

Birds of Pench Tiger Reserve, Madhya Pradesh, central India

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Introduction

Pench Tiger Reserve (PTR) (78°55'E--79°35'E and 21°8'N--22°N) lies in the southern lower reaches of Satpura Hills. According to the biogeographic classification of Rodgers and Panwar (1988), PTR falls under 6E Biogeographic Province of the Deccan Peninsula. PTR was the 19th Tiger Reserve of India, notified as such in 1992-93. The Reserve, spreading over the two districts of Seoni and Chhindwara, comprises of the Pench (or Priyadarshini) National Park, Pench Sanctuary and the reserve forest, totally encompassing an area of 757.85 km².

Little previous work has been carried out on the avifauna of the Reserve. Kumar (1999) had listed 171 species of birds in the management plan of PTR. Some information however, on distribution of bird species, is available (Pasha and Sankar 1996, Pasha 1998). One of us (R.J.) studied bird community structure of PTR between October 1997 and May 1998. M.K.S.P. and G.A. stayed in PTR from February 1997 to August 2000 studying the ecology of Gaur *Bos gaurus* Smith, 1827, and collected information on avifauna. Since there is no published checklist prior to this, the present work can form the baseline for further research.

Study area

The Pench River, from which the Reserve derives its name, flows through the center of the park dividing it into the western Chhindwara Block (141.61km²) and the eastern Seoni Block (145.24km²). The river dries out in summer resulting in the formation of several puddles, which are an important water source for the fauna of the Reserve. On the southern end of the river stands Totladoh hydroelectric dam. The construction of the dam submerged 54km² area of the Reserve. In addition to this, a water tank (c.0.5km²) at Bodha Nala was constructed in 1994 in the Seoni Block. These water bodies attract and provide refuge to many migratory waterfowl and other water-bird species.

The vegetation of the area falls into two major categories: Tropical Dry Deciduous and the Tropical Moist Deciduous type (Champion and Seth 1968). These forest types, for the present study, were further sub-divided as follows:

1. Teak dominant forest: Teak (*Tectona grandis*) with associated species like *Madhuca indica*, *Diospyros melanoxylon*, *Terminalia tomentosa*, *Buchanania lanzan*, *Lagerstroemia parviflora*, *Milium velutina* and *Lannea coromandelica*.

2. Miscellaneous forest: Teak mixed, *Anogeissus latifolia*-*Bosewellia serrata* mixed stand, hill forest and *Zizyphus-Butea* mixed woodland.
3. Bamboo-dominant (*Dendrocalamus strictus*) forest.
4. *Cleistanthus collinus* woodland.
5. Grassland–Savanna.
6. Open scrub jungle: Dominated by *Lantana camara*.
7. Wetlands: River, streams, ponds and reservoir.

The terrain is gently undulating and is dissected by a number of seasonal streams and *nullahs*. The altitude of the Reserve ranges from 350m to 650m. Climatically the area has four seasons: summer (March--June), monsoon (July--August), post monsoon (September--October) and winter (November--February). The temperature in winter dips as low as -2°C and rises to a maximum of 49°C in summer. The average rainfall is around 1400mm, 80% of which is received during the southwest monsoon between July and September.

Methods

The present list is the outcome of bird observations carried out in PTR between February 1996 and July 2000, spread over all four seasons. The area was regularly surveyed for birds in all the major habitats. Birds seen were identified and recorded along with habitat type and status (resident, winter visitor, local migrant and straggler). On the basis of the frequency of sighting, the bird species were assigned categories of abundance (absent, rare, uncommon, occasional and common). The birds recorded were categorized into seven trophic guilds, namely insectivores, omnivores, carnivores, frugivores, granivores, piscivores and nectarivores based on Ali and Ripley (1987).

