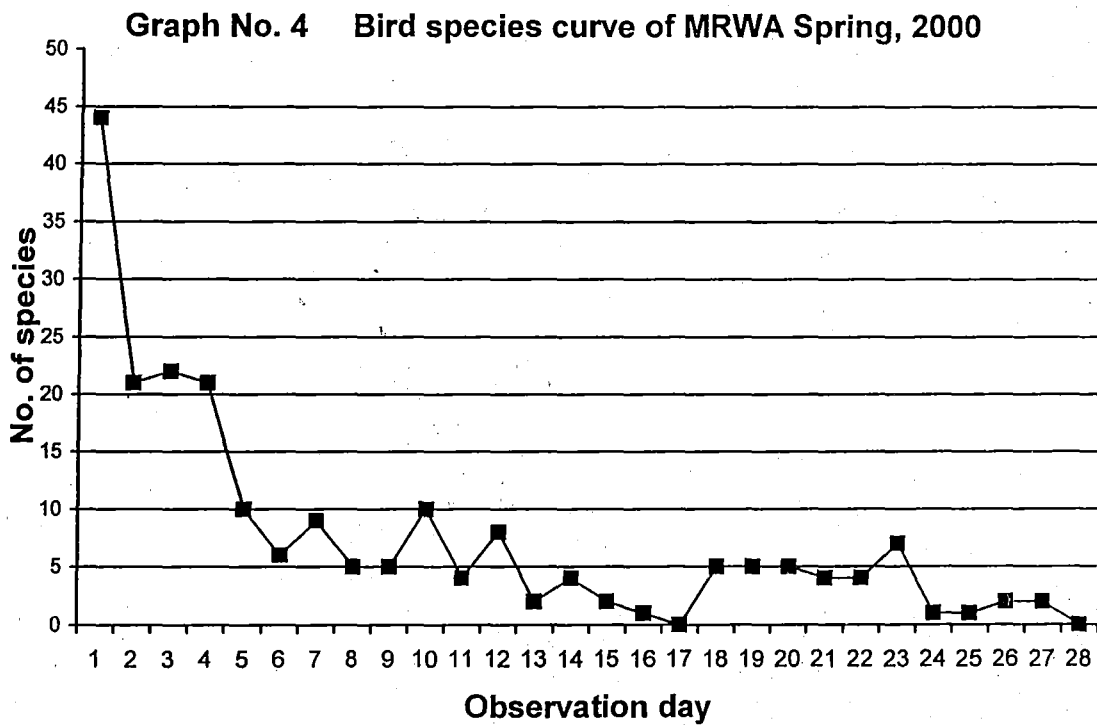
Movement status	No. of species (%)
Resident Species	190 (90.5)
Migratory Summer	16 (7.6)
Migratory Winter	4 (1.9)

Graph No. 3 Bird movement status of MKCA Spring 2000



3.5 Bird Species Curve for MRWA Spring, 2000

The chances of seeing new species is greater in the first week of the survey with more than 40 in the first day and 20 species in an average for another three days (ANNEX IV). The frequency of recording new species decreases to about 5 – 10 species per day after a week or so. By the end of the month long survey the chances of seeing a new species become less than five per day or eventually to none. As the sites are repeated the chances of seeing new species becomes rare (Graph No. 4).



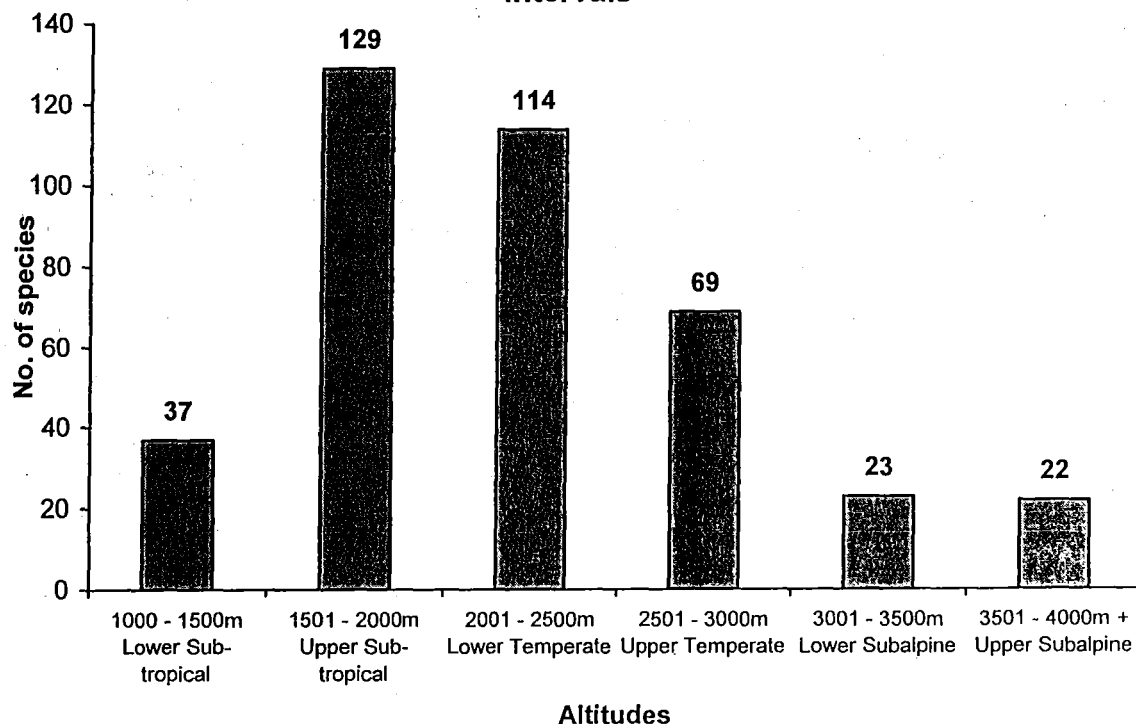
3.6 Bird Distribution According to Bio-Climatic Zones at 500m Interval

The upper subtropical (1500 - 2000m) and the lower temperate bio-climatic zone (2000 - 2500m) found out to be the important zones for the bird distribution, where 129 (61.43%) and 114 (54.29%) bird species were recorded respectively (Table 8) (Graph No. 5). Sixty-nine bird species were recorded in the Upper Temperate Bio-climatic Zone followed by lower sub tropical and the lower and upper sub-alpine bio-climatic zones (ANNEX VI). The time budget at various altitudes is not similar so this analysis is not conclusive. Nevertheless more than 500 species of Nepalese bird species occur below 1000 m (Inskipp, 1989).

Table 8: Altitudinal distribution of bird species observed at 500m interval bio-climatic zones and time budget

Time budget No. of days (%)	Altitudes at 500m interval	No. of sps. observed in the 500m interval	(%)
1 (3.6)	1000 – 1500m Lower Sub-tropical	37	(17.62)
10 (35.7)	1501 – 2000m Upper Sub-tropical	129	(61.43)
8 (28.5)	2001 – 2500m Lower Temperate	114	(54.29)
7 (25.0)	2501 - 3000m Upper Temperate	69	(32.86)
1 (3.6)	3001 - 3500m Lower Sub-alpine	23	(10.95)
1 (3.6)	3501 - 4000m + Upper Sub-alpine	22	(10.48)
28 days (100)	1000 -4100m	210 species	

Graph No. 5 No. of bird species observed at 500m intervals



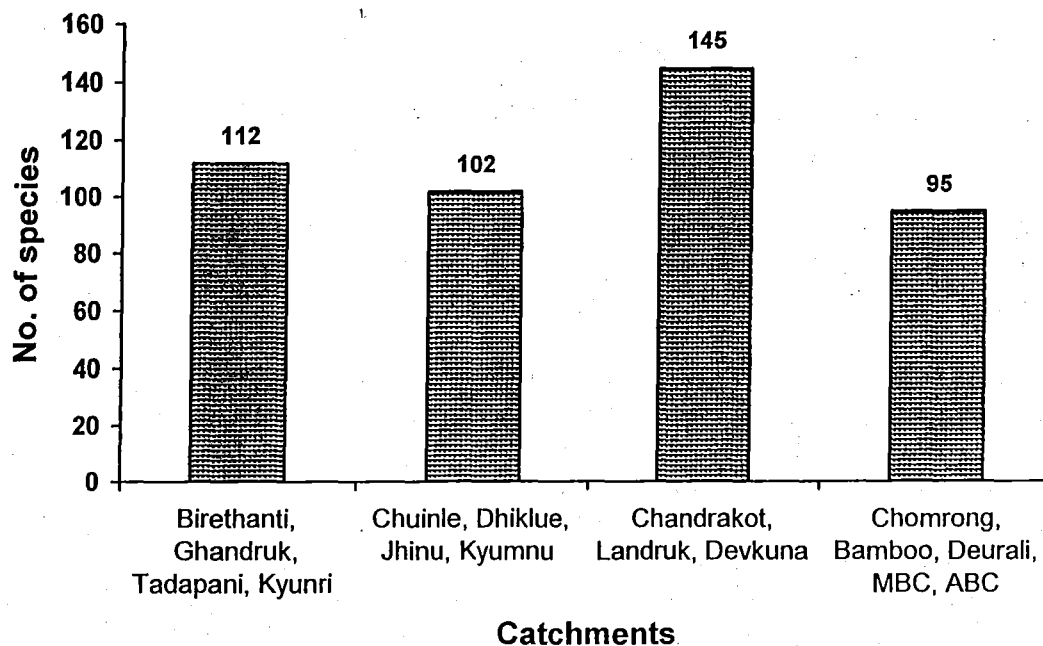
3.7 Bird Species According to the Catchment

The occurrence of bird species vary according to the catchment of MRWA depending upon the coverage (area), landuse type, bio-climatic zones and the aspect of the mountain. The Landruk catchment supporting the greater number of species could be contributed by being a larger area, healthy forest stretching from Sub-tropical to the Upper Temperate Bio-Climatic Zones (Table 9) (Graph No. 6) (ANNEX VII). Less number of bird species occurring in the Upper Modi may be due to the to the harsh climates, rocky cliffs and less vegetation.

Table 9: Bird species observed according to the MRWA catchments

MRWA Catchments	No. of species
Birethanti, Ghandruk, Tadapani, Kyunri Catchment	112
Chuinle, Dhikleu, Jhinu, Kyumnu Catchment	102
Chandrakot, Landruk, Devkuna Catchment	145
Chomrong, Bamboo, Deurali, MBC, ABC	95

Graph No. 6 Bird species observed according to the Catchments



Kyunri and the Kyumnu Catchment are mostly cultivated and with settlements. Except for the upper reaches which is forested but heavily grazed by livestock. There is also plenty of scrub forest. This type of open habitat under the canopy is ideal for flycatchers and the frugivorous birds. The stretch between Bhainsi Khaki to Tadapani is good for flycatchers and other insectivorous.

The specialties of Kyunri catchment are given below (Table 10). Eurasian Woodcock breeds in the pools of the upper temperate forest. The lower slope is good for Kingfishers and the Indian Roller. The forest is good for flycatchers including Orange-gorgetted and the Green Shrike Babblers. The streams are also good for the Forktails such as Slaty-backed, Spotted and the Little.

The Kyumnu Catchment stretches from Chuinle and Taulung and it provides good habitat for frugivorous, birds of prey and also flycatchers. It is drier than other catchment. The catchment lies in east west direction between the high mountains and the Midhills. Some of the specialties of this catchment are the Golden Eagles and the elusive Jungle Nightjar heard near Jhinu. The Snowy-browed Flycatcher and the Black-chinned Babbler occur in the forest of north facing slopes above Chuinle. Pied Ground Thrush was observed in the tree near the cultivation. They are summer migrants for breeding. The Crested Buntings though they are the species of warmer climates they were observed in the transition zone of Midhills and the High Mountains.

The west facing slopes of the Landruk catchment was found out to be rich in bird species in the MRWA. The mountain of Landruk is a continuous ridge from Kanre/Lumle to the Mount Machhapuchre. This ridge is a diving range between Mardi Catchment and the Modi Catchment. This ridge receives the highest precipitation (5000mm +) in Nepal. The west facing slopes is covered with broad-leaved forest and also cultivated between Landruk and Chandrakot. Further north to the Landruk is the densely forested, with no cultivation, but grazing is practiced. There is a low human impact in this area. This area is with less human impact, high rainfall and dense forest hence the occurrence of high bird diversity. Specialties of this catchment include the Eurasian Hobby in the cliffs of Chandrakot. The dense forest provides ideal habitat for the Satyr Tragopan, Nepal Cutia and Scarlet Finch. The lower slope and the cliff are good for the Great Horned Owl.

The Upper Temperate and Sub-alpine bio-climatic zones characterize the Upper Modi catchment. The lower slope of the High Mountain is forested up to Deurali at 3230m. The upper reaches of the mountains are rocky cliffs, scrubs and grasslands. Specialties of Upper Modi include the Barred Cuckoo Doves observed feeding upon fruits of lianas near Bamboo. Higher up in the scrub vegetation just above Deurali Black-facing Laughing Thrush was recorded singing. The sub-alpine meadow with melting snow was frequented by the Snow Pigeons, Golden Bush Robin and the flashy Grandala. The Isabelline Wheatear was seen on the rocky outcrops of the moraine. Besides these species there were number of other high altitude species such as the chough, accentors, and finches.

Table 10: Bird specialties of the four major catchment

Kyunri	Kyumnu	Landruk/Chandrakot	Upper Modi
Eurasian Woodcock	Golden Eagle	Eurasian Hobby	Snow Pigeon
White-breasted Kingfisher	Jungle Nightjar	Satyr Tragopan	Barred Cuckoo Dove
Indian Roller	Snowy-browed Flycatcher	Northern Eagle Owl	Golden Bush Robin
Orange-gorgetted Flycatcher	Black-chinned Babbler	Himalayan Swiftlet	Grandala
Slaty-backed Forktail	Pied Ground Thrush	Nepal Cutia	Isabelline Wheatear
Green Shrike Babbler	Crested Bunting	Scarlet Finch	Black faced Laughing Thrush

3.8 Bird Species According to Landuse

Birds are the glorified reptiles that are gifted with the greatest mobility on Earth. They occur in almost every corner of the earth and utilize the diverse habitat. Most of the bird species exploit different habitat for different activity. They may require different landuse types for different activity such as feeding, nesting, courtship etc. Larger bird species require greater diversity of landuse type for hunting, roosting, nesting, soaring and courtship display etc. But some bird species require specific habitat or landuse type for their annual cycle. Depending upon the category of feeding ecogroups their corresponding habitats can be as follows (Table 12) (ANNEX VIII). The specialized habitat requiring species are briefly discussed below.

Table 12: Feeding eco-groups and corresponding habitat

Feeding eco-group	Corresponding habitat
Birds of Prey	All the landuse types including cliffs
Swimming and diving	Lakes, pools and rivers
Waders	River, streams, pool and marshes
Terrestrial	Grassland, meadows, forest and forest floor
Aerial	Cliffs for nesting, sky for feeding
Arboreal	Forest, scrub forest, cultivation

3.8.1 Streams, river and pools

The streams of MRWA is a best example to demonstrate as a life supporting system for the stream dwellers such as Kingfishers, Dippers, Wagtails, Redstarts, Forktails and the Whistling Thrush (Table 13). The Eurasian Woodcock was seen flying towards the isolated ponds of the forest at Mesram Barah. The Kingfishers (White Breasted and Eurasian) are mostly found on the lower stretchers of Modi River near Birethanti. The Brown Dippers, White Capped Riverchat and Little Forktail are found in all the stretches of Modi River.

Table 13: MRWA stream dwelling bird species

Altitude→ Species↓	1000 – 1500	1500 – 2000	2000 – 2500	2500 – 3000	3000 – 3500	3500 – 4000+
W. B. Kingfisher						
Common Kingfisher						
Brown Dipper						
Gray Wagtail						
Plumbeous Redstart						
White-capped Redstart						
Little Forktail						
Slaty-backed Forktail						
Spotted Forktail						
Whistling Thrush						

3.8.2 Forest

More than 82% bird observed during the survey were arboreal species, i.e., these requires trees for feeding. They are predominantly forest dweller and also nests in the tree. The canopy and the vegetation strata provide habitat for many ground dweller, which may not be possible in the absence of forest. A large tree demonstrates as a complete ecosystem. Beside the arboreal species other bird communities also require forests, such as the birds of prey, for roosting or for nesting or as a vantage for hunting. The important bird communities requiring forests are the birds of prey, pheasants (though they are ground feeder but roosts on the trees), green pigeons, barbets, woodpeckers, robins, flycatchers, thrushes, babbler, warblers, parrotbills, tits, nuthatches, tree creepers, nectarines, orioles, magpies, etc.

3.8.3 Shrubs

The shrubs that are found at the edge of the forest, or a degraded forests or grown in the steep slopes. Fruit bearing shrubs as such as yellow raspberry, berberries are important source of food for barbets, orioles, bulbul etc. The shrub landuse type is also a primary foraging habitat for the insectivores such as chats, drongo, shrikes, flycatchers, prinia, munia, bunting's etc. These species can also adapt easily on the man-modified habitat such as the cultivation and also the landslide area.

3.8.4 Grassland and meadows

The steep slopes of mountains and the high altitudes are primary grassland and meadows. This landuse type is the primary summer pasture for the livestock. The seeds of the grass and the insects found in this habitat are source of food for the Snow Pigeons, Rosy Pipit, sparrows, accentors and finches. The birds of prey utilize all the landuse type found at MRWA including the rocky cliffs and the alpine meadows. Grassland and meadows provides a good hunting ground for the birds of prey. The chough also forages in the sub-alpine meadows. The terrestrial birds such as the Himalyan Monal (Danfe) also forages in the sub-alpine meadows. Two male Danfe was observed at the Khuile pasture above Devkuna

3.8.5 Cultivation and settlements

The settlements and the cultivation are also an important habitat for the birds. The cultivation is the prime foraging habitat for the birds requiring open habitat. The grain eaters and the shrub dwellers frequent this type of habitat. The settlements of MRWA rural community provide habitat for Rock Pigeons, House and Eurasian Tree Sparrow, Common and Jungle Myna and the crows. From the conservation point of view these species are considered as the aggressive species and they displace other weaker species from their dwellings. Magpie Robin also live in the cultivation and the settlements. Some of the opportunist bird species destroy the crops in the seedling stage or when they are ripened. Doves are one of the important groups of bird living off the farms. The birds of prey also take advantage of the cultivation by hunting some of the above mentioned species. The Black Kite also depends upon the organic waste of the settlements and cultivation.

3.8.6 Rocky cliffs

The overhanging cliffs are ideal nesting and roosting sites for the birds of prey, Great Horned Owls. The Eurasian Griffon roosts near the caves Chane and Kumrong Hill. The cliff near Chandrakot and Ghandruk lies the nesting colonies of martins and swifts. The beehive on the overhanging cliffs attracts the Himalayan Honey Guide to feed on the wax and honey. The dominant territorial male defends the cliff. The cliffs are also a foraging habitat for the Wall Creepers. The rocky outcrops are used by Lammergeier to split the bone to extract the marrow.

3.9 Observation Account According to Families or Tribes

The description of the bird families is based upon the Keith and Gooder, 1980 and Grimmet et. al., 1999.

Eagles Hawks and Vultures (Accipitridae)

MRWA harbors a good variety of birds of prey ranging from small Besra to the large Himalayan Griffons. The Lammergeier has the widest wingspan among the Nepalese bird measuring nine feet. Birds of prey are small to medium and large birds with broad wings, strong legs, powerful feet, and sharp claws (talons) for seizing their prey. Their bill is short, stout, and strongly hooked for seizing prey; used for tearing flesh. They have acute eyesight. Plumage usually brown or gray (sometimes black), often barred and streaked. Sexes usually similar and female often larger than male. They frequent all the habitats of MRWA, ranging from the streams, cliffs to the alpine grassland. They prey on live animal, including small mammals, birds, reptiles, fish, frogs and large insects; some also take carrion. Their flight is fast, often soaring and dives after their prey. Most of the species are territorial and covers much of their territory while hunting and soaring. They live usually solitary or in pairs or with family members. They built nest made up of twigs in the tree or in the cliff. Many species in the region have declined because of the habitat loss and probably through pesticide poisoning (Grimmet et. al., 1999).

They contribute largely to control the pest birds, rodents, mollusks and insects in the cultivation and in the wild. They are also of sanitary help by feeding upon the carcass.

The ridge along the southern boundary of ACA along the Dhampus, Kanre, Lumle and Chandrakot is the route of the birds of prey during the fall migration. Hundreds of Eagles

(chiefly Steppe), Buzzards and harriers migrate through this route in the end of October and early November.

One of the most frequently seen birds of prey during the survey was the majestic Lammergeier with a wing span of more than nine feet, the widest in Nepal. One of their favorite diets is the bone marrow of mammals. They drop the bones on the rock to feed on the marrow.

Family of Himalayan and Eurasian Griffon Vulture could be seen over the valley and mountain. Roost site (and probably the nest) of Eurasian Vulture are at the cliff near Ghandruk and Kumrong Hill. It is situated in the small cave like structure. The slope near the ACAP office at Ghandruk is an important place for the soaring vultures and eagles. Similarly pair of King Vulture (Red headed) and White-rumped Vulture is seen along with other vulture while soaring or near the carrion. Egyptian Vulture was recorded near Chandrakot at about 1500 meter. Eurasian Black Vulture a rare vulture was seen only once at Kimrong Hill, along with other griffons.

Crested Serpent Eagle was seen along the Modi Valley and also soaring above Chomrong and also at a roost site near Kimrong Valley. They were mostly seen in pairs, with vocalization and sometimes with the juvenile.

The Accipiters were observed on several occasions in the forest, over the cultivation, edge of the forest and in the thermals. Northern Sparrow Hawk was also observed below the Machhapuchre Base Camp at 3500m.

Mountain Hawk Eagle was mostly seen over the forests of Pachaun and Devkuna. Pair of Bonelli's Eagle was seen chasing the mobbing crows and other birds of prey above Ghandruk, Landruk and also above Dhiklu.

A juvenile Golden Eagle was observed between Ghurjung and Chomrong and also once at Ghandruk.

The falcons are small to medium sized birds of prey with long, pointed wings, long tail, short neck, rounded head, hooked bill, long toes, and strong talons. Female usually larger than male. They are among the worlds fastest birds, using rapid wing-beats alternating with glides; they catch birds (their principal prey), bats and insects in the air.

Eurasian Kestrel is the common falcon species seen along the Modi valley. One Peregrine Falcon was seen over the Deurali Pass near Gurung Hill. A pair of Oriental Hobby was seen carrying twigs near Chandrakot.

Pheasants, Partridges and Quails; the Game birds (Phasianidae)

They are also known as the game birds, because they are popular for the hunting and their delicious meat. They are of small, medium and large chicken like with short rounded wings, that beat rapidly in heavy flight. Their bill is short and thick; legs stout, unfeathered, some with spurs. Tail is long in pheasants, short in Partridges and Quails,. Sexes usually dissimilar, with male more brightly colored. They are ground feeders, hence termed as terrestrial birds. They live,

often in flocks, eating seeds, fruits, berries, and grain; also insects, snails, worms, and other animals. Often roost in trees; nest on ground.

Kalij were the common pheasants, seen along the lower temperate forest near the streams. They were also seen inside the fenced compound of Lumle Agriculture Research Center compound. Monal was often heard than seen in the upper temperate forest above Phlamu and Devkuna. A male Danphe was seen at 3000m altitude near Humal. Common Hill Partridge was the commonest game bird seen and heard along the survey route. They were seen in good numbers between the forests of Deurali and Kogar and Devkuna. Black Partridge was heard only once below the Tanchowk village.

Woodcocks (Scolopacidae)

Woodcocks are medium sized waders with a long bill, fairly long legs, and cryptically patterned plumage. They feed mainly by probing in soft ground and also by picking from the source. Their diet consists mainly of worms, tiny mollusks, larvae, and aquatic invertebrates. They inhabit marshy ground.

The Eurasian Woodcock was observed flying over the canopy at Mesram Barah (3000m). They probably breed near the shallow pools at this altitude.

Pigeons and doves (Columbidae)

Pigeons are of small to medium sized birds with soft-plumage, fairly shorter, often slender bill; small, round head; short neck; and plump body. Their tail is fairly long and square or graduated; legs are short. Plumage is mainly brown and gray and also brighter greens. The sexes are similar or dissimilar. Their flight is rapid often with clatter of wings on takeoff. They are arboreal as well as terrestrial feeders, feeding on seeds, grain and fruit and drinking by sucking water through immersed bill. Nest in trees or on cliff ledges. Parents feed young "pigeon's milk" produced in their crops.

Ashy Wood Pigeon were observed in the temperate forest. A flock of Snow Pigeon was observed below 1500m altitude near Himalpani and also on the trail from MBC to ABC feeding near the melting snow. Wedge-tailed Green Pigeons were seen feeding on the yellow raspberry (*ainselu*) near Landruk and also at Pachaun. A small flock of Bar-tailed Cuckoo Doves were seen at Bamboo. Rufous Turtle Doves were commonly seen on the edges of fields and forest. Very few Spotted Doves were seen during the survey period.

Cuckoo (Cuculidae)

They are of small to medium-large sized slender birds. They have slightly decurved, often stout bill; and long, graduated tail; and rather short legs. The plumage is extremely variable from gray to black: underpart and tail usually barred. The sexes are similar. They are arboreal, feeding mainly on insects, especially caterpillars. Loud and far-carrying call in breeding season. They are parasitic nesters, laying eggs in other birds' nests. Most of these species arrive here from southern India during the spring season for breeding. They leave at the end of summer.

Altogether five species of cuckoos were seen and heard during the survey. Large Hawk Cuckoo was the most audible species. The other species are Common, Indian, Oriental, and the Drongo Cuckoo.

True owls (Strigidae)

They are small to large predominantly nocturnal birds of prey with large, rounded head; short neck; and strong hooked bill. Their eyes are very large and facing forward in flat facial discs. Wings broad and rounded; tail usually short. Their legs and often toes are covered with feathers. Feet are strong, with hooked claw; the outer toe is reversible. Many species have ear-like tufts. The plumage is soft and fluffy, mainly brown or gray in color, with barring and streaks. Sexes are similar; female usually larger. Flight is very silent. Feed mainly on rodents; also birds and insects. Some species eat swallowed whole; bones, fur, and other inedible parts are later regurgitated as pellets. The favorite perch of an owl can often be located by finding pellets on the ground below. They contribute to the control of rodents at night.

We were able to hear the call of Great-horned Owl on two occasions only; once at Jhinu and second at Phlamu. A skin of Jungle Owlet was at display at Bhichok killed by a local youth. Since we were equipped for the night survey the observation of owls and nightjars were overlooked hence the low number of observation.

Nightjar (Caprimulgidae)

Nightjar is a small to medium-sized aerial, nocturnal bird with large head and eyes, tiny bill and feet, and a very wide gape (mouth) for catching insects in flight. Their wing is long and pointed, tail is also long. The plumage is soft, mainly brown and gray with dark mottling, barring and streaking perfectly camouflaged for resting and nesting on the ground. In flight, many species show white patches on wings and tail. Sexes often somewhat dissimilar. Flight is silent and erratic; birds glide and wheel as they pursue insects. Often sit on roads at night, bright red eyes shine against the vehicle light. Only one species of nightjar (Jungle) was heard near the forest of Jhinu (1700meters).

Swift (Apodidae)

Swifts are small to medium-sized aerial birds with tiny bill and large gape (mouth) for catching insects in flight. They have long, pointed, sickle-shaped wings that make them among the swiftest flying birds in the world hence the vernacular name. Swifts never perch, but short leg, strong feet and curved claws are adapted for clinging to a vertical surface, where they rest. They contribute to the control of the diurnal flying insects.

