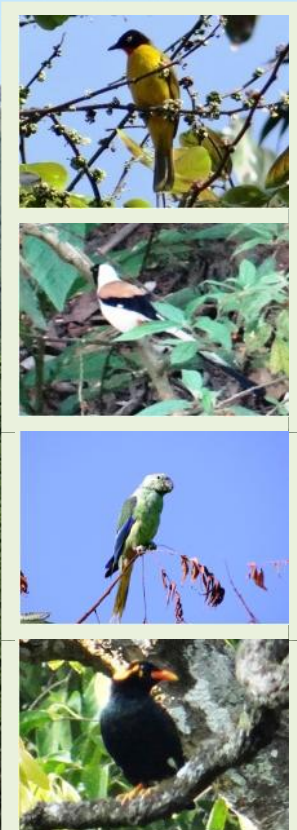


# Birds of High Range Mountain Landscape, Munnar

## A Literature Review



**Sálim Ali Centre for Ornithology and Natural History**  
**November 2015**

# **Birds of Munnar High Ranges Mountain Landscape**

## **-A Literature Review**

**Project Plant- Animal (birds and butterflies) community studies in various landscape elements of Munnar High Range Mountain Landscape**

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## 1 INTRODUCTION

The scenic landscape of High Ranges is located in the northern part of the Southern Western Ghats. It encompasses three sub regions namely, the central high range (Kannan Devan Hills), the Eastern Anjanad Valley (Marayoor) and the western Pooyamkutty –Idamalayar valleys. As acclaimed ecologist and environmentalist Dr.Sathis Chandran Nair describes, the High Ranges comprises of the widest and highest reaches of the Western Ghats in Kerala. Most of the forests of high ranges are on the western slopes drained by Idamalayar and Pooyamkutty Rivers and their valleys. The River originates from the eastern side of Kannan Devan Hills are drained into Amaravathi River through Chinnar.

The forest types of High Ranges include high elevation montane-forests and grasslands, humid and high elevation forests, humid mid elevation and humid low elevation evergreen forests in the windward side and dry forests in the Anjanad Valley. The present land use pattern of high ranges include Protected areas (Eravikulam National Park, Chinnar Wildlife Sanctuary, Kurinjimala Wildlife Sanctuary, Anaimudi National Park, Pampadum shola National Park, Mathikettan shola National Park, Thattekkad Bird Sanctury and Idukki Wildlife Sanctuary), non proteted areas such as Malayattoor, Kothamangalam, Mankulam, Munnar, Marayoor and Kottayam Forest Divisions which encompasses vast stretches of High Value Biodiversity Areas, commercial plantations such as tea, Cardamom, and coffee, mixed cultivation area or human dominated home gardens, tribal settlements, river valley projects and urban/peri-urban areas. The High Ranges is rich in avian diversity with more than 300 species of birds including 15 of 16 western ghat endemic species. Among these , Nilgiri wood-pigeon, Broad-tailed grass bird, Kerala laughing thrush, White bellied short wing, Black-and-rufous flycatcher, Nilgiri flycatcher, White-bellied blue-flycatcher, Crimson-backed sunbird and Nilgiri pipit are habitat specialists confined to the high altitudes of the High Ranges.

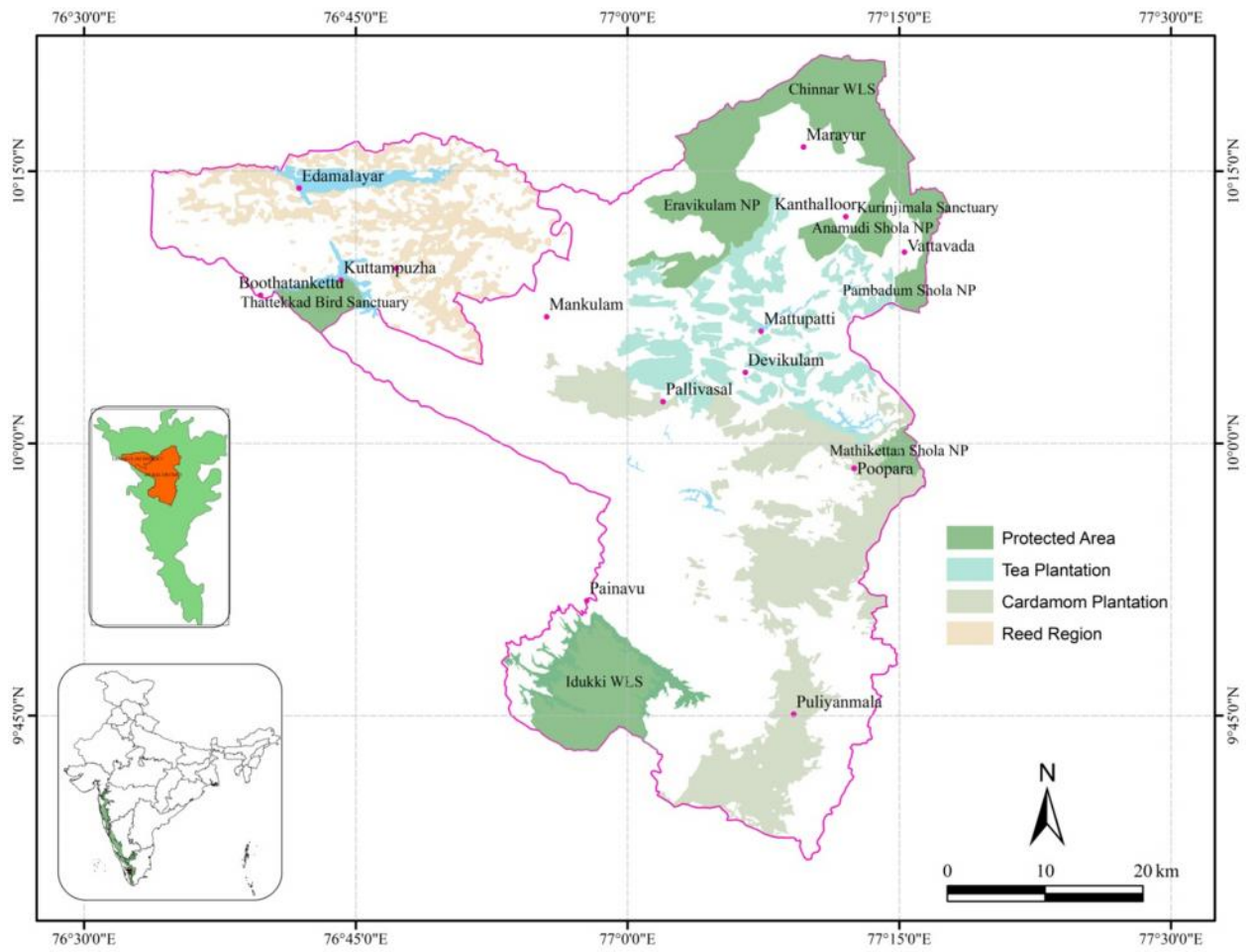


Figure 1 Munnar High Range Mountain Landscape

## 2 REVIEW OF LITERATURE

Literatures pertaining to birds of High ranges were searched in various online sources like Google Scholar, JSTOR, Bio-one, Research Gate, Sci-Hub, Bibliography of South Asian Ornithology using combinations of keywords including Munnar, Thattakad, Salim Ali Bird Sanctuary, Idukki, Eravikulam, Travancore, Cochin and Chinnar, High Ranges, Nilgiri Tahr, Kurunjimalai, Mannavan Shola, Mathikettan Shola, etc. Apart from Online sources Back Volumes of offline journals like Journal of Bombay Natural History Society, Newsletter for bird watchers, Indian Birds and Stray Feather were also searched. Although there are few unpublished dissertations in some local institutes especially in the camp office of Thattekkad, we could not follow up further due to the freezing of project activities.

Out of 109 articles on the faunal studies, 53 studies were relevant to avifauna. Most of the studies (69%) were checklists or notes on the distribution of birds and a very few studies (21%) were on the ecology of birds (Fig 2). The Field notes on the ornithology of HRML were published by few British Naturalists in 1870s and more articles were started publishing from 1990s and long term ecological studies are carried out in the present decade (Fig 3)

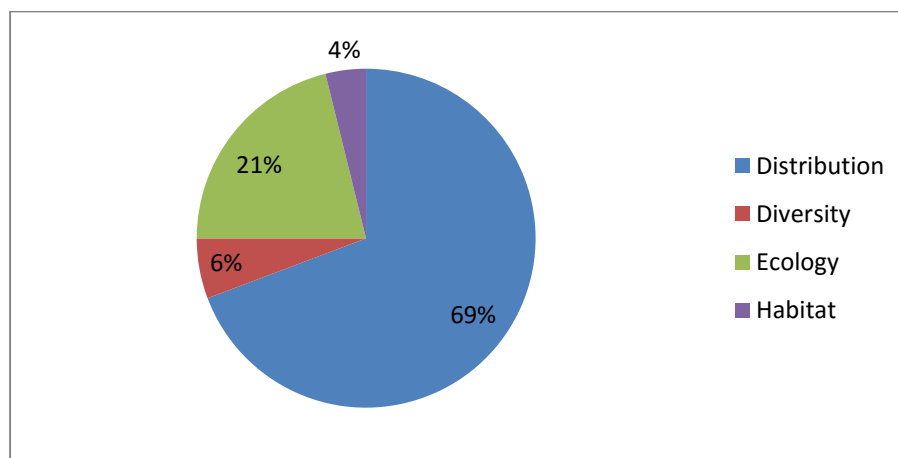


Figure 2 Proportion of studies conducted on various aspects of ornithology in HRML