Results and discussion

262 species of birds were recorded in PTR (Appendix 1). This study has added 84 species to the previous list of PTR (Kumar 1999). Among the birds sighted, 162 are resident, 70 winter visitors, 3 summer visitors, 25 local migrants and 2 vagrant / straggler species. The composition of birds in different guilds in PTR showed that the insectivorous guild was the most abundant (35% of the total species) and nectarivorous guild was the least abundant guild with only (1%). The composition of other five guilds is 25% omnivores, 16% carnivores, 10% frugivores, 6% granivores and 7% piscivores.

The Pench Reservoir spread over 50km² is a major attraction to the migratory waterfowls and the dead trees scattered amidst the reservoir is good nesting site for many

water birds. Important species nesting in the reservoir are Painted Stork *Mycteria leucocephala* (Pennant, 1769), Asian Openbill-Stork *Anastomus oscitans* (Boddaert, 1783), White-necked Stork *Ciconia episcopus* (Boddaert, 1783), and Oriental White Ibis *Threskiornis melanocephalus* (Latham, 1790). The Painted Stork and Oriental White Ibis are "Near Threatened" (BirdLife International 2001: *Threatened birds of Asia: The BirdLife International Red Data Book*), while the Asian Openbill-Stork and White-necked Stork have been recorded breeding here for the first time. The waders in PTR occur in low numbers. The plausible reason for the low abundance of waders in PTR could be that, the edges of the forest end abruptly into these water bodies leaving practically little or no space for the creation of the banks and shallow areas, which are essential for wading birds. Another point worth noting is the overwintering of Brahminy Shelduck *Tadorna ferruginea* (Pallas, 1764) in PTR in 1997 and 1998. During these two years c.50 birds stayed over in PTR till as late as April.

Sightings of special interest

Great Crested Grebe *Podiceps cristatus* (Linnaeus, 1758). Not a common winter visitor to PTR. Has been sighted only once in the Pench reservoir in January 1999.

Pied Harrier *Circus melanoleucos* (Pennant, 1769). A winter visitor to the area. Has been sighted continuously, every winter, since 1996. This harrier was first sighted in November 1995 (Pasha & Sankar 1996), which is the range extension record for this raptor.

Saker Falcon *Falco cherrug* J. E. Gray, 1834. Was sighted once in March 1997.

Painted Spurfowl *Gallopardix lunulata* (Valenciennes, 1825). Very rare in PTR. Seen only twice, at the same site, in March and April 1996 (Pasha 1998). In dry deciduous forest dominated by teak (*Tectona grandis*).

Malabar Pied Hornbill *Anthracoceros coronatus* (Boddaert, 1783). About seven to ten breeding pairs are present in PTR. Commonly seen along the banks of Pench River in the northern part of the national park.

Rosy Minivet *Pericrocotus roseus* (Vieillot, 1818). A male was sighted once in scrubland, in the national park, near Karmajhiri village.

White-rumped Shama *Copsychus malabaricus* (Scopoli, 1786). A male was seen near Bodha Nala tank. The area has moist deciduous vegetation, dominated by bamboo.

Threats to the area

Sporadic fires and illegal fishing are two major problems that the management of PTR faces. Fires occur

annually, predominantly during summer. These can be detrimental to breeding ground birds. Also, these fires affect old, dead trees, which are essential for hole-nesting birds. Effective preventive measures which the Reserve staff has embarked upon, is an effective step to combat such situations. Illegal fishing in Pench Reservoir used to be a major threat to the Reserve's flora and fauna and also to migratory waterfowl visiting this area every year. Since the Supreme Court's Order in 2000, a complete ban on fishing has come into force. As a result the mortality of several water birds, which used to get caught and entangled in the fishing nets, has declined. Effective patrolling in PTR has minimized the pressures on the reservoir. The park is becoming a major tourist attraction and the increase in tourist influx and the proposition of opening some areas of the reservoir for boating for the visitors needs to be looked with great caution. The staff still needs to be better equipped to provide strong resistance and overcome the existing problem.