Large number of Himalayan Swiftlets was observed near Chandrakot along with House Swifts and other martins. White-throated Needletail was seen only once near the Mesram Barah Temple above Ghandruk. Fork-tailed Swift was commonly seen between 1000m- 2500m along the Modi Valley.

Kingfishers (Alcedinidae)

Kingfishers are small to medium-sized plump birds with long, stout, pointed and often brightly colored bill, large head and short neck. They have a short rounded wing that helps in fast and direct flight. Tail is usually short; legs are very short. Many kingfisher feed entirely on fish, caught hovering flight; others eat insects, lizards and frogs. The lower portion of Modi (between 100m -1500m) is good habitat for the Kingfishers.

There are three types of Kingfishers found along the streams, but we were able to observe only two species; Common and White Throated Kingfisher. The occurrence of Crested Kingfisher was confirmed by fellow bird watchers (pers. comm. Johannes, Austria). The confluence of Modi, the tributary Burundi at Birethanti is a good place to watch Kingfishers. White Breasted Kingfishers was observed near the cultivation, they often feed upon grasshoppers.

Rollers (Coraciidae)

Rollers are the birds of warm temperate and tropical regions of Old World. They are of medium-sized, stocky, crow-like birds with broad, stout bill, large head, short neck and legs and long wings. Tail fairly long, square or forked. Sexes are similar. Food consists of insects and other prey captured either on the ground by sudden drop from prominent perch or in the air. Numbers gather at brush fire, feeding on insects flushed by the heat. Nest in tree cavity.

Only one species recorded at MRWA along the Birethanti and Syaule Bazar trail, below 1500m. A pair is nesting on the compound of Laxmi Guest House at Birethanti.

Barbets (Capitonidae)

Barbets are arboreal and usually found in tree-top. Despite their bright coloration they can be very difficult to see especially when silent, the green color of the body blends remarkably with the foliage of the tree. They are usually silent during non-breeding season, but call persistently during the breeding season, sometimes through out the day. They are chiefly frugivorous, Ficus fruits are one of the favored diet. Flower petals, and nectars also consists of a part of the diet, and occasionally insects are eaten. They dug in the tree to make cavity for nesting.

Great Barbet was most often heard during the survey period and frequently from subtropical to upper temperate bio-climatic zones. Golden-throated Barbet was seen in the forest edge and forest. Blue-throated Barbet was heard only once near Bhichok at 1500m.

Woodpeckers (Picidae)

They are small to medium-sized, mainly arboreal birds with strong feet and sharp claws for clinging to tree trunks. Usually zygodactyl (two toes pointing forward and two back), but some woodpeckers have powerful, chisel-like bills for boring into wood to extract insects and excavate nest hole. Wrynecks have weak bills and obtain insect food from ground. They have stiff, pointed tail feathers and are used as a brace when climbing trees; wryneck's have a longer and rounded tails not used in climbing. Wings rounded; flight undulating in most species. They are tree cavity nesters. Sexes fairly similar; male woodpeckers more brightly colored on head than females. Woodpeckers contribute to make a healthy forest by controlling the tree borer insects.

Gray headed Woodpecker was often seen and heard in the temperate forest. Crimson-breasted. Darjeeling and Rufous-bellied woodpeckers were observed occasionally on the forest of lower and upper temperate bio-climatic zones. Greater Yellownappe was observed on one occasion near Pachaun forest.

Swallows and Martins (Hirundinidae)

Swallows and Martins are small, slim aerial birds with long, pointed wings and forked or notched tail. Their bill is very small but mouth is wide, adapted for catching insects in flight. Neck and legs short, feet weak. Sexes similar. They are expert fliers. They are gregarious, mostly colonial nester and forming large flocks on migration. Many nest on man-made structures. They are often observed perch on wires. They contribute to the control of flying insects.

Nesting colony of Nepal House Martin is on the cliff near Chane (on the way to Ghandruk). Barn Swallow and Red-rumped Swallow is commonly seen at Lumle and Chandrakot.

Pipits and Wagtails (Motacillidae)

Pipits and wagtails are small, slender, mainly terrestrial birds with longish tail constantly wagged. Pipits outwardly resemble larks, having plain brown plumage, often spotted or streaked; wagtails are black, white, gray or yellow. Sexes are similar or dissimilar. Flight is undulating; walk or aerial song flight. They are gregarious after breeding season. Feed mainly on insects and spiders.

Gray Wagtail is the commonest wagtail seen during the spring season. They are stream dwellers.

Minivets (Campephagadae)

Minivets are one of the most brightly colored passerines with moderately longer tail. They are small to medium sized birds, They are arboreal and feed upon insects, Minivets are members of roving mixed parties of insectivorous species in forest. They utter contact call when in flight or feeding.

Long-tailed Minivets are one of the most frequently seen bird species during this survey period. They are seen in small flock in the forest edge near the cultivation or villages and also on the canopy of the forest.

Bulbuls (Pycnonotidae)

Bulbuls are medium sized passerines with soft fluffy plumage. Some are common and found in the cultivation and gardens near the human settlements. Bulbuls chiefly feeds on berries and fruits, nectars, buds and petals often supplemented by insects. Bulbuls have a variety of calls and songs. Most species are gregarious in non-breeding season.

Altogether six species of bulbuls were recorded during the survey period. Red Vented, Black and the Himalayan Bulbul were the common species in the survey route. They are common and widespread in the kingdom. Occasionally Striated and the Mountain Bulbuls were recorded on the edge of the forest. The ripening yellow raspberry and the berberry were attraction to them during the survey period.

Dippers (Cinclidae)

They are chiefly a palaeartic species. Dippers are small aquatic birds with stout body, short wings and tail and long legs. Plumage is dense. They are seen in constant bobbing motion when not diving. They go underwater, using wings, and when submerging either wade or dive into water from surface or from rock. They are able to walk underwater and swim against the current.

Chiefly Brown Dipper was seen in pair along most of the major the streams. A pair was seen with juvenile near the Himalpani of Modi River. They were observed from 1000m - 3000 m, along the Modi and its tributaries.

Wrens (Troglodytidae)

Wrens are very small land birds with slender bill, short, rounded wings and tail typically short and often cocked. Their plumage is mainly brown with dark barring on wings and tail; often black and white stripes on face. Sexes are similar. Usually solitary or in pairs. Most species rather shy, skulking in low vegetation. Wrens are among the world's most brilliant songsters. Most are hole nesters; often polygamous.

A pair of Winter Wren was observed at the Annapurna Base Camp. They probably were nesting. They have altitudinal movements in fall and spring seasons.

Accentors (Prunellidae)

Accentors are small, streaked, sparrow-like birds but with thin bill. Plumage is mainly brown and gray; sexes are similar. Most species are montane and only partly migratory, remaining in mountains all year. Terrestrial feeders, creeping along ground with shuffling walk and short hops. They often flick wings and tail.

We were able to observe only two species; Rufous Breasted and the Alpine Accentors both at over 3000m.

Chats (Tribe Saxicolini)

Chats are diverse group of small to medium sized passerines that includes chats, bush-robins, magpie robins, redstarts, forketails, cochoas, and wheatears. Majorities of them are terrestrial, or partly terrestrial some are arboreal, and some are closely associated with stream or river beds. They are chiefly insectivorous, contributing to control the pest insects also feeds upon berries. Feeding strategy is either by hopping on the ground or make sallies from a low perch.

Only two types of Bush Chat were observed during the survey period; Common Bush Chat and Gray Bush Chat. Common Bush Chat was found in the cultivation at Kimche, Ghandruk and Landruk. Gray Bush Chat was commonly seen all along the trail from sub-tropical to the temperate bio-climatic zone. They were found in the cultivation, forest edge, scrub forest and forest meadows. They were also nesting in the hole of the terraced wall at Taulung.

Asian Magpie Robin, though a common garden and a forest bird was seen only twice at Ghandruk. White-tailed Robin was observed in the forest trail between Ghandruk and Tadapani and at Pachaun forest near Landruk.

Orange-flanked Bush Robins were observed between 1500m to 2500m. They were mostly observed on the Ghandruk - Tadapani forest trail. Golden Bush Robin was seen on the sub alpine bio-climatic zone, on the way to ABC in the meadows adjacent to snow deposit. White-browed Bush Robin was observed only once between the Deurali and Tadapani forest trail.

Blue-fronted Redstart was observed as high as 4100m at ABC and also at lower altitude. They probably breed at this altitude. There were two breeding pairs at Kogar at 2650 m. Plumbeous Redstart were quite commonly seen along the river and the streams. There were seen singly or in pairs. A pair was nesting below the New Bridge on the way to Jhinu.

Forktails are among the important stream dweller bird tribes residing in the mountain stream. They share the same niche with other kingfishers, redstarts, whistling thrush and dippers. A pair of Slaty-backed Forktails was observed nesting near Birethanti at around 1000m. Little Forktail and the Spotted Forktail that were observed from 1500m to 3000 m. Spotted Forktail was observed nesting at Banthanti, 2580 m.

Isabelline Wheatear was seen hopping among the rocks on the way to ABC at about 4000m. This species is an under recorded species in Nepalese High Mountains and Himalaya.

The flashy royal blue Grandala was an attraction between MBC and ABC trail. They were observed foraging on the meadows cleared from snow around 3900 and 4100 m. They occasionally congregate prior to breeding season and move northwards (Grimmet et. al, 1999 and pers. comm., H. S. Nepali 'Kazi').

White Capped Riverchats are the flashy red, white and black color. They are also the stream dweller and are found up-to the ABC at 4100m. They are seen in pairs or in single. They have altitudinal movements according to the season.

Thrushes (Turdidae)

Thrushes are small to medium-sized land birds with rather slender bill. Plumage of adults highly variable; juveniles are spotted. Arboreal and terrestrial, found in both wooded and open country, feeding on insects, worms and berries. Most species are migratory. Usually solitary, but some (especially larger species) flock on migration and winter. Thrushes are among the world's finest songsters.

Blue Capped and the Chestnut bellied Rock Thrush were seen during the survey. Both are migratory species and come to breeds in the mountain. Both are beautiful song birds and are territorial.

Blue Whistling Thrush was one of the most common species seen along the MRWA stream. They are found from 1000m to 4100m of MRWA. Their whistling calls are melodious.

Plain-backed Mountain Thrush, and Scaly Thrush were observed between 2500m and 3000m. They were seen in pairs, in the forest meadow. They have altitudinal movements according to the season. Scaly Thrush is a summer migrants for breeding. Pied Thrush is a summer migrant for breeding. One was seen at Kimrong Valley.

White Collared and the Grey Winged Blackbirds were observed at few occasions. White Collared at around 3000m and the Grey winged Black Birds from 1500m to 3000m . Both are beautiful songbirds.

Dark throated Thrushes were seen at several occasions. They are probably migrating northwards. They are common winter migrants. Tickell's Thrush, was observed between Kimrong Valley, Ghandruk and Birethanti.

Warblers and Goldcrests (Sylviidae)

Warblers are small birds with slender bill and weak flight. Their plumage is rather drab, chiefly brown, green or gray; sexes similar except in *Sylvia*. Juveniles not spotted. Active, arboreal birds feeding on insects and spiders gleaned from vegetation. Most species gleaned from vegetation. Most species nesting in temperate regions are migratory. Many are excellent singers. There are ground warblers, bush warblers, leaf and prinia in MRWA.

Chestnut headed *Tesia* or the ground warbler seen along the bamboo to Sinuwa trail under the dense undergrowth of temperate forest. Common Tailorbird was seen in the Ghandruk. The scrub vegetation at Deurali was found out to be good for the Aberrant Bush Warblers. Golden Spectacled Warblers were observed at several occasion in the forest. The shrub and the cultivation near Chandrakot are good habitat for the Hill Prinia. Other warblers include the Chestnut Crowned, Grey Hooded, Black Faced, Lemon-rumped, Western Crowned, Greenish, Buff Barred, and Tickell's Warbler. The warblers largely contribute to the control of larvae and insects on the foliage of tree.

Flycatchers (Muscicapidae)

Flycatchers are small birds with broad, flattened bill with bristles adapted for catching flying insects. Their Legs are rather short. Plumage highly variable; sexes similar or dissimilar; juvenile spotted. They perch upright on a prominent vantage point, making sallies after passing insects or dropping to the ground to catch prey, often returning to the same favored perch. Feed entirely on insects and spiders, contributing to the control of flying insects.

Twelve species of flycatchers were observed, Verditer was by far the most common flycatcher species from 1050m to 3000m. They probably breed at the upper temperate and lower temperate bio-climatic zones. Rufous-bellied Niltava and the Orange Gorgetted Flycatcher were the next common species of MRWA. Followed by Ultra-marine, Yellow Bellied Fantail, Gray-headed Canary, and Snowy-browed Flycatcher. Small Niltava, Slaty Blue, Slaty backed was observed only few times.

Babblers (Timaliidae)

Babblers are widely diversified family of small to medium-sized perching birds, most abundant in southern Asia, occupying a wide variety of habitats, though mainly arboreal. Plumage variable; sexes similar or dissimilar; bill varies from small and thin to long and curved. Wings are rather short and rounded; flight is weak. Many species are very noisy (babble like call), giving the family its name. They are mainly insectivorous.

Parrotbills are a unique bamboo and grass-haunting species. Scattered birds follow each other through dense cover; a running contact calls keeps the flock together. Plumage is shades of brown with pug-shaped bills (Fleming et. al. 1976). Great Parrotbill was seen once at the ridge above Deurali (3100m) on the way to Ghorepani and another above Devkuna (at about

2800m). Black-throated Parrotbill was also seen on two occasions, once at Poong (2200m) and secondly near Bamboo (2335), foraging during the rain along with other species.

Laughing Thrushes are medium sized birds. Some of them gather in flocks of thirty or more some in small flocks. They forage on the ground or through the foliage. They are very vocal and call loudly.

Tits (Paridae)

Tits are small sized birds. They are very arboreal birds with short bill and rather short, rounded wings. Flight is weak. Plumage variable, often with black on head; some species crested. Sexes are similar. They are active and restless birds, often hanging. Travel in mixed flocks after breeding season. They are mainly insectivorous; but also feed upon seeds and nuts, coming regularly to bird feeders and becoming very tame in Europe and America. They are tree cavity nesters.

Nuthatches and Wallcreepers (Sittidae)

Nuthatches and Wallcreepers are small energetic passerines with a compact body, short tail, strong feet and a long bill. They are agile tree climbers, and move about the branches in search of insects. They also feed upon seeds and nuts, which they wedge into the tree holes or cracks and break into small pieces by hammering with bill.

Chestnut bellied Nuthatch and the Velvet Fronted was seen in the lower subtropical Alnus Forest near the Syaule Bazar. Chestnut bellied Nuthatch was seen in the support subtropical and the lower temperate forest. The White-tailed was seen in the lower and upper temperate forest.

Wallcreepers is a monotypic family related to both nuthatches and tree-creepers, with some characters of each. Wallcreeper has curved bill like tree-creeper but climbs more like a nuthatch. They are adapted to clambering over vertical rocky faces and wall of the mountain. One was seen over the moraine of Annapurna Base Camp. They are altitudinal migrants.

Tree-creepers (Certhiidae)

Tree-creepers are small arboreal birds with slender, curved bill; rather long tail used as a brace in climbing, the feathers with pointed tips. Long toes and sharp claws also aid in climbing. Plumage streaked brown above, whitish below; sexes similar. Tree-creepers use their bills to probe into bark cracks and crevices, searching for insects and spiders.

Rusty flanked and the Eurasian Tree-creepers were observed in the forest at around 2800 - 3000m near above Banthanti and the Deurali forest. They forage on the insects found on barks of the tree trunks and the branches

Sunbirds (Nectarinidae)

Sunbirds are small and brightly colored arboreal birds; female usually drab green. They have a bill and tongue adapted to feed on nectar; they also eat small insects and spiders. The bill is long, thin, and curved for probing the corollas of flowers and has fine serration near the tip. The tongue is very long and tubular and extensible far beyond the bill, used to draw out the nectar. They have sharp, metallic calls and high-pitched trilling and twittering songs.

MRWA is probably a very important place for the conservation of Nectarines. Four species of sunbirds were observed during the survey period. Green-tailed Sunbird was frequently observed between 2000 - 3000 m. followed by Black-throated Sunbird at 1000 -1500m altitudes. Mrs. Gould's Sunbird was seen on the trail between Bhainsekharka and Ghorepani forest (2000 - 3000 m). Fire-tailed Sunbird was seen between the Sinwa - Bamboo trail at 2000 - 2500m

Flowerpeckers (Dicaeidae)

Flowerpeckers are a very small (probably the smallest) passerines similar to sunbirds, but have small beak and tail. Their tongue is adapted for nectar feeding. They are strictly arboreal and live on the canopy by feeding on the fruits, berries, and nectar; supplemented by insects and spiders. They are very active, and restless, movements include twist, turn and short when perched and have dashing flights. They are sedentary in habits.

Fire-breasted Flowerpecker was seen occasionally on the forest edge and forest. They were mainly observed on the Ghurjung - Chomrong trail and Chandrakot - Landruk trail between 1500m - 2500m.

Shrikes (Laniidae)

Shrikes are medium-small birds with large head; strong, hooked bill; and long, graduated or rounded tail. Sexes are fairly similar; juveniles are barred. They are solitary, aggressive birds that hunt insects, small birds, frequently making "larder" of prey impaled on thorns. Flight is direct and undulating. Generally they are rather silent, but song quite musical and calls harsh and they also mimic. Their bill is used during the rice feeding ceremony in Hindu community, with the belief that the kids will be able to speak in different tones.

Only the resident species of Long-tailed Shrikes were seen. There are two different sub species of Long-tailed Shrikes occurring at MRWA. They are mostly seen on the cultivation or in the forest edge.

White-eye (Zosteropidae)

White-eye is a small passerine, with a slightly decurved bill and a white ring around the eye. They frequent forest, forest edge and gardens. Oriental White-eye makes a peeping call while foraging. They are widely distributed in Nepal in the midhills and Terai Siwaliks.

Orioles (Oriolidae)

Orioles are medium-small arboreal birds with rather stout bill and short legs. They are bright colored and are good singers. Feed on both insects and fruit.

Maroon Oriole was observed frequently in the forest and forest edge between 1000 - 2500m. Golden Oriole was observed only once along the Dhiklu - Chomrong trail at about 1800m.

Drongo (Dicruridae)

Drongos are medium sized bird with black and often glossy plumage. They often have long and deeply forked tail. They are arboreal and insectivorous and catch insects in the air. They also flock during the brush fire to feed upon the flying insects or to drink nectar in the flowering Kapok and Erythrina trees. They live in the forest, forest edge and also in the cultivation. They

contribute to the control of flying insects and also pollinating the kapok, Erythrina and other flowers.

Ashy Drongo was quite commonly seen along the trail. Spangled Drongo was mostly seen along the Birethanti Shyaule route, below 1300m, although one was seen on the Deurali Pass at 3000m. Little Bronzed and the Lesser Raquet-tailed Drongo were seen near the Himalpani across the New Bridge and once at Poong.

Crows, Magpies and Jays (Corvidae)

Corvids are medium-to large-sized land birds, they are largest of the Passeriformes (Perching birds). Bill and legs strong, plumage varying from all-black in typical crows to diverse and colorful in jays and magpies; sexes are similar. Bold, aggressive and wary, they are among the most intelligent birds in the world. They are highly adaptable, found in a wide variety of habitats and altitudes and are omnivorous. Their voice is very harsh. Most species build large stick nest in tree or on cliff. They are known garbage cleaners. They could displace the population of some weaker species by raiding and mobbing the nests. Crows may pose a threat to some crops such as maize.

A flock of Eurasian Jay was observed along the Poong and Phlamu forest trail at around 2200m - 2500m. Few Himalayan Treepie was observed along the Birethanti, New-bridge and the Chandrakot Trail. They were mostly seen on the edge of the forest and cultivation. Red-billed Blue Magpies were seen on the sub-tropical and lower temperate and the Yellow Billed Magpies were observed in the lower and the upper temperate bio-climatic zones.

Eurasian Nutcracker was observed at Deurali, on the way to Ghorepani at 3100m. Flocks of Red-billed and the Alpine Chough were observed between MBC and the ABC trail. They were often seen soaring and sometimes feeding. Jungle Crow was the one of the commonest birds seen through-out the trail.

Starlings or Mynas (Sturnidae)

Starlings are small to medium-sized, plump birds with rather long, straight bill and usually short tail. Their plumage is variable, often brown, black, brown or blue with metallic gloss; sexes are similar or dissimilar. They are very noisy, active birds, gregarious outside breeding season. They run or walk on the ground; their flight is swift and direct. They are omnivorous and nest in the hole. Relatively very few Mynas (Jungle and Common) were seen during this period. Ghandruk village has a good population of Common Myna. A pair nests under the roof of ACAP office.

Sparrows (Passeridae)

Sparrows are small, stout-billed birds with mainly brown or gray plumage; sexes similar or dissimilar. Terrestrial, feeding mainly on seeds. Closely related to the weaverbirds but with a different nest, bulky and untidy usually in a hole. Largely sedentary and some species adapted to human settlements. They may pose a nuisance to some standing crops, but also helps to control the weed by feeding on its seeds.

Very few sparrows were seen in the villages and the fields. Russet sparrow was seen on the outskirts of villages at Ghandruk and Taulung. House Sparrow and Eurasian Tree Sparrow were

CHAPTER IV

4. MRWA Bird Conservation

4.1 Significance of MRWA for Bird Conservation

Proximity of the Nival and the subtropical bio-climatic zone

The resident bird of MRWA enjoys the close proximity of Nival and Subtropical bio-climatic zone within a 20 - 30 kilometer stretch. In this condition many birds have altitudinal movements according to season or diurnal migration to and from the roosting and foraging sites. Many passerines that spend winter in the Sub tropics may breed in the temperate region within this stretch.

ACA as a fly way of trans-himalayan migratory birds

Cranes (Gruidae) Migration flyway

Cranes are tall, long-necked, long-legged terrestrial birds with stout, straight bill, broad wings, and elongated secondaries drooping over tail. Despite a superficial resemblance, cranes are not related to either storks or herons. Neck and legs extended in flight and inclined downward, producing humped look. Flocks migrate in line or V with much soaring and gliding.

Demoiselle and Common Cranes migrates over the Annapurna massif and the Kali Gandaki Valley. Every year more than 30 thousand Demoiselle Cranes fly over the ACA region. Modi Khola is only a fly way for the migratory cranes, they do not stop as there is no suitable habitat available for them.

Eagle Migration flyway

The saddle of the Kanre/Lumle is the bottle neck of bird of prey during migration. Hundreds of eagles (chiefly Steppe), harries and buteo migrates over this point. Some migrating birds stops for the night or during the bad weather in the forest. These birds fly over the Suikhet valley and Dhampus ridge. They fly westwards over Modi River Valley and later probably disperse to the south in the Terai plains.

Passerine migration flyway

Annapurna massif acts as a barrier for migration of passerines and other smaller species. Hence the northwards (through Kali Gandaki Valley) movement may takes place from the west such as the Deurali Ghorepani Pass. The migratory passerines include cuckoos, pipits, thrushes, warblers, flycatchers, etc.

Pheasant conservation

MRWA is the culminating point of the pheasant distribution in Nepal. Mardi River Watershed Area that lies east to the Modi River is the eastern distribution limit of Koklas Pheasant. Similarly, the Kali Gandaki River is the western limit for the distribution of Blood Pheasant. Pipar area of Mardi River Watershed has been designated as a pheasant reserve.

Occurrence of Endemic species

As many as 13% of the world's bird species have been recorded from the Indian Sub-continent. These include 141 endemic species, which is 10% of the regions avifauna. New species are continually added, as ornithological expeditions to unexplored site took place. Politically Nepal may be a land locked country, but biologically it is a land-linked country. MRWA lies in the transition between two zoogeographic region, Palaearctic and the Oriental realm. Similarly it is situated in the Sino Japanese phyto-geographic region. MRWA lies in proximity to the avian geography such as Rara Ringmo finger, Trans-Himalaya, and High Himalayas. The mountains of Nepal (from east to west) termed as Central Himalaya has been identified as the endemic bird area of the Indian subcontinent by Birdlife International (Grimmet et. al., 1999). The position of MRWA is in the dividing line between the central east and west Himalaya. Since it is a land-linked country, it is difficult to harbor many endemic species as that in the islands which is isolated. But MRWA is an western limit for eastern species, like wise eastern limit for the western species. Within this boundary Nepal harbors two endemic bird species, that includes Spiny Babbler and Nepal Wren Babbler

Spiny Babbler was observed at Chane scrub forest on the way to Ghandruk. Spiny Babbler is common in the scrub forest through out the midhills. Nepal Wren Babbler a newly discovered endemic species occurs in Central and Eastern Midhills. It has been recorded between 1700 - 2400 m altitudes in Langtang National Park and ACA. They live in the broad leafed forest with dense bamboo under growth (BPP 4, 1995).

Although Nepal is a land linked, the transition zone between the palaearctic and the Oriental realm of the Central Himalayan range harbor number of subcontinent endemic species. There are number of sub-continent endemic species residing at the MRWA. Some of the sub-continent endemic birds observed during the survey are Himalayan Bulbul, Pied Ground Thrush, Tickell's Thrush, Black-chinned babbler, White-crested Laughing-thrush, Hoary-throated Barwing, and Black-lored Tit. All these species were observed frequently along the survey trail.

The other subcontinent endemic species, occurring at MRWA is Variegated Laughing Thrush. Another sub-continent endemic species Kashmir Flycatcher, may as well occur during the migration period.

The presence of the species lying in the higher level of the food chain in the ecosystems indicates the health of its environment. For example Vultures and the Eagles are among the predators in the MRWA's mountain ecology. The diversity of birds of prey ranges and their diet from Lammergeier that feed on the bone marrow, Himalayan Griffon on the carrion, Golden Eagle on birds and small mammals, Crested Serpent Eagle on snakes, Peregrine Falcons on birds, Kestrels on insects and rodents. It indicates that there are diversity of prey and predators in the food chain. That means the avian diversity status of MRWA is healthy.

The cliff of MRWA plays a greater role in cliff dwelling birds conservation. The cliffs are the nesting sites of Kestrel and feeding area for the Honey Guides. Honeyguides are small, dull colored and inconspicuous birds that inhabit forest or forest edge. They are chiefly insectivorous, but also eat wax of the honeycombs as a chief source of food.

Although we were not able to observe Honey Guide during this trip they defend the cliff with the honeycombs. The cliffs along the Modi Khola are a good habitat for the Himalayan Honey Bees. Honey Guides are attracted to these sites. Dominant male defends the honey cliffs and allows only female to feed on the wax (Flemming et. al, 1976)

4.2 Bird Conservation Issues of MRWA

4.2.1 Loss of forest cover

Both the extent and the quality of forest resources are declining throughout much of the Indian Sub-continent. Nepal was once extensively forested, but by 1988 forested are decreased to 37% of the country forested and only 15% carried dense forest. The major threats to natural forest are overexploitation for fuel-wood, timber and fodder, overgrazing which prevents forest regeneration and the conversion of forest to other land uses: agriculture, shifting cultivation, tree plantation, settlements, and reservoirs through dam construction. The decline in Nepal's forest cover has been attributed partly to the breakdown of traditional management. All forest were nationalized in 1957, in an attempt to give federal protection, but the consequences was that the forest loss accelerated, because people felt that the forest no longer belonged to them. The forest act of 1993 once again decentralized forest management system, and many villages or communities have since started to manage their own forest resources (Grimmet et. al., 1999). However it is still in the experimental phase (though it was proved to be successful in some places), the area covered by these forest is minimal. Fuel-wood provides 98% of the Nepal's domestic energy supply in the rural and sub urban settlements. The local populace of MRWA largely depends upon the forest resources for their livelihood. They use bamboo extensively for multiple purposes and supplement their diet by wild vegetables and herbs for medicine. The initiation of ACA a decade ago has helped to reverse some of the negative impacts on the forest resources of MRWA.