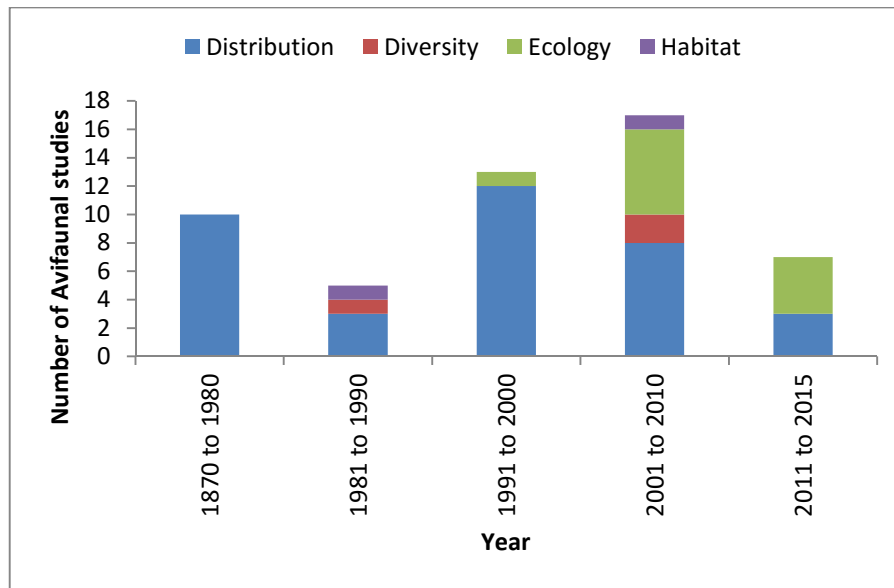


Figure 3 Number of publications on research conducted on the various aspects of ornithology in Munnar HRML from 1970s to the present

## 2.1 STUDIES ON THE DISTRIBUTION OF BIRDS

This first published study of birds in this region is by Hume in 1876, 1878. Other classical literature on the avifauna of the study area includes Ferguson and Bourdillon (1903, 1904a, b) Ali & Whistler (1936), Stoner (1946), Primose (1938). Recent published checklists are available for certain locations of the study area such as Chinnar WLS (Katju 1995, Nameer and George 1991), Idukki (Prasad 1990) Thattakad Bird Sanctuary (Sugathan & Varghese 1996; Sugathan and Sivan 2000; Susanthkumar & Rafeek 1998), Eravikulam National Park (Uthaman 1999). Apart from these many new site reports are also available (Sugathan & Natarajan 1988, Thejaswi 2005, Robertson 1991, Santharam 2009, Praveen and Namassivayan 2006, Mathew and Jijo 2000, Jayachandran 2007). The recent study by Parveen and Nameer (2015) describes the bird communities in Eravikulam NP, Kurinjimala WLS, Pampadum Shola NP, Anamudi Shola NP. Apart from the published information there are many census reports conducted by Kerala forest department and other NGOs are also available.

## 2.2 STUDIES ON THE ECOLOGY AND CONSERVATION OF BIRDS

Studies on the ecology of birds in this region are scarce. (Jaison & Sivaram 2009, Santharam, 2003) (Table 1). Most of the studies were on assessing the habitat of particular species (Robin and Sukumar 2002, Santharam 2003) or in general avifauna (Maheswaran 2011, Prasad and Prasad 1984). The focus of few studies were on the threatened or endemic birds for instance Endangered White-bellied Short wing (Robin and Sukumar 2002) and



Endemic Nilgiri Pipit (Vinod and Vijayan 2011; Sangha 2012). The Habitat and conservation status of particular group of birds such as Forest Owls (Jayson and Ramachandran 1994) and Hornbills (Mudappa and Raman 2008) were also studied. There are few studies which deal with the threats and conservation in the high ranges (Raman 2006, Robin & Sukumar 2002,). In particular, Prasad & Prasad (1984) has assessed the ecological impacts reference to changes in the avifauna of Idukki hydro-electric project area. Kunhikrishnan (2011) describes the destruction of Shola forests for Tea plantations in the last century by the colonies followed by plantations of Black Wattle tree and Eucalyptus are the major reason for degradation of Munnar Hills and its conservation, while Kerala Forest Department (Management Plan 2012) consider the invasive alien species, livestock grazing, Ganja cultivation, hunting and poaching, wild fires, human wildlife conflict, soil erosion, wildlife disease, Firewood and NWFP collection, Road through Tourism zone and Police wireless station are major threats to Munnar Hills

Table 1 Studies on the ecology of Avifauna of HRML

No	Authors	Year	Species	Areas	Remarks
1	Prasad and Prasad	1984	Birds	Idukki	Habitat
2	Jayson and Ramachandran	1994	Black Drongo	Chinnar	Feeding
3	Robin and Sukumar	2002	White-bellied Short wing	Rajamalai	Habitat
4	Santharam	2003	White-bellied Woodpecker	Idukki, Ponmudi	Habitat
5	Mudappa and Raman	2008	Hornbills and Western Ghat endemic birds	Malayattur	Habitat and Conservation
6	Jayson and Sivarajam	2009	Forest Owls	Thattekkad, Chinnar, Eravikulam, Idukki	Habitat, Niche, Behavior
7	Maheswaran	2011	Birds	Western ghats	Habitat
8	Uma and Lalitha	2011	Nilgiri Pipit	Eravikulam	Habitat
9	Sangha	2012	Nilgiri Pipit	Munnar	Feeding
10	Kunhikrishnan	2011	WG Endemic birds	Eravikulam	Threats

### 3 STATUS OF BIRDS OF HIGH RANGES

The Checklist of birds of High ranges were compiled from available published information and most of the information are from the book Birds of Kerala by Sashikumar et al.(2011)

and recently published paper of Praveen & Nameer (2015). Unconfirmed reports of birds were excluded for this compilation. Based on the compiled information there are 305 species of birds recorded from the study area including 15 species of western Ghat endemic species. This also includes one Endangered, five Vulnerable and 10 Near-threatened bird species (IUCN 2015). Among the families Accipitridae (25) recorded maximum number of species followed by Sylviinae (23).

Table 2 Threatened and Near Threatened Birds of High Ranges

	Family	Common name	Species	IUCN Status
1.	Turdinae	White-bellied Shortwing	<i>Myiomela major</i>	EN
2.	Columbidae	Nilgiri Wood-Pigeon	<i>Columba elphinstonii</i>	VU
3.	Accipitridae	Eastern Imperial Eagle	<i>Aquila heliaca</i>	VU
4.	Sylviinae	Broad-tailed Grass-Warbler	<i>Schoenicola platyura</i>	VU
5.	Motacillidae	Nilgiri Pipit	<i>Anthus nilghiriensis</i>	VU
6.	Paridae	Pied Tit	<i>Parus nuchalis Jerdon</i>	VU
7.	Accipitridae	Pallid Harrier	<i>Circus macrourus</i>	NT
8.	Anhingidae	Darter	<i>Anhinga melanogaster</i>	NT
9.	Bucerotidae	Malabar Pied Hornbill	<i>Anthracoceros coronatus</i>	NT
10.	Laridae	River Tern	<i>Sterna aurantia</i>	NT
11.	Muscicapinae	Black-and-Orange Flycatcher	<i>Ficedula nigrorufa</i>	NT
12.	Muscicapinae	Nilgiri Flycatcher	<i>Eumyias albicaudata</i>	NT
13.	Pelecanidae	Spot-billed Pelican	<i>Pelecanus philippensis</i>	NT
14.	Pycnonotidae	Grey-headed Bulbul	<i>Pycnonotus priocephalus</i>	NT
15.	Sylviinae	Tytler's Leaf-Warbler	<i>Phylloscopus tytleri</i>	NT
16.	Muscicapinae	Kashmir Flycatcher	<i>Ficedula subrubra</i>	NT

EN- Endangered; VU- Vulnerable; NT- Near threatened; E- Endemic to Western Ghats

Table 3 Status of Birds in Protected Areas of High Ranges

	Family	Common Name	Scientific Name
1.	Turdinae	White-bellied Shortwing	<i>Myiomela major</i>
2.	Sylviinae	Broad-tailed Grass-Warbler	<i>Schoenicola platyura</i>
3.	Columbidae	Nilgiri Wood-Pigeon	<i>Columba elphinstonii</i>
4.	Motacillidae	Nilgiri Pipit	<i>Anthus nilghiriensis</i>

5.	Pycnonotidae	Grey-headed Bulbul	<i>Pycnonotus priocephalus</i>
6.	Muscicapinae	Black-and-Orange Flycatcher	<i>Ficedula nigrorufa</i>
7.	Muscicapinae	Nilgiri Flycatcher	<i>Eumyias albicaudata</i>
8.	Muscicapinae	White-bellied Blue-Flycatcher	<i>Cyornis pallipes</i>
9.	Nectariniidae	Small Sunbird	<i>Nectarinia minima</i>
10.	Psittacidae	Blue-winged Parakeet	<i>Psittacula columboides</i>
11.	Timaliinae	Wynaad Laughingthrush	<i>Garrulax delesserti</i>
12.	Timaliinae	Grey-breasted Laughingthrush	<i>Garrulax jerdoni</i>
13.	Timaliinae	Indian Rufous Babbler	<i>Turdoides subrufus</i>
14.	Bucerotidae	Malabar Grey Hornbill	<i>Ocyrceros griseus</i>
15.	Corvidae	White-bellied Treepie	<i>Dendrocitta leucogastra</i>

Table 4 Family-wise species richness of birds

	Family Name	No.of Species
1.	Accipitridae	24
2.	Alaudidae	4
3.	Alcedinidae	7
4.	Anatidae	1
5.	Anhingidae	1
6.	Apodidae	7
7.	Ardeidae	11
8.	Artamidae	1
9.	Bucerotidae	2
10.	Campephagidae	7
11.	Capitonidae	4
12.	Caprimulgidae	5
13.	Charadriidae	4
14.	Ciconiidae	1
15.	Columbidae	11
16.	Coraciidae	3
17.	Corvidae	4
18.	Cuculidae	12
19.	Dicaeidae	3