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Species	Habitat	Frequency	Status
Little Grebe <i>Tachybaptus ruficollis</i> (Pallas, 1764)	Wl	C	R
Great Crested Grebe <i>Podiceps cristatus</i> (Linnaeus, 1758)	Wl	X	W
Little Cormorant <i>Phalacrocorax niger</i> (Vieillot, 1817)	Wl	C	R
Indian Shag <i>Phalacrocorax fuscicollis</i> Stephens, 1826	Wl	O	LM
Great Cormorant <i>Phalacrocorax carbo</i> (Linnaeus, 1758)	Wl	O	LM
Darter <i>Anhinga melanogaster</i> Pennant, 1769	Wl	U	LM
Little Egret <i>Egretta garzetta</i> (Linnaeus, 1766)	Wl	C	R
Grey Heron <i>Ardea cinerea</i> Linnaeus, 1758	Wl	C	LM
Purple Heron <i>Ardea purpurea</i> Linnaeus, 1766	Wl	O	LM
Large Egret <i>Casmerodius albus</i> (Linnaeus, 1758)	Wl	C	R
Median Egret <i>Mesophoyx intermedia</i> (Wagler, 1829)	Wl	C	R
Cattle Egret <i>Bubulcus ibis</i> (Linnaeus, 1758)	Gr, Os, Cs, Wl	C	R
Indian Pond-Heron <i>Ardeola grayii</i> (Sykes, 1832)	Wl	C	R
Little Green Heron <i>Butorides striatus</i> (Linnaeus, 1758)	Wl	O	R
Black-crowned Night-Heron <i>Nycticorax nycticorax</i> (Linnaeus, 1758)	Wl	C	R
Painted Stork <i>Mycteria leucocephala</i> (Pennant, 1769)	Wl	O	R
Asian Openbill-Stork <i>Anastomus oscitans</i> (Boddaert, 1783)	Wl	O	R
Black Stork <i>Ciconia nigra</i> (Linnaeus, 1758)	Wl	O	W
White-necked Stork <i>Ciconia episcopus</i> (Boddaert, 1783)	Wl	O	R
Black-necked Stork <i>Ephippiorhynchus asiaticus</i> (Latham, 1790)	Wl	U	R
Oriental White Ibis <i>Threskiornis melanocephalus</i> (Latham, 1790)	Wl	C	R
Black Ibis <i>Pseudibis papillosa</i> (Temminck, 1824)	Wl	U	R
Eurasian Spoonbill <i>Platalea leucorodia</i> Linnaeus, 1758	Wl	O	LM
Lesser Whistling-Duck <i>Dendrocygna javanica</i> (Horsfield, 1821)	Wl	C	LM
Brahminy Shelduck <i>Tadorna ferruginea</i> (Pallas, 1764)	Wl	C	W
Cotton Teal <i>Nettapus coromandelianus</i> (Gmelin, 1789)	Wl	U	W
Gadwall <i>Anas strepera</i> Linnaeus, 1758	Wl	O	W
Eurasian Wigeon <i>A. penelope</i> Linnaeus, 1758	Wl	O	W
Mallard <i>A. platyrhynchos</i> Linnaeus, 1758	Wl	U	W
Spot-billed Duck <i>A. poecilorhyncha</i> J.R. Forester, 1781	Wl	U	LM
Northern Pintail <i>A. acuta</i> Linnaeus, 1758	Wl	C	W
Garganey <i>A. querquedula</i> Linnaeus, 1758	Wl	O	W
Common Teal <i>A. crecca</i> Linnaeus, 1758	Wl	O	W
Red-crested Pochard <i>Rhodonessa rufina</i> (Pallas, 1773)	Wl	O	W
Common Pochard <i>Aythya ferina</i> (Linnaeus, 1758)	Wl	O	W
Ferruginous Pochard <i>A. nyroca</i> (Guldenstadt, 1770)	Wl	O	W
Tufted Pochard <i>A. fuligula</i> (Linnaeus, 1758)	Wl	U	W
Oriental Honey-Buzzard <i>Pernis ptilorhynchus</i> (Temminck, 1821)	Tk, Ms, Gr, Os, Cs	C	R
Black-shouldered Kite <i>Elanus caeruleus</i> (Desfontaines, 1789)	Gr, Os, Cs	C	R
Black Kite <i>Milvus migrans</i> (Boddaert, 1783)	Cs	X	R
Brahminy Kite <i>Haliastur indus</i> (Boddaert, 1783)	Wl	U	R
Greater Grey-headed Fish-Eagle <i>Ichthyophaga ichthyaetus</i> (Horsfield, 1821)	Wl	O	R
Egyptian Vulture <i>Neophron percnopterus</i> (Linnaeus, 1758)	Cs	C	R
Indian White-backed Vulture <i>Gyps bengalensis</i> (Gmelin, 1788)	Ms, Cs	C	R
Long-billed Vulture <i>G. indicus</i> (Scopoli, 1786)	Cs	C	R
Cinereous Vulture <i>Aegyptius monachus</i> (Linnaeus, 1766)	Cs	X	V
Red-headed Vulture <i>Sarcogyps calvus</i> (Scopoli, 1786)	Tk, Ms, Cs	O	R
Short-toed Snake-Eagle <i>Circaetus gallicus</i> (Gmelin, 1788)	Gr, Os, Cs	U	R
Crested Serpent-Eagle <i>Spilornis cheela</i> (Latham, 1790)	Tk, Ms	C	R
Western Marsh-Harrier <i>Circus aeruginosus</i> (Linnaeus, 1758)	Wl	O	W
Pied Harrier <i>Circus melanoleucos</i> (Pennant, 1769)	Gr	X	W
Shikra <i>Accipiter badius</i> (Gmelin, 1788)	Tk, Ms, Cs	C	R