4.2.2 Pesticide poisoning

The detrimental effect on the biodiversity by human related activity is a worldwide phenomenon. The farms lands of the Terai and the valleys linked with black topped road are the hardest hit areas by pesticides. The insecticides with their toxicity to mammals, birds and their persistence that have had serious effect on wildlife and livestock are alarming. Studies have shown that birds are particularly susceptible to insecticides damage. Eating pesticide containing worms or insects or rodents may kill them directly or the chemicals accumulate in their body system. The use of pesticide over a large area and over a long period may diminish the overall population of invertebrates that are food sources for insectivore birds. Some insecticides and especially the organochlorines DDT have a long-term effect on the reproductive processes of bird of prey and aquatic species. These chemicals are banned for import and use from most developed countries but are still used in the developing country to control pests often with deadly side effects not only to wildlife but also to human who apply them. Nepal is one of the country not to have banned their use (Asian Development Bank, 1987). Countries like Nepal have the pesticides that have been wisely banned from other countries (developed), dumped on them either free or at low cost to get rid of these extremely dangerous substances. Sometimes the local people apply poisons to kill the nuisance species to their farms or livestock. For example the Blue Bull Antelope that has colonized the Lumbini garden in the 90's became the pest for the farmers. After many request and delegation to the government, the plight of the farmers became

intolerable. They simply used some pesticide (probably benzenehexachloride, BHC) on their crops. The effect of this poison on the Blue Bull Antelope is the loss of eyesight due to internal hemorrhage. Now the number has plummeted to around 50 individual from once 200+ animals. The authorities overlook these poisoning cases. Now poachers have also employed the use of such Zinc Oxide and electrocution to kill the Rhinos in Chitwan, Thiodan for fish and BHC for Ruddy Shelducks in Chitwan and Koshi Tappu. The result of periodic disposal of poisoned dogs near the Bishnumati Riverbanks in the 1970's have wiped out the White-rumped and Long Billed Vulture population from Kathmandu Valley (BPP, 1995). The principles of ecology such as utilization of the numerous species and the conservation of rare species are always needed. Specially, if the numerous species becomes a nuisance to the humanity, there should be a guideline to control it. Similar threats are surfacing at ACA, especially by the monkey, occasionally by bear and by the Muntjak. The birds of prey and jackals are considered a menace for the poultry. Management of some pest species should be initiated to control the growing depredation. One cannot rule out the possibility of using the poison by angry farmers to get rid of the pests. It would have irreversible effect on the wildlife and especially to the carrion eaters. The current case of poisoning seventy peacock adjoining the national park in Orissa in the neighboring country may also be an indicator of lack of management of overcrowded and agriculture nuisance species.

4.2.3 Hunting activities

It was surprising to see six-year old kids playing with catapults. Most of the teenagers carry a catapult in the MRWA. This would have effect on the bird species living in the farms and the forest edge. The catapult playing seems like a culture to youth and also to the olds. It is used to drive away the monkey, other pest birds or to kill small birds. Catapult may be an option to drive away the monkey or to some pest bird species. Communal hunting was once a common practice in this region, but now after the establishment of ACA it has been stopped to some extent. However some communities staying in remote areas resort to these activities. And few local poachers have become a professionals, they kill wild animals to trade the flesh, skin and the musk pods or the bear bile. Some incidence of poaching has come to the notice of ACA officials and some individuals have been convicted.

4.2.4 Impact of tourism

Tourism is a boon but it may be a curse, if the natural resources are not sustainable. A group of lodges in the forest (e.g. Tadapani) have impact on the two kilometers radius due to the harvest of timber to build lodge, fuel wood and grazing the livestock. Since MRWA is an important tourist destination in a fragile landscape, care must be taken while harvesting natural resources. ACA has invested a decade to the promotion of environmental friendly technologies and sustainable strategy to minimize the damage to the nature. However some locals do not heed to the request and do not follow the guidelines. A guideline to indicate the carrying capacity of a destination or the trail must be set to control the impact of tourism on the fragile environment.

4.2.5 Development

The proposed hydropower development in the Modi River would have direct impact on the subtropical stream dwelling species. They are Kingfishers, dippers, forketails, redstarts, riverchat etc. It would diminish the local and migratory fish population such as Faketa, Kabre, Asala, Buduna and other hill-stream fishes. It may have impact on the migratory fish species such as

Asala (*Schizothorax* spp), Mahsheer (*Tor* spp) and the Raj Bam Eel (*Anguilla* spp). The dam built at Kali Gandaki River has become an obstacle for the long distance migratory fishes. This hydropower installs high voltage cable to distribute the electricity. The poles and the cables supplying the high voltage electric currents are hazardous for bird movement during low visibility. The resident and migrating eagles and other birds may die by collision during the bad weather. The roads provide access to the harvest of the natural resources and flow of people. The degree of threats to the MRWA natural resources is based on the cursory observation.

4.3 Threatened birds of MRWA

Over the past 50 years at least 80% of the global mammal, bird, reptile, and amphibian extinction have taken place on islands. Of the 109 bird species which have become extinct since 1600 AD, 91 species (83.5%) were island dwellers. Until 1844 - when the Great Auk of North America was killed; all known bird extinction had occurred on islands. About 22% of the bird species became extinct as a result of the introduction of rats, cats, mongoose, goats, pigs, ships and cattle. The role of habitat destruction in species extinction is difficult to separate from influence of introduced predator species in devastating island bird population. However, it is estimated that 20% of the bird extinction can be traced to habitat destruction alone (Nilsson, 1983). Now more mainland species are threatened with extinction than the island and the oceanic species (Table 14). It is due to the cause that many mainland habitats are becoming effectively "islands" of natural and semi-natural habitat due to increasing human populations and the extension of cultivated land settlements - as is happening in Nepal (BPP 13, 1995). In these category the grassland and the wetlands are the most threatened habitat, and the species requiring these specific habitat for their survival may perish at the earliest. These habitats are also subject to environmental change in short period from flood, drought or fire.

Table 14: Number of species extinct and threatened with extinction since 1600's in the world

Status	Mainland	Island	Ocean	Total species
Extinct	37(19%)	155(80%)	2(1%)	194
Threatened with extinction	391(63%)	202(33%)	24(4%)	617

Source: Nilsson, 1983

To define the threatened status of the bird in this report the criteria applied by National Red Data Book of Nepal was applied. The global regional and the national conservation status of the bird species have been referred to include them in the Red Data Book. The CITES criteria has also been referred to include some species which are of international trade concern and their 'look alike species'. They are threatened in particular as the threatened species are traded in the name of the non-threatened look-alike species.

The NPWC Act 1973 allows legal protection of nine bird species only. It represents just a small percentage of species requiring legal protection and conservation intervention. The government enacted NPWC Act as a legal binding document but it lacks the Endangered Species Action plan. It should be a complimentary to the NPWC Act so as to revive the number of dwindling species

and by creation of protected areas or by other methods and to re-catalogue the species periodically as they recover from their original threat status.

NRDB was developed to review the existing protected bird species under the NPWC Act, 1973 (BPP 4., 1995). It has two divisions that are a. recommended for legal protection and the b. the conservation dependent category. The species recommended for legal protection are facing immediate threats for their survival, and are of special concern for ecological balance, where as the conservation dependent are facing little threat but may face greater consequence if not managed within a time frame. It has used five broad threat categories from Extinct to Susceptible.

Extinct (EXN)

A taxon is Extinct when there is no reasonable doubt that its last individual has died in the country. Extinct is forever. Eleven bird species (including Pink-headed Duck) have become extinct from Nepal. Most of these species were collected by earlier ornithologists over a century ago. Now there is no reliable data to compliment their findings. Most of these species have been recorded from the eastern Terai, Siwaliks and the Midhills including Kathmandu Valley.

Two bird species are thought to have become extinct from the subcontinent namely Pink-headed Duck and the Himalayan Quail. Hodgson has recorded Pink-headed Duck in Nepal in the 1840's. At the moment there are no reliable data to prove their existence.

Eleven bird species are believed to have become locally extinct from Nepal (Table 15). These bird specimens were collected over a century ago and there have not been any recent records except for a sighting of a Hodgson's Hawk-cuckoo (*Hierococcyx fugax*) from KTWR area during the spring season of 1988 (Inskipp and Inskipp 1991). Six of the bird species that have become extirpated from Nepal were recorded from the eastern region. No bird species recorded from MRWA have become extinct.

Table 15: Extinct bird species of Nepal

Scientific name	Common Name	Recorded from (region, physiographic zones)
<i>Ardea imperialis</i>	Imperial Heron	Central Terai/ Siwaliks
<i>Rhodonessa caryophyllacea</i>	Pink-headed Duck	Central, Midhills
<i>Perdica asiatica</i>	Jungle Bush Quail	Unknown, Terai/Siwaliks
<i>Hierococcyx fugax</i> *	Hodgson's Hawk-cuckoo	Eastern Terai/Siwaliks
<i>Aceros nipalensis</i>	Rufous-necked Hornbill	Eastern Terai/ Siwaliks
<i>Serilophus lunatus</i>	Silver-breasted Broadbill	Eastern/ Terai/Siwaliks and Midhills
<i>Brachypteryx hyperythra</i>	Rusty-bellied Shortwing	Unknown locality
<i>Cochoa viridis</i>	Green Cochoa	Unknown, Terai Siwaliks
<i>Paradoxornis flavirostris</i>	Black-breasted Parrotbill	Eastern, Terai Siwaliks and Midhills
<i>Liocichla phoenicea</i>	Red-faced Liocichla	Eastern, Terai Siwaliks and Midhills
<i>Heterophasia sibia</i>	Long-tailed Sibia	Central, Terai Siwaliks

Source: BPP, 1995i

* recent unconfirmed sighting in Nepal

Critical (C)

A taxon is critical when it is facing as extremely high probability of extinction in the wild in the immediate future. There are no bird species at the moment, which is immediately threatened to become extinct in MRWA.

Endangered (E)

A taxon is endangered when it not critical but is facing a very high risk of extinction in the wild in the near future.

Three NRDB endangered bird species reside in the MRWA. All these species were sighted during the survey period. Although they are endangered regionally Satyr Tragopan and the Cutia is fairly common in some pockets of MRWA. Peregrine Falcon is quite rare in number but seldom seen in flights. Satyr Tragopan lives in the forest with dense bamboo undergrowth at an altitude higher than 2000m, They are more heard than seen. Their crimson color is very conspicuous in the forest surrounding. They are hunted for their feathers (to make fish bait or flies) and meat. Cutia was observed in the forest north of Landruk. They were seen in pairs. The forest north of Landruk is a good habitat for the conservation of Satyr Tragopan, Cutia and many other bird species.

Vulnerable (V)

A taxon is vulnerable when it is not critical or endangered but is facing a high risk of extinction in the wild in the medium-term, or if the animal is rare or scarce. Seven of the 20 vulnerable species were sighted during the survey (Table 16). Few of the flycatcher species may be recorded during the winter season.

Table 16: Vulnerable bird species occurring at MRWA.

Bird name	Bird name
*Eurasian Black Vulture	Hill-blue Flycatcher
Greater Spotted Eagle	Sapphire Flycatcher
Imperial Eagle	White-gorgetted Flycatcher
Lesser Kestrel	Streak-breasted Scimitar Babbler
Wood Snipe	*Black-chinned Babbler
*Barred Cuckoo Dove	*Great Parrotbill
Oriental Scops Owl	*Chestnut-tailed Minla
*Northern Eagle Owl	*Golden Babbler
Gould's Shortwing	Orange-rumped Honey Guide
Long-billed Thrush	Silver-eared Mesia

Note: * marked sighted during the survey

Susceptible

(S)

A taxon is susceptible when it does not qualify for any of the categories above, but is of concern because its range area is restricted (typically less than 100 sq. km.). And/or it is found only at few locations, which render it prone to the effects of human and other environmental threats (Table 17).

The uses of pesticide to kill the rodents and the insects have effect on the food chain of the birds of prey. The accumulation of poison in their body may kill them or impair their breeding biology. Although they are fairly common they are exposed to poisoning in many countries, Nepal too won't be spared. The remoteness and the poor trails for transportation at MRWA have hampered the smooth supply of pesticides and chemical

fertilizers. Reasons for them to be included in the susceptible category are the risk of habitat destruction or alteration and hunting.

Table 17: Susceptible bird species found in MRWA

Bird name	Bird name
*Egyptian Vulture	Ibisbill
*Lammergeier	Slaty-headed Parakeet
Long-billed Vulture	Spotted Little Owl
*Crested Serpent Eagle	Short-eared Owl
Pallid Harrier	Brown-fronted Pied Woodpecker
Pied Harrier	White-browed Shortwing
*Besra	Rufous-fronted Bush-Robin
*Crested Goshawk	*White-tailed Robin
*Shikra	*Pied Ground Thrush
Common Buzzard	Yellow-bellied Bushwarbler
Long-legged Buzzard	*Grey-cheeked Warbler
Upland Buzzard	Smoky Warbler
*Golden Eagle	Large Niltava
*Mountain Hawk Eagle	Pygmy Blue Flycatcher
Amur Falcon	Ferruginous Flycatcher
Saker Falcon	Little Pied Flycatcher
Tibetan Snow Cock	Fulvous Parrotbill
Blood Pheasant	*Scaly Laughing Thrush
Koklas Pheasant	*Streaked Laughing Thrush
Himalayan Monal (Danphe)	*Red-billed Leothrix
*Kalij Pheasant	Yellow-bellied Flowerpecker
Demoiselle Crane	*Scarlet Finch

Note: * marked species observed during the survey

4.4 Legal Provision for Bird Conservation

Modern Nepal's first wildlife legislation was the Wildlife Conservation Act of 1958 that offered legal protection to Rhinos and their habitat (Heinen and Kattel, 1992). In 1962 an Aquatic life Protection was enacted to preserve aquatic fauna. As a conservation measure a Rhino Reserve was established in 1964. This legislation was repealed in 1973 and Wildlife Conservation Act was enacted with amendments made in 1975, 1980 (Himalayan National Parks Rules) and 1989, providing the basis for parks and reserve administration and wildlife Conservation. The 1973 Act defined National Parks and wildlife conservation area and hunting reserves and listed protected fauna. Three reptiles, nine birds and 27 mammal species were designated as fully protected (Appendix). In 1995 Schedule II was updated (BPP 1995).

In the amendment to the 1973 NPWC Act the government introduced the protected area category of "conservation area" where wildlife management occurs alongside the development of local people's livelihood. Conservation and community development activities for the conservation of biodiversity were first introduced in the Annapurna Conservation Area Project (ACAP).

Though government provision provide legal protection to nine species only, the protected area system of Nepal (about 18%) provides protected habitat for the conservation of the diverse bird species of Nepal that are nationally and internationally threatened.

CHAPTER V

5. Opportunities for Bird Conservation, Education and Research

5.1 Bird conservation

The establishment of ACA is a landmark for conservation of the biodiversity of the midhills, high-mountains and High-himalaya and Trans-himalayan physiographic zones. MRWA represents mostly the Midhills and High Mountains and the High Himalaya physiographic zone. Midhills and the High Mountain of MRWA are significant for bird conservation. The high Himalaya supports very little birds and other forms of life. A decade of conservation practice has shown results of the return of many species to a healthy population. Besides the numerous species secured at ACA the revival of the population of pheasants (Kalij, Monal and Danphe), a partridge (Common Hill) is visible along the trail. The forest north of Landruk, in the eastern catchment of Modi is devoid of permanent settlements and there is no tourist trail, hence there is abundance of these species at their respective habitats. The sightings of Monkey (Assamese and Rhesus) and Himalayan Thar along the trail is very promising. Himalayan Thar is commonly seen from Bamboo - Himalaya and to Deurali.

It is recommended to preserve pockets of microhabitats as a safe haven in the conservation area, where there should be no grazing or other human interference. These protected core habitats will become a breeding pool for the birds, other wildlife and vegetation. MRWA has the advantages due to its rough terrain; the topography itself became a barrier for the human exploitation in many pockets.

The sheer cliffs and the caves have become a natural refuge for the large birds of prey. Any nesting sites of eagles, vultures or colony of other birds (whether on the cliff or the trees) lying near by the trail or the human settlement must be given strict protection. The birds of prey and swifts tend to use the same nests year after year. Bird of prey and the game birds require special attention to the management strategy. The bird species listed as endangered, vulnerable and susceptible requires periodic monitoring on their population structure, reproductive success and their conservation constraints.

Like the harvest of NTFP, the local should be given the permission to allow harvesting of some game species that are in abundance. It could also help to revive the traditional communal hunting. The hunting exercise may help to research and documentation of the wildlife abundance, diets and population dynamics. The controlled hunting is a tool for wildlife management and to promote eco-tourism. But this could be promoted where the trekking tourism does not take place. The NPWC Act allows to harvest pheasants/partridges and doves/pigeons against some fees.

5.2 Bird education and display center

To initiate a successful long-term conservation strategy, it is important to lift the level of knowledge of the local people on the natural resource management. It is important to inform the local populace on the benefits of birds as a carrion eater, pollinators, weed eaters, and as a source of protein. People should be informed on the management of pest

by birds. Periodic bird survey and birds of prey count should be carried in MRWA region. It will provide a base line data to monitor some bird species. The bird education center should be established at major settlements that would facilitate for bird's arts and crafts training place. A small bird conservation units or local bird clubs be established under the management of school or local users group. These activities may help to produce local bird tour guides for the bird watchers.

The center should provide facility as an orphanage center for the orphan and injured birds or birds confiscated from poachers. This would add to the educational value to the local and the students on the existence of the species and their biology. Some of the birds such as the birds of prey could be trained for wild flight and education to attract the visitors and generate income for the center. The orphan birds are good opportunity for captive breeding and reintroduction to the wild. The center should grow diverse tree and bush species in their nursery to plant in the farms and the village boundaries. The fruits of figs, yellow raspberry, berberries and many other fruiting species are good attraction for birds.

The local people have immense knowledge on local names, behavior, and ecology of the birds and the folktales. It will be worthwhile to collect these local data and to disseminate the knowledge to others.

5.3 Ornithological Research

MRWA is a potential location for bird research according to their bio-climatic zone, population dynamics, diversity and status of migratory birds, vertical and horizontal distribution of bird species, bird species and population density according to the landuse. It is probably a best place to initiate Himalayan Ornithological Research Center. The significant diversity of pheasant and birds of prey is a good opportunity for their research. Application of GIS and GPS as a tool for bird research would help to answer many queries of the scientists. The application of satellite radio telemetry on the migrating eagles of MRWA would help to determine their complete migratory route, staging areas and the duration of migration. Most of the research carried out in MRWA is either bird specimen collection in the 70's and or observation by amateur and professional bird watchers. It is difficult to get these information, as it is scattered around the world. ACA should coordinate to the visiting scientist to exchange information for reference. There are number of institutions in the world who may want to collaborate with ACAP for the bird research.

The endangered, the vulnerable and the susceptible birds should be the major subjects for the research. A research on the availability and the abundance and the feasibility to promote hunting of game species may be of good option to exploit the natural resources and generate revenues.

CHAPTER VI

6. Discussion/conclusion

A total of 844 bird species have been recorded for Nepal, 8.5% of the global species. It is estimated that more than 600 bird species breed in Nepal (Inskipp, 1989). Nepal has one of the highest bird densities in the mainland countries of the world. The Midhills and the high Himalaya provides the most varied topographic and the bio-climatic regions in the world due to its pyramidal effects. The land above 5000 meter is under perpetual snow and it supports little birdlife. Nepal is distribution limit for 122 eastern and 22 western species (Shrestha, 1999). Kali Gandaki valley or the ACA is the dividing line for avian geography.

The movement of birds in Nepal is dynamic and governed by altitudes and the seasons. Birds living in the mountainous region exhibit the typical phenomenon of diurnal altitudinal and seasonal movements. The breeding passerines of the high altitudes descend to the midhills and the Terai/Siwaliks in winter. The large scavengers exploit gravity and thermal for foraging. The intercontinental migratory species includes the passerines, plovers, cranes, birds of prey, ducks and geese arrive during fall and spring. Nepalese summer migrants include the breeding species such as cuckoos, pittas, bee-eaters, swifts and swallows.

Birds contribute to a great extent for ecological benefits such as sanitary value, seed pollination, seed dispersal, weed seed remover, controlling rodents and other pest insects, and birds are the indicators of the health of the habitats.

Vulture and Eagles contribute to sanitary value by clearing the carcass of dead animals. Sometimes animals die (domestic or wild) in large numbers, during these period the scavengers play a greater role to help it clean so that the germs may not be able to spread. Their contribution along with mammals (such as jackals) is appreciated to keep the environment clean. We were able to observe the Lammergeier feeding on the carcass of the Himalayan Thar died due to avalanche near Himalaya.

The farmland as well as the natural lands harbor number of pest species, such as rodents, insects and birds. The numbers of these pest species need to be controlled annually. The rodent lives in burrows and forage by night. They are blamed for the destruction of one third of the grains. The bird of prey such as hawks, kestrel and falcons contribute to it by preying upon them during the day. The nature has employed the service of owls and jackals at night and serpents in the burrows to keep their population balanced or under control.

Similarly there are tons of worms and other insects in the environment, to counter these insects; warblers, flycatcher, cuckoos and many other passerines are there to keep their population under control. Swifts and the martins control the high-flying insects.

Sunbirds and other nectar drinking birds help to pollinate the flowers. Finches and Munia, and sparrows help the farm by removing the weed seeds.

Beside the above-mentioned species, the diversity of bird itself is an aesthetically important for bird watchers and nature lovers. Bird watching tourism is the growing new tour of special interest. The people of developed countries are interested and can afford for such tours. MRWA supports the birds residing at subtropical, temperate and sub-alpine bio-climatic zone within a short stretch. The rare, colorful and the diversity of bird is an attraction of MRWA for bird watchers.

Pheasants, partridges, doves and pigeons are considered the game birds. They are exploited as a species for hunting or for the delicacy. There is a worldwide demand for their meat and for sports. The NPWC ACT 1973 allows permitted hunting of some of these species in non-protected areas and designated hunting area of Nepal. However, so far permitted hunting is not allowed at ACA. Before the establishment of ACA the communal hunting occurs annually. The target species may be the larger ungulates (Thar, Serow, and Muntjak) or the game birds (pheasants and partridges). The isolated areas of MRWA could be developed for seasonal hunting of the abundant game species.

About 474 bird species have been recorded from ACA, which comprises 53% of the Nepalese species. Two hundred and ten bird species have been recorded in the 28 days survey during spring season in the MRWA. Most of the survey was concentrated in the upper subtropical and temperate bio-climatic zone. A detailed survey in the different season would reveal more bird species for MRWA, chiefly wintering and the passage migrant species. The annotated checklist of ACA suggests the occurrence of 533 species. MRWA do not have Trans-himalayan Physiographic zone or the Tibetan plateau.

A total of 210 bird species was observed during the survey. Forty bird species was observed in average per day. The forest of Pachaun/Devkuna (near Landruk) and the forest between Bamboo and Ghurjung were found out to be significant for bird observation. We were able to record up to 58 bird species in a single day between this route. The forest from Bhainsi Kharka up to Deurali is healthy for birds. The farmlands from Shyaule to Chane have sparse bird diversity and population. Where as the farmlands interspersed with forest between Chandrakot and Landruk have good bird diversity. Most of the bird species (190) observed were resident and few (16) were summer migrants for breeding.

The Birethanti - Shyaule is good for subtropical forest and hill stream species. The trails between Bhainsikharka, Tadapani - Ghurjung - Taulung are good for lower temperate bio-climatic birds. Similarly The trail from Chandrakot - Landruk - Pachaun - Devkuna is also good for bird upper temperate bio-climatic birds. The Sinwa - Himalaya is equally good for temperate birds and mammals (Goral and Himalayan Thar) too.

The local status of birds during the survey period was scarce 59.5%, rare 21%, uncommon 9%, occasional 8.6%, fairly common and common .95%. This data states that the bird species are not uniformly distributed due to varied topography and vegetation.

The major eco-groups include the Arboreal eco-group consisting 82.38% followed by Birds of Prey 11.43%. The chances of seeing new species daily is expected up-to 43 on the first day and culminates to zero by the end of the month. The upper sub-tropical and the lower temperate bio-climate zones are the important bio-climatic zone for the bird distribution where 61% and 54% of MRWA bird species was recorded respectively. The Landruk catchment was found out to have diverse species with 145 species followed by the Kyumnu (112) and Kyunri (102) catchment. Among the landuse type the forest supports nearly 90% of the birds species occurring at MRWA. However the grasslands, rocky cliffs, streams/river, and the cultivation support the specialized habitat requiring bird species.