	Family Name	No.of Species
20.	Dicruridae	6
21.	Estrildidae	3
22.	Falconidae	3
23.	Fregatidae	1
24.	Fringillidae	1
25.	Glareolidae	1
26.	Hemiprocnidae	1
27.	Hirundinidae	7
28.	Irenidae	4
29.	Laniidae	3
30.	Laridae	3
31.	Meropidae	4
32.	Monarchinae	2
33.	Motacillidae	10
34.	Muscicapinae	10
35.	Nectariniidae	5
36.	Oriolidae	3
37.	Pandionidae	1
38.	Paridae	3
39.	Passerinae	2
40.	Pelecanidae	1
41.	Phalacrocoracidae	3
42.	Phasianidae	5
43.	Picidae	13
44.	Pittidae	1
45.	Ploceinae	1
46.	Podargidae	1
47.	Podicipedidae	1
48.	Psittacidae	4
49.	Pycnonotidae	8
50.	Rallidae	4
51.	Recurvirostridae	1

	Family Name	No.of Species
52.	Rhipidurinae	2
53.	Scolopacidae	3
54.	Sittidae	2
55.	Strigidae	8
56.	Sturnidae	7
57.	Sylviinae	23
58.	Timaliinae	11
59.	Trogonidae	1
60.	Turdinae	13
61.	Tytonidae	2
62.	Upupidae	1
63.	Zosteropidae	1

## 4 AVIFAUNAL PROFILE OF PROTECTED AREAS IN HIGH RANGES

### 4.1 CHINNAR WILDLIFE SANCTUARY

Chinnar Wildlife Sanctuary was declared as a wildlife sanctuary in 1984 and is located in the eastern part of the High Ranges of southern Western Ghats of Kerala (between 10° 15' to 10° 21' N latitude 77° 05' to 77° 16' E longitude) has an area of 90.44km<sup>2</sup>. The area falls in the Marayoor and Kanthalloor Panchayat of Devikulam Taluk in Idukki District and is regarded as one of the important protected areas in the Western Ghats due to its ecological, floral and geo-morphological significance. The habitat types range from shola-grassland to dry thorny scrub, across a diverse cultural landscape as well, making it unique in comparison with others. At least 217 species of birds were recorded in Chinnar excluding few unconfirmed records. The Family Sylviinae has maximum number of birds species (15) followed by Acciptridae (14).

Table 5 Family wise distribution of birds in Chinnar WLS

	Family	No. of Species
1.	Sylviinae	15
2.	Acciptridae	14
3.	Picidae	12
4.	Timaliinae	11
5.	Columbidae	10
6.	Muscicapinae	10
7.	Cuculidae	9
8.	Turdinae	9
9.	Pycnonotidae	8
10.	Campephagidae	7
11.	Motacillidae	7
12.	Apodidae	6
13.	Dicruridae	6
14.	Hirundinidae	6
15.	Caprimulgidae	5
16.	Nectariniidae	5
17.	Strigidae	5
18.	Sturnidae	5
19.	Capitonidae	4
20.	Corvidae	4
21.	Irenidae	4

	Family	No. of Species
22.	Phasianidae	4
23.	Psittacidae	4
24.	Alcedinidae	3
25.	Ardeidae	3
26.	Dicaeidae	3
27.	Estrildidae	3
28.	Laniidae	3
29.	Meropidae	3
30.	Oriolidae	3
31.	Scolopacidae	3
32.	Alaudidae	2
33.	Falconidae	2
34.	Monarchinae	2
35.	Paridae	2
36.	Passerinae	2
37.	Rhipidurinae	2
38.	Artamidae	1
39.	Bucerotidae	1
40.	Charadriidae	1
41.	Coraciidae	1
42.	Fringillidae	1
43.	Hemiprocnidae	1
44.	Pittidae	1
45.	Rallidae	1
46.	Sittidae	1
47.	Upupidae	1
48.	Zosteropidae	1

Table 6 Threatened, Near Threatened and Western Ghat Endemic birds of Chinnar WLS

Family	Common Name	Scientific Name	Status
1 Columbidae	Nilgiri Wood-Pigeon	<i>Columba elphinstonii</i>	VU & E
2 Motacillidae	Nilgiri Pipit	<i>Anthus nilghiriensis</i>	VU & E
3 Sylviinae	Broad-tailed Grass-Warbler	<i>Schoenicola platyura</i>	VU & E
4 Muscicapinae	Nilgiri Flycatcher	<i>Eumyias albicaudata</i>	NT & E
5 Pycnonotidae	Grey-headed Bulbul	<i>Pycnonotus priocephalus</i>	NT & E
6 Bucerotidae	Malabar Grey Hornbill	<i>Ocyrceros griseus</i>	E
7 Muscicapinae	Black-and-Orange Flycatcher	<i>Ficedula nigrorufa</i>	NT & E
8 Corvidae	White-bellied Treepie	<i>Dendrocitta leucogastra</i>	E
9 Muscicapinae	White-bellied Blue- Flycatcher	<i>Cyornis pallipes</i>	E
1 Nectariniidae	Small Sunbird	<i>Nectarinia minima</i>	E
1 Psittacidae	Blue-winged Parakeet	<i>Psittacula columboides</i>	E
1 Timaliinae	Wynaad Laughingthrush	<i>Garrulax delesserti</i>	E
1 Timaliinae	Grey-breasted Laughingthrush	<i>Garrulax jerdoni</i>	E
1 Timaliinae	Indian Rufous Babbler	<i>Turdoides subrufus</i>	E

EN- Endangered; VU- Vulnerable; NT- Near threatened; E- Endemic to Western Ghats

#### 4.2 ERAVIKULAM NATIONAL PARK

Eravikulam National Park is located in the High Ranges (Kannan Devan Hills) of the Southern Western Ghats in the Devikulam Taluk of Idukki district, Kerala State between 10° 05' - 10° 20' N Latitude and 77° 0' - 77° 10' E Longitude. Eravikulam National Park is 97 km<sup>2</sup> in extent and consisting mostly of high altitude grasslands that are interspersed with sholas. The main body of the National Park comprises of a high rolling plateau with a base elevation of about 2000 meters from mean sea level. The Park is of undulating terrain and the highest peak is Anamudi (2695 m). Three major types of plant communities are found in the Park- grasslands, shrub land and shola forests. The high plateau and the hills rising above it are primarily covered by grasslands. Shrub lands are seen along the bases of the cliffs. Shola forests are located in the valleys and folds. Turner's valley, which splits the Park roughly in half from North West to southeast, is the deepest. At least 129 species of birds were recorded in Chinnar excluding few unconfirmed records. The Family Sylviinae has maximum number



of birds species (16) followed by Acciptridae (15) and Turdinae (10). Among the 129 species of birds 11 species were endemic to Western Ghats.

Table 7 Family wise distribution of birds in Eravikulam NP

	Family	No. of Species
1.	Sylviinae	16
2.	Accipitridae	15
3.	Turdinae	10
4.	Timaliinae	7
5.	Apodidae	6
6.	Motacillidae	6
7.	Muscicapinae	6
8.	Pycnonotidae	6
9.	Columbidae	5
10.	Hirundinidae	5
11.	Picidae	5
12.	Caprimulgidae	3
13.	Cuculidae	3
14.	Dicaeidae	3
15.	Dicruridae	3
16.	Nectariniidae	3
17.	Alaudidae	2
18.	Falconidae	2
19.	Irenidae	2
20.	Laniidae	2
21.	Meropidae	2
22.	Monarchinae	2
23.	Paridae	2
24.	Phasianidae	2
25.	Alcedinidae	1
26.	Capitonidae	1
27.	Corvidae	1
28.	Fringillidae	1
29.	Oriolidae	1

30.	Scolopacidae	1
31.	Sittidae	1
32.	Sturnidae	1
33.	Tytonidae	1
34.	Zosteropidae	1

Table 8 Threatened, Near Threatened and Western Ghat Endemic birds of Eravikulam NP

	Family	Common Name	Scientific Name	Status
1.	Turdinae	White-bellied Shortwing	<i>Myiomela major</i>	EN & E
2.	Sylviinae	Broad-tailed Grass-Warbler	<i>Schoenicola platyura</i>	VU & E
3.	Columbidae	Nilgiri Wood-Pigeon	<i>Columba elphinstonii</i>	VU & E
4.	Motacillidae	Nilgiri Pipit	<i>Anthus nilghiriensis</i>	VU & E
5.	Accipitridae	Eastern Imperial Eagle	<i>Aquila heliaca</i>	VU
6.	Muscicapinae	Nilgiri Flycatcher	<i>Eumyias albicaudata</i>	NT & E
7.	Muscicapinae	Black-and-Orange Flycatcher	<i>Ficedula nigrorufa</i>	NT & E
8.	Pycnonotidae	Grey-headed Bulbul	<i>Pycnonotus priocephalus</i>	NT & E
9.	Sylviinae	Tytler's Leaf-Warbler	<i>Phylloscopus tytleri</i>	NT
10.	Accipitridae	Pallid Harrier	<i>Circus macrourus</i>	NT
11.	Muscicapinae	Kashmir Flycatcher	<i>Ficedula subrubra</i>	NT
12.	Muscicapinae	White-bellied Blue-Flycatcher	<i>Cyornis pallipes</i>	E
13.	Nectariniidae	Small Sunbird	<i>Nectarinia minima</i>	E
14.	Timaliinae	Grey-breasted Laughing thrush	<i>Garrulax jerdoni</i>	E
15.	Timaliinae	Indian Rufous Babbler	<i>Turdoides subrufus</i>	E

EN- Endangered; VU- Vulnerable; NT- Near threatened; E- Endemic to Western Ghats

### 4.3 THATTEKKAD BIRD SANCTUARY

Thattekkad Bird Sanctuary falls between 100 7' and 110N latitude and 76040' and 76045'E longitude and is located in the Kerala State, Ernakulam District, Kothamangalam Taluk. The area was previously part of Kuttampuzha Section of Kuttampuzha Range under Malayattoor Division and presently under Idukki Wildlife Division. Thattekkad is the first Bird Sanctuary in Kerala and is a heaven for nature lovers and Bird watchers with a wide variety of flora and fauna. Dr Salim Ali recognized the species richness of Thattekkad, particularly Birds, as one of the richest he had everseen. He had recorded 167 species of Birds during his survey in

1933. Based on the Sashikumar et al 2011 at least 227 species are there including vulnerable and endemic Nilgiri Wood Pigeon. Among the 227 birds 10 species are endemic to Western Ghats.