Species	Habitat	Frequency	Status
White-eyed Buzzard <i>Butastur teesa</i> (Franklin, 1832)	Tk, Ms, Cc, Gr, Os, Cs	C	R
Common Buzzard <i>Buteo buteo</i> Linnaeus, 1758	Ms	U	W
Tawny Eagle <i>Aquila rapax</i> (Temminck, 1828)	Tk, Ms	U	R
Bonelli's Eagle <i>Hieraaetus fasciatus</i> (Vieillot, 1822)	Tk	O	R
Booted Eagle <i>H. pennatus</i> (Gmelin, 1788)	Tk	O	W
Changeable Hawk-Eagle <i>Spizaetus cirrhatus</i> (Gmelin, 1788)	Tk, Ms, Bm	C	R
Osprey <i>Pandion haliaetus</i> (Linnaeus, 1758)	Wl	O	W
Common Kestrel <i>Falco tinnunculus</i> Linnaeus, 1758	Gr, Cs	C	W
Saker Falcon <i>Falco cherrug</i> J.E. Gray, 1834	Ms, Os, Cs	O	R
Peregrine Falcon <i>Falco peregrinus</i> Tunstall, 1771	Tk, Wl	U	W
Painted Francolin <i>Francolinus pictus</i> (Jardine & Selby, 1828)	Ms, Os	C	R
Grey Francolin <i>F. pondicerianus</i> (Gmelin, 1789)	Os, Cs	C	R
Jungle Bush-Quail <i>Perdica asiatica</i> (Latham, 1790)	Ms, Bm, Gr	C	R
Red Spurfowl <i>Galloperdix spadicea</i> (Gmelin, 1789)	Tk, Ms, Bm	C	R
Painted Spurfowl <i>G. lunulata</i> (Valenciennes, 1825)	Bm, Ms	X	R
Red Junglefowl <i>Gallus gallus</i> (Linnaeus, 1758)	Tk, Ms, Bm, Os, Cs	C	R
Indian Peafowl <i>Pavo cristatus</i> Linnaeus, 1758	Ms, Cc, Gr, Os, Cs	C	R
Yellow-legged Buttonquail <i>Turnix tanki</i> Blyth, 1843	Gr, Os, Cs	U	R
Common Buttonquail <i>T. suscitator</i> (Gmelin, 1789)	Ms, Gr, Os	U	R
White-breasted Waterhen <i>Amaurornis phoenicurus</i> (Pennant, 1769)	Wl	C	R
Purple Moorhen <i>Porphyrio porphyrio</i> (Linnaeus, 1758)	Wl	O	R
Common Moorhen <i>Gallinula chloropus</i> (Linnaeus, 1758)	Wl	C	R
Common Coot <i>Fulica atra</i> Linnaeus, 1758	Wl	C	LM
Bronze-winged Jacana <i>Metopidius indicus</i> (Latham, 1790)	Wl	O	R
Greater Painted-Snipe <i>Rostratula benghalensis</i> (Linnaeus, 1758)	Wl	O	R
Little Ringed Plover <i>Charadrius dubius</i> Scopoli, 1786	Wl	O	LM
Yellow-wattled Lapwing <i>Vanellus malabaricus</i> (Boddaert, 1783)	Cs	O	R