CHAPTER VII

7. References

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ANNEX I ACA Fact Sheet

<i>Surface Area</i>	762 900 ha
<i>IUCN Management Category</i>	VI (Proposed)
<i>Management plan</i>	Operational Plan (Sherpa et. al., 1986) Management Plan Yonzon et. al. 1999)
<i>Number of visitors</i>	60,000 1998/99 estimated
<i>Altitude Range</i>	1151 - 8091 meters
<i>Number of wildlife Species</i>	Mammals 101 Birds 533 (2000) Reptile 34 Amphibians 22
<i>Number of donor assisted projects</i>	Several
<i>Scientific research and facilities</i>	Surveys of vegetation, Bahrain population in Manang, Jharal Populaion at Annapurna bases camp, bird research at Pipar, and a snow leopard Study. Biodviersity survey of Modi River Watershed Area (2000). A research unit is proposed
<i>Visitor Facilities</i>	Visitor center at Ghandruk, Jomsom, Siklis
<i>Information centers</i>	At all the entry points and major tourist destinations

ANNEX II Frequency of bird species observed, altitude and the site names

Day	No. of bird sps.	Altitude 1	Altitude 2	Altitude 3	Place
1	45	1025	1600	1939	Birethanti-Kimche-Ghandruk
2	45	1939	1800	1939	Ghandruk-Chane- Kymnu
3	40	1939	1620	2580	Ghandruk-Tadapani-Banthanti
4	37	2580	3020	2750	Banthanti-Deurali-Tadapani
5	44	2750	1900	2620	Ghorepani-Deurali-Tadapani
6	48	2620	1900	2170	Tadapani-Ghurjung-Chomrong
7	45	2170	2000	1760	Chomrong-Dhiklu-Chomrong-Jhinu
8	37	1760	1340	1565	Jhinu-New Bridge-Landruk
9	36	1565	1340	1565	Landruk-New Bridge-Landruk
10	57	1565	1800	2000	Landruk-Pachaun
11	40	2000	2100	2200	Pachaun-Poong
12	37	2200	2400	2500	Poong-Phlamu
13	21	2500	2600	2750	Phlamu-Devkuna
14	24	2750	3200	2750	Devkuna-Khuile-Devkuna
15	34	2750	2700	2650	Devkuna-Kogar
16	31	2650	2600	2634	Kogar-Dond
17	33	2634	2300	2100	Dond-Deurali
18	50	2100	1800	1580	Deurali-Tanchowk-Chandrakot
19	58	1580	1700	1565	Lumle -Chandrakot-Landruk
20	55	1565	2000	1760	Landruk-Pachaun-Jhinu
21	48	1760	2170	2335	Jhinu-Sinwa- Bamboo
22	29	2335	2920	3250	Bamboo-Himalaya-Deurali
23	22	3250	3600	4130	Deurali-MBC-ABC
24	29	4130	3600	2335	ABC-Bamboo
25	58	2335	2500	1780	Bamboo-Kimrong Khola
26	43	1780	2100	1939	Kimrong Khola-Ghandruk
27	42	1939	1800	3100	Ghandruk-Mesram Barah
28	32	3100	1410	1025	Mesram Barah-Birethanti

ANNEX III Bird species recorded according to the family groups

Bird family	Resident + Altitudinal	Migratory Summer	Migratory Winter	No. of sps
Birds of Prey				
Eagles, Hawks, Vulture, and Falcons	20		3	23
Owl	1			1
Wader				
Snipe		1		1
Terrestrial				
Game birds (Partridges and Pheasants)	5			5
Arboreal				
Doves & Pigeons	7			7
Cuckoos	0	5		5
Nightjar	1			1
Kingfisher	2			2
Barbet	3			3
Woodpecker	5			5
Pipits & Wagtail	1	2		3
Minivet	1			1
Bulbul	5			5
Dipper	1			1
Wren	1			1
Accentors	2			2
Bush Robin	3			3
Redstart	2			2
Robin	2			2
Grandala	1			1
Bush chat	2			2
Wheatear	1			1
River Chat	1			1
Rock Thrush	1	1		2
Thrush	4	3		7
Black Bird	2			2
Forktail	3			3
Tesia	1			1
Tailor Bird	1			1
Hill Prinia	1			1
Warblers	10			10
Flycatcher	11	1		12
Scimitar Babbler	1			1
Babblers	3			3
Parrotbill	2			2
Laughing-thrush	8			8

Bird family	Resident + Altitudinal	Migratory Summer	Migratory Winter	No. of sps
Leothrix	1			1
Cutia/ Shrike-Babblers	4			4
Fulvetta/ Minla	7			7
Sibia	1			1
Yuhina	4			4
Tits	5			5
Nuthatch	3			3
Wallcreeper	1			1
Tree-creeper	2			2
Roller	1			1
Sunbird	4			4
Flowerpecker	1			1
Shrikes	1			1
Drongo	4			4
Magpies & Crows	8			8
Myna	2			2
White Eye	1			1
Oriole	2			2
Sparrow	3			3
Finches	16			16
Bunting	1			1
Aerials				
Swifts	1	3		4
Martins	3			3

ANNEX IV Bird species curve for MRWA Spring, 2000

Day	Species
1	44
2	21
3	22
4	21
5	10
6	6
7	9
8	5
9	5
10	10
11	4
12	8
13	2
14	4
15	2
16	1
17	0
18	5
19	5
20	5
21	4
22	4
23	7
24	1
25	1
26	2
27	2
28	0

Birds Observed in MEWA Spring 2000

Common Name	Local	Observation days																											
	Status	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
HAWKS, EAGLES AND VULTURES																													
Crested Honey Buzard	S																			*									
Black Kite	S	*																	*										*
Egyptian Vulture	S																		*	*									
Lammergeier	O	*	*	*	*	*		*	*	*												*	*	*	*	*	*		
Oriental White-backed Vulture	S																				*								
Himalayan Griffon Vulture	O		*	*	*	*		*	*							*					*	*	*	*	*	*	*	*	*
Eurasian Griffon Vulture	R	*	*					*			*					*			*								*	*	*
Red-headed Vulture	R	*						*	*											*						*	*	*	
Eurasian Black Vulture	S																										*		
Crested Serpent Eagle	U				*			*	*	*						*			*	*	*					*		*	
Hen Harrier	S					*														*									
Besra	S																			*									
Northern Sparrowhawk	R			*		*										*						*			*				
Crested Goshawk	S												*																
Shikra	S				*												*												
Black Eagle	R		*				*			*				*					*										
Steppe Eagle	S	*	*			*											*												
Golden Eagle	S							*																					
Bonelli's Eagle	S										*											*			*			*	
Mountain Hawk-eagle	R				*						*	*		*		*	*		*										
FALCONS																													
Common Kestrel	R	*	*				*	*	*	*										*	*								
Oriental Hobby	S																			*									
Peregrine	S				*																								
GAME BIRDS																													
Black Partridge	S																			*									
Common Hill Partridge	U				*						*	*	*	*	*	*		*			*	*				*		*	*
Satyr Tragopan	R											*	*	*	*	*	*	*											
Himalayan Monal	S														*									*					
Kalij Pheasant	R										*	*				*	*		*									*	
WADERS																													
Eurasian Woodcock	S																											*	
DOVES & PIGEONS																													
Rock Pigeon	S								*																				
Snow Pigeon	S									*					*									*	*				
Ashy Woodpigeon	R		*	*	*							*				*	*												
Oriental Turtle Dove	U			*			*	*	*										*	*		*			*	*	*	*	
Spotted Dove	R	*						*											*	*							*	*	

Bird Species Observed in MRWA, Spring 2000

Common Name	Local Status	Observation days																												
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	
Barred Cuckoo-dove	S																					*								
Wedge-tailed Green Pigeon	S										*		*								*	*						*		
CUCKOOS																														
Hodgson's Hawk-cuckoo	O	*		*			*				*	*				*	*	*	*	*	*	*	*			*	*	*	*	
Indian Cuckoo	R															*	*	*		*	*	*								
Common Cuckoo	O	*	*	*			*	*		*	*						*	*	*	*	*	*				*	*	*	*	
Himalayan Cuckoo	O			*		*	*	*			*	*	*			*				*	*	*	*			*	*	*	*	
Drongo-cuckoo	R							*	*											*	*					*	*			
Nightjar																														
Jungal Nightjar	S								*																					
OWLS																														
Northern Eagle Owl	S											*																		
SWIFTS																														
Himalayan Swiftlet	S																				*									
White-throated Needletail	S																												*	
Pacific Swift	R		*			*			*			*				*		*	*	*										
House Swift	S																			*										
KINGFISHERS																														
White-breasted Kingfisher	S	*																												
Common Kingfisher	S	*																												
BARBETS																														
Golden-throated Barbet	R									*	*	*	*						*	*	*	*								
Blue-throated Barbet	S																			*										
Great Barbet	O	*	*				*	*	*	*	*	*	*						*	*	*	*				*	*	*	*	*
WOODPECKERS																														
Greater Yellow-naped Woodpecker	S																				*									
Grey Headed Woodpecker	U		*						*		*	*	*							*	*	*	*			*	*			
Darjeeling Woodpecker	S								*		*	*	*					*												
Crimson-breasted Pied Woodpecker	S						*																						*	
Rufous-bellied Pied Woodpecker	S										*																			
MARTINS																														
Barn Swallow	S																			*	*									*
Nepal House Martin	U																													
Red-rumped Swallow	S		*						*				*						*		*				*	*	*	*	*	*
PIPITS AND WAGTAILS																														
Olive-backed Pipit	U	*	*			*		*	*	*		*			*				*			*	*							
Rosy Pipit	S														*	*									*	*				
Grey Wagtail	O	*	*	*	*	*			*	*	*									*	*			*	*	*	*	*		

Local status legend: C - Common , F - Fairly Common , O - Occasional, U - Uncommon, R - Rare, S - Scarce

Bird Species Observed in MRWA, Spring 2000

Common Name	Local Status	Observation days																											
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
MINIVETS																													
Long-tailed Minivet	C	*	*	*	*	*	*	*	*	*	*	*		*	*	*		*	*	*	*	*	*		*	*	*		
BULBULS																													
Striated Bulbul	R								*		*	*	*									*							
Himalayan Bulbul	R	*	*																	*	*	*				*	*		
Red-vented Bulbul	R	*	*	*																*	*	*						*	
Mountain Bulbul	R		*					*	*	*	*	*						*	*	*	*	*				*	*	*	*
Black Bulbul	O	*	*					*	*	*	*	*						*	*	*	*	*				*	*	*	*
DIPPER																													
Brown Dipper	R	*		*	*			*	*																			*	
WREN																													
Northern Wren	S																							*	*				
ACCENTORS																													
Rufous breasted Accentor	S																							*	*				
Alpine Accentor	S														*														
FLYCATCHER AND ALLIES																													
Asian Magpie Robin	S																										*	*	
Orange-flanked Bush Robin	S			*							*		*												*	*			
Golden Bush Robin	S																							*	*				
White-browed Bush Robin	S					*																							
Blue-fronted Redstart	R					*					*					*	*							*	*				
Plumbeous Redstart	U	*	*		*		*	*	*	*									*		*	*					*	*	*
White-tailed Robin	S			*																	*								
Grandala	S																							*	*				
Common Stonechat	R			*					*											*							*	*	*
Grey Bushchat	O	*				*	*	*		*			*	*					*	*	*	*				*	*	*	*
Isabelline Wheatear	S																							*					
White-capped Riverchat	U	*			*	*			*	*									*		*	*	*	*	*				
Blue-capped Rock-thrush	R	*					*	*		*	*								*	*	*	*							
Chestnut-bellied Rock-thrush	S				*	*																							
Blue Whistling Thrush	F	*	*	*	*	*	*		*	*	*	*	*						*	*	*	*	*	*	*	*	*	*	*
Plain-backed Mountain Thrush	S															*													
Scaly Thrush	S										*		*		*		*		*										
Pied Ground Thrush	S																									*			
White-collared Blackbird	R				*	*		*																*				*	*
Grey-winged Blackbird	R					*					*	*				*				*						*	*		
Dark-throated Thrush	S	*	*														*												
Tickell's Thrush	S	*																								*	*	*	
Little Forktail	R				*	*	*	*												*			*						

Local status legend: C - Common, F - fairly common, O - Occasional, U - uncommon, R - Rare, S - Scarce

Wild Species Observed in MRWA, Spring 2000

Common Name	Local Status	Observation days																											
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
Slaty-backed Forktail	R	*																											
Spotted Forktail	S				*			*			*									*							*		
Chestnut-heased Tesia	S																			*					*	*			
Tailor Bird	S		*																	*									
Aberrant Bush Warbler	S																						*	*	*				
Golden Spectacled Warbler	O				*	*	*		*	*	*		*	*						*	*	*		*	*	*		*	
Hill Prinia	U		*				*	*		*	*								*	*	*	*				*	*		
Chestnut Crowned Warbler	R										*			*	*		*					*	*					*	
Grey-hooded Warbler	O	*	*			*	*	*	*	*								*		*	*	*	*			*	*		
Black-faced Warbler	S			*					*		*	*																	
Lemon Rumped Warbler	U	*	*	*			*	*	*		*	*				*		*	*										
Western Crowned Warbler	U			*	*	*	*				*		*	*		*	*	*											
Greenish Warbler	U	*						*	*								*		*		*	*	*			*	*		*
Buff-barred Leaf Warbler	R				*		*				*			*		*	*	*											
Tickell's Warbler	S								*																				
Small Niltava	S									*										*									
Rufous-bellied Niltava	U			*		*	*				*	*	*		*	*			*								*		
Verditer Flycatcher	O	*	*	*		*	*	*	*	*	*	*							*	*	*	*	*			*	*	*	*
Asian Sooty Flycatcher	S									*	*																		
Slaty-blue Flycatcher	S												*																
Ultra-Marine Flycatcher	S							*			*	*														*			
Slaty-backed Flycatcher	S										*																		
Snowy-browed Flycatcher	S						*				*							*											
Orange-gorgetted Flycatcher	U			*	*	*	*					*		*	*	*	*	*											*
Grey-headed Flycatcher	S		*										*															*	
Yellow-bellied Fantail	R				*	*	*					*			*	*							*						
White throated Fantail	S																			*	*								
Rusty Cheeked Scimitar Babbler	S		*					*																			*	*	
Lesser Scaly-breasted Wren-babbler	R					*	*				*	*														*			
Golden Babbler	S		*																				*						
Spiny Babbler	S		*																										
Black-chinned Babbler	S							*																					
Great Parrotbill	S				*										*														
Black-throated Parrotbill	S										*											*							
White-crested Laughing thrush	S	*																	*	*									
White-throated Laughing-thrush	F			*			*		*	*	*	*	*	*	*	*	*	*	*		*	*	*		*	*	*	*	*
Striated Laughing-thrush	U		*					*	*	*	*	*	*			*	*			*	*	*		*	*	*	*	*	*
Spotted Laughing-thrush	S					*																*			*	*	*	*	*
Streaked Laughing-thrush	R		*			*	*			*												*			*	*	*	*	*

Local status legend: C - Common , F - Fairly Common, O - Occasional, U - Uncommon, R - Rare, S - Scarce

Bird species Observed in MRWA, Spring 2000

Common Name	Local Status	Observation days																											
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
Scaly Laughing thrush	S									*											*	*	*						
Black-faced Laughing-thrush	S				*	*																		*	*				
Chestnut-crowned Laughing-thrush	R	*					*		*	*													*		*	*			
Red-billed Leothrix	S			*																	*	*							
Nepal cutia	S									*	*																		
White browed Shrike Babbler	S																			*						*			
Green Shrike-babbler	S			*																									
Black-eared Shrike Babbler	S											*					*												
Hoary Barwing	S												*	*		*	*												
Chestnut-tailed Minla	R			*	*	*	*									*		*											*
Red-tailed Minla	S											*	*	*															
Blue winged minla	S			*						*		*																	
Rufous-winged Fulvetta	R									*	*	*	*	*	*								*		*		*		*
White-browed Fulvetta	R				*	*																*	*		*	*			
Nepal Fulvetta	R								*	*	*										*		*		*				
Black-capped Sibia	O	*	*			*	*	*	*	*	*	*			*	*	*	*	*	*	*	*	*		*	*	*	*	*
Whiskered Yuhina	O			*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Stripe-throated Yuhina	O			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Rufous-vented Yuhina	S									*																		*	
White bellied Yuhina	S											*																	
TITS																													
Rufous-vented Black Tit	S				*	*									*														
Green-backed Tit	O	*	*	*		*	*		*	*	*				*	*	*	*	*	*	*	*	*		*	*	*	*	*
Black-lored Tit	O	*	*		*	*			*	*	*									*	*	*	*		*	*	*	*	*
Fire Capped Tit	S												*	*															
NUTHATCHES																													
Velvet froked Nuthatch	S	*																											
Chestnut-bellied Nuthatch	S			*						*									*										
White-tailed Nuthatch	R					*							*		*	*	*			*	*						*		
ROLLERS																													
Roller	S	*																											
WALL & TREECREEPERS																													
Wallcreeper	S																							*					
Rusty-flanked Treecreeper	S				*																								
Common Treecreeper	S				*																								
SUNBIRDS																													
Mrs. Gould's Sunbird	S			*		*	*																						
Green-tailed Sunbird	U				*	*	*			*			*	*	*	*	*								*	*		*	*
Black-throated Sunbird	S						*	*		*										*	*	*			*				

Local status legend: C - Common, F - rarely Common, O - Occasional, U - Uncommon, R - Rare, S - Scarce

Bird Species Observed in MRWA, Spring 2000

Common Name	Local Status	Observation days																												
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	
Fire-tailed Sunbird	S																					*	*				*			
FLOWERPECKERS																														
Buff-bellied Flowerpecker	R						*	*											*	*	*									
WHITE EYE																														
Oriental White Eye	R			*				*		*	*									*	*						*	*		
SHRIKES																				*	*	*	*				*	*		
Long-tailed Shrike	U		*	*			*	*	*																					
ORIOLES																														
Maroon Orioles	R			*					*	*	*							*	*	*	*						*			
Golden Orioles	S							*																						
DRONGOS																														
Bronze Drongo	S	*																				*								
Ashy Drongo	O	*				*	*	*	*	*									*	*	*	*	*				*	*	*	*
Spangled Drongo	S	*																*												
Lesser Raquet-tailed Drongo	S								*		*																			
MAGPIES																														
Eurasian Jay	S												*																	
Himalayan Tree-pie	S	*		*	*	*			*																					
Yellow-billed Blue Magpie	U			*	*	*				*		*					*	*			*		*			*	*	*	*	
Red-billed Blue Magpie	S	*	*																*											
Eurasian Nutcracker	S					*																								
Alpine Chough Yellow billed	S																						*	*						
Red-billed Chough	S																						*	*						
Jungle Crow	C	*	*	*	*	*	*	*	*					*	*	*	*	*	*	*	*	*	*			*	*	*	*	*
MYNAS																														
Common Myna	U		*	*			*		*	*	*								*	*	*						*	*	*	
Jungle Myna	S						*																							
SPARROW																														
Sharp Tailed Munia	S	*																												
Russet Sparrow	R							*											*	*	*					*		*		
Eurasian Tree Sparrow	R		*	*																*						*	*	*		
House Sparrow								*																						
FINCHES																														
Yellow-breasted Greenfinch	S			*															*	*										
Plain Mountain-finch	S																							*	*					
Dark-breasted Rosefinch	S							*														*	*	*						
Common Rosefinch	S		*			*																								
Beautiful Rosefinch	S													*																
Pink-browed Rosefinch	S																					*		*	*					

Local status legend: C - Common , F - Fairly Common, 0 - Occasional, U - Uncommon, R - Rare, S - Scarce

Bird Species Observed in MRWA - Spring 2000

Common Name	Local Status	Observation days																											
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
Dark-rumped Rosefinch	S																						*						
Spot-winged Rosefinch	R				*	*																*	*		*				
White-browed Rosefinch	S					*																							
Crimson-browed Finch	S																									*			
Scarlet Finch	S										*																		
Gold-naped Finch	S				*																								
Brown Bullfinch	S					*																							
Red-headed Bullfinch	R				*	*							*	*															*
Spot-winged Grosbeak	S										*																		
Spectacted Finch	S				*																								
BUNTINGS																													
Crested Bunting	S																					*					*		

Local status legend: C - Common, F - Fairly Common, O - Occasional, U - Uncommon, R - Rare, S - Scarce

Bird Species Recorded in MRWA According to Bioclimatic Zones at 500m interval

Genus	Species	Common Name	Movement Status	NRDB Status	Lower Subtropical	Upper Subtropical	Lower Temperate	Upper Temperate	Lower Subalpine	Upper Sub alpine
Family - Accipitridae		HAWKS, EAGLES AND VULTURES								
PERNIS	PTILORHYNCUS	Crested Honey Buzard	R		*					
MILVUS	MIGRANS	Black Kite	R		*	*				
NEOPHRON	PERCNOPTERUS	Egyptian Vulture	R	Susceptible		*				
GYPAETUS	BARBATUS	Lammergeier	R	Susceptible		*	*	*	*	*
GYPUS	BENGHALENSIS	Oriental White-backed Vulture	R			*				
GYPUS	HIMALAYENSIS	Himalayan Griffon Vulture	R			*	*	*	*	*
GYPUS	FULVUS	Eurasian Griffon Vulture	R		*	*	*	*		
SARCOGYPUS	CALVUS	Red-headed Vulture	R	Susceptible	*	*	*			
AEGYPIUS	MONACHUS	Eurasian Black Vulture	W	Vulnerable		*				
SPILORNIS	CHEELA	Crested Serpent Eagle	R	Susceptible		*	*	*		
CIRCUS	CYANEUS	Hen Harrier	W					*		
ACCIPITER	VIRGATUS	Besra	R	Susceptible		*				
ACCIPITER	NISUS	Northern Sparrowhawk	R				*	*	*	
ACCIPITER	TRIVIRGATUS	Crested Goshawk	R	Susceptible			*			
ACCIPITER	BADIUS	Shikra	R	Susceptible				*		
ICTINAETUS	MALAYENSIS	Black Eagle	R			*	*	*		
AQUILA	NIPALENSIS	Steppe Eagle	W		*	*		*		
AQUILA	CHRYSAETOS	Golden Eagle	R	Susceptible		*				
HIERAAETUS	FASCIATUS	Bonelli's Eagle	R			*	*			
SPIZAETUS	NIPALENSIS	Mountain Hawk-eagle	R	Susceptible		*	*	*		
Family - Falconidae		FALCONS								
FALCO	TINNUNCULUS	Common Kestrel	R		*	*	*			
FALCO	SUBBUTEO	Eurasian Hobby	R			*				
FALCO	PEREGRINUS	Peregrine	R	Endangered				*		
Family - Phasianidae		GAME BIRDS								
PERDIX	HODGSONIAE	Black Partridge	R			*				
ARBOROPHILA	TORQUEOLA	Common Hill Partridge	R				*	*		
TRAGOPAN	SATYRA	Satyr Tragopan	R	Endangered			*	*		
LOPHOPHORUS	IMPEJANUS	Himalayan Monal	R	Susceptible				*	*	
LOPHURA	LEUCOMELANA	Kalij Pheasant	R	Susceptible		*	*	*		
Family: Charadriidae		WADERS								
SCOLOPAX	RUSTICOLA	Eurasian Woodcock	S							
Family - Columbidae		PIGEONS AND DOVES								
COLUMBA	LIVIA	Rock Pigeon	R			*				
COLUMBA	LEUCONOTA	Snow Pigeon	R			*		*	*	*
COLUMBA	PULCHRICOLLIS	Ashy Woodpigeon	R			*	*	*		
STREPTOPELIA	ORIENTALIS	Oriental Turtle Dove	R			*		*		
STREPTOPELIA	CHINENSIS	Spotted Dove	R		*	*				

Legend: R= Resident; S = Summer migrant; W= Winter migrant;
NRDB = Nepal Red Data Book

Bird Species Recorded in MRWA According to Bioclimatic Zones at 500m interval

Genus	Species	Common Name	Movement Status	NRDB Status	Lower Subtropical	Upper Subtropical	Lower Temperate	Upper Temperate	Lower Subalpine	Upper Sub alpine
MACROPYGGIA	UNCHALL	Barred Cuckoo-dove	R	Vulnerable			*			
TRERON	SPHENURA	Wedge-tailed Green Pigeon	R			*	*			
Family - Cuculidae		CUCKOOS								
HIEROCOCCYX	SPARVERIOIDES	Hodgson's Hawk-cuckoo	S		*	*	*	*		
CUCULUS	MICROPTERUS	Indian Cuckoo	S			*	*	*		
CUCULUS	CANORUS	Common Cuckoo	S		*	*	*	*		
CUCULUS	SATURATUS	Himalayan Cuckoo	S			*	*	*		
SURNICULUS	LUGUBRIS	Drongo-cuckoo	S			*	*			
Family- Caprimulgiformes		Nightjar								
CAPRIMULGUS	INDICUS	Jungle Nightjar	R			*				
Family - Strigidae		OWLS								
BUBO	BUBO	Northern Eagle Owl	R	Vulnerable			*			
Family - Apodidae		SWIFTS								
COLLOCALIA	BREVIROSTRIS	Himalayan Swiftlet	R			*				
HIRUNDAPUS	CAUDATUS	White-throated Needletail	S				*			
APUS	PACIFICUS	Pacific Swift	S			*	*	*		
APUS	AFFINIS	Home Swift	S			*				
Family - Alcedinidae		KINGFISHERS								
HALCYON	SMYRNENSIS	White-breasted Kingfisher	R		*					
ALCEDO	ATTHIS	Common Kingfisher	R		*					
Family - Capitonidae		BARBETS								
MEGALAIMA	FRANKLINI	Golden-throated Barbet	R			*	*			
MEGALAIMA	ASIATICA	Blue-throated Barbet	R			*				
MEGALAIMA	VIRENS	Great Barbet	R		*	*	*			
Family - Picidae		WOODPECKERS								
PICUS	FLAVINUCHA	Greater Yellow-naped Woodpecker	R			*				
PICUS	CANUS	Grey Headed Woodpecker	R			*	*			
DENDROCOPOS	DARJELLENSIS	Darjeeling Woodpecker	R			*	*			
DENDROCOPOS	CATHPHARIUS	Crimson-breasted Pied Woodpecker	R					*		
DENDROCOPOS	HYPERYTHRUS	Rufous-bellied Pied Woodpecker	R			*				
Family - Hirundinidae		MARTINS								
HIRUNDO	RUSTICA	Barn Swallow	R			*				
DELICHON	NIPALENSIS	Nepal House Martin	R			*	*	*	*	
HIRUNDO	DAURICA	Red-rumped Swallow	R			*				
Family - Motacillidae		PIPITS AND WAGTAILS								
ANTHUS	HODGSONI	Olive-backed Pipit	R			*	*	*		
ANTHUS	ROSEATUS	Rosy Pipit	S				*	*	*	*
MOTACILLA	CINEREA	Grey Wagtail	S		*	*	*	*	*	*

Legend: Resic = St migr = W nigra

NRDB = Nepal Red Data Book

BIRDS RECORDED IN MRWA According to Bioclimatic Zones at 500m interval

Genus	Species	Common Name	Movement	NRDB	Lower	Upper	Lower	Upper	Lower	Upper
			Status	Status	Subtropical	Subtropical	Temperate	Temperate	Subalpine	Sub alpine
Family - Campephagidae		MINIVETS								
PERICROCOTUS	ETHOLOGUS	Long-tailed Minivet	R		*	*	*	*		
Family - Pycnonotidae		BULBULS								
PYCNONOTUS	STRIATUS	Striated Bulbul	R			*	*			
PYCNONOTUS	LEUCOGENYS	Himalayan Bulbul	R		*	*				
PYCNONOTUS	CAFER	Red-vented Bulbul	R		*	*				
HYPSIPETES	MCCLELLANDII	Mountain Bulbul	R			*				
HYPSIPETES	MADAGASCARIENSIS	Black Bulbul	R		*	*	*			
Family - Cinclidae		DIPPER								
CINCLUS	PALLASII	Brown Dipper	R		*	*	*	*		
Family - Troglodytidae		WREN								
TROGLODYTES	TROGLODYTES	Northern Wren	R							*
Family - Prunellidae		ACCENTORS								
PRUNELLA	STROPHIATA	Rufous breasted Accentor	R							*
PRUNELLA	COLLARIIS	Alpine Accentor	R					*		
Family - Muscicapidae		FLYCATCHER AND ALLIES								
COPSYCHUS	SAULARIS	Asian Magpie Robin	R			*				
TARSIGER	CYANURUS	Orange-flanked Bush Robin	R			*	*			
TARSIGER	CHRYSAEUS	Golden Bush Robin	R						*	*
TARSIGER	INDICUS	White-browed Bush Robin	R					*		
PHOENICURUS	FRONTALIS	Blue-fronted Redstart	R							
RHYACORNIS	FULIGINOSUS	Plumbeous Redstart	R		*	*	*	*		
MYIOMELA	LEUCURA	White-tailed Robin	R	Susceptible		*	*			
GRANDALA	COELICOLOR	Grandala	R						*	*
SAXICOLA	TORQUATA	Common Stonechat	R		*	*	*			
SAXICOLA	FERREA	Grey Bushchat	R		*	*	*	*		
OENANTHE	ISABELLINA	Isabelline Wheatear	S							
CHAIMARRORNIS	LEUCOCEPHALUS	White-capped Riverchat	R		*	*	*	*	*	*
MONTICOLA	CINCLORHYNCHA	Blue-capped Rock-thrush	S		*	*	*			
MONTICOLA	RUFIVENTRIS	Chestnut-bellied Rock-thrush	R					*		
MYIOPHONEUS	CAERULEUS	Blue Whistling Thrush	R		*	*	*	*	*	*
ZOOTHERA	MOLLISSIMA	Plain-backed Mountain Thrush	R					*		
ZOOTHERA	DAUMA	Scaly Thrush	S				*	*		
ZOOTHERA	WARDII	Pied Ground Thrush	S	Susceptible		*				
TURDUS	ALBOCINCTUS	White-collared Blackbird	R					*		
TURDUS	BOULBOUL	Grey-winged Blackbird	R			*	*	*		
TURDUS	RUFICOLLIS	Dark-throated Thrush	W		*	*	*			
TURDUS	UNICOLOR	Tickell's Thrush	R		*	*	*			
ENICURUS	SCOULERI	Little Forktail	R			*	*	*		

Legend: R= Resident; S = Summer migrant; W= Winter migrant;
NRDB = Nepal Red Data Book