Table 9 Family wise distribution of birds in Thattekkad Bird Sanctuary

	Family	No.Species
1.	Accipitridae	16
2.	Picidae	12
3.	Sylviinae	11
4.	Ardeidae	10
5.	Cuculidae	10
6.	Turdinae	9
7.	Columbidae	8
8.	Muscicapinae	8
9.	Timaliinae	8
10.	Campephagidae	7
11.	Pycnonotidae	7
12.	Strigidae	7
13.	Sturnidae	7
14.	Alcedinidae	6
15.	Apodidae	6
16.	Caprimulgidae	5
17.	Dicruridae	5
18.	Motacillidae	5
19.	Nectariniidae	5
20.	Corvidae	4
21.	Irenidae	4
22.	Meropidae	4
23.	Psittacidae	4
24.	Rallidae	4
25.	Capitonidae	3
26.	Dicaeidae	3
27.	Hirundinidae	3
28.	Laridae	3

29.	Oriolidae	3
30.	Phalacrocoracidae	3
31.	Bucerotidae	2
32.	Coraciidae	2
33.	Estrildidae	2
34.	Monarchinae	2
35.	Paridae	2
36.	Passerinae	2
37.	Phasianidae	2
38.	Scolopacidae	2
39.	Anhingidae	1
40.	Artamidae	1
41.	Charadriidae	1
42.	Ciconiidae	1
43.	Falconidae	1
44.	Fregatidae	1
45.	Fringillidae	1
46.	Glareolidae	1
47.	Hemiprocnidae	1
48.	Laniidae	1
49.	Pelecanidae	1
50.	Pittidae	1
51.	Ploceinae	1
52.	Podargidae	1
53.	Podicipedidae	1
54.	Sittidae	1
55.	Trogonidae	1
56.	Tytonidae	1
57.	Upupidae	1
58.	Zosteropidae	1

Table 10 Threatened, Near Threatened and Western Ghat Endemic birds of Thattekkad Bird Sanctuary

Family	Common Name	Scientific Name	Status
Columbidae	Nilgiri Wood-Pigeon	<i>Columba elphinstonii</i>	VU & E
Pycnonotidae	Grey-headed Bulbul	<i>Pycnonotus priocephalus</i>	NT & E
Muscicapinae	Nilgiri Flycatcher	<i>Eumyias albicaudata</i>	NT & E
Anhingidae	Darter	<i>Anhinga melanogaster</i>	NT
Bucerotidae	Malabar Pied Hornbill	<i>Anthracoceros coronatus</i>	NT
Laridae	River Tern	<i>Sterna aurantia</i>	NT
Pelecanidae	Spot-billed Pelican	<i>Pelecanus philippensis</i>	NT
Bucerotidae	Malabar Grey Hornbill	<i>Ocyeros griseus</i>	E
Corvidae	White-bellied Treepie	<i>Dendrocitta leucogastra</i>	E
Muscicapinae	White-bellied Blue-flycatcher	<i>Cyornis pallipes</i>	E
Nectariniidae	Small Sunbird	<i>Nectarinia minima</i>	E
Psittacidae	Blue-winged Parakeet	<i>Psittacula columboides</i>	E
Timaliinae	Wynaad Laughing thrush	<i>Garrulax delesserti</i>	E
Timaliinae	Indian Rufous Babbler	<i>Turdoides subrufus</i>	E

EN- Endangered; VU- Vulnerable; NT- Near threatened; E- Endemic to Western Ghats

#### 4.4 KURINJIMALAI WILDLIFE SANCTUARY

Kurinjalama Sanctuary was notified with objective of long term conservation of plant species namely Neelakurinji (*Strobilanthus kunthianus*). The Sanctuary is located on the eastern slopes of the Vattavada valley of the High Ranges of the Southern Western Ghats of Kerala and shares its boundary with Kodaikanal Forest Division of Tamil Nadu. It is located 40 Kms away from Munnar town. The approximate extent is 32Sqkm. Kurinjimala Sanctuary is located in the uppermost regions of the southern Western Ghats between High Ranges and the Palani Hills. The area is home to vast stretches of *Neelakurinji*, a shrubby flowering plant which flowers gregariously flowering once in twelve years and convert the entire valleys with a blanket of bluish flowers. The beauty of gregarious flowering of *Neelakurinji* attracts thousand to the valley. At least 70 species of birds were recorded in Kurunjimalai excluding few unconfirmed records. The Family Muscicapinae (7) has maximum number of birds species (16) followed by Turdinae (6) and Columbidae (5). Seven Western Ghat endemic birds are also included in the list.

Table 11 Family wise distribution of birds in Kurunjimalai wildlife Sanctuary

	Family	No.Species
1.	Muscicapinae	7
2.	Turdinae	6
3.	Columbidae	5
4.	Sylviinae	4
5.	Campephagidae	3
6.	Picidae	3
7.	Pycnonotidae	3
8.	Timaliinae	3
9.	Accipitridae	2
10.	Ardeidae	2
11.	Capitonidae	2
12.	Dicaeidae	2
13.	Dicruridae	2
14.	Irenidae	2
15.	Motacillidae	2
16.	Nectariniidae	2
17.	Paridae	2
18.	Psittacidae	2
19.	Sturnidae	2
20.	Alcedinidae	1
21.	Apodidae	1
22.	Charadriidae	1
23.	Corvidae	1
24.	Cuculidae	1
25.	Fringillidae	1
26.	Hirundinidae	1
27.	Laniidae	1
28.	Meropidae	1
29.	Oriolidae	1
30.	Phasianidae	1
31.	Scolopacidae	1
32.	Sittidae	1
33.	Trogonidae	1

Table 12 Threatened, Near Threatened and Western Ghat Endemic birds of Kurunjimalai Wild Sanctuary

Family	Common Name	Scientific Name	Status
1. Columbidae	Nilgiri Wood-Pigeon	<i>Columba elphinstonii</i>	VU & E
2. Motacillidae	Nilgiri Pipit	<i>Anthus nilghiriensis</i>	VU & E

3. Muscicapinae	Nilgiri Flycatcher	<i>Eumyias albicaudata</i>	NT & E
4. Muscicapinae	Black-and-Orange Flycatcher	<i>Ficedula nigrorufa</i>	NT & E
5. Nectariniidae	Small Sunbird	<i>Nectarinia minima</i>	E
6. Psittacidae	Blue-winged Parakeet	<i>Psittacula columboides</i>	E
7. Timaliinae	Grey-breasted Laughingthrush	<i>Garrulax jerdoni</i>	E

EN- Endangered; VU- Vulnerable; NT- Near threatened; E- Endemic to Western Ghats;

#### 4.5 IDUKKI WILDLIFE SANCTUARY

The sanctuary is a fragmented part of the High Range forests separated from the main tract of vegetation extending between Munnar Hills which includes Eravikulam National Park, Shola National Parks, Kurinjimala Sanctuary and Chinnar Wildlife Sanctuary and Periyar Tiger Reserve. Idukki Wildlife Sanctuary is an isolated patch of forests which was cut off from the adjacent areas due to development process and habitat destruction. The entire sanctuary forms the catchment area of the Idukki Hydro Electric Project. 217 species of birds are recorded from this sanctuary including 13 western hat endemic species. Among the families Accipitridae accounts for maximum number of species (14) followed by Cuculidae (11) and Muscicapinae (10).