River Lapwing <i>V. duvaucelii</i> (Lesson, 1826)	Wl	C	R
Red-wattled Lapwing <i>V. indicus</i> (Boddaert, 1783)	Cs, Wl	C	R
Common Snipe <i>Gallinago gallinago</i> (Linnaeus, 1758)	Wl	O	W
Green Sandpiper <i>Tringa ochropus</i> Linnaeus, 1758	Wl	C	W
Wood Sandpiper <i>Tringa glareola</i> Linnaeus, 1758	Wl	U	W
Common Sandpiper <i>Actitis hypoleucos</i> Linnaeus, 1758	Wl	O	W
Little Stint <i>Calidris minuta</i> (Leisler, 1812)	Wl	O	W
Black-winged Stilt <i>Himantopus himantopus</i> (Linnaeus, 1758)	Wl	C	R
Stone-Curlew <i>Burhinus oedicephalus</i> (Linnaeus, 1758)	Tk, Os, Cs	C	R
Indian Courser <i>Cursorius coromandelicus</i> (Gmelin, 1789)	Cs	U	R
River Tern <i>Sterna aurantia</i> J.E. Gray, 1831	Wl	O	R
Painted Sandgrouse <i>Pterocles indicus</i> (Gmelin, 1789)	Os	O	R
Blue Rock Pigeon <i>Columba livia</i> Gmelin, 1789	Cs	X	R
Oriental Turtle-Dove <i>Streptopelia orientalis</i> (Latham, 1790)	Tk, Ms, Bm	O	R
Little Brown Dove <i>S. senegalensis</i> (Linnaeus, 1766)	Os, Cs	C	R
Spotted Dove <i>S. chinensis</i> (Scopoli, 1786)	Tk, Ms, Cc, Cs	C	R
Red Collared-Dove <i>S. tranquebarica</i> (Hermann, 1804)	Ms, Bm	O	R
Eurasian Collared Dove <i>S. decaocto</i> (Fridvaldszky, 1838)	Tk, Os, Cs	C	R
Emerald Dove <i>Chalcophaps indica</i> (Linnaeus, 1758)	Tk, Ms, Bm	X	R
Yellow-legged Green-Pigeon <i>Treron phoenicoptera</i> (Latham, 1790)	Tk, Ms, Bm	C	R
Alexandrine Parakeet <i>Psittacula eupatria</i> (Linnaeus, 1766)	Tk, Ms, Bm, Cc	C	R
Rose-ringed Parakeet <i>P. krameri</i> (Scopoli, 1769)	Tk, Ms, Bm, Cc, Gr, Cs	C	R
Plum-headed Parakeet <i>P. cyanocephala</i> (Linnaeus, 1766)	Tk, Ms, Bm, Cc	C	R
Pied Crested Cuckoo <i>Clamator jacobinus</i> (Boddaert, 1783)	Tk, Ms, Bm, Os, Cs	C	S
Brainfever Bird <i>Hierococcyx varius</i> (Vahl, 1797)	Tk, Ms, Bm, Cc	C	R
Indian Cuckoo <i>Cuculus micropterus</i> Gould, 1838	Tk, Ms, Bm	U	LM