According to Bioclimatic Zones at 500m interval										
Genus	Species	Common Name	Movement	NRDB	Lower	Upper	Lower	Upper	Lower	Upper
			Status	Status	Subtropical	Subtropical	Temperate	Temperate	Subalpine	Sub alpine
ENICURUS	SCHISTACEUS	Slaty-backed Forktail	R		*					
ENICURUS	MACULATUS	Spotted Forktail	R			*	*	*		
TESIA	CASTANEOCORONATA	Chestnut-headed Tesia	R			*	*			
ORTHOTOMUS	SUTORIUS	Tailor Bird	R			*				
CETTIA	FLAVOLIVACEA	Aberrant Bush Warbler	R					*	*	
SEICERCUS	BURKII	Golden Spectacled Warbler	R			*	*	*		
PRINIA	ATROGULARIS	Hill Prinia	R			*	*			
SEICERCUS	CASTANICEPS	Chestnut Crowned Warbler	R				*	*		
SEICERCUS	XANTHOSCHISTOS	Grey-hooded Warbler	R			*	*			
ABROSCOPUS	SCHISTICEPS	Black-faced Warbler	R			*	*			
PHYLLOSCOPUS	CHLORONOTUS	Lemon Rumped Warbler	R							
PHYLLOSCOPUS	REGULOIDES	Western Crowned Warbler	R			*	*	*		
PHYLLOSCOPUS	TROCHILOIDES	Greenish Warbler	R		*	*	*	*		
PHYLLOSCOPUS	PULCHER	Buff-barred Leaf Warbler	R			*	*	*		
PHYLLOSCOPUS	AFFINIS	Tickell's Warbler	R			*				
NILTAVA	MACGRIGORIAE	Small Niltava	R			*				
NILTAVA	SUNDARA	Rufous-bellied Niltava	R			*	*	*		
MUSCICAPA	THALASSINA	Verditer Flycatcher	S		*	*	*	*		
MUSCICAPA	SIBIRICA	Asian Sooty Flycatcher	R			*	*			
FICEDULA	TRICOLOR	Slaty-blue Flycatcher	R				*			
FICEDULA	SUPERCLARIAS	Ultra-Marine Flycatcher	R			*	*			
FICEDULA	HODGSONII	Slaty-backed Flycatcher	R			*				
FICEDULA	HYPERYTHRA	Snowy-browed Flycatcher	R			*	*			
FICEDULA	STROPHIATA	Orange-gorgetted Flycatcher	R				*	*		
CULICICAPA	CEYLONENSIS	Grey-headed Flycatcher	R			*	*	*		
RHIPIDURA	HYPOXANTHA	Yellow-bellied Fantail	R				*	*		
POMATORHINUS	RUFICOLLIS	White throated Fantail	R				*	*		
POMATORHINUS	ERYTHROGENYS	Rusty cheeked Scimitar babbler	R			*				
STACHYRIS	RUFICEPS	Lesser Scaly-breasted Wren-babbler	R			*	*			
STACHYRIS	CHRYSAEA	Golden Babbler	R	Vulnerable		*				
TURDOIDES	NIPALENSIS	Spiny Babbler	R			*				
CONOSTOMA	AEMODIUM	Black-chinned Babbler	R	Vulnerable		*				
PARADOXORNIS	UNICOLOR	Great Parrotbill	R	Vulnerable				*		
GARRULAX	ALBOGULARIS	Black-throated Parrotbill	R				*			
GARRULAX	LEUCOLOPHUS	White-crested Laughing thrush	R		*	*				
GARRULAX	STRIATUS	White-throated Laughing-thrush	R			*	*	*	*	
GARRULAX	VARIEGATUS	Striated Laughing-thrush	R			*	*	*		
GARRULAX	LINEATUS	Spotted Laughing-thrush	R				*	*		
GARRULAX	SUBUNICOLOR	Streaked Laughing-thrush	R	Susceptible		*	*	*		

Legend: R= Resident; S = Summer migrant; W= Winter migrant;

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Genus	Species	Common Name	Movement	NRDB	Lower	Upper	Lower	Upper	Lower	Upper
			Status	Status	Subtropical	Subtropical	Temperate	Temperate	Subalpine	Sub alpine
GARRULAX	AFFINIS	Scaly Laughing thrush	R	Susceptible		*	*			
GARRULAX	ERYTHROCEPHALUS	Black-faced Laughing-thrush	R					*	*	
LEIOTHRIX	LUTEA	Chestnut-crowned Laughing-thrush	R		*	*	*			
MYZORNIS	PYRRHOURA	Red-billed Leothrix	R	Susceptible		*	*			
CUTIA	NIPALENSIS	Nepal cutia	R			*	*			
PTERUTHUS	FLAVISCAPIS	White browed Shrike Babbler	R			*	*			
PTERUTHUS	MELANOTIS	Green Shrike-babbler	R				*			
ACTINODURA	NIPALENSIS	Black-eared Shrike Babbler	R				*	*		
MINLA	STRIGULA	Hoary Barwing	R				*	*		
MINLA	IGNOTINCTA	Chestnut-tailed Minla	R				*	*		
ALCIPPE	CHRYSOTIS	Red-tailed Minla	R	Vulnerable			*	*		
MINLA	CYANOUROPTERA	Blue winged Minla	R			*	*			
ALCIPPE	CASTANECEPS	Rufous-winged Fulvetta	R			*	*	*		
ALCIPPE	VINIPECTUS	White-browed Fulvetta	R				*	*		
ALCIPPE	NIPALENSIS	Nepal Fulvetta	R			*	*			
HETEROPHASIA	CAPISTRATA	Black-capped Sibia	R			*	*	*		
YUHINA	FLAVICOLLIS	Whiskered Yuhina	R			*	*	*		
YUHINA	GULARIS	Stripe-throated Yuhina	R			*	*	*		
YUHINA	OCCIPITALIS	Rufous-vented Yuhina	R				*	*		
YUHINA	ZANTHOLEUCA	White belled Yuhina	R				*			
Family - Paridae		TITS								
PARUS	RUBIDIVENTRIS	Rufous-vented Black Tit	R					*		
PARUS	MONTICOLUS	Green-backed Tit	R		*	*	*	*		
PARUS	XANTHOGENYS	Black-lored Tit	R			*	*	*		
CEPHALOPYRUS	FLAMMICEPS	Fire Capped Tit	R					*		
Family - Sittidae		NUTHATCHES								
SITTA	FRONTALIS	Velvet froked Nuthatch	R		*					
SITTA	CASTANEA	Chestnut-bellied Nuthatch	R			*	*			
SITTA	HIMALAYENSIS	White-tailed Nuthatch	R			*	*	*		
Family - Coraciidae		ROLLER								
CORACIAS	BENGHALENSIS	Roller	R		*					
Family - Certhiidae		TREECREEPERS								
TICHODROMA	MURARIA	Wallcreeper	R							*
CERTHIA	NIPALENSIS	Rusty-flanked Treecreeper	R					*		
CERTHIA	FAMILIARIS	Common Treecreeper	R					*		
Family - Nectariniidae		SUNBIRDS								
AETHOPYGA	GOULDIAE	Mrs. Gould's Sunbird	R				*	*		
AETHOPYGA	NIPALENSIS	Green-tailed Sunbird	R				*	*		
AETHOPYGA	SATURATA	Black-throated Sunbird	R			*				

Legend: R= Resident; S = Summer migrant; W= Winter migrant;
NRDB = Nepal Red Data Book

Bird Species Recorded in MRWA According to Bioclimatic Zones at 500m interval

Genus	Species	Common Name	Movement Status	NRDB Status	Lower Subtropical	Upper Subtropical	Lower Temperate	Upper Temperate	Lower Subalpine	Upper Sub alpine
AETHOPYGA	IGNICAUDA	Fire-tailed Sunbird	R				*			
Family - Zosteropidae		WHITE EYE								
ZOSTEROPS	PALPEBROSUS	Oriental White Eye	R			*	*			
Family - Dicaeidae		FLOWERPECKERS								
DICAEUM	IGNIPECTUS	Buff-bellied Flowerpecker	R			*	*			
Family - Laniidae		SHRIKES								
LANIUS	SCHACH	Long-tailed Shrike	R			*	*			
Family - Oriolidae		ORIOLES								
ORIOLUS	TRALLI	Maroon Orioles	R			*	*			
ORIOLUS	ORIOLUS	Golden Orioles	R			*				
Family - Dicuridae		DRONGOS								
DICRURUS	AENEUS	Bronze drongo	R		*	*				
DICRURUS	LEUCOPHAeus	Ashy Drongo	R		*	*	*	*		
DICRURUS	HOTTENTOTTUS	Spangled Drongo	R		*		*			
DICRURUS	REMIFER	Lesser Raquet-tailed Drongo	R			*	*			
Family - Corvidae		MAGPIES								
GARRULUS	GLANDARIUS	Eurasian Jay	R				*			
DENDROCITTA	FORMOSA	Himalayan Tree-pie	R		*	*				
UROCISSA	FLAVIROSTRIS	Yellow-billed Blue Magpie	R			*	*	*		
UROCISSA	ERYTHORHYNCHA	Red-billed Blue Magpie	R		*	*				
NUCIFRAGA	CARYOCATACTES	Eurasian Nutcracker	R					*		
PYRRHOCORAX	GRACULUS	Alpine Chough Yellow billed	R						*	*
PYRRHOCORAX	PYRRHOCORAX	Red-billed Chough	R							*
CORVUS	MACRORHYNCHOS	Jungle Crow	R		*	*	*	*	*	*
Family - Sturnidae		MYNAS								
ACRIDOTHERES	TRISTIS	Common Myna	R			*	*			
ACRIDOTHERES	FUSCUS	Jungle Myna	R				*			
Family - Ploceidae		SPARROW								
LONCHURA	STRIATA	Sharp tailed Munia	R		*					
PASSER	RUTILANS	Russet Sparrow	R			*				
PASSER	DOMESTICUS	House Sparrow	R			*				
PASSER	MONTANUS	Eurasian Tree Sparrow	R			*	*			
Family - Fringillidae		FINCHES								
CARDUELIS	SPINOIDES	Yellow-breasted Greenfinch	R			*	*			
LEUCOSTICTE	NEMORICOLA	Plain Mountain-finch	R						*	*
CARPODACUS	NIPALENSIS	Dark-breasted Rosefinch	R			*		*	*	*
CARPODACUS	ERYTHRINUS	Common Rosefinch	R			*		*		
CARPODACUS	PULCHERRIMUS	Beautiful Rosefinch	R					*		
CARPODACUS	RHODOCHROUS	Pink-browed Rosefinch	R				*		*	*

Legend: R= Resident; S = Summer migrant; W= Winter migrant;
NRDB = Nepal Red Data Book

Genus	Species	Common Name	Movement Status	NRDB Status	Lower		Upper		Lower		Upper	
					Subtropical	Subtropical	Temperate	Temperate	Subalpine	Sub alpine		
CARPODACUS	EDWARDSII	Dark-rumped Rosefinch	R							*	*	
CARPODACUS	RHODOPEPLUS	Spot-winged Rosefinch	R							*	*	*
CARPODACUS	THURA	White-browed Rosefinch	R							*		
PROPYRRHULA	SUBHIMACHALA	Crimson-browed Finch	R									*
HAEMATOSPIZA	SIPAHI	Scarlet Finch	R	Susceptible				**				
PYRRHOPECTES	EPAULETTA	Gold-naped Finch	R							*		
PYRRHULA	NIPALENSIS	Brown Bullfinch	R							*		
PYRRHULA	ERYTHROCEPHALA	Red-headed Bullfinch	R					*	*			
MYCEROBAS	MELANOZANTHOS	Spot-winged Grosbeak	R					*				
CALLACANTHIS	BURTONI	Spectacled Finch	R							*		
Family - Emberizidae		BUNTINGS										
MELOPHUS	LATHAMI	Crested Bunting	R					*	*			

Legend: R= Resident; S = Summer migrant; W= Winter migrant;
NRDB = Nepal Red Data Book

ANNEXE VII MRWA Bird Species Recorded According to Catchments, Spring 2000

Genus	Species	Common Name	Kyunri	Kyumnu	Landruk	Upper
			Ghandruk	Jhinu	Chandrakot	Modi
Family - Accipitridae			HAWKS, EAGLES AND VULTURES			
PERNIS	PTILORHYNCHUS	Crested Honey Buzard			*	
ELANUS	MIGRANS	Black Kite	*		*	
NEOPHRON	PERCNOPTERUS	Egyptian Vulture			*	
NYCTALPA	BARBATUS	Lammergeier	*	*	*	*
ACCIPITER	BENGHALENSIS	Oriental White-backed Vulture			*	
ACCIPITER	HIMALAYENSIS	Himalayan Griffon Vulture	*	*	*	*
ACCIPITER	FULVUS	Eurasian Griffon Vulture	*	*	*	
NEOPHRON	CALVUS	Red-headed Vulture	*	*	*	*
ACCIPITER	MONACHUS	Eurasian Black Vulture	*			
ELANUS	CHEELA	Crested Serpent Eagle	*	*	*	*
ELANUS	CYANEUS	Hen Harrier				
ACCIPITER	VIRGATUS	Besra			*	
ACCIPITER	NISUS	Northern Sparrowhawk	*		*	*
ACCIPITER	TRIVIRGATUS	Crested Goshawk			*	
ACCIPITER	BADIUS	Shikra			*	
ELANUS	MALAYENSIS	Black Eagle	*	*	*	
ELANUS	NIPALENSIS	Steppe Eagle	*		*	
ELANUS	CHRYSAETOS	Golden Eagle	*	*		
ELANUS	FASCIATUS	Bonelli's Eagle	*		*	*
ELANUS	NIPALENSIS	Mountain Hawk-eagle		*	*	
Family - Falconidae			FALCONS			
FALCO	TINNUNCULUS	Common Kestrel	*	*	*	
FALCO	SUBBUTEO	Eurasian Hobby			*	
FALCO	PEREGRINUS	Peregrine				
Family - Phasianidae			GAME BIRDS			
PERDIX	HODGSONIAE	Black Partridge			*	
PERDIX	TORQUEOLA	Common Hill Partridge	*	*	*	*
PERDIX	SATYRA	Satyr Tragopan			*	
PERDIX	IMPEJANUS	Himalayan Monal			*	*
PERDIX	LEUCOMELANA	Kalij Pheasant	*		*	
Family - Charadriidae			WADERS			
COLOPAX	RUSTICOLA	Eurasian Woodcock	*			
Family - Columbidae			DOVES & PIGEONS			
COLUMBA	LIVIA	Rock Pigeon		*		
COLUMBA	LEUCONOTA	Snow Pigeon			*	*
COLUMBA	PULCHRICOLLIS	Ashy Woodpigeon	*		*	
TRIPTELEIA	ORIENTALIS	Oriental Turtle Dove	*	*	*	*
TRIPTELEIA	CHINENSIS	Spotted Dove	*	*	*	
CACROPYGIA	UNCHALL	Barred Cuckoo-dove				*
TRIPTELEIA	SPHENURA	Wedge-tailed Green Pigeon		*	*	*
Family - Cuculidae			CUCKOOS			
TRIPTELEIA	SPARVERIOIDES	Hodgson's Hawk-cuckoo	*	*	*	*
TRIPTELEIA	MICROPTERUS	Indian Cuckoo			*	*
TRIPTELEIA	CANORUS	Common Cuckoo	*	*	*	*
TRIPTELEIA	SATURATUS	Himalayan Cuckoo	*	*	*	*
TRIPTELEIA	LUGUBRIS	Drongo-cuckoo	*	*	*	*
Family - Caprimulgiformes			NIGHTJAR			
TRIPTELEIA	INDICUS	Jungal Nightjar		*		
Family - Strigidae			OWLS			
BUBO	BUBO	Northern Eagle Owl			*	
Family - Apodidae			SWIFTS			
APLOCEPHALUS	BREVIROSTRIS	Himalayan Swiftlet			*	

MRWA Bird Species Recorded According to Catchments, Spring 2000

Genus	Species	Common Name	Kyunri	Kyumnu	Landruk	Upper
			Ghandruk	Jhinu	Chandrakot	Modi
ALCIPES	CAUDACUTUS	White-throated Needletail	*			
ALCIPES	PACIFICUS	Pacific Swift (Fork-tailed)	*	*	*	
ALCIPES	AFFINIS	House Swift			*	
Family - Alcedinidae			KINGFISHERS			
ALCIPES	SMYRNENSIS	White-breasted Kingfisher	*			
ALCIPES	ATTHIS	Common Kingfisher	*			
Family - Capitonidae			BARBETS			
MEGALAIMA	FRANKLINI	Golden-throated Barbet		*	*	*
MEGALAIMA	ASIATICA	Blue-throated Barbet			*	
MEGALAIMA	VIRENS	Great Barbet	*	*	*	*
Family - Picidae			WOODPECKERS			
MEGALAIMA	FLAVINUCHA	Greater Yellow-naped Woodpecker			*	
MEGALAIMA	CANUS	Grey Headed Woodpecker	*	*	*	*
MEGALAIMA	DARJELLENSIS	Darjeeling Woodpecker		*	*	
MEGALAIMA	CATHPHARIUS	Crimson-breasted Pied Woodpecker	*	*		
MEGALAIMA	HYPERYTHRUS	Rufous-bellied Pied Woodpecker			*	
Family - Hirundinidae			MARTINS			
HIRUNDO	RUSTICA	Barn Swallow	*		*	
HIRUNDO	NIPALENSIS	Nepal House Martin				
HIRUNDO	DAURICA	Red-rumped Swallow	*	*	*	*
Family - Motacillidae			PIPITS AND WAGTAILS			
MOTACILLA	HODGSONI	Olive-backed Pipit	*	*	*	*
MOTACILLA	ROSEATUS	Rosy Pipit				
MOTACILLA	CINEREA	Grey Wagtail	*	*	*	*
Family - Campephagidae			MINIVETS			
PERICLITUS	ETHOLOGUS	Long-tailed Minivet	*	*	*	*
Family - Pycnonotidae			BULBULS			
PYCNONOTUS	STRIATUS	Striated Bulbul		*	*	
PYCNONOTUS	LEUCOGENYS	Himalayan Bulbul	*	*	*	*
PYCNONOTUS	CAFER	Red-vented Bulbul	*	*	*	
PYCNONOTUS	MCCLELLANDII	Mountain Bulbul	*	*	*	*
PYCNONOTUS	MADAGASCARIENSIS	Black Bulbul	*	*	*	*
Family - Cinclidae			DIPPER			
CINCLUS	PALLASII	Brown Dipper	*	*		
Family - Troglodytidae			WREN			
TROGLODYTES	TROGLODYTES	Northern Wren				*
Family - Prunellidae			ACCENTORS			
PRUNELLA	STROPHIATA	Rufous breasted Accentor				*
PRUNELLA	COLLARIS	Alpine Accentor			*	
Family - Muscicapidae			FLYCATCHER AND ALLIES			
MUSCICAPA	SAULARIS	Asian Magpie Robin	*	*		
MUSCICAPA	CYANURUS	Orange-flanked Bush Robin	*		*	*
MUSCICAPA	CHRYSABEUS	Golden Bush Robin				*
MUSCICAPA	INDICUS	White-browed Bush Robin				
MUSCICAPA	FRONTALIS	Blue-fronted Redstart			*	*
MUSCICAPA	FULIGINOSUS	Plumbeous Redstart	*	*	*	*
MUSCICAPA	LEUCURUM	White-tailed Robin	*		*	
MUSCICAPA	COELICOLOR	Grandala				*
MUSCICAPA	TORQUATA	Common Stonechat	*	*	*	
MUSCICAPA	FERREA	Grey Bushchat	*	*	*	*
MUSCICAPA	ISABELLINA	Isabelline Wheatear				*
MUSCICAPA	LEUCOCEPHALUS	White-capped Riverchat	*	*	*	*
MUSCICAPA	CINCLORHYNCHA	Blue-capped Rock-thrush	*	*	*	*

MRWA Bird Species Recorded According to Catchments, Spring 2000

Genus	Species	Common Name	Kyunri	Kyumnu	Landruk	Upper
			Ghandruk	Jhinu	Chandrakot	Modi
MONTICOLA	RUFIVENTRIS	Chestnut-bellied Rock-thrush				
MYIOPHONEUS	CAERULEUS	Blue Whistling Thrush	*	*	*	*
ZOOTHERA	MOLLISSIMA	Plain-backed Mountain Thrush			*	
ZOOTHERA	DAUMA	Scaly Thrush			*	
ZOOTHERA	WARDII	Pied Ground Thrush		*		
TURDUS	ALBOCINCTUS	White-collared Blackbird	*	*		
TURDUS	BOULBOUL	Grey-winged Blackbird	*	*	*	*
TURDUS	RUFICOLLIS	Dark-throated Thrush	*		*	
TURDUS	UNICOLOR	Tickell's Thrush	*	*		*
ENICURUS	SCOULERI	Little Forktail		*	*	*
ENICURUS	SCHISTACEUS	Slaty-backed Forktail	*			
ENICURUS	MACULATUS	Spotted Forktail		*	*	*
TESIA	CASTANEOCORONATA	Chestnut-heased Tesia		*	*	*
ORTHOTOMUS	SUTORIUS	Tailor Bird	*		*	
SETTLA	FLAVOLIVACEA	Aberrant Bush Warbler				*
CEICERCUS	BURKII	Golden Spectacled Warbler	*	*	*	*
PRINIA	ATROGULARIS	Hill Prinia	*	*	*	*
CEICERCUS	CASTANICEPS	Chestnut Crowned Warbler			*	*
CEICERCUS	XANTHOSCHISTOS	Grey-hooded Warbler	*	*	*	*
ABROSCOPUS	SCHISTICEPS	Black-faced Warbler	*	*	*	
PHYLLOSCOPUS	CHLORONOTUS	Lemon Rumped Warbler	*	*	*	
PHYLLOSCOPUS	REGULOIDES	Western Crowned Warbler	*	*	*	
PHYLLOSCOPUS	TROCHILOIDES	Greenish Warbler	*	*		*
PHYLLOSCOPUS	PULCHER	Buff-barred Leaf Warbler		*	*	
PHYLLOSCOPUS	AFFINIS	Tickell's Warbler		*		
NILTAVA	MACGRIGORIAE	Small Niltava			*	
NILTAVA	SUNDARA	Rufous-bellied Niltava	*	*	*	*
MUSCICAPA	THALASSINA	Verditer Flycatcher	*	*	*	*
MUSCICAPA	SIBIRICA	Asian Sooty Flycatcher			*	
FICEDULA	TRICOLOR	Slaty-blue Flycatcher			*	
FICEDULA	SUPERCILIARIS	Ultra-Marine Flycatcher		*	*	*
FICEDULA	HODGSONII	Slaty-backed Flycatcher			*	
FICEDULA	HYPERYTHRA	Snowy-browed Flycatcher		*	*	
FICEDULA	STROPHIATA	Orange-gorgetted Flycatcher	*	*	*	
MUSCICAPA	CEYLONENSIS	Grey-headed Flycatcher	*	*	*	
PHIPIDURA	HYPOXANTHA	Yellow-bellied Fantail		*	*	*
COMATORHINUS	RUFICOLLIS	White throa+C103ted Fantail			*	*
PHIRHYNCHUS	SUPERCILIARIS	Rusty Cheeked Scimitar Babbler	*	*		
TACHYRIS	RUFICEPS	Lesser Scaly-breasted Wren-babbler		*	*	*
TACHYRIS	CHRYSAEA	Golden Babbler	*			*
TURDOIDES	NIPALENSIS	Spiny Babbler	*			
MONOSTOMA	AEMODIUM	Black-chinned Babbler		*		
PARADOXORNIS	UNICOLOR	Great Parrotbill	*		*	
TARRULAX	ALBOGULARIS	Black-throated Parrotbill			*	*
TARRULAX	LEUCOLOPHUS	White-crested Laughing thrush	*		*	
TARRULAX	STRIATUS	White-throated Laughing-thrush	*	*	*	*
TARRULAX	VARIEGATUS	Striated Laughing-thrush	*	*	*	*
TARRULAX	LINEATUS	Spotted Laughing-thrush		*		*
TARRULAX	SUBUNICOLOR	Streaked Laughing-thrush	*	*	*	*
TARRULAX	AFFINIS	Scaly Laughing thrush			*	*
TARRULAX	ERYTHROCEPHALUS	Black-faced Laughing-thrush				*
LEIOTHRIX	LUTEA	Chestnut-crowned Laughing-thrush	*	*	*	*
MYZORNIS	PYRRHOURA	Red-biled Leothrix	*		*	*