Table 13 Family wise distribution of birds in Idukki wildlife Sanctuary

No	Family	No.of Species
1.	Accipitridae	14
2.	Cuculidae	11
3.	Muscicapinae	10
4.	Sylviinae	10
5.	Picidae	9
6.	Turdinae	9
7.	Ardeidae	8
8.	Columbidae	8
9.	Campephagidae	7
10.	Pycnonotidae	7
11.	Timaliinae	7
12.	Apodidae	6
13.	Dicruridae	6
14.	Motacillidae	6

No	Family	No.of Species
15.	Sturnidae	6
16.	Nectariniidae	5
17.	Strigidae	5
18.	Alcedinidae	4
19.	Charadriidae	4
20.	Corvidae	4
21.	Hirundinidae	4
22.	Irenidae	4
23.	Meropidae	4
24.	Phasianidae	4
25.	Psittacidae	4
26.	Capitonidae	3
27.	Caprimulgidae	3
28.	Dicaeidae	3
29.	Estrildidae	3
30.	Oriolidae	3
31.	Phalacrocoracidae	3
32.	Scolopacidae	3
33.	Laniidae	2
34.	Laridae	2
35.	Monarchinae	2
36.	Paridae	2
37.	Passerinae	2
38.	Sittidae	2
39.	Anatidae	1
40.	Anhingidae	1
41.	Artamidae	1
42.	Bucerotidae	1
43.	Coraciidae	1
44.	Falconidae	1
45.	Fringillidae	1
46.	Hemiprocnidae	1



No	Family	No.of Species
47.	Pandionidae	1
48.	Pittidae	1
49.	Ploceinae	1
50.	Podicipedidae	1
51.	Rallidae	1
52.	Recurvirostridae	1
53.	Rhipidurinae	1
54.	Trogonidae	1
55.	Upupidae	1
56.	Zosteropidae	1

Table 14 Threatened, Near Threatened and Western Ghat Endemic birds of Idukki WLS

	Family	Common Name	Scientific Name	Status
1.	Columbidae	Nilgiri Wood-Pigeon	<i>Columba elphinstonii</i>	VU & E
2.	Laridae	River Tern	<i>Sterna aurantia</i>	NT & E
3.	Muscicapinae	Nilgiri Flycatcher	<i>Eumyias albicaudata</i>	NT & E
4.	Pycnonotidae	Grey-headed Bulbul	<i>Pycnonotus priocephalus</i>	NT & E
5.	Muscicapinae	Black-and-Orange Flycatcher	<i>Ficedula nigrorufa</i>	NT & E
6.	Accipitridae	Pallid Harrier	<i>Circus macrourus</i>	NT
7.	Anhingidae	Darter	<i>Anhinga melanogaster</i>	NT
8.	Bucerotidae	Malabar Grey Hornbill	<i>Ocyeros griseus</i>	E
9.	Columbidae	Nilgiri Wood-Pigeon	<i>Columba elphinstonii</i>	E
10.	Corvidae	White-bellied Treepie	<i>Dendrocitta leucogastra</i>	E
11.	Muscicapinae	White-bellied Blue-Flycatcher	<i>Cyornis pallipes</i>	E
12.	Nectariniidae	Small Sunbird	<i>Nectarinia minima</i>	E
13.	Psittacidae	Blue-winged Parakeet	<i>Psittacula columboides</i>	E
14.	Timaliinae	Wynaad Laughingthrush	<i>Garrulax delesserti</i>	E
15.	Timaliinae	Indian Rufous Babbler	<i>Turdoides subrufus</i>	E

EN- Endangered; VU- Vulnerable; NT- Near threatened; E- Endemic to Western Ghats;

#### **4.6 ANAIMUDI SHOLA NATIONAL PARK**

The NP is located between 10 10' to 10 12' 18" N Latitude and 77 09' 50" to 77 12' 18" E. Longitude in the Devikulam Taluk of Idukki district at an altitude of 1600 m to 2400 m. It is closely to the Munnar hill station (40 km). The National Park represents a unique ecosystem of Shola forests noted for wide presence of tree ferns. It is rich in term of biodiversity and has a high conservation value in term of geo-morphology and hydrology. These forests with adjoining forest areas form a vast stretch of forest cover in the very fragile high range ecosystem. 41 species of birds were recorded from this National park including Vulnerable and Endemic Nilgiri Wood-Pigeon and Nilgiri Pipit. Among the 41 species five were endemic to the Western Ghats.

Table 15 Threatened, Near Threatened and Western Ghat Endemic birds of Anaimudi Shola National Park

No	Family	Common Name	Scientific Name	Status
1.	Columbidae	Nilgiri Wood-Pigeon	<i>Columba elphinstonii</i>	VU & E
2.	Motacillidae	Nilgiri Pipit	<i>Anthus nilghiriensis</i>	VU & E
3.	Muscicapinae	Nilgiri Flycatcher	<i>Eumyias albicaudata</i>	NT & E
4.	Muscicapinae	Black-and-Orange Flycatcher	<i>Ficedula nigrorufa</i>	E
5.	Timaliinae	Grey-breasted Laughing thrush	<i>Garrulax jerdoni</i>	E

EN- Endangered; VU- Vulnerable; NT- Near threatened; E- Endemic to Western Ghats;

#### 4.7 PAPMPADUM SHOLA NATIONAL PARK

Pampadum Shola NP is with 11.753 sq.km dense pristine forests located in the Eastern part of the South-Western Ghat bordering Tata Tea plantations and Tamil Nadu. Terrain is undulating with hillocks of varying heights, the altitude ranges between 1600 to 2400 m. The National Park is conserved as a representative habitat of high altitude shola forests. The streams originates from here is the only source of water to the people in and around Vattavada for drinking and irrigation. These streams also form the tributaries of east flowing river Pambar. The grassland ecosystem in the Park is very rich in term of biodiversity. A Total of 68 bird species were recorded from the National park which includes Endangered and endemic White-bellied Short wing and Vulnerable Nilgiri Wood Pigeon. Six species of Western Ghat endemic birds are also in the list.

Table 16 Threatened, Near Threatened and Western Ghat Endemic birds of Papmpadum shola National Park

No	Family	Common Name	Scientific Name	Status
1.	Turdinae	White-bellied Shortwing	<i>Myiomela major</i>	EN & E
2.	Columbidae	Nilgiri Wood-Pigeon	<i>Columba elphinstonii</i>	VU & E
3.	Muscicapinae	Nilgiri Flycatcher	<i>Eumyias albicaudata</i>	NT & E
4.	Muscicapinae	Black-and-Orange Flycatcher	<i>Ficedula nigrorufa</i>	E
5.	Nectariniidae	Small Sunbird	<i>Nectarinia minima</i>	E
6.	Timaliinae	Grey-breasted Laughingthrush	<i>Garrulax jerdoni</i>	E

EN- Endangered; VU- Vulnerable; NT- Near threatened; E- Endemic to Western Ghats;

#### 4.8 MUNNAR HILLS

Munnar Hills (10.083°–10.333°N, 77.000°–77.617°E), forming part of the High Ranges of Western Ghats, also known as the Kannan Devan Hill. Munnar Hills enjoy a tropical montane climate. The average annual rainfall is *c.* 5000–6500 mm. The area receives both the south-west, as well as the north-east monsoons. The mean monthly minimum temperature is 11.9°C, while the mean monthly maximum temperature is 22.5°C. These hills are covered with about 100 yrs old tea plantations and in some parts *Eucalyptus* plantations which serve as fuel for tea processing factories. There are 97 species of birds were recorded from the study area including 13 western Ghat endemic bird species. Among the Family Sylviinae recorded maximum number of species followed by Muscicapinae.

Table 17 Family wise distribution of birds in Idukki wildlife Sanctuary

	Family	Number of Species
1.	Sylviinae	10
2.	Muscicapinae	8
3.	Accipitridae	7
4.	Columbidae	6
5.	Timaliinae	6
6.	Turdinae	5
7.	Picidae	4
8.	Apodidae	3
9.	Campephagidae	3
10.	Hirundinidae	3
11.	Irenidae	3
12.	Pycnonotidae	3
13.	Ardeidae	2
14.	Capitonidae	2
15.	Cuculidae	2
16.	Dicaeidae	2
17.	Falconidae	2
18.	Laniidae	2
19.	Motacillidae	2
20.	Nectariniidae	2
21.	Paridae	2

22.	Phasianidae	2
23.	Psittacidae	2
24.	Sturnidae	2
25.	Alaudidae	1
26.	Alcedinidae	1
27.	Charadriidae	1
28.	Corvidae	1
29.	Fringillidae	1
30.	Meropidae	1
31.	Oriolidae	1
32.	Passerinae	1
33.	Scolopacidae	1
34.	Sittidae	1
35.	Trogonidae	1
36.	Zosteropidae	1

Table 18 Threatened, Near Threatened and Western Ghat Endemic birds of Munnar Hills

Family	Common Name	Scientific Name	Status
1. Turdinae	White-bellied Shortwing	<i>Myiomela major</i>	EN & E
2. Columbidae	Nilgiri Wood-Pigeon	<i>Columba elphinstonii</i>	VU & E
3. Motacillidae	Nilgiri Pipit	<i>Anthus nilghiriensis</i>	VU & E
4. Sylviinae	Broad-tailed Grass-Warbler	<i>Schoenicola platyura</i>	VU & E
5. Muscicapinae	Nilgiri Flycatcher	<i>Eumyias albicaudata</i>	NT & E
6. Sylviinae	Tytler's Leaf-Warbler	<i>Phylloscopus tytleri</i>	NT & E
7. Muscicapinae	Black-and-Orange Flycatcher	<i>Ficedula nigrorufa</i>	E
8. Muscicapinae	White-bellied Blue-Flycatcher	<i>Cyornis pallipes</i>	E
9. Nectariniidae	Small Sunbird	<i>Nectarinia minima</i>	E
10. Psittacidae	Blue-winged Parakeet	<i>Psittacula columboides</i>	E
1. Timaliinae	Wynaad Laughing thrush	<i>Garrulax delesserti</i>	E
1. Timaliinae	Grey-breasted Laughing thrush	<i>Garrulax jerdoni</i>	E
1. Timaliinae	Indian Rufous Babbler	<i>Turdoides subrufus</i>	E

EN- Endangered; VU- Vulnerable; NT- Near threatened; E- Endemic to Western Ghats;

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Annexure 1. Consolidated Checklist of birds of study areas