Species	Habitat	Frequency	Status
Indian Plaintive Cuckoo <i>Cacomantis passerinus</i> (Vahl, 1797)	Tk, Bm, Os	O	R
Asian Koel <i>Eudynamis scolopacea</i> (Linnaeus, 1758)	Tk, Ms, Bm, Cc	C	R
Sirkeer Malkoha <i>Phaenicophaeus leschenaultii</i> (Lesson, 1830)	Ms, Bm, Os	O	R
Greater Coucal <i>Centropus sinensis</i> (Stephens, 1815)	Ms, Bm, Gr, Os, Cs	C	R
Barn Owl <i>Tyto alba</i> (Scopoli, 1769)	Cs	U	R
Oriental Scops-Owl <i>Otus sunia</i> (Hodgson, 1836)	Tk, Ms	U	R
Collared Scops-Owl <i>O. bakkamoena</i> Pennant, 1769	Tk, Ms, Bm	O	R
Eurasian Eagle-Owl <i>Bubo bubo</i> (Linnaeus, 1758)	Tk, Ms	O	R
Brown Fish-Owl <i>Ketupa zeylonensis</i> (Gmelin, 1788)	Tk	U	R
Mottled Wood-Owl <i>Strix ocellata</i> (Lesson, 1839)	Tk, Ms	U	R
Jungle Owlet <i>Glaucidium radiatum</i> (Tickell, 1833)	Tk, Ms, Bm, Cc, Os	C	R
Spotted Owlet <i>Athene brama</i> (Temminck, 1821)	Os, Cs	U	R
Short-eared Owl <i>Asio flammeus</i> (Pontoppidan, 1763)	Ms	X	W
Indian Jungle Nightjar <i>Caprimulgus indicus</i> Latham, 1790	Tk, Ms, Gr, Os, Cs	C	R
Common Indian Nightjar <i>C. asiaticus</i> Latham, 1790	Tk, Ms, Os, Cs	C	R
Franklin's Nightjar <i>C. affinis</i> Horsfield, 1821	Gr, Os	C	R
White-rumped Needletail-Swift <i>Zoonavena sylvatica</i> (Tickell, 1846)	Ms, Bm	O	R
Asian Palm-Swift <i>Cypsiurus balasiensis</i> (J.E. Gray, 1829)	Cs	O	R
House Swift <i>Apus affinis</i> (J.E. Gray, 1830)	Cs, Wl	C	R
Crested Tree-Swift <i>Hemiprocne coronata</i> (Tickell, 1833)	Tk, Ms, Bm	C	R
Small Blue Kingfisher <i>Alcedo atthis</i> (Linnaeus, 1758)	Wl	O	R
Stork-billed Kingfisher <i>Halcyon capensis</i> (Linnaeus, 1766)	Wl	O	R
White-breasted Kingfisher <i>H. smyrnensis</i> (Linnaeus, 1758)	Ms, Cc, Cs, Wl	C	R
Lesser Pied Kingfisher <i>Ceryle rudis</i> (Linnaeus, 1758)	Wl	C	R
Small Bee-eater <i>Merops orientalis</i> Latham, 1801	Ms, Cc, Os, Cs	C	R
Blue-tailed Bee-eater <i>M. philippinus</i> Linnaeus, 1766	Ms	U	W
Indian Roller <i>Coracias benghalensis</i> (Linnaeus, 1758)	Tk, Ms, Cs	C	R