MRWA Bird Species Recorded According to Catchments, Spring 2000

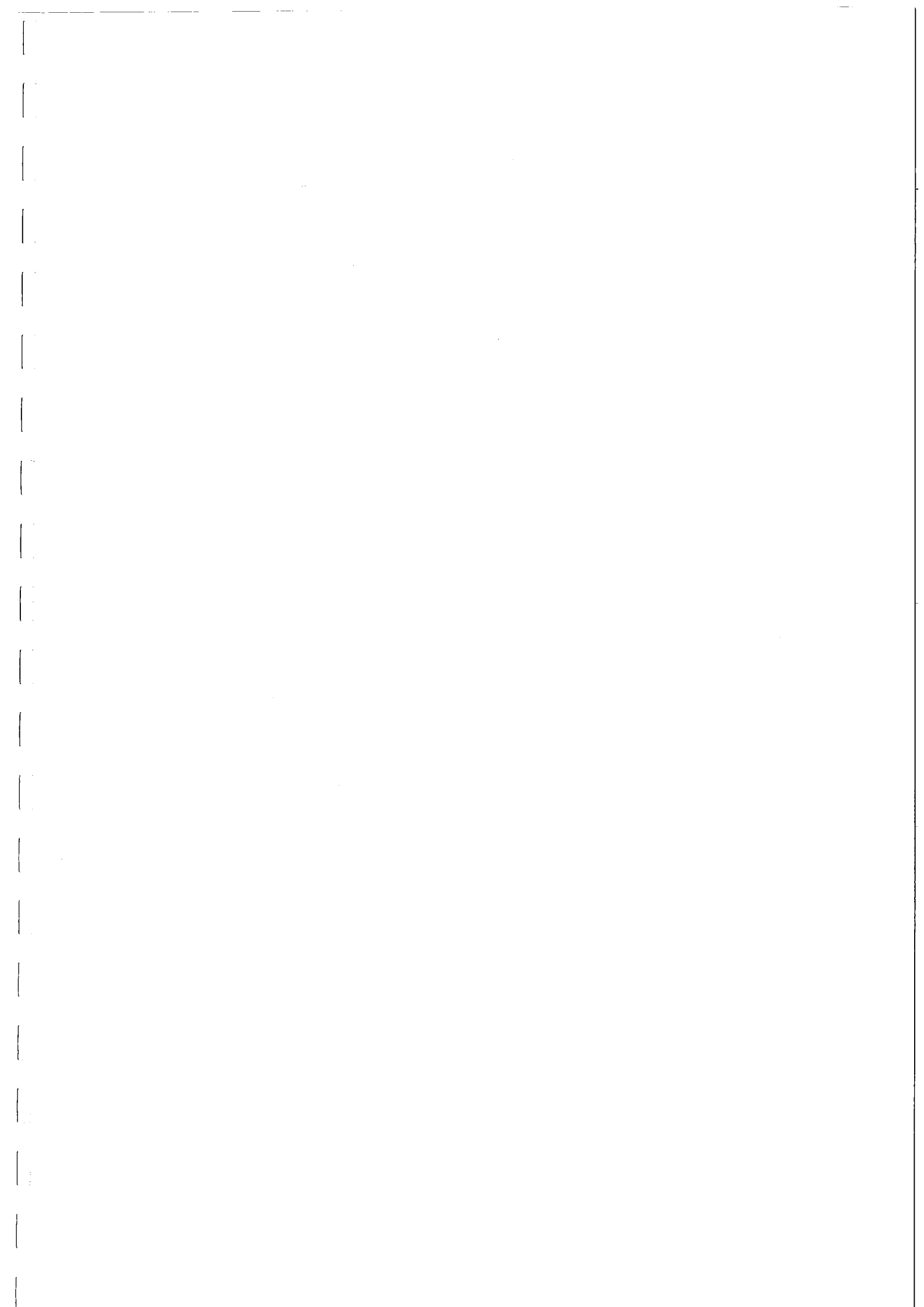
Genus	Species	Common Name	Kyunri	Kyumnu	Landruk	Upper
			Ghandruk	Jhinu	Chandrakot	Modi
CUTIA	NIPALENSIS	Nepal cutia			*	
TERUTHIUS	FLAVISCAPIS	White browed Shrike Babbler		*	*	*
TERUTHIUS	MELANOTIS	Green Shrike-babbler	*			
ACTINODURA	NIPALENSIS	Black-eared Shrike Babbler			*	
MINLA	STRIGULA	Hoary Barwing			*	
MINLA	IGNOTINCTA	Chestnut-tailed Minla	*	*	*	
ALCIPPE	CHRYSOTIS	Red-tailed Minla			*	
MINLA	CYANOUREOPTERA	Blue winged minla	*		*	
ALCIPPE	CASTANECEPS	Rufous-winged Fulvetta	*	*	*	*
ALCIPPE	VINIPECTUS	White-browed Fulvetta		*		*
ALCIPPE	NIPALENSIS	Nepal Fulvetta			*	*
PETROPHASIA	CAPISTRATA	Black-capped Sibia	*	*	*	*
YUHINA	FLAVICOLLIS	Whiskered Yuhina	*	*	*	*
YUHINA	GULARIS	Stripe-throated Yuhina	*	*	*	*
YUHINA	OCCIPITALIS	Rufous-vented Yuhina	*		*	
YUHINA	ZANTHOLEUCA	White bellied Yuhina			*	
Family - Paridae		TITS				
PARUS	RUBIDIVENTRIS	Rufous-vented Black Tit			*	
PARUS	MELANOLOPHUS	Green-backed Tit	*	*	*	*
PARUS	XANTHOGENYS	Black-lored Tit	*	*	*	*
EPHALOPYRUS	FLAMMICEPS	Fire Capped Tit			*	
Family - Sittidae		NUTHATCHES				
SITTA	FRONTALIS	Velvet fronted Nuthatch	*			
SITTA	HIMALAYENSIS	Chestnut-bellied Nuthatch	*		*	
SITTA	CASHMIRENSIS	White-tailed Nuthatch	*	*	*	*
Family - Coraciidae		ROLLERS				
CORACIAS	BENGHALENSIS	Roller	*			
Family - Certhiidae		WALL & TREECREEPERS				
CHODROMA	MURARIA	Wallcreeper				*
CERTHIA	NIPALENSIS	Rusty-flanked Treecreeper	*			
CERTHIA	FAMILIARIS	Common Treecreeper	*			
Family - Nectariniidae		SUNBIRDS				
METHOPYGA	GOULDIAE	Mrs. Gould's Sunbird	*	*		
METHOPYGA	NIPALENSIS	Green-tailed Sunbird	*	*	*	*
METHOPYGA	SATURATA	Black-throated Sunbird		*	*	*
METHOPYGA	IGNICAUDA	Fire-tailed Sunbird		*		*
Family - Dicaeidae		FLOWERPECKERS				
DICAEUM	IGNIPECTUS	Buff-bellied Flowerpecker		*	*	
Family - Zosteropidae		WHITE EYE				
ZOSTEROPS	PALPEBROSUS	Oriental White Eye	*	*	*	*
Family - Laniidae		SHRIKES				
LANIUS	SCHACH	Long-tailed Shrike	*	*	*	*
Family - Oriolidae		ORIOLES				
ORIOLOUS	TRAILLII	Maroon Orioles	*	*	*	*
ORIOLOUS	ORIOLOUS	Golden Orioles		*		
Family - Dicruridae		DRONGOS				
DICRURUS	AENEUS	Bronze Drongo	*		*	
DICRURUS	LEUCOPHAeus	Ashy Drongo	*	*	*	*
DICRURUS	HOTTENTOTTUS	Spangled Drongo	*		*	
DICRURUS	REMIFER	Lesser Raquet-tailed Drongo			*	
Family - Corvidae		MAGPIES				
GARRULUS	GLANDARIUS	Eurasian Jay			*	
DENDROCITTA	FORMOSA	Himalayan Tree-pie	*	*	*	

ANNEXE VIII

MRWA Bird Species Observed According to Landuse

Common Name	Stream/River	Forest	Shrubs	Grassland	Cultivation	Rocky	Land slides
	Ponds			Meadows	Settlement	Cliffs	Moraine
HAWKS, EAGLES AND VULTURES							
Crested Honey Buzard		*					
Black Kite		*	*	*	*	*	
Egyptian Vulture*					*	*	*
Lammergeier		*	*	*	*	*	*
Oriental White-backed Vulture		*	*	*	*	*	*
Himalayan Griffon Vulture		*	*	*	*	*	*
Eurasian Griffon Vulture		*	*	*	*	*	*
Red-headed Vulture		*	*	*	*	*	*
Eurasian Black Vulture		*	*	*	*	*	*
Crested Serpent Eagle		*	*	*	*	*	*
Hen Harrier			*				
Besra		*	*	*	*	*	*
Northern Sparrowhawk		*	*	*	*	*	*
Crested Goshawk		*	*	*	*	*	*
Shikra		*	*	*	*	*	*
Black Eagle		*	*	*	*	*	*
Steppe Eagle		*	*	*	*	*	*
Golden Eagle		*	*	*	*	*	*
Bonelli's Eagle		*	*	*	*	*	*
Mountain Hawk-eagle		*	*	*	*	*	*
FALCONS							
Common Kestrel		*	*	*	*	*	*
Eurasian Hobby		*	*	*	*	*	*
Peregrine		*	*	*	*	*	*
GAME BIRDS							
Black Partridge		*	*	*	*		
Common Hill Partridge		*	*				
Satyr Tragopan		*	*				
Himalayan Monal		*	*	*	*		*
Kalij Pheasant		*	*	*	*		
WADERS							
Eurasian Woodcock	*	*	*	*			
PIGEONS AND DOVES							
Rock Pigeon					*		
Snow Pigeon				*		*	*
Ashy Woodpigeon		*	*				
Oriental Turtle Dove		*	*	*	*		
Spotted Dove		*	*	*	*		
Barred Cuckoo-dove		*	*				
Wedge-tailed Green Pigeon		*	*				
CUCKOOS							
Hodgson's Hawk-cuckoo	*	*	*	*	*		
Indian Cuckoo		*	*	*	*		
Common Cuckoo	*	*	*	*	*		
Himalayan Cuckoo		*	*	*	*		
Drongo-cuckoo		*	*	*	*		
NIGHTJAR							
Jungle Nightjar		*	*	*			
OWLS							
Northern Eagle Owl		*	*	*	*	*	
SWIFTS							
Himalayan Swiftlet			*	*	*	*	*





MRWA Bird Species Observed According to Landuse

Common Name	Stream/River Ponds	Forest	Shrubs	Grassland Meadows	Cultivation Settlement	Rocky Cliffs	Land slides Moraine
White-throated Needletail		*	*	*	*	*	*
Pacific Swift		*	*	*	*	*	*
House Swift		*					
KINGFISHERS							
White-breasted Kingfisher	*	*	*	*	*		
Common Kingfisher	*						
BARBETS							
Golden-throated Barbet		*	*				
Blue-throated Barbet		*	*				
Great Barbet		*	*				
WOODPECKERS							
Greater Yellow-naped Woodpecker		*	*				
Grey Headed Woodpecker		*	*				
Darjeeling Woodpecker		*	*				
Crimson-breasted Pied Woodpecker		*	*				
Rufous-bellied Pied Woodpecker		*	*				
MARTINS							
Barn Swallow		*	*	*	*	*	*
Nepal House Martin		*	*	*	*	*	*
Red-rumped Swallow		*	*	*	*	*	*
PIPITS AND WAGTAILS							
Olive-backed Pipit		*	*	*			
Rosy Pipit	*			*	*		*
Grey Wagtail	*	*	*	*	*		
MINIVETS							
Long-tailed Minivet		*	*				
BULBULS							
Striated Bulbul		*	*				
Himalayan Bulbul		*	*				
Red-vented Bulbul		*	*				
Mountain Bulbul		*	*				
Black Bulbul		*	*				
DIPPER							
Brown Dipper	*						
WREN							
Northern Wren				*		*	*
ACCENTORS							
Rufous breasted Accentor				*			*
Alpine Accentor				*			*
FLYCATCHER AND ALLIES							
Asian Magpie Robin		*			*		
Orange-flanked Bush Robin		*	*				
Golden Bush Robin			*	*		*	*
White-browed Bush Robin		*	*				
Blue-fronted Redstart		*	*				
Plumbeous Redstart	*						
White-tailed Robin		*	*				
Grandala	*			*		*	*
Common Stonechat			*	*	*		*
Grey Bushchat		*	*	*	*		*
Isabelline Wheatear				*		*	*
White-capped Riverchat	*						
Blue-capped Rock-thrush		*	*				

MRWA Bird Species Observed According to Landuse

Common Name	Stream/River	Forest	Shrubs	Grassland	Cultivation	Rocky	Land slides
	Ponds			Meadows	Settlement		Moraine
Chestnut-bellied Rock-thrush		*	*				
Blue Whistling Thrush	*	*	*	*			
Plain-backed Mountain Thrush		*	*	*			
Scaly Thrush		*	*	*			
Pied Ground Thrush		*	*		*		
White-collared Blackbird		*	*				
Grey-winged Blackbird		*	*	*	*		
Dark-throated Thrush		*	*	*	*		
Tickell's Thrush		*	*	*	*		
Little Forktail	*						
Slaty-backed Forktail	*						
Spotted Forktail	*						
Chestnut-headed Tesia		*	*	*			
Tailor Bird		*	*		*		
Aberrant Bush Warbler			*	*			
Golden Spectacled Warbler		*	*	*			
Hill Prinia			*	*	*		
Chestnut Crowned Warbler		*	*				
Grey-hooded Warbler		*	*				
Black-faced Warbler		*	*				
Lemon Rumped Warbler		*	*				
Western Crowned Warbler		*	*				
Greenish Warbler		*	*				
Buff-barred Leaf Warbler		*	*				
Tickell's Warbler		*	*				
Small Niltava		*	*				
Rufous-bellied Niltava		*	*				
Verditer Flycatcher		*	*				
Asian Sooty Flycatcher		*	*				
Slaty-blue Flycatcher		*	*				
Ultra-Marine Flycatcher		*	*				
Slaty-backed Flycatcher		*	*				
Snowy-browed Flycatcher		*	*				
Orange-gorgetted Flycatcher		*	*				
Grey-headed Flycatcher		*	*				
Yellow-bellied Fantail		*	*				
White throated Fantail		*	*				
Rusty cheeked Scimitar babbler		*	*				
Lesser Scaly-breasted Wren-babbler		*	*	*			
Golden Babbler		*	*				
Spiny Babbler		*	*				
Black-chinned Babbler		*	*				
Great Parrotbill		*	*				
Black-throated Parrotbill		*	*				
White Crested Laughing thrush		*	*				
White-throated Laughing-thrush		*	*				
Striated Laughing-thrush		*	*				
Spotted Laughing-thrush		*	*				
Streaked Laughing-thrush		*	*	*	*		
Scaly Laughing thrush		*	*	*			
Black-faced Laughing-thrush		*	*	*			
Chestnut-crowned Laughing-thrush		*	*				
Red-billed Leothrix		*	*	*			

MRWA Bird Species Observed According to Landuse

Common Name	Stream/River Ponds	Forest	Shrubs	Grassland Meadows	Cultivation Settlement	Rocky Cliffs	Land slides Moraine
Nepal cutia		*	*				
White browed Shrike Babbler		*	*				
Green Shrike-babbler		*	*				
Black-eared Shrike Babbler		*	*				
Hoary Barwing		*	*				
Chestnut-tailed Minla		*	*				
Red-tailed Minla		*	*				
Blue winged Minla		*	*				
Rufous-winged Fulvetta		*	*				
White-browed Fulvetta		*	*				
Nepal Fulvetta		*	*				
Black-capped Sibia		*	*				
Whiskered Yuhina		*	*				
Stripe-throated Yuhina		*	*				
Rufous-vented Yuhina		*	*				
White belled Yuhina		*	*				
TITS							
Rufous-vented Black Tit		*	*				
Green-backed Tit		*	*				
Black-lored Tit		*	*				
Fire Capped Tit							
NUTHATCHES							
Velvet froked Nuthatch		*					
Chestnut-bellied Nuthatch		*					
White-tailed Nuthatch		*					
ROLLER							
Roller		*	*	*	*		
TREECREEPERS							
Wallcreeper						*	*
Rusty-flanked Treecreeper		*					
Common Treecreeper		*					
SUNBIRDS							
Mrs. Gould's Sunbird		*	*				
Green-tailed Sunbird		*	*				
Black-throated Sunbird		*	*				
Fire-tailed Sunbird		*	*				
FLOWERPECKERS							
Buff-bellied Flowerpecker		*	*				
WHITE EYE							
Oriental White Eye		*	*	*	*		
SHRIKES							
Long-tailed Shrike		*	*	*	*		
ORIOLES							
Maroon Orioles		*	*	*	*		
Golden Orioles		*	*	*	*		
DRONGOS							
Bronze drongo		*	*				
Ashy Drongo		*	*	*	*		
Spangled Drongo		*	*	*			
Lesser Raquet-tailed Drongo		*	*				
MAGPIES							
Eurasian Jay		*	*	*	*		
Himalayan Tree-pic		*	*	*	*		

MRWA Bird Species Observed According to Landuse

Common Name	Stream/River Ponds	Forest	Shrubs	Grassland Meadows	Cultivation Settlement	Rocky Cliffs	Land slides Moraine
Yellow-billed Blue Magpie		*	*	*	*		
Red-billed Blue Magpie		*	*	*	*		
Eurasian Nutcracker		*					
Alpine Chough Yellow billed			*	*	*	*	*
Red-billed Chough			*	*	*	*	*
Jungle Crow		*	*	*	*	*	*
MYNAS							
Common Myna		*	*	*	*		
Jungle Myna		*	*	*	*		
SPARROW							
Sharp tailed Munia		*	*	*	*		
Russet Sparrow		*	*	*	*		
House Sparrow			*	*	*		
Eurasian Tree Sparrow			*	*	*		
FINCHES							
Yellow-breasted Greenfinch		*	*	*	*		*
Plain Mountain-finch		*	*	*	*		*
Dark-breasted Rosefinch		*	*	*	*		*
Common Rosefinch		*	*	*	*		*
Beautiful Rosefinch		*	*	*	*		*
Pink-browed Rosefinch		*	*	*	*		*
Dark-rumped Rosefinch		*	*	*	*		*
Spot-winged Rosefinch		*	*	*	*		
White-browed Rosefinch		*	*	*			
Crimson-browed Finch		*	*	*			
Scarlet Finch		*	*	*			
Gold-naped Finch		*	*	*			
Brown Bullfinch		*	*	*			
Red-headed Bullfinch		*	*	*			
Spot-winged Grosbeak		*	*	*			
Spectacled Finch		*	*	*			
BUNTINGS							
Crested Bunting		*	*	*	*		

ANNEXE IX Species protected by 1973 National Parks and Wildlife Conservation Act

Scientific Name	Common Name
<i>Ciconia nigra</i>	Black Stork
<i>Ciconia ciconia</i>	White Stork
<i>Lophophorus impejanus</i>	Impeyan Pheasant
<i>Tragopan satyra</i>	Crimson-horned Pheasant
<i>Catreus wallichii</i>	Cheer Pheasant
<i>Houbaropsis bengalensis</i>	Bengal Florican
<i>Sypheotides indica</i>	Lesser Florican
<i>Grus grus</i>	Sarus Crane
<i>Buceros bicornis</i>	Great Pied Hornbill

List of birds for which hunting and scientific collection is permitted (revision of 1995)

Scientific Name or family	Common Name
Anatidae	Geese and ducks
<i>Lophura leucomelana</i>	Kalij Pheasant
<i>Pavo cristatus</i>	Blue Peafowl
<i>Gallus gallus</i>	Red Jungle Fowl
Phasianidae	Partridges and quails
Columbidae	Doves and pigeons
Charadriidae	Snipes

List of birds allowed for scientific collection (including eggs)

Species or Family Name	Common Name
<i>Leptoptilos dubius</i>	Greater Adjutant Stork
Anatidae	Geese and ducks
Accipitridae/Falconidae	Birds of Prey
Phasianidae	Partridges and quails
<i>Ithagus cruentus</i>	Blood Pheasant
<i>Pucrasia macrolopha</i>	Koklas Pheasant
Phasianidae	Pheasants (except protected by HMG)
<i>Grus antigone</i>	Sarus Crane
<i>Anthropoides virgo</i>	Demoiselle Crane
Charadriidae	Snipes
Columbidae	Doves and Pigeons
Psittacidae	Parakeets
Strigidae	Owls
Bucerotidae	Hornbills (except Giant Hornbill)
Campephagidae	Cuckoos
Picidae	Woodpeckers
Capitonidae	Barbets
Pycnonotidae	Bulbuls
Campephagidae	Minivets
Muscicapadae	Thrushes
Nectariniidae	Sunbirds
Dicaeidae	Flowerpeckers
Passeriformes	Passerines

ANNEXE X Annotated Bird Checklist of Annapurna Conservation Area 2000

Genus	Species	Common Name	Date	Place	Remarks
Family - Podicipididae		GREBES			
PODICEPS	CRISTATUS	Great-crested Grebe			
PODICEPS	NIGRICOLLIS	Black-necked Grebe			
TACHYBAPTUS	RUFICOLLIS	Little Grebe			
Family - Phalacrocoracidae		CORMORANTS			
ANHINGA	MELANOGASTER	Darter			
PHALACROCORAX	CARBO	Great Cormorant			
Family - Ardeidae		HERONS AND EGRETS			
BUBULCUS	IBIS	Cattle Egret			
NYCTICORAX	NYCTICORAX	Night Heron			
ARDEOLA	GRAYII	Pond Heron			
EGRETTA	ALBA	Great Egret			
ARDEA	CINEREA	Grey Heron			
Family - Ciconiidae		STORKS			
CICONIA	EPISCOPIUS	Woolly-necked Stork			
CICONIA	NIGRA	Black Stork			
Family - Anatidae		DUCKS AND GESE			
NETTAPUS	COROMANDELIANUS	Cotton Teal			
ANSER	ANSER	Graylag Goose			
ANSER	INDICUS	Bar-headed Goose			
TADORNA	FERRUGINEA	Ruddy Shelduck			
ANAS	PENELOPE	Eurasian Wigeon			
ANAS	STREPERA	Gadwall			
ANAS	FORMOSA	Baikal Teal			
ANAS	CRECCA	Common Teal			
ANAS	PLATYRHYNCHOS	Mallard			
ANAS	POECILORHYNCHA	Spotbill			
ANAS	ACUTA	Northern Pintail			
ANAS	QUERQUEDULA	Garganey			
ANAS	CLYPEATA	Northern Shoveler			
NETTA	RUFINA	Red-crested Pochard			
AYTHYA	FERINA	Common Pochard			
AYTHYA	NYROCA	Ferruginous Duck			
AYTHYA	FULIGULA	Tufted Duck			
BUCEPHALA	CLANGULA	Common Goldeneye			
MERGUS	MERGANSER	Goosander			
Family - Accipitridae		HAWKS, EAGLES AND VULTURES			
ELANUS	CAERULEUS	Black Shouldered Kite			
PERNIS	PTILORHYNCHUS	Crested Honey Buzard			
MILVUS	MIGRANS	Black Kite			
HALIAEETUS	LEUCORYPHUS	Pallas's Fish Eagle			
ICHTHYOPHAGA	NANA	Himalayan Gray-headed Fishing Eagle			
NEOPHRON	PERCNOPTERUS	Egyptian Vulture			
GYPAETUS	BARBATUS	Lammergeier			
GYPUS	BENGHALENSIS	Oriental White-backed Vulture			
GYPUS	INDICUS	Long-billed Vulture			
GYPUS	HIMALAYENSIS	Himalayan Griffon Vulture			
GYPUS	FULVUS	Eurasian Griffon Vulture			
SARCOGYPS	CALVUS	Red-headed Vulture			
AEGYPIUS	MONACHUS	Eurasian Black Vulture (Cinereous)			
ICHTHYOPHAGA	HUMILIS	Lesser Fishing Eagle			
CIRAETUS	GALLICUS	Shot-toed Snake Eagle			
SPILOARNIS	CHEELA	Crested Serpent Eagle			
CIRCUS	AERUGINOSUS	Eurasian Marsh Harrier			

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CIRCUS	CYANEUS	Hen Harrier			
CIRCUS	MACROURUS	Pallid Harrier			
CIRCUS	PYGARGUS	Montagu's Harrier			
CIRCUS	MELANOLEUCUS	Pied Harrier			
ACCIPITER	GENTILIS	Northern Goshawk			
ACCIPITER	VIRGATUS	Besra			
ACCIPITER	NISUS	Northern Sparrowhawk			
ACCIPITER	TRIVIRGATUS	Crested Goshawk			
ACCIPITER	BADIUS	Shikra			
BUTEO	BUTEO	Common Buzzard			
BUTEO	RUFINUS	Long-legged Buzzard			
BUTEO	HEMILASIVS	Upland Buzzard			
ICTINAETUS	MALAYENSIS	Black Eagle			
AQUILA	CLANGA	Greater-spotted Eagle			
AQUILA	NIPALENSIS	Steppe Eagle			
AQUILA	HELIACA	Imperial Eagle			
AQUILA	CHRYSAETOS	Golden Eagle			
HIERAAETUS	PENNATUS	Booted Eagle			
HIERAAETUS	FASCIATUS	Bonelli's Eagle			
SPIZAETUS	NIPALENSIS	Mountain Hawk-eagle			
HALIAEETUS	ALBICILLA	White Tailed Sea Eagle			
PANDION	HALIAETUS	Osprey			
Family - Falconidae		FALCONS			
FALCO	NAUMANNI	Lesser Kestrel			
FALCO	TINNUNCULUS	Common Kestrel			
FALCO	CHICQUERA	Red-necked Falcon			
FALCO	AMURENSIS	Amur Falcon			
FALCO	BIARMICUS	Laggar Falcon			
FALCO	COLUMBARIUS	Merlin			
FALCO	SUBBUTEO	Eurasian Hobby			
FALCO	SEVERUS	Oriental Hobby			
FALCO	CHERRUG	Saker Falcon			
FALCO	PEREGRINUS	Peregrine Falcon			
FALCO	PELEGRINOIDES	Barbary Falcon			
MICROHIERAX	CAERULESCENS	Red-thighed Falconet			
Family - Phasianidae		GAME BIRDS			
LERWA	LERWA	Snow Partridge			
TETRAOGALLUS	TIBETANUS	Tibetan Snow Cock			
TETRAOGALLUS	HIMALAYENSIS	Himalayan Snow Cock			
ALECTORIS	CHUKAR	Chukar Partridge			
FRANCOLINUS	FRANCOLINUS	Black Partridge			
PERDIX	HODGSONIAE	Tibetan Partridge			
COTURNIX	COTURNIX	Common Quail			
TURNIX	SUSCITATOR	Common Bustard Quail			
ARBOROPHILA	TORQUEOLA	Common Hill Partridge			
ARBOROPHILA	RUFUGULARIS	Rufous Throated Partridge			
GALLUS	GALLUS	Red Jungle Fowl			
ITHAGINIS	CRUENTUS	Blood Pheasant			
TRAGOPAN	SATYRA	Satyr Tragopan			
PUCRASIA	MACROLOPHA	Koklas Pheasant			
LOPHOPHORUS	IMPEJANUS	Himalayan Monal			
LOPHURA	LEUCOMELANA	Kalij Pheasant			
Family - Rallidae		MOORHENS			
PARZANA	PUSILLA	Baillon's Crake			
PORZANA	FUSCA	Ruddy Breasted Crake			

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GALLINULA	CHLOROPUS	Common Moorhen		
FULICA	ATRA	Common Coot		
PORPHYRIO	PORPHYRIO	Purple Gallinule		
Family - Gruidae		CRANES		
GRUS	GRUS	Common Crane		
ANTHROPOIDES	VIRGO	Demoiselle Crane		
Family - Recurvirostridae		WADERS		
HIMANTOPUS	HIMANTOPUS	Black winged Stilt		
IBIDORHYNCHA	STRUTHERSII	Ibisbill		
Family - Charadriidae		WADERS		
VANELLUS	CINEREUS	Grey-headed Lapwing		
CHARADRIUS	DUBIUS	Little-ringed Plover		
PLUVIALIS	DOMINICA	Lesser Golden Plover		
PLUVIALIS	FULVA	Pacific Golden Plover		
HOPLOPTERUS	INDICUS	Red-wattled Lapwing		
VANELLUS	VANELLUS	Northern Lapwing		
CALIDRIS	MINUTA	Little Stint		
CALIDRIS	TEMMINCKII	Temminck's Stint		
LYMNOCRYPTES	MINIMUS	Jack Snipe		
GALLINAGO	GALLINAGO	Common Snipe		
GALLINAGO	SOLITARIA	Solitary Snipe		
GALLINAGO*	NEMORICOLA	Wood Snipe		
GALLINAGO	STENURA	Pintail Snipe		
SCOLOPAX	RUSTICOLA	Eurasian Woodcock		
NUMENIUS	ARQUATA	Eurasian Curlew		
TRINGA	ERYTHROPUS	Spotted Redshank		
TRINGA	TOTANUS	Common Redshank		
TRINGA	NEBULARIA	Common Greenshank		
TRINGA	OCHROPUS	Green Sandpiper		
TRINGA	GLAREOLA	Wood Sandpiper		
XENUS	CINEREUS	Terek Sandpiper		
ACTITIS	HYPOLEUCOS	Common Sandpiper		
ARENARIA	INTERPRES	Ruddy Turnstone		
PHALAROPUS	LOBATUS	Red-necked Phalarope		
Family - Laridae		GULLS		
LARUS	ICHTHYAETUS	Great Black-headed Gull		
LARUS	RIDIBUNDUS	Common Black-headed Gull		
LARUS	BRUNNICEPHALUS	Brown-headed Gull		
LARUS	FUSCUS	Lesser Black-backed Gull		
GELOCHELIDON	NILOTICA	Gull-billed Tern		
STERNA	HIRUNDO	Common Tern		
Family - Columbidae		PIGEONS AND DOVES		
COLUMBA	LIVIA	Rock Pigeon		
COLUMBA	RUPESTRIS	Hill Pigeon		
COLUMBA	LEUCONOTA	Snow Pigeon		
COLUMBA	PALUMBUS	Common Wood Pigeon		
COLUMBA	HODGSONII	Speckled Woodpigeon		
COLUMBA	PULCHRICOLLIS	Ashy Woodpigeon		
STREPTOPELIA	DECAOCTO	Eurasian Collared Dove		
STREPTOPELIA	ORIENTALIS	Oriental Turtle Dove		
STREPTOPELIA	SENEGALENSIS	Laughing Dove		
STREPTOPELIA	CHINENSIS	Spotted Dove		
MACROPYGIA	UNCHALL	Barred Cuckoo-dove		
TRERON	SPHENURA	Wedge-tailed Green Pigeon		
TRERON	PHOENICOPTERA	Yellow-footed Green Pigeon		