No	Common name	Species	I-WLS	MH	C-WLS	E-NP	T-BS	K-WLS	A-NP	P-NP
1	Jerdon's Baza	<i>Aviceda jerdoni</i>				x				
2	Black Baza	<i>Aviceda leuphotes</i>	x		x		x			
3	Oriental Honey-Buzzard	<i>Pernis ptilorhynchus</i>	x	x	x	x	x			
4	Black-shouldered Kite	<i>Elanus caeruleus</i>	x	x	x	x	x			
5	Black Kite	<i>Milvus migrans</i>	x							
6	Brahminy Kite	<i>Haliastur indus</i>	x				x			
7	Greater Grey-headed Fish-Eagle	<i>Ichthyophaga ichhyaetus</i>	x				x	x		
8	Short-toed Snake-Eagle	<i>Circaetus gallicus</i>			x	x				
9	Crested Serpent-Eagle	<i>Spilornis cheela</i>	x	x	x	x	x			
10	Pallid Harrier	<i>Circus macrourus</i>	x			x				
11	Montagu's Harrier	<i>Circus pygargus</i>				x				
12	Crested Goshawk	<i>Accipiter trivirgatus</i>	x	x		x	x			
13	Shikra	<i>Accipiter badius</i>	x		x	x	x			
14	Besra Sparrowhawk	<i>Accipiter virgatus</i>			x		x			
15	Eurasian Sparrowhawk	<i>Accipiter nisus</i>			x					
16	White-eyed Buzzard	<i>Butastur teesa</i>			x					
17	Common Buzzard	<i>Buteo buteo</i>	x	x	x	x	x			
18	Black Eagle	<i>Ictinaetus malayensis</i>	x	x	x	x	x			
19	Eastern Imperial Eagle	<i>Aquila heliaca</i>				x				
20	Bonelli's Eagle	<i>Hieraaetus fasciatus</i>			x		x			
21	Booted Eagle	<i>Hieraaetus pennatus</i>				x	x			
22	Rufous-bellied Eagle	<i>Hieraaetus kienerii</i>				x	x			
23	Changeable Hawk-Eagle	<i>Spizaetus cirrhatus</i>	x	x	x	x	x	x		
24	Mountain Hawk-Eagle	<i>Spizaetus nipalensis</i>					x			
25	Ashy-crowned Sparrow-Lark	<i>Eremopterix grisea</i>			x					
26	Greater Short-toed Lark	<i>Calandrella brachydactyla</i>			x					

No	Common name	Species	I-WLS	MH	C-WLS	E-NP	T-BS	K-WLS	A-NP	P-NP
27	Malabar Crested Lark	<i>Galerida malabarica</i>				x				
28	Eurasian Skylark	<i>Alauda arvensis</i>		x		x				
29	Small Blue Kingfisher	<i>Alcedo atthis</i>	x		x		x			
30	Blue-eared Kingfisher	<i>Alcedo meninting</i>							x	
31	Oriental Dwarf Kingfisher	<i>Ceyx erithacus</i>					x			
32	Stork-billed Kingfisher	<i>Halcyon capensis</i>	x		x		x			
33	White-breasted Kingfisher	<i>Halcyon smyrnensis</i>	x	x	x	x	x	x		
34	Black-capped Kingfisher	<i>Halcyon pileata</i>					x			
35	Lesser Pied Kingfisher	<i>Ceryle rudis</i>	x				x			
36	Lesser Whistling-Duck	<i>Dendrocygna javanica</i>	x							
37	Darter	<i>Anhinga melanogaster</i>	x				x			
38	Indian Edible-nest Swiftlet	<i>Collocalia unicolor</i>	x	x	x	x	x	x		
39	White-rumped Needletail-Swift	<i>Zoonavena sylvatica</i>	x	x	x	x	x			
40	Brown-backed Needletail-Swift	<i>Hirundapus giganteus</i>	x		x	x	x			
41	Asian Palm-Swift	<i>Cypsiurus balasiensis</i>	x		x		x			
42	Alpine Swift	<i>Tachymarptis melba</i>	x		x	x	x			
43	Pacific Swift	<i>Apus pacificus</i>		x		x				
44	House Swift	<i>Apus affinis</i>	x		x	x	x			
45	Little Egret	<i>Egretta garzetta</i>	x		x		x			
46	Purple Heron	<i>Ardea purpurea</i>					x			
47	Large Egret	<i>Casmerodius albus</i>	x				x			
48	Median Egret	<i>Mesophoyx intermedia</i>	x				x			
49	Cattle Egret	<i>Bubulcus ibis</i>	x	x			x	x		
50	Indian Pond-Heron	<i>Ardeola grayii</i>	x	x	x		x	x		
51	Little Green Heron	<i>Butorides striatus</i>	x				x			
52	Black-crowned Night-Heron	<i>Nycticorax nycticorax</i>	x							

No	Common name	Species	I-WLS	MH	C-WLS	E-NP	T-BS	K-WLS	A-NP	P-NP
53	Malayan Night-Heron	<i>Gorsachius melanolophus</i>			X		X			
54	Chestnut Bittern	<i>Ixobrychus cinnamomeus</i>	X				X			
55	Black Bittern	<i>Dupetor flavicollis</i>	X				X			
56	Ashy Woodswallow	<i>Artamus fuscus</i>	X		X		X			
57	Malabar Grey Hornbill	<i>Ocyrceros griseus</i>	X		X		X			
58	Malabar Pied Hornbill	<i>Anthracoceros coronatus</i>					X			
59	Large Cuckoo-Shrike	<i>Coracina macei</i>	X		X		X			
60	Black-headed Cuckoo-Shrike	<i>Coracina melanoptera</i>	X		X		X			
61	Small Minivet	<i>Pericrocotus cinnamomeus</i>	X		X		X			
62	Scarlet Minivet	<i>Pericrocotus flammeus</i>	X	X	X	X	X	X	X	
63	Pied Flycatcher-Shrike	<i>Hemipus picatus</i>	X	X	X	X	X	X	X	X
64	Large Woodshrike	<i>Tephrodornis gularis</i>	X	X	X		X	X		
65	Common Woodshrike	<i>Tephrodornis pondicerianus</i>	X		X		X			
66	Brown-headed Barbet	<i>Megalaima zeylanica</i>			X					
67	White-cheeked Barbet	<i>Megalaima viridis</i>	X	X	X	X	X	X	X	X
68	Crimson-throated Barbet	<i>Megalaima rubricapilla</i>	X	X	X		X	X		
69	Coppersmith Barbet	<i>Megalaima haemacephala</i>	X		X		X			
70	Great Eared-Nightjar	<i>Eurostopodus macrotis</i>			X		X			
71	Indian Jungle Nightjar	<i>Caprimulgus indicus</i>	X		X	X	X			
72	Jerdon's Nightjar	<i>Caprimulgus atripennis</i>			X	X	X			
73	Common Indian Nightjar	<i>Caprimulgus asiaticus</i>	X		X	X	X			
74	Franklin's Nightjar	<i>Caprimulgus affinis</i>	X		X		X			
75	Little Ringed Plover	<i>Charadrius dubius</i>	X							
76	Kentish Plover	<i>Charadrius alexandrinus</i>	X							
77	Yellow-wattled Lapwing	<i>Vanellus malabaricus</i>	X							
78	Red-wattled Lapwing	<i>Vanellus indicus</i>	X	X	X		X	X		
79	Asian Openbill-Stork	<i>Anastomus oscitans</i>					X			

No	Common name	Species	I-WLS	MH	C-WLS	E-NP	T-BS	K-WLS	A-NP	P-NP
80	Blue Rock Pigeon	<i>Columba livia Gmelin</i>	x	x	x		x			
81	Nilgiri Wood-Pigeon	<i>Columba elphinstonii</i>	x	x	x	x	x	x		
82	Oriental Turtle-Dove	<i>Streptopelia orientalis</i>					x			
83	Little Brown Dove	<i>Streptopelia senegalensis</i>			x					
84	Spotted Dove	<i>Streptopelia chinensis</i>	x	x	x	x	x	x		
85	Eurasian Collared-Dove	<i>Streptopelia decaocto</i>			x					
86	Emerald Dove	<i>Chalcophaps indica</i>	x	x	x	x	x	x		
87	Pompadour Green-Pigeon	<i>Treron pompadora</i>	x	x	x		x	x		
88	Yellow-legged Green-Pigeon	<i>Treron phoenicoptera</i>	x		x					
89	Green Imperial-Pigeon	<i>Ducula aenea</i>	x		x	x	x			
90	Mountain Imperial-Pigeon	<i>Ducula badia</i>	x	x	x	x	x	x		
91	European Roller	<i>Coracias garrulus</i>			x					
92	Indian Roller	<i>Coracias benghalensis</i>	x		x		x			
93	Oriental Broad-billed Roller	<i>Eurystomus orientalis</i>					x			
94	Indian Treepie	<i>Dendrocitta vagabunda</i>	x		x		x			
95	White-bellied Treepie	<i>Dendrocitta leucogastra</i>	x		x		x			
96	House Crow	<i>Corvus splendens</i>	x		x		x		x	
97	Jungle Crow	<i>Corvus macrorhynchos</i>	x	x	x	x	x	x	x	
98	Pied Crested Cuckoo	<i>Clamator jacobinus</i>	x		x		x			
99	Red-winged Crested Cuckoo	<i>Clamator coromandus</i>	x				x			
100	Brainfever Bird	<i>Hierococcyx varius</i>	x		x		x			
101	Indian Cuckoo	<i>Cuculus micropterus</i>	x			x	x			
102	Banded Bay Cuckoo	<i>Cacomantis sonneratii</i>	x		x		x			
103	Indian Plaintive Cuckoo	<i>Cacomantis passerinus</i>	x		x		x			
104	Drongo Cuckoo	<i>Surniculus lugubris</i>	x		x		x			
105	Asian Koel	<i>Eudynamys scolopacea</i>	x		x		x			