Common Hoopoe <i>Upupa epops</i> Linnaeus, 1758	Cs	C	R
Indian Grey Hornbill <i>Ocyroceros birostris</i> (Scopoli, 1786)	Tk, Ms, Bm	C	R
Malabar Pied Hornbill <i>Anthracoeros coronatus</i> (Boddaert, 1783)	Tk, Ms	O	R
Brown-headed Barbet <i>Megalaima zeylanica</i> (Gmelin, 1788)	Tk, Ms, Bm, Cc	C	R
Coppersmith Barbet <i>M. haemacephala</i> (P.L.S. Müller, 1776)	Tk, Ms	C	R
Eurasian Wryneck <i>Jynx torquilla</i> Linnaeus, 1758	Os	X	W
Brown-capped Pygmy Woodpecker <i>Dendrocopos nanus</i> (Vigors, 1832)	Tk, Ms, Bm	C	R
Yellow-fronted Pied Woodpecker <i>D. mahrattensis</i> (Latham, 1801)	Tk, Ms, Bm	C	R
Rufous Woodpecker <i>Celeus brachyurus</i> (Vieillot, 1818)	Tk, Ms, Bm, Cc	U	R
Small Yellow-naped Woodpecker <i>Picus chlorolophus</i> Vieillot, 1818	Tk, Bm	U	R
Little Scaly-bellied Green Woodpecker <i>P. xanthopygaeus</i> J.E. Gray & G.R. Gray, 1846	Tk, Ms, Bm	O	R
Lesser Golden-backed Woodpecker <i>Dinopium benghalense</i> (Linnaeus, 1758)	Tk, Ms, Cc	C	R
Black-shouldered Woodpecker <i>Chrysocolaptes festivus</i> (Boddaert, 1783)	Tk, Ms, Bm	C	R
Indian Pitta <i>Pitta brachyura</i> (Linnaeus, 1766)	Tk, Ms, Bm, Os	C	S
Singing Bush-Lark <i>Mirafra cantillans</i> Blyth, 1845	Gr, Cs	O	R
Red-winged Bush-Lark <i>Mirafra erythroptera</i> Blyth, 1845	Os, Cs	C	R
Ashy-crowned Sparrow-Lark <i>Eremopterix grisea</i> (Scopoli, 1786)	Os, Cs	C	R
Rufous-tailed Finch-Lark <i>Ammomanes phoenicurus</i> (Franklin, 1831)	Cs	O	R
Eastern Skylark <i>Alauda gulgula</i> Franklin, 1831	Gr, Cs	O	R
Plain Martin <i>Riparia paludicola</i> (Vieillot, 1817)	Wl	O	R
Common Swallow <i>Hirundo rustica</i> Linnaeus, 1758	Gr, Cs, Wl	C	W
Wire-tailed Swallow <i>H. smithii</i> Leach, 1818	Wl	C	R
Red-rumped Swallow <i>H. daurica</i> Linnaeus, 1771	Gr, Os, Cs	C	W
Streak-throated Swallow <i>H. fluvicola</i> Blyth, 1855	Wl	U	LM
Forest Wagtail <i>Dendronanthus indicus</i> (Gmelin, 1789)	Ms	X	W
White Wagtail <i>Motacilla alba</i> Linnaeus, 1758	Wl	O	W