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Family - Psittacidae		PARAKEET			
PSITTACULA	EUPATRIA	Large Parakeet			
PSITTACULA	HIMALAYANA	Slaty-headed Parakeet			
Family - Cuculidae		CUCKOOS			
CLAMATOR	JACOBINUS	Pied-crested Cuckoo			
HIEROCOCCYX	SPARVERIOIDES	Hodgson's Hawk-cuckoo			
CUCULUS	MICROPTERUS	Indian Cuckoo			
CUCULUS	CANORUS	Common Cuckoo			
CUCULUS	SATURATUS	Oriental Cuckoo			
CUCULUS	POLIOCEPHALUS	Lesser Cuckoo			
CACOMANTIS	MERULINUS	Plaintive Cuckoo			
HIEROCOCCYX	VIRENS	Common Hawk Cuckoo			
PHAENICOPHAEUS	TRISTIS	Green Billed Malkoha			
SURNICULUS	LUGUBRIS	Drongo-cuckoo			
Family - Strigidae		OWLS			
OTUS	SUNIA	Oriental Scops Owl			
OTUS	SPILOCEPHALUS	Mountain Scops Owl			
KETUPA	ZEYLONENSIS	Brown Fish Owl			
BUBO	BUBO	Northern Eagle Owl			
BUBO	NIPALENSIS	Spot Bellied Eagle Owl			
GLAUCIDIUM	RADIATUM	Jungle Owllet			
GLAUCIDIUM	CUCLOIDES	Asia Barred Owllet			
GLAUCIDIUM	BRODIEI	Collared Owllet			
ATHENE	NOCTUA	Northern Little Owl			
ATHENE	BRAMA	Spotted Little Owl			
STRIX	LEPTOGRAMMICA	Brown Wood Owl			
STRIX	ALUCO	Tawny Owl			
ASIO	FLAMMEUS	Short-eared Owl			
Family - Caprimulgidae		NIGHTJARS			
CAPRIMULGUS	INDICUS	Jungle Nightjar			
CAPRIMULGUS	MACRURUS	Long-t+C212tailed Nightjar			
Family - Apodidae		SWIFTS			
COLLOCALIA	BREVIROSTRIS	Himalayan Swiftlet			
HIRUNDAPUS	CAUDACUTUS	White-throated Needletail			
APUS	APUS	Common Swift			
APUS	PACIFICUS	Pacific Swift (Fork-tailed)+C225			
APUS	MELBA	Alpine Swift			
APUS	AFFINIS	Little Swift			
ZOOVENA	SYLVETICA	White-rumped Needletail			
Family - Alcedinidae		KINGFISHERS			
HALCYON	SMYRNENSIS	White-breasted Kingfisher			
AICDDO	ATTHIS	Eurasian Kingfisher			
CERYLE	RUDIS	Small Pied Kingfisher			
CERYLE	LUGUBRIS	Crested Kingfisher			
Family- Meropidae		BEE-EATERS			
MEROPS	LESCHENAUTI	Chestnut headed Bee-eater			
MEROPS	ORIENTALIS	Green Bee-eater			
Family - Coraciidae		ROLLERS			
CORCIAS	BENGHALENSIS	Indian Roller			
Family - Upupidae		HOOPOE			
UPUPA	EPOPS	Hoopoe			
Family - Capitonidae		BARBETS			
MEGALAIMA	FRANKLINI	Golden-throated Barbet			
MEGALAIMA	ASIATICA	Blue-throated Barbet			
MEGALAIMA	VIRENS	Great Barbet			

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MEGALAIMA	ZEYLANICA	Green Barbet		
MEGALAIMA	HAEMACEPHALA	Crimson Breasted Barbet		
Family - Indicatoridae		HONEYGUIDE		
INDICATOR	XANTHONOTUS	Honey-guide		
Family - Picidae		WOODPECKERS		
JYNX	TORQUILLA	Eurasian Wryneck		
PICUMNUS	INNOMINATUS	Speckled Piculet		
CELEUS	BRACHYURUS	Rufous Woodpecker		
PICUS	SQUAMATUS	Scaly-bellied Green Woodpecker		
PICUS	FLAVINUCHA	Greater Yellow-naped Woodpecker		
PICUS	CHLOROPHUS	Lesser Yellow Naped Woodpecker		
PICUS	CANUS	Grey Headed Woodpecker		
CHRYSOCOLAPTES	LUCIDES	Greater Golden Backed Woodpecker		
BLYTHIPICUS	PYRRHOTIS	Bay Woodpecker		
DENDROCOPOS	DARJELLENSIS	Darjeeling Woodpecker		
DENDROCOPOS	HIMALAYENSIS	Himalayan Pied Woodpecker		
DENDROCOPOS	CATHPHARIUS	Crimson-breasted Pied Woodpecker		
DENDROCOPOS	HYPERYTHRUS	Rufous-bellied Pied Woodpecker		
DENDROCOPOS	AURICEPS	Brown-fronted Pied Woodpecker		
DENDROCOPOS	MACEI	Fulvous Breasted Pied woodpecker		
Family - Alaudidae		LARKS		
CALANDRELLA	BRACHYDACTYLA	Greater Short-toed Lark		
CALANDRELLA	ACUTIROSTRIS	Hume's Short Toed Lark		
ALAUDA	GULGULA	Oriental Skylark		
EREMOPHILA	ALPESTRIS	Horned Lark		
Family - Hirundinidae		MARTINS		
RIPARIA	PALUDICOLA	Brown-throated Sand Martin		
RIPARIA	RIPARIA	Collared Sand Martin		
PTYONOPROGNE	RUPESTRIS	Crag Martin		
HIRUNDO	RUSTICA	Barn Swallow		
HIRUNDO	DAURICA	Red-rumped Swallow		
DELICHON	NIPALENSIS	Nepal House Martin		
DELICHON	DASYPUS	Asian House Martin		
DELICHON	URBICA	Common House Martin		
Family - Motacillidae		PIPITS AND WAGTAILS		
ANTHUS	NOVAESEELANDIAE	Richard's pipit		
ANTHUS	GODLEWSKII	Blyth's Pipit		
ANTHUS	HODGSONI	Olive-backed Pipit		
ANTHUS	TRIVIALIS	Tree Pipit		
ANTHUS	CERVINUS	Red-throated Pipit		
ANTHUS	ROSEATUS	Rosy Pipit		
ANTHUS	SPINOLETTA	Water Pipit		
ANTHUS	SYLVANUS	Upland Pipit		
MOTACILLA	FLAVA	Yellow Wagtail		
MOTACILLA	CITREOLA	Citrine Wagtail		
MOTACILLA	CINEREA	Grey Wagtail		
MOTACILLA	ALBA	White Wagtail		
MOTACILLIA	MADERASPATENSIS	White Browed Wagtail		
Family - Campephagidae		MINIVETS		
CORACIHA	MACEI	Large Cuckoo Shrike		
CORACINA	MELASCHISTOSIS	Black Winged Cuckoo Shrike		
HEMIPUS	PICATUS	Bar Winged Flycatcher Shrike		
PERICROCOTUS	FLAMMEUS	Scarlet Minivet		
PERICROOTUS	BREVIROSTRIS	Short-billed Minivet		
PERICROCOTUS	SOLARIS	Grey Chinned Minivet		

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PERICROCOTUS	ETHOLOGUS	Long-tailed Minivet		
Family - Pycnonotidae		BULBULS		
PYCNONOTUS	STRIATUS	Striated Bulbul		
PYCNONOTUS	LEUCOGENYS	White Cheeked Bulbul		
PYCNONOTUS	CAFER	Red Vented Bulbul		
HYPSSIPETES	MCLELLANDII	Mountain Bulbul		
HYPSSIPETES	MADAGASCARIENSIS	Black Bulbul		
HYPSSIPETES	FLAVALUS	Brown Eared Bulbul		
PYCNONOTUS	JOCOSUS	Red Whiskered Bulbul		
Family - Irenidae		LEAFBIRDS		
CHLOROPSIS	HARDWICKII	Orange Bellied leafbird		
Family - Cinclidae		DIPPER		
CINCLUS	CINCLUS	White-breasted Dipper		
CINCLUS	PALLASHI	Brown Dipper		
Family - Troglodytidae		WREN		
TROGLODYTES	TROGLODYTES	Northern Wren		
Family - Prunellidae		ACCENTORS		
PRUNELLA	IMMACULATA	Marron-backed Accentor		
PRUNELLA	STROPHIATA	Rufous breasted Accentor		
PRUNELLA	FULVESCENS	Brown Accentor		
PRUNELLA	ATROGULARIS	Black-throated Accentor		
PRUNELLA	RUBECULOIDES	Robin Accentor		
PRUNELLA	HIMALAYANA	Altai Accentor		
PRUNELLA	COLLARIS	Alpine Accentor		
Family - Muscicapidae		FLYCATCHER AND ALLIES		
BRACHYPTERYX	STELLATA	Gould's Shortwing		
BRACHYPTERYX	MONTANA	White-browed Shortwing		
LUSCINIA	SVECICA	Bluethroat		
LUSCINIA	PECTORALIS	White-tailed Rubythroat		
LUSCINIA	BRUNNEA	Indian Blue Robin		
LUSCINIA	CALLIOPE	Siberian Rubythroat		
TARSIGER	CYANURUS	Orange-flanked Bush Robin		
TARSIGER	CHRYSAEUS	Golden Bush Robin		
TARSIGER	INDICUS	White-browed Bush Robin		
TARSIGER	HYPERYTHRUS	Rufous Breasted Bush Robin		
COPSYCHUS	SAULARIS	Asian Magpie Robin		
PHOENICURUS	ERYTHRONOTUS	Rufous-backed Redstart		
PHOENICURUS	CAERULEOCEPHALUS	Blue-capped Redstart		
PHOENICURUS	OCHRUROS	Black Redstart		
PHOENICURUS	HODGSONI	Hodgson's Redstart		
PHOENICURUS	FRONTALIS	Blue-fronted Redstart		
PHOENICURUS	SCHISTICEPS	White-throated Redstart		
PHOENICURUS	ERYTHROGASTER	Guldenstadt's Redstart		
RHYACORNIS	FULIGINOSUS	Plumbeous Redstart		
HODGSONIUS	PHOENICUROIDES	White-bellied Redstart		
CINCLIDIUM	LEUCURUM	White-tailed Robin		
GRANDALA	COELICOLOR	Grandala		
SAXICOLA	TORQUATA	Common Stonechat		
SAXICOLA	CAPRATA	Pied Bushchat		
SAXICOLA	FERREA	Grey Bushchat		
OENANTHE	ISABELLINA	Isabelline Wheatear		
OENANTHE	OENANTHE	Northern Wheatear		
OENANTHE	PLESCHANKA	Pied Wheatear		
OENANTHE	DESERTI	Desert Wheatear		
CHAIMARRONIS	LEUCOCEPHALUS	White-capped Riverchat		

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MONTICOLA	CINCLORHYNCHA	Blue-capped Rock-thrush			
MONTICOLA	RUFIVENTRIS	Chestnut-bellied Rock-thrush			
MONTICOLA	SOLITARIUS	Blue Rock-thrush			
MYIOPHONEUS	CAERULEUS	Blue Whistling Thrush			
ZOOTHERA	MOLLISSIMA	Plain-backed Mountain Thrush			
ZOOTHERA	DIXONI	Long-tailed Mountain Thrush			
ZOOTHERA	DAUMA	Scaly Thrush			
ZOOTHERA	MONTICOLA	Long-billed Thrush			
ZOOTHERA	WARDII	Pied Ground Thrush			
ZOOTHERA	CITRINA	Orange Headed Ground Thrush			
TURDUS	ALBOCINCTUS	White-collared Blackbird			
TURDUS	BOULBOUL	Grey-winged Blackbird			
TURDUS	MERULA	Eurasian Blackbird			
TURDUS	RUBROCANUS	Chestnut Thrush			
TURDUS	RUFICOLLIS	Dark-throated Thrush			
TURDUS	VISCIVORUS	Mistle Thrush			
TURDUS	UNICOLOR	Tickell's Thrush			
ENICURUS	SCOULERI	Little Forktail			
ENICURUS	IMMACULATUS	Black-backed Forktail			
ENICURUS	SCHISTACEUS	Slaty-backed Forktail			
ENICURUS	MACULATUS	Spotted Forktail			
TESIA	CASTANEOCORONATA	Chestnut-headed Tesia			
TESIA	CYANIVENTER	Grey-bellied Tesia			
CETTIA	FORTIPES	Brown-flanked Bush Warbler			
CETTIA	MAJOR	Chestnut-crowned Bush Warbler			
CETTIA	FLAVOLIVACEA	Aberrant Bush Warbler			
CETTIA	ACANTHIZOIDES	Yellow-bellied Bush Warbler			
CETTIA	BRUNNIFRONS	Grey-sided Bush Warbler			
BRADYPTERUS	THORACICUS	Spotted Bush Warbler			
PRINIA	CRINIGER	Striated Prinia			
ORTHOTOMUS	SUTORIUS	Common Tailorbird			
ACROCEPHALUS	DUMETORUM	Blyth's Reed Warbler			
HIPPOLAIS	CALIGATA	Booted Warbler			
SYLVIA	CURRUCA	Lesser Whitethroat			
SEICERCUS	BURKII	Golden Spectacled Warbler			
SEICERCUS	POLIOGENYS	Grey-checked Warbler			
SEICERCUS	CASTANICEPS	Chestnut Crowned Warbler			
SEICERCUS	XANTHOSCHISTOS	Grey-hooded Warbler			
ABROSCOPUS	SCHISTICEPS	Black-faced Warbler			
PHYLLOSCOPUS	REGULOIDES	Blyth's Crowned Warbler			
PHYLLOSCOPUS	OCCIPITALIS	Western Crowned Warbler			
PHYLLOSCOPUS	TROCHILOIDES	Greenish Warbler			
PHYLLOSCOPUS	MAGNIROSTRIS	Large-billed Leaf Warbler			
PHYLLOSCOPUS	PULCHER	Buff-barred Leaf Warbler			
PHYLLOSCOPUS	MACULIPENNIS	Grey-faced Leaf Warbler			
PHYLLOSCOPUS	PROREGULUS	Pallas's Leaf Warbler			
PHYLLOSCOPUS	INORNATUS	Yellow-browed Warbler			
PHYLLOSCOPUS	FULIGIVENTER	Smoky Warbler			
PHYLLOSCOPUS	AFFINIS	Tickell's Warbler			
PHYLLOSCOPUS	COLLYBITA	Chiffchaff			
REGULUS	REGULUS	Goldcrest			
LEPTOPOECILE	SOPHIAE	Stoliczka's Tit-warbler			
ZOSTEROPS	PALPEBROSUS	Oriental White Eye			
NILTAVA	GRANDIS	Large Niltava			
NILTAVA	MACGRIGORIAE	Small Niltava			

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NILTAVA	SUNDARA	Rufous-bellied Niltava			
CYORNIS	BANYUMAS	Hill-blue Flycatcher			
MUSCICAPELLA	HODGSONI	Pygmy Blue Flycatcher			
MUSCICAPA	THALASSINA	Verditer Flycatcher			
MUSCICAPA	FERRUGINEA	Ferruginous Flycatcher			
MUSCICAPA	SIBIRICA	Asian Sooty Flycatcher			
MUSCICAPA	RUFICAUDA	Rufous-tailed Flycatcher			
MUSCICAPA	LATIROSTRIS	Asian brown Flycatcher			
FICEDULA	SAPPHIRA	Sapphire Flycatcher			
FICEDULA	TRICOLOR	Slaty-blue Flycatcher			
FICEDULA	SUPERCILIARIS	Ultra-Marine Flycatcher			
FICEDULA	WESTERMANNI	Little Pied Flycatcher			
FICEDULA	HODGSONII	Slaty-backed Flycatcher			
FICEDULA	HYPERYTHRA	Snowy-browed Flycatcher			
FICEDULA	MONILEGER	White-gorgetted Flycatcher			
FICEDULA	STROPHIATA	Orange-gorgetted Flycatcher			
FICEDULA	SUBRUBRA	Kashmir Flycatcher			
FICEDULA	PARVA	Red-breasted Flycatcher			
CULICICAPA	CEYLONENSIS	Grey-headed Flycatcher			
RHIPIDURA	HYPOXANTHA	Yellow-bellied Fantail			
RHIPIDURA	ALBICOLLIS	White Throated Fantail			
TERPISPHONE	PARADISI	Paradise Flycatcher			
POMATORHINUS	RUFICOLLIS	Streak-breasted Scimitar Babbler			
XIPHIRHYNCHUS	SUPERCILIARIS	Slender-billed Scimitar Babbler			
PNOEPYGA	ALBIVENTER	Greater Scaly-breasted Wren-babbler			
PNOEPYGA	PUSILLA	Lesser Scaly-breasted Wren-babbler			
STACHYRIS	RUFICEPS	Rufous-capped Babbler			
TURDOIDES	NIPAENSIS	Spiny Babbler			
POMATORHINUS	ERYTHROCEPHALUS	Rusty Cheeked Scimitar Babbler			
POMATORHINUS	SCHISTICEPS	White Browed Scimitar Babbler			
STACHYRIS	PYRRHOPS	Black-chinned Babbler			
STACHYRIS	CHRYRHOPS	Golden Babbler			
STACHYRIS	NIGRICEPS	Grey Throated Babbler			
CONOSTOMA	AEMODIUM	Great Parrotbill			
PARADOXORNIS	UNICOLOR	Brown Parrotbill			
PARADOXORNIS	FULVIFRONS	Fulvous Parrotbill			
PARADOXORNIS	NIPAENSIS	Black-throated Parrotbill			
GARRULAX	LEUCOLOPHUS	White Crested Laughing thrush			
GARRULAX	ALBOGULARIS	White-throated Laughing-thrush			
GARRULAX	STRIATUS	Striated Laughing-thrush			
GARRULAX	VARIEGATUS	Variiegated Laughing-thrush			
GARRULAX	RUFOGULARIS	Rufous Chinned Laughing Thrush			
GARRULAX	OCELLATUS	Spotted Laughing-thrush			
GARRULAX	CAERULATUS	Grey-sided Laughing Thrush			
GARRULAX	LINEATUS	Streaked Laughing-thrush			
GARRULAX	SUBUNICOLOR	Scaly Laughing thrush			
GARRULAX	AFFINIS	Black-faced Laughing-thrush			
GARRULAX	ERYTHROCEPHALUS	Chestnut-crowned Laughing-thrush			
LEIOTHRIX	LUTEA	Red-billed Leothrix			
MYZORNIS	PYRRHOURA	Fire-tailed Myzornis			
CUTIA	NIPAENSIS	Cutia			
PTERUTHIUS	RUFIVENTER	Black-headed Shrike Babbler			
PTERUTHIUS	FLAVISCAPIS	White browed Shike Babbler			
PTERUTHIUS	XANTHOCHLORIS	Green Shrike-babbler			
PTERUTHIUS	MELANOTIS	Black-eared Shrike Babbler			

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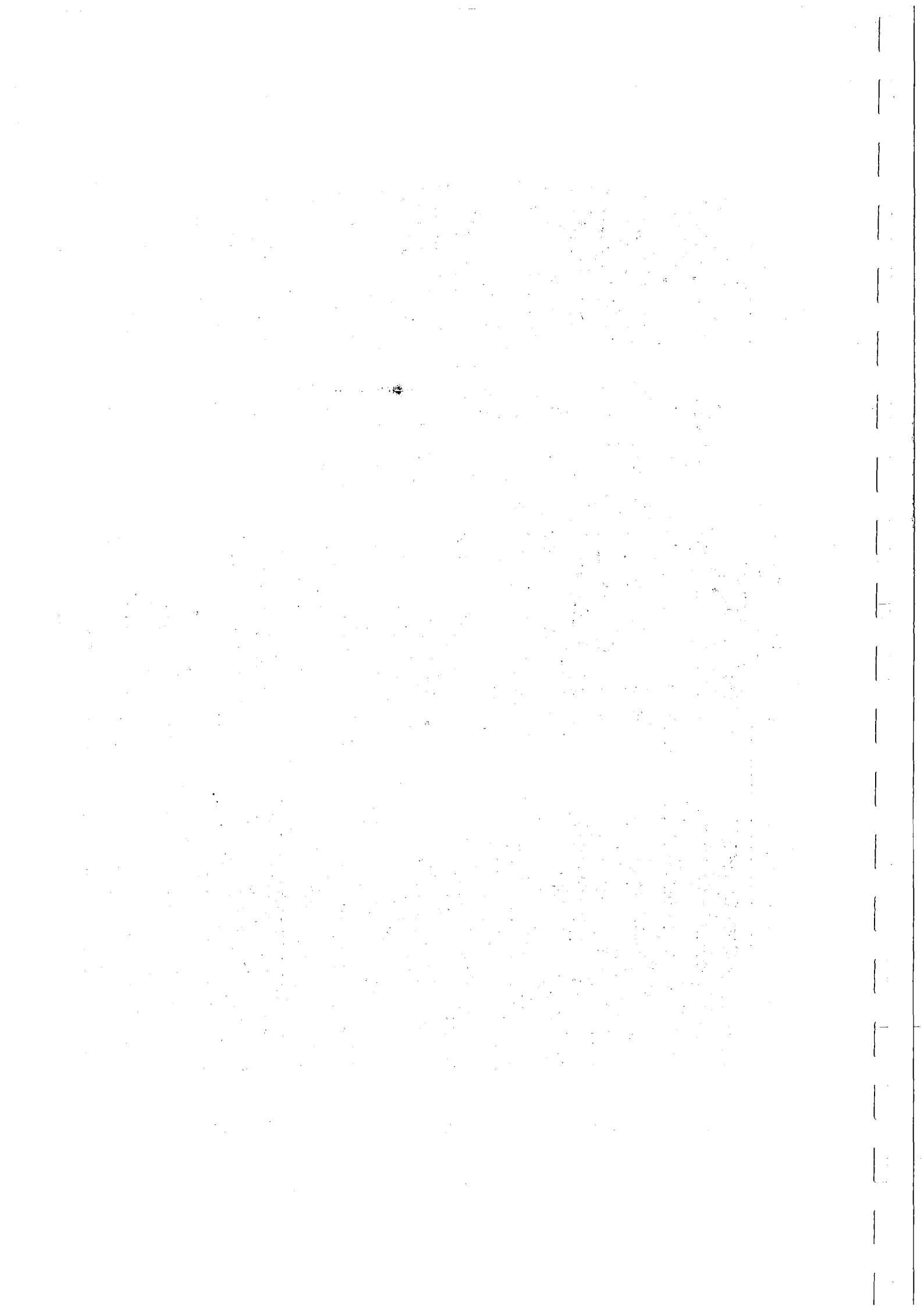
ACTINODURA	NIPALENSIS	Hoary Barwing		
MINLA	CYANOUROPTERA	Blue Winged Minla		
MINLA	STRIGULA	Chestnut-tailed Minla		
MINLA	IGNOTINCTA	Red-tailed Minla		
ALCIPPE	CHRYSOTIS	Golden-breasted Fulvetta		
ALCIPPE	CASTANECEPS	Rufous-winged Fulvetta		
ALCIPPE	VINIPECTUS	White-browed Fulvetta		
ALCIPPE	NIPALENSIS	Nepal Fulvetta		
HETEROPHASIA	CAPISTRATA	Black-capped Sibia		
YUHINA	FLAVICOLLIS	Whiskered Yuhina		
YUHINA	GULARIS	Stripe-throated Yuhina		
YUHINA	OCCIPITALIS	Rufous-vented Yuhina		
YUHINA	ZANTHOLEUCA	White Bellied Yuhina		
Family - Paridae		TITS		
AEGITHALOS	IOUSCHISTOS	Black-browed Tit		
AEGITHALOS	NIVEOGULARIS	White-throated Tit		
AEGITHALOS	CONCINNUS	Black-throated Tit		
SYLVIPARUS	MODESTUS	Yellow-browed Tit		
PARUS	DICHROUS	Grey-crested Tit		
PARUS	RUFONUCHALIS	Rufous-naped Black Tit		
PARUS	RUBIDIVENTRIS	Rufous-vented Black Tit		
PARUS	MELANOLOPHUS	Spot-winged Black Tit		
PARUS	ATER	Coal Tit		
PARUS	MAJOR	Great Tit		
PARUS	MONTICOLUS	Green-backed Tit		
PARUS	XANTHOGENYS	Black-lored Tit		
CEPHALOPYRUS	FLAMMICEPS	Fire Capped Tit		
PARUS	SPILONOTUS	Black Spotted Yellow Tit		
Family - Sittidae		NUTHATCHES		
SITTA	LEUCOPSIS	White-cheeked Nuthatch		
SITTA	FRONTALIS	Velvet Fronted Nuthatch		
SITTA	HIMALAYENSIS	White Tailed Nuthatch		
SITTA	CASTANEA	Chestnut-bellied Nuthatch		
SITTA	HIMALAYENSIS	White-tailed Nuthatch		
SITTA	CASHMIRENSIS	Kashmir Nuthatch		
Family - Certhiidae		TREECREEPERS		
CERTHIA	DISCOLOR	Brown-throated Treecreeper		
CERTHIA	HIMALAYANA	Bar-tailed Treecreeper		
CERTHIA	NIPALENSIS	Rusty-flanked Treecreeper		
CERTHIA	FAMILIARIS	Common Treecreeper		
TICHO DROMA	MURARIA	Wallcreeper		
Family - Nectariniidae		SUNBIRDS		
NECTARINIA	ASIATICA	Purple Sunbird		
AETHOPYGA	GOULDIAE	Mrs. Gould's Sunbird		
AETHOPYGA	NIPALENSIS	Green-tailed Sunbird		
AETHOPYGA	IGNICAUDA	Fire-tailed Sunbird		
AETHOPYGA	SATURATA	Black-throated Sunbird		
AETHOPYGA	SIPARAJA	Crimson Sunbird		
Family - Dicaeidae		FLOWERPECKERS		
DICAEUM	MELANOXANTHUM	Yellow-bellied Flowerpecker		
DICAEUM	IGNIPECTUS	Buff-bellied Flowerpecker		
DICAEUM	AGILE	Thick-billed Flowerpecker		
Family - Oriolidae		ORIOLES		
ORIOIUS	TRAILLII	Maroon Oriole		
ORIOIUS	ORIOIUS	Eurasian Golden Oriole		