No	Common name	Species	I-WLS	MH	C-WLS	E-NP	T-BS	K-WLS	A-NP	P-NP
106	Small Green-billed Malkoha	<i>Phaenicophaeus viridirostris</i>	x		x		x			
107	Sirkeer Malkoha	<i>Phaenicophaeus leschenaultii</i>			x					
108	Greater Coucal	<i>Centropus sinensis</i>	x	x	x	x	x	x		
109	Lesser Coucal	<i>Centropus bengalensis</i>	x	x		x				
110	Thick-billed Flowerpecker	<i>Dicaeum agile</i>	x		x	x	x			
111	Tickell's Flowerpecker	<i>Dicaeum erythrorhynchos</i>	x	x	x	x	x	x		
112	Plain Flowerpecker	<i>Dicaeum concolor</i>	x	x	x	x	x	x	x	x
113	Black Drongo	<i>Dicrurus macrocercus</i>	x		x		x			
114	Ashy Drongo	<i>Dicrurus leucophaeus</i>	x		x	x	x	x	x	
115	White-bellied Drongo	<i>Dicrurus caerulescens</i>	x		x					
116	Bronzed Drongo	<i>Dicrurus aeneus Vieillot</i>	x		x	x	x			
117	Spangled Drongo	<i>Dicrurus hottentottus</i>	x		x		x			
118	Greater Racket-tailed Drongo	<i>Dicrurus paradiseus</i>	x		x		x	x		
119	White-rumped Munia	<i>Lonchura striata</i>	x		x		x			
120	Black-throated Munia	<i>Lonchura kelaarti</i>	x		x		x		x	
121	Spotted Munia	<i>Lonchura punctulata</i>	x		x					
122	Lesser Kestrel	<i>Falco naumanni Fleischer</i>				x				
123	Common Kestrel	<i>Falco tinnunculus</i>	x	x	x	x	x		x	x
124	Peregrine Falcon	<i>Falco peregrinus peregrinator</i>		x	x	x				
125	Lesser Frigatebird	<i>Fregata ariel</i>					x			
126	Common Rosefinch	<i>Carpodacus erythrinus</i>	x	x	x	x	x	x	x	x
127	Small Pratincole	<i>Glareola lactea</i>					x			
128	Crested Tree-Swift	<i>Hemiprocne coronata</i>	x		x		x			
129	Dusky Crag-Martin	<i>Hirundo concolor</i>	x	x	x	x	x			
130	Common Swallow	<i>Hirundo rustica</i>	x		x	x	x			

No	Common name	Species	I-WLS	MH	C-WLS	E-NP	T-BS	K-WLS	A-NP	P-NP
131	House Swallow	<i>Hirundo tahitica</i>	x	x	x	x				
132	Red-rumped Swallow	<i>Hirundo daurica</i>	x	x	x	x	x	x		
133	Streak-throated Swallow	<i>Hirundo fluvicola</i>			x	x				
134	Northern House-Martin	<i>Delichon urbica</i>			x					
135	Common Iora	<i>Aegithina tiphia</i>	x	x	x	x	x	x		
136	Jerdon's Chloropsis	<i>Chloropsis cochinchinensis</i>	x		x		x			
137	Gold-fronted Chloropsis	<i>Chloropsis aurifrons</i>	x	x	x		x	x		
138	Asian Fairy-Bluebird	<i>Irena puella</i>	x	x	x	x	x		x	
139	Brown Shrike	<i>Lanius cristatus</i>	x	x	x	x	x			
140	Bay-backed Shrike	<i>Lanius vittatus</i>			x					
141	Rufous-backed Shrike	<i>Lanius schach</i>	x	x	x	x		x	x	x
142	River Tern	<i>Sterna aurantia</i>	x				x			
143	Whiskered Tern	<i>Chlidonias hybridus</i>	x				x			
144	White-winged Black Tern	<i>Chlidonias leucopterus</i>					x			
145	Small Bee-eater	<i>Merops orientalis</i>	x		x	x	x	x	x	
146	Blue-tailed Bee-eater	<i>Merops philippinus</i>	x				x			
147	Chestnut-headed Bee-eater	<i>Merops leschenaulti</i>	x	x	x	x	x			
148	Asian Paradise-Flycatcher	<i>Terpsiphone paradisi</i>	x		x	x	x			
149	Black-naped Monarch-Flycatcher	<i>Hypothymis azurea</i>	x		x	x	x			
150	Forest Wagtail	<i>Dendronanthus indicus</i>	x		x		x		x	
151	White Wagtail	<i>Motacilla alba</i>	x							
152	Large Pied Wagtail	<i>Motacilla maderaspatensis</i>	x		x	x	x		x	x
153	Yellow Wagtail	<i>Motacilla flava</i>	x		x					
154	Grey Wagtail	<i>Motacilla cinerea</i>	x	x	x	x	x	x	x	x
155	Paddy field Pipit	<i>Anthus rufulus</i>	x		x	x	x			
156	Blyth's Pipit	<i>Anthus godlewskii</i>					x			
157	Brown Rock Pipit	<i>Anthus similis Jerdon</i>				x				
158	Oriental Tree Pipit	<i>Anthus hodgsoni</i>			x	x				



No	Common name	Species	I-WLS	MH	C-WLS	E-NP	T-BS	K-WLS	A-NP	P-NP
159	Nilgiri Pipit	<i>Anthus nilghiriensis</i>		X	X	X		X		X
160	Asian Brown Flycatcher	<i>Muscicapa dauurica</i>	X	X	X		X	X	X	
161	Rusty-tailed Flycatcher	<i>Muscicapa ruficauda</i>	X		X	X	X			
162	Brown-breasted Flycatcher	<i>Muscicapa muttui</i>	X	X	X		X			
163	Black-and-Orange Flycatcher	<i>Ficedula nigrorufa</i>	X	X	X	X		X	X	X
164	Verditer Flycatcher	<i>Eumyias thalassina</i>	X	X	X	X	X	X	X	
165	Nilgiri Flycatcher	<i>Eumyias albicaudata</i>	X	X	X	X	X	X	X	X
166	White-bellied Blue-Flycatcher	<i>Cyornis pallipes</i>	X	X	X	X	X			
167	Blue-throated Flycatcher	<i>Cyornis rubeculoides</i>	X		X		X	X		
168	Tickell's Blue-Flycatcher	<i>Cyornis tickelliae</i>	X	X	X		X	X		
169	Grey-headed Flycatcher	<i>Culicicapa ceylonensis</i>	X	X	X	X		X	X	X
170	Purple-rumped Sunbird	<i>Nectarinia zeylonica</i>	X		X		X			
171	Small Sunbird	<i>Nectarinia minima</i>	X	X	X	X	X	X	X	
172	Purple Sunbird	<i>Nectarinia asiatica</i>	X		X		X			
173	Loten's Sunbird	<i>Nectarinia lotenia</i>	X		X	X	X			
174	Little Spiderhunter	<i>Arachnothera longirostra</i>	X	X	X	X	X	X		
175	Eurasian Golden Oriole	<i>Oriolus oriolus</i>	X	X	X		X	X		
176	Black-naped Oriole	<i>Oriolus chinensis</i>	X		X		X		X	
177	Black-headed Oriole	<i>Oriolus xanthornus</i>	X		X	X	X			
178	Osprey	<i>Pandion haliaetus</i>	X							
179	Great Tit	<i>Parus major</i>	X	X	X	X	X	X		
180	Black-lored Yellow Tit	<i>Parus xanthogenys</i>	X	X	X	X	X	X		
181	House Sparrow	<i>Passer domesticus</i>	X	X	X		X			
182	Yellow-throated Sparrow	<i>Petronia xanthocollis</i>	X		X		X			
183	Spot-billed Pelican	<i>Pelecanus philippensis</i>					X			
184	Little Cormorant	<i>Phalacrocorax niger</i>	X				X			
185	Indian Shag	<i>Phalacrocorax fuscicollis</i>	X				X			

No	Common name	Species	I-WLS	MH	C-WLS	E-NP	T-BS	K-WLS	A-NP	P-NP
186	Great Cormorant	<i>Phalacrocorax carbo</i>	x				x			
187	Jungle Bush-Quail	<i>Perdica asiatica</i>	x							
188	Painted Bush-Quail	<i>Perdica erythrorhyncha</i>	x	x		x				
189	Red Spurfowl	<i>Galloperdix spadicea</i>	x		x		x			
190	Grey Junglefowl	<i>Gallus sonneratii</i>	x	x	x	x	x	x		
191	Indian Peafowl	<i>Pavo cristatus</i>			x					
192	Eurasian Wryneck	<i>Jynx torquilla</i>					x			
193	Speckled Piculet	<i>Picumnus innominatus</i>			x		x		x	
194	Brown-capped Woodpecker	Pygmy <i>Dendrocopos nanus</i>	x	x	x		x	x		
195	Yellow-fronted Woodpecker	Pied <i>Dendrocopos mahrattensis</i>			x		x			
196	Rufous Woodpecker	<i>Celeus brachyurus</i>	x		x		x			
197	Great Black Woodpecker	<i>Dryocopus javensis</i>	x		x		x			
198	Small Yellow-naped Woodpecker	<i>Picus chlorolophus</i>	x		x	x	x			
199	Little Scaly-bellied Green Woodpecker	<i>Picus xanthopygaeus</i>	x		x	x	x			
200	Common Golden-backed Woodpecker	<i>Dinopium javanense</i>	x	x	x	x	x		x	
201	Lesser Golden-backed Woodpecker	<i>Dinopium benghalense</i>	x	x	x	x	x	x		
202	Greater Golden-backed Woodpecker	<i>Chrysocolaptes lucidus</i>	x	x	x	x	x	x		
203	Black-shouldered Woodpecker	<i>Chrysocolaptes festivus</i>			x					
204	Heart-spotted Woodpecker	<i>Hemicircus canente</i>	x		x		x			
205	Indian Pitta	<i>Pitta brachyura</i>	x		x		x			
206	Baya Weaver	<i>Ploceus philippinus</i>	x				x			
207	Ceylon Frogmouth	<i>Batrachostomus moniliger</i>					x			

No	Common name	Species	I-WLS	MH	C-WLS	E-NP	T-BS	K-WLS	A-NP	P-NP
208	Little Grebe	<i>Tachybaptus ruficollis</i>	x				x			
209	Indian Hanging-Parrot	<i>Loriculus vernalis</i>	x	x	x		x	x		
210	Rose-ringed Parakeet	<i>Psittacula krameri</i>	x		x		x			
211	Plum-headed Parakeet	<i>Psittacula cyanocephala</i>	x		x		x			
212	Blue-winged Parakeet	<i>Psittacula columboides</i>	x	x	x		x	x		
213	Grey-headed Bulbul	<i>Pycnonotus priocephalus</i>	x		x	x	x			
214	Black-crested Bulbul	<i>Pycnonotus melanicterus</i>	x		x	x	x			
215	Red-whiskered Bulbul	<i>Pycnonotus jocosus</i>	x	x	x	x	x	x		
216	Red-vented Bulbul	<i>Pycnonotus cafer</i>	x		x	x	x		x	x
217	Yellow-throated Bulbul	<i>Pycnonotus xantholaemus</i>			x				x	
218	White-browed Bulbul	<i>Pycnonotus luteolus</i>	x		x		x			
219	Yellow-browed Bulbul	<i>Iole indica</i>	x	x	x	x	x	x		
220	Black Bulbul	<i>Hypsipetes leucocephalus</i>	x	x	x	x	x	x		
221	Slaty-legged Crake	<i>Rallina eurizonoides</i>					x			
222	White-breasted Waterhen	<i>Amaurornis phoenicurus</i>	x		x		x			
223	Ruddy-breasted Crake	<i>Porzana fusca</i>					x			
224	Common Moorhen	<i>Gallinula chloropus</i>					x			
225	Black-winged Stilt	<i>Himantopus himantopus</i>	x							
226	White-throated Fantail-Flycatcher	<i>Rhipidura albicollis</i>			x					
227	White-browed Fantail-Flycatcher	<i>Rhipidura aureola</i>	x		x					
228	Green Sandpiper	<i>Tringa ochropus</i>	x		x	x	x			
229	Wood Sandpiper	<i>Tringa glareola</i>	x		x					
230	Common Sandpiper	<i>Actitis hypoleucos</i>	x	x	x		x	x		
231	Chestnut-bellied Nuthatch	<i>Sitta castanea</i>	x							
232	Velvet-fronted Nuthatch	<i>Sitta frontalis</i>	x	x	x	x	x	x	x	x
233	Oriental Scops-Owl	<i>Otus sunia</i>	x		x		x			
234	Collared Scops-Owl	<i>Otus bakkamoena</i>	x		x		x			

No	Common name	Species	I-WLS	MH	C-WLS	E-NP	T-BS	K-WLS	A-NP	P-NP
235	Eurasian Eagle-Owl	<i>Bubo bubo</i>			x					
236	Forest Eagle-Owl	<i>Bubo nipalensis</i>					x			
237	Brown Fish-Owl	<i>Ketupa zeylonensis</i>	x		x		x			
238	Mottled Wood-Owl	<i>Strix ocellata</i>					x			
239	Jungle Owlet	<i>Glaucidium radiatum</i>	x		x		x			
240	Brown Hawk-Owl	<i>Ninox scutulata</i>	x				x			
241	Grey-headed Starling	<i>Sturnus malabaricus blythi</i>					x			
242	Brahminy Starling	<i>Sturnus pagodarum</i>	x		x		x			
243	Rosy Starling	<i>Sturnus roseus</i>	x				x			
244	Common Myna	<i>Acridotheres tristis</i>	x		x		x			
245	Jungle Myna	<i>Acridotheres fuscus</i>	x	x	x	x	x	x		
246	Southern Hill-Myna	<i>Gracula indica</i>	x	x	x		x	x	x	
247	Streaked Fantail-Warbler	<i>Cisticola juncidis</i>				x	x			
248	Franklin's Prinia	<i>Prinia hodgsonii</i>	x	x	x	x	x			
249	Jungle Prinia	<i>Prinia sylvatica</i>			x	x				
250	Ashy Prinia	<i>Prinia socialis</i>	x	x	x	x	x		x	
251	Plain Prinia	<i>Prinia inornata</i>		x	x	x	x			x
252	Pale Grasshopper-Warbler	<i>Locustella naevia</i>				x				
253	Paddyfield Warbler	<i>Acrocephalus agricola</i>	x							
254	Blyth's Reed-Warbler	<i>Acrocephalus dumetorum</i>	x	x	x	x	x	x	x	x
255	Indian Great Reed-Warbler	<i>Acrocephalus stentoreus</i>			x		x			
256	Thick-billed Warbler	<i>Acrocephalus aedon</i>	x		x	x	x			
257	Booted Warbler	<i>Hippolais caligata</i>			x	x				
258	Common Tailorbird	<i>Orthotomus sutorius</i>	x		x		x			
259	Common Chiffchaff	<i>Phylloscopus collybita</i>				x				
260	Tickell's Warbler	<i>Phylloscopus affinis</i>	x	x		x			x	x
261	Greenish Leaf-Warbler	<i>Phylloscopus trochiloides</i>	x	x	x	x	x	x	x	x
262	Large-billed Leaf-Warbler	<i>Phylloscopus magnirostris</i>	x	x	x	x	x	x	x	x
263	Tytler's Leaf-Warbler	<i>Phylloscopus tytleri</i>		x		x			x	

No	Common name	Species	I-WLS	MH	C-WLS	E-NP	T-BS	K-WLS	A-NP	P-NP
264	Western Crowned Warbler	<i>Phylloscopus occipitalis</i>	x	x	x	x	x	x	x	
265	Broad-tailed Grass-Warbler	<i>Schoenicola platyura</i>		x	x	x				
266	Common Lesser Whitethroat	<i>Sylvia curruca</i>			x					
267	Orphean Warbler	<i>Sylvia hortensis</i>			x					
268	Wynaad Laughingthrush	<i>Garrulax delesserti</i>	x	x	x		x			
269	Grey-breasted Laughingthrush	<i>Garrulax jerdoni</i>		x	x	x		x	x	x
270	Spotted Babbler	<i>Pellorneum ruficeps</i>	x		x	x	x		x	
271	Indian Scimitar-Babbler	<i>Pomatorhinus horsfieldii</i>	x	x	x	x	x		x	x
272	Rufous-bellied Babbler	<i>Dumetia hyperythra</i>			x	x				
273	Black-headed Babbler	<i>Rhopocichla atriceps</i>	x	x	x		x	x		
274	Yellow-eyed Babbler	<i>Chrysomma sinense</i>			x					
275	Indian Rufous Babbler	<i>Turdoides subrufus</i>	x	x	x	x	x			
276	Jungle Babbler	<i>Turdoides striatus</i>	x		x		x			
277	White-headed Babbler	<i>Turdoides affinis</i>	x		x	x	x			
278	Quaker Tit-Babbler	<i>Alcippe poioicephala</i>		x	x	x	x	x	x	x
279	Malabar Trogon	<i>Harpactes fasciatus</i>	x	x			x	x		
280	Blue-headed Rock-Thrush	<i>Monticola cinclorhynchus</i>	x		x	x	x			
281	Blue Rock-Thrush	<i>Monticola solitarius</i>				x	x			
282	Malabar Whistling-Thrush	<i>Myiophonus horsfieldii</i>	x	x	x	x	x	x	x	x
283	Pied Thrush	<i>Zoothera wardii</i>				x				
284	Orange-headed Thrush	<i>Zoothera citrina cyanotus</i>	x		x		x			
285	Scaly Thrush	<i>Zoothera dauma</i>				x	x			
286	Eurasian Blackbird	<i>Turdus merula</i>	x	x	x	x	x	x		
287	White-bellied Shortwing	<i>Brachypteryx major</i>		x		x			x	x
288	Indian Blue Robin	<i>Luscinia brunnea</i>	x	x	x	x	x	x		
289	Oriental Magpie-Robin	<i>Copsychus saularis</i>	x		x	x	x	x	x	
290	White-rumped Shama	<i>Copsychus malabaricus</i>	x		x		x			

No	Common name	Species	I-WLS	MH	C-WLS	E-NP	T-BS	K-WLS	A-NP	P-NP
291	Indian Robin	<i>Saxicoloides fulicata</i>	x		x			x		
292	Pied Bushchat	<i>Saxicola caprata</i>	x	x	x	x		x	x	x
293	Grass Owl	<i>Tyto capensis</i>				x				
294	Oriental Bay-Owl	<i>Phodilus badius</i>					x			
295	Common Hoopoe	<i>Upupa epops</i>	x		x		x			
296	Oriental White-eye	<i>Zosterops palpebrosus</i>	x	x	x	x	x		x	x
297	Blue-bearded Bee-eater	<i>Nyctyornis athertoni</i>	x		x		x			
298	Grey-headed Starling	<i>Sturnus malabaricus</i>	x		x		x			
299	Greater Flame back	<i>Chrysocolaptes guttacristatus</i>							x	x
300	Cinereous Tit	<i>Parus cinereus</i>								x
301	Indian Black lored Tit	<i>Machlophus aplonotus</i>							x	x
302	Square tailed bulbul	<i>Hypsipetes ganeesa</i>							x	x
303	Hill swallow	<i>Hirundo domicola</i>							x	x
304	Nilgiri Thrush	<i>Zoothera neilgherriensis</i>							x	
305	Bourdillons Blackbird	<i>Turdus simillimus bourdilloni</i>							x	x

**I-WLS-** Idukki Wildlife Sanctuary; **M-H** Munnar Hills; **C-WLS-** Chinnar Wildlife Sanctuary; **E-NP-** Eravikulam National Park; **T-BS-** Thattekkad Bird Sanctuary; **K-WLS-** Kurinjimalai Wildlife Sanctuary; **A-NP-**Anamudi Shola National Park; **P-NP-** Pampadum shola National Park