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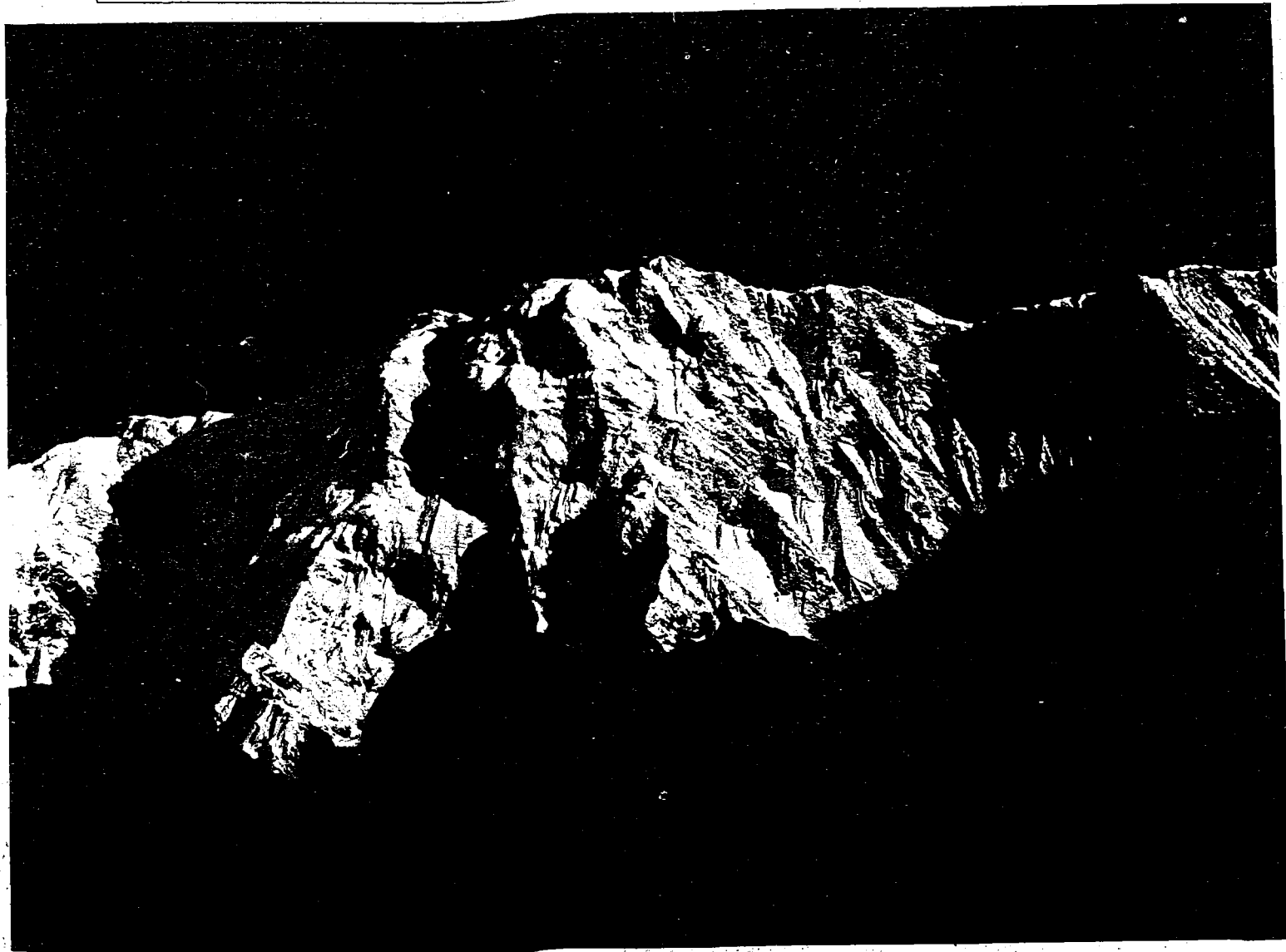
Family - Laniidae		SHRIKES			
LANIUS	CRISTATUS	Brown Shrike			
LANIUS	ISABELLINUS	Isabelline Shrike			
LANIUS	VITTATUS	Bay-backed Shrike			
LANIUS	SCHACH	Long-tailed Shrike			
LANIUS	TEPHRONOTUS	Grey-backed Shrike			
Family - Dicruridae		DRONGOS			
DICRURUS	MACROCERCUS	Black Drongo			
DICRURUS	LEUCOPHAEUS	Ashy Drongo			
DICRURUS	AENEUS	Bronzed Drongo			
DICRURUS	HOTTENTOTTUS	Spangled Drongo			
DICRURUS	REMIFER	Lesser Raquet-tailed Drongo			
Family - Corvidae		MAGPIES			
GARRULUS	GLANDARIUS	Eurasian Jay			
GARRULUS	LANCEOLATUS	Lanceolated Jay			
DENDROCITTA	FORMOSA	Himalayan Tree-pie			
UROCISSA	FLAVIROSTRIS	Yellow-billed Blue Magpie			
UROCISSA	ERYTHORHYNCHA	Red Billed Blue Magpie			
CISSA	CHINENSIS	Green Magpie			
DENDROCITTA	FORMOSAE	Grey Treepie			
PSEUDOPODOCES	HUMILIS	Hume's Ground Jay			
NUCIFRAGA	CARYOCATACTES	Eurasian Nutcracker			
PYRRHOCORAX	GRACULUS	Alpine Chough			
PYRRHOCORAX	PYRRHOCORAX	Red-billed Chough			
CORVUS	SPIENDENS	House Crow			
CORVUS	MACRORHYNCHOS	Jungle Crow			
CORVUS	CORAX	Common Raven			
ARTAMUS	FUSCUS	Ashy woods wallow			
Family - Sturnidae		MYNAS			
STARNUS	VULGARIS	Common Starling			
SARAGLOSSA	SPILOPTERA	Spot-winged Stare			
STURNUS	MALABARICUS	Chest-tailed Starling			
STURNUS	VULGARIS	Common Starling			
ACRIDOTHERES	FUSCUS	Jungle Myna			
ACRIDOTHERES	TRISTIS	Common Myna			
Family - Ploceidae		SPARROW			
PASSER	RUTILANS	House Sparrow			
PASSER	RUTILANS	Cinnamon Sparrow			
PASSER	MONTANUS	Eurasian Tree Sparrow			
MONTIFRINGILLA	BLANFORDI	Plain-backed Snow Finch			
PETRONIA	XANTHOCOLLIS	Chestnut shouldered Sparrow			
MONTIFRINGILLA	RUFICOLLIS	Red-necked Snow Finch			
MONTIFRINGILLA	TACZANOWSKII	White-rumped Snowfinch			
MONTIFRINGILLA	ADAMSI	Tibetan Snowfinch			
PLOCEUS	PHILIPPINUS	Baya Weaver			
LONCHURA	STRIATE	White-rumped Munia			
LONCHURA	PUNCTULATA	Scaly Breasted Munia			
LONCHURA	MALACCA	Chestnut Munia			
Family - Fringillidae		FINCHES			
FRINGILLA	COELEBS	Common Chaffinch			
FRINGILLA	MONTIFRINGILLA	Brambling			
SERINUS	PUSILLUS	Red-fronted Serin			
SERINUS	THIBETANUS	Tibetan Serin			
CALLACNTHIS	BURTONI	Red Browed Finch			
CARDUELIS	SPINOIDES	Yellow-breasted Greenfinch			

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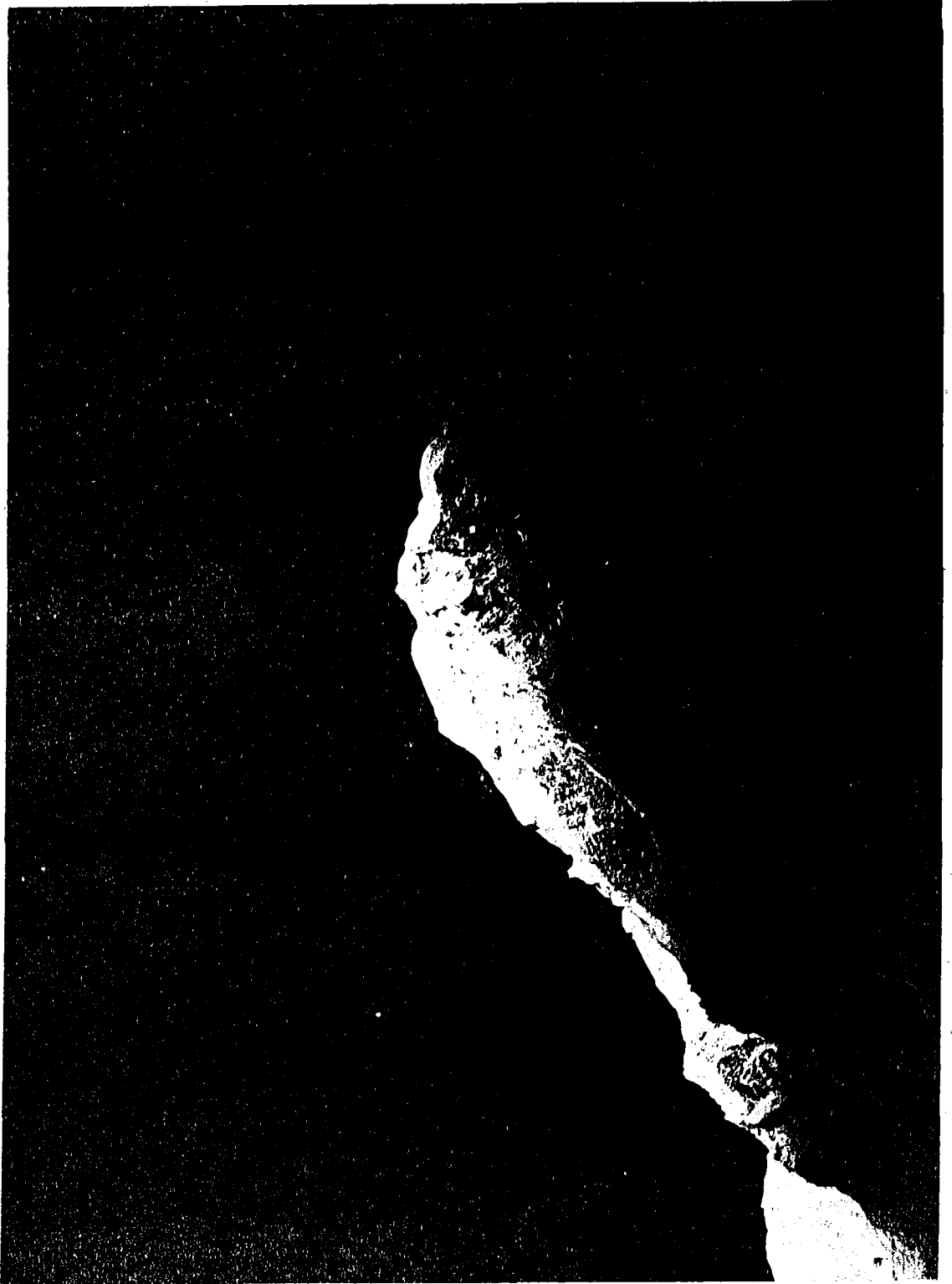
CARDUELIS	CARDUELIS	Eurasian Goldfinch			
CARDUELIS	FLAVIROSTRIS	Twite			
LOXIA	CURVIROSTRA	Common Crossbill			
LEUCOSTICTE	NEMORICOLA	Plain Mountain-finch			
LEUCOSTICTE	BRANDTI	Brandt's Mountain Finch			
BUCANETES	MONGOLICUS	Mongolian Finch			
CARPODACUS	RUBESCENS	Crimson Rosefinch			
CARPODACUS	NIPALENSIS	Dark-breasted Rosefinch			
CARPODACUS	ERYTHRINUS	Common Rosefinch			
CARPODACUS	PULCHERRIMUS	Beautiful Rosefinch			
CARPODACUS	RHODOCHROUS	Pink-browed Rosefinch			
CARPODACUS	VINACEUS	Vinaceous Rosefinch			
CARPODACUS	EDWARDSII	Dark-rumped Rosefinch			
CARPODACUS	RHODOPEPLUS	Spot-winged Rosefinch			
CARPODACUS	THURA	White-browed Rosefinch			
CARPODACUS	RUBICILLOIDES	Crimson-eared Rosefinch			
CARPODACUS	RUBICILLA	Spot-crowned Rosefinch			
CARPODACUS	PUNICEUS	Red-breasted Rosefinch			
PROPYRRHULA	SUBHIMACHALA	Crimson-browed Finch			
HAEMATOSPIZA	SIPAHI	Scarlet Finch			
PYRRHOPLECTES	EPAULETTA	Gold-naped Finch			
PYRRHULA	NIPALENSIS	Brown Bullfinch			
PYRRHULA	ERYTHROCEPHALA	Red-headed Bullfinch			
MYCEROBAS	AFFINIS	Collared Grosbeak			
MYCEROBAS	MELANOZANTHOS	Spot-winged Grosbeak			
MYCEROBAS	CARNIPES	White-winged Grosbeak			
Family - Emberizidae		BUNTINGS			
EMBERIZA	LEUCOCEPHALOS	Pine-bunting			
EMBERIZA	CITRINELLA	Yellowhammer			
EMBERIZA	CIA	Rock Bunting			
EMBERIZA	FUCATA	Chestnut Eared Bunting			
EMBERIZA	RUSTICA	Rustic Bunting			
EMBERIZA	PUSILLA	Little Bunting			



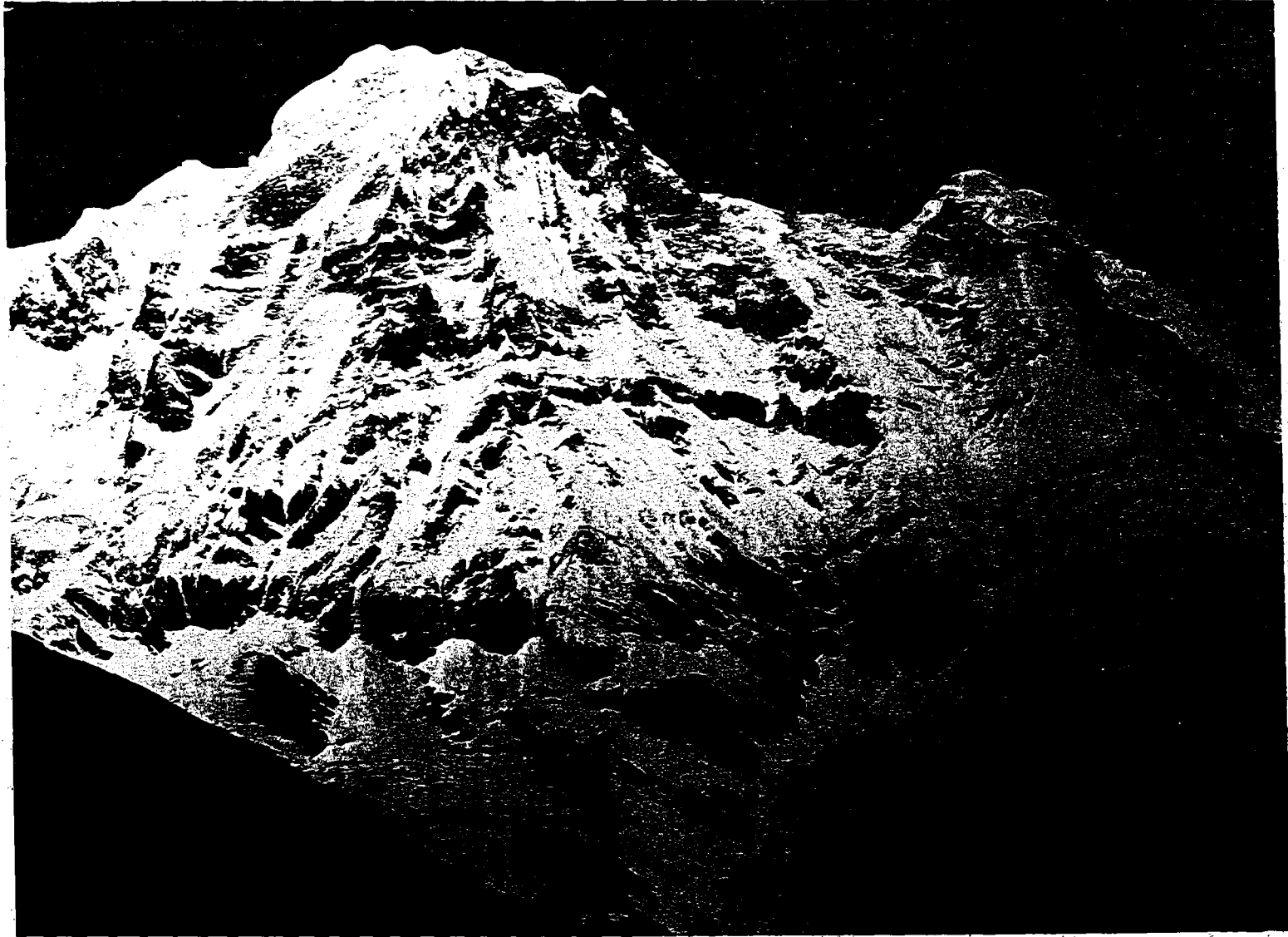
1. Annapurna I the highest mountain of ACA measures 8091m. Photo: R. N. Suwal



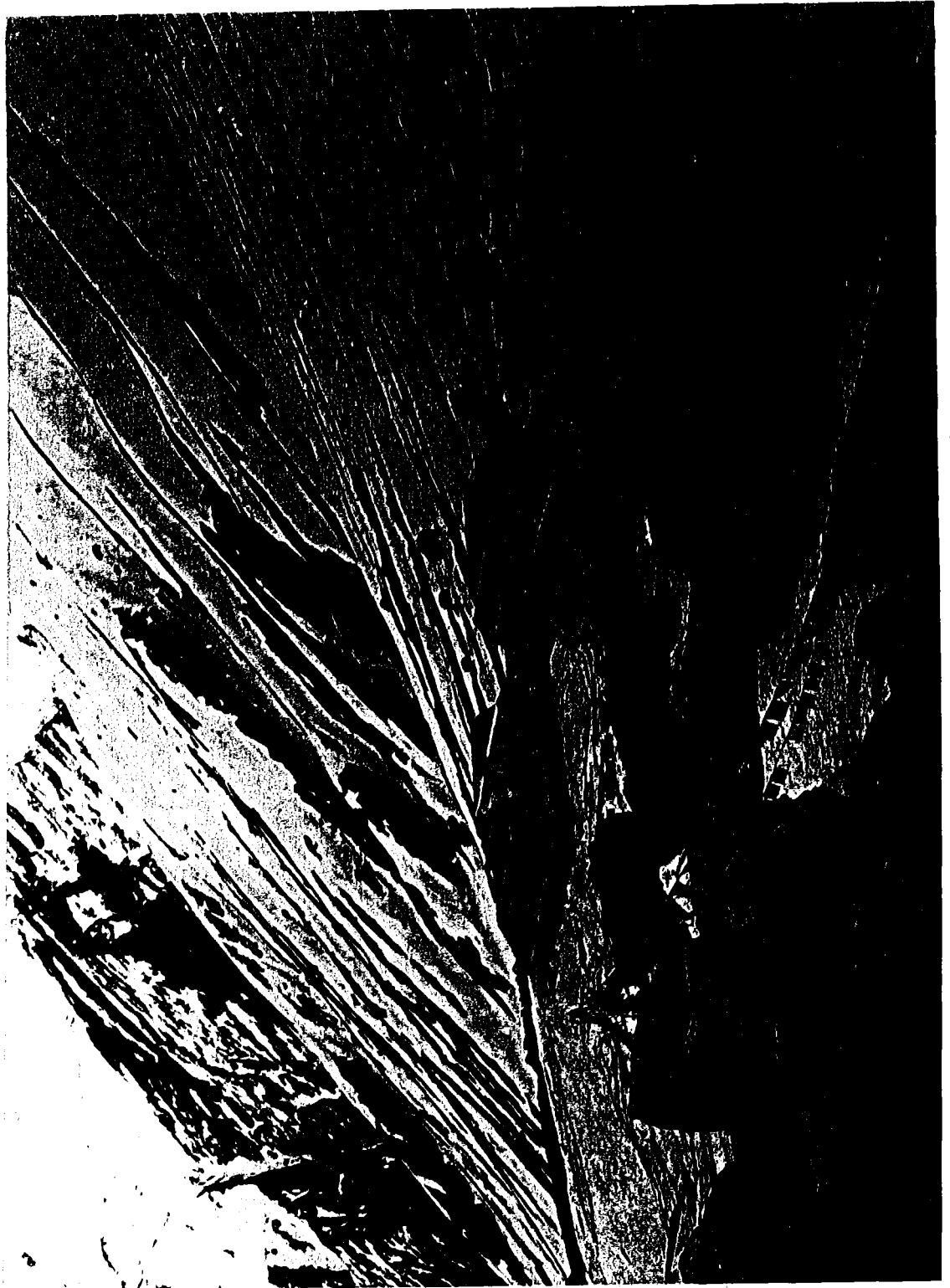
2. Sunrays over the Annapurna South in the early morning. Photo: R. N. Suwal



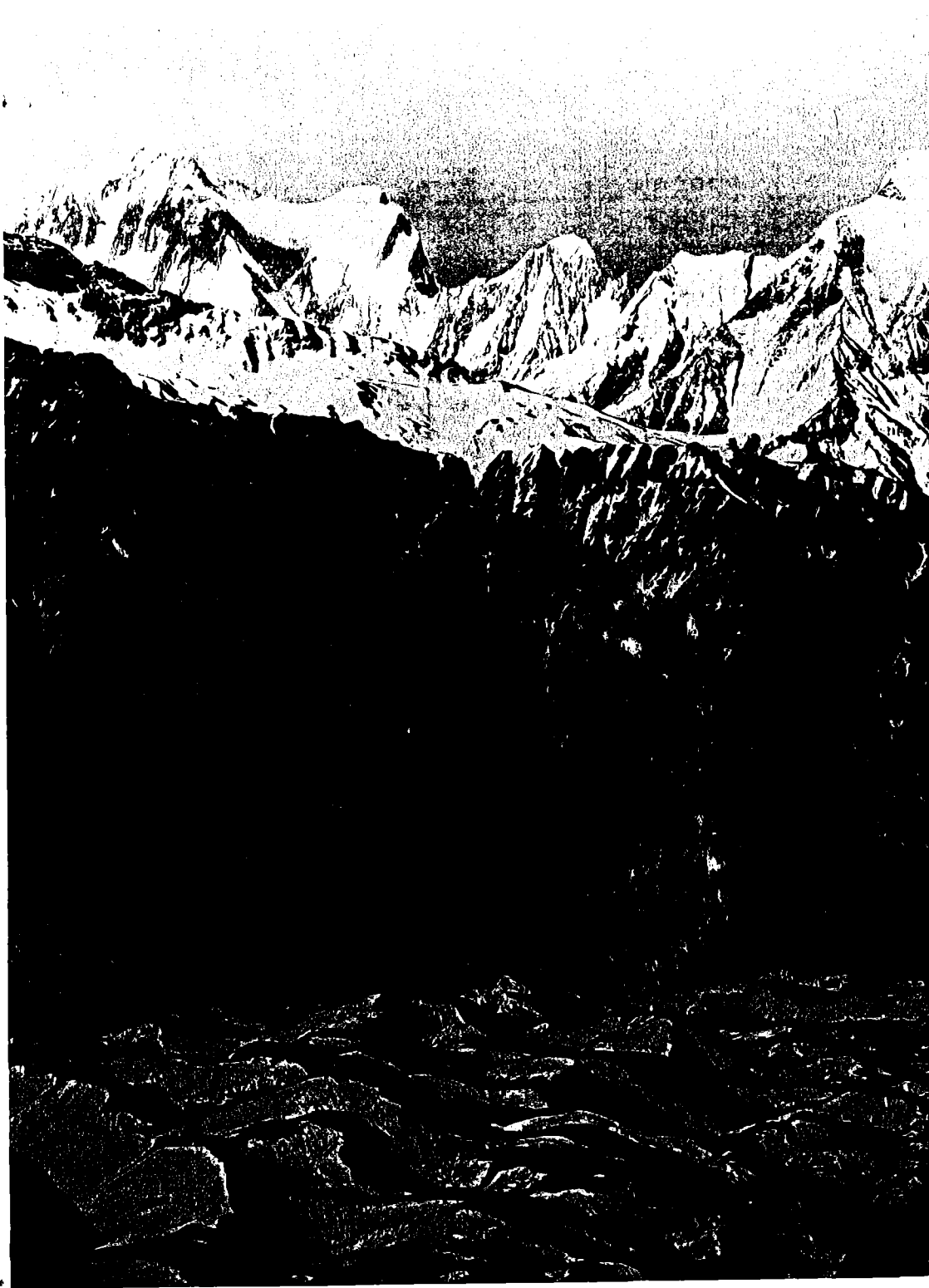
3. Annapurna South Glacier; one of the primary source of water of Modi River. Photo: R. N. Suwal



4. Annapurna Base Camp on May 3, 2000. Photo: R. N. Suwal



5. Landscape of Annapurna South Glacier. Photo: R. N. Suwal



6. The steep rocky slopes of MRWA. Photo: R. N. Suwal



7. The Modi Gorge and the Bagar as seen from MBC (3700). Photo: R. N. Suwal



8. The subalpine bioclimatic zone above Deurali 3230m. Photo: R. N. Suwal



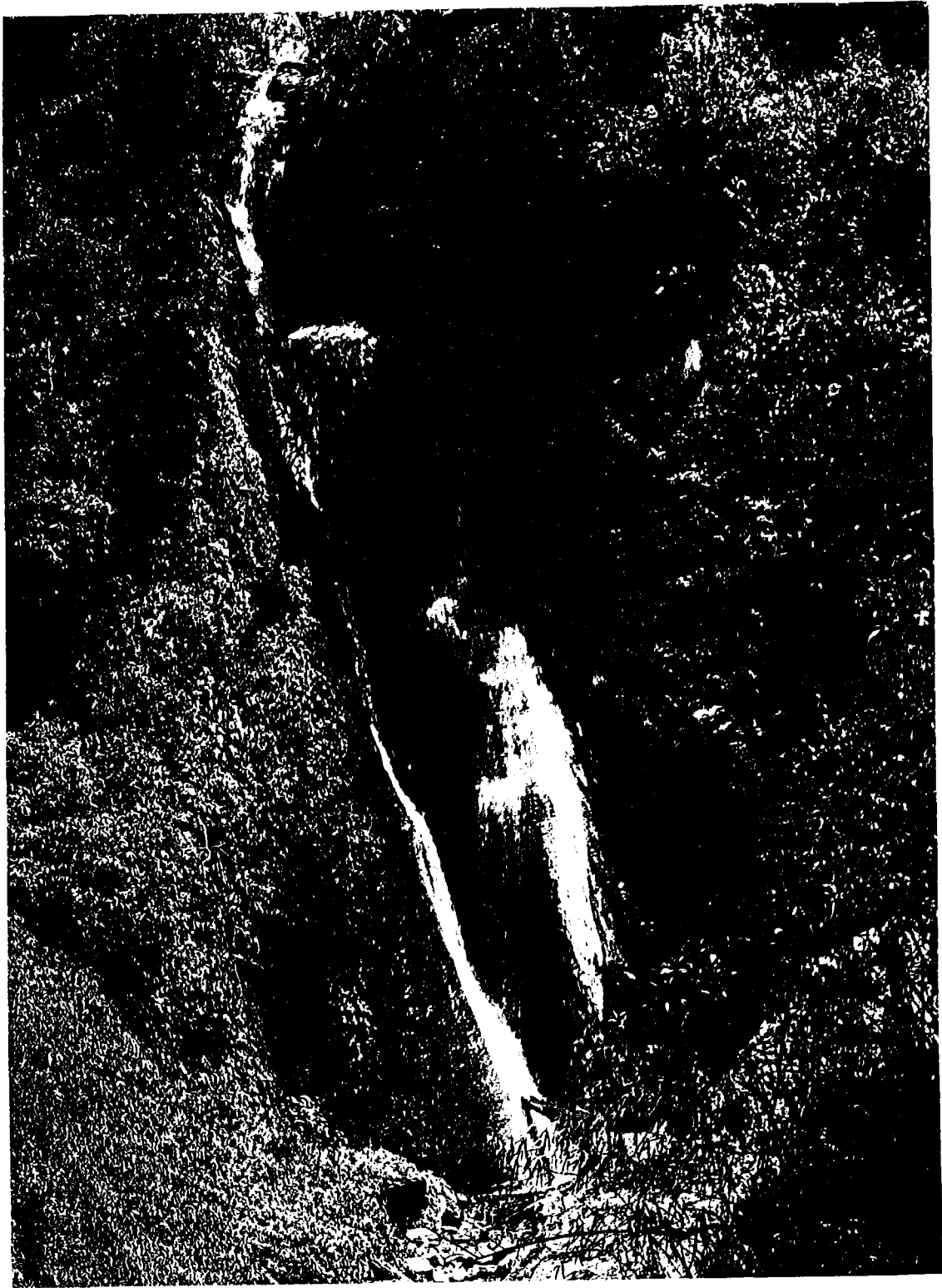
9. The survey team members in the grazing land at 3000m. Photo: R. N. Suwal



10. Macchapuchre as seen from the Jante Danda. Photo: R. N. Suwal



Small streams, the tributaries of Modi provide habitat for forktails, Whistling Thrush and Grey wagtails. Photo: R. N. Suwal



12. Modi River, terraced farm, shrub vegetation and the Landruk Village. Photo: R. N. Suwal