Species	Habitat	Frequency	Status
Large Pied Wagtail <i>M. maderaspatensis</i> Gmelin, 1789	Wl	C	R
Citrine Wagtail <i>M. citreola</i> Pallas, 1776	Wl	O	W
Yellow Wagtail <i>M. flava</i> Linnaeus, 1758	Gr, Wl	O	W
Grey Wagtail <i>M. cinerea</i> Tunstall, 1771	Ms, Wl	C	W
Paddyfield Pipit <i>Anthus rufulus</i> Vieillot, 1818	Cs	C	R
Tawny Pipit <i>A. campestris</i> (Linnaeus, 1758)	Os, Cs	O	W
Brown Rock Pipit <i>A. similis</i> Jerdon, 1840	Os, Wl	O	W
Eurasian Tree Pipit <i>A. trivialis</i> (Linnaeus, 1758)	Ms, Bm	O	W
Oriental Tree Pipit <i>Anthus hodgsoni</i> Richmond, 1907	Tk, Ms, Bm, Cc	C	W
Large Cuckoo-Shrike <i>Coracina macei</i> (Lesson, 1830)	Tk, Ms, Bm	C	R
Black-headed Cuckoo-Shrike <i>C. melanoptera</i> (Rüppell, 1839)	Ms, Cc	U	LM
Small Minivet <i>Pericrocotus cinnamomeus</i> (Linnaeus, 1766)	Tk, Ms	C	R
White-bellied Minivet <i>P. erythropterygius</i> (Jerdon, 1840)	Os	U	LM
Long-tailed Minivet <i>P. ethologus</i> Bangs & Phillips, 1914	Tk, Ms, Bm, Cc	C	W
Scarlet Minivet <i>P. flammeus</i> (Forster, 1781)	Tk, Ms	O	LM
Common Woodshrike <i>Tephrodornis pondicerianus</i> (Gmelin, 1789)	Tk, Ms, Bm, Cc	C	R
White-eared Bulbul <i>Pycnonotus leucotis</i> (Gould, 1836)	Os	X	V
Red-vented Bulbul <i>P. cafer</i> (Linnaeus, 1766)	Tk, Ms, Bm, Cc, Os	C	R
White-browed Bulbul <i>P. luteolus</i> (Lesson, 1841)	Os	O	R
Common Iora <i>Aegithina tiphia</i> (Linnaeus, 1758)	Tk, Ms, Bm, Cc	C	R
Jerdon's Chloropsis <i>Chloropsis jerdoni</i> (Blyth, 1844)	Tk, Ms, Bm, Cc	C	R
Gold-fronted Chloropsis <i>Chloropsis aurifrons</i> (Temminck, 1829)	Tk, Ms	O	R
Brown Shrike <i>L. cristatus</i> Linnaeus, 1758	Os, Cs	O	W
Bay-backed Shrike <i>L. vittatus</i> Valenciennes, 1826	Gr, Os	O	R
Rufous-backed Shrike <i>L. schach</i> Linnaeus, 1758	Ms, Bm, Gr, Os, Cs	C	R
Southern Grey Shrike <i>L. meridionalis</i> Temminck, 1820	Os, Cs	U	LM
Blue Rock-Thrush <i>Monticola solitarius</i> (Linnaeus, 1758)	Cs	C	W
Orange-headed Thrush <i>Zoothera citrina</i> (Latham, 1790)	Ms, Bm	O	R
Scaly Thrush <i>Z. dauma</i> (Latham, 1790)	Bm	U	W
Tickell's Thrush <i>Turdus unicolor</i> Tickell, 1833	Tk, Bm	U	W
Eurasian Blackbird <i>T. merula</i> Linnaeus, 1758	Ms, Bm	O	LM?
Dark-throated Thrush <i>T. ruficollis</i> Pallas, 1776	Tk, Bm	U	W
Oriental Magpie-Robin <i>Copsychus saularis</i> (Linnaeus, 1758)	Tk, Cc, Os	C	R
White-rumped Shama <i>C. malabaricus</i> (Scopoli, 1786)	Ms, Bm	U	LM
Indian Robin <i>Saxicoloides fulicata</i> (Linnaeus, 1766)	Os, Cs	C	R
Black Redstart <i>Phoenicurus ochruros</i> (Gmelin, 1774)	Tk, Os, Cs	C	W
Common Stonechat <i>Saxicola torquata</i> (Linnaeus, 1766)	Gr, Os, Cs	O	W
Pied Bushchat <i>S. caprata</i> (Linnaeus, 1766)	Gr, Os	O	LM
Grey Bushchat <i>S. ferrea</i> Gray, 1846	Os	U	W
Indian Scimitar Babbler <i>Pomatorhinus horsfieldii</i> Sykes, 1832	Ms, Bm	U	R
Rufous-bellied Babbler <i>Dumetia hyperythra</i> (Franklin, 1831)	Bm, Os	C	R
Yellow-eyed Babbler <i>Chrysomma sinense</i> (Gmelin, 1789)	Ms, Bm, Os	C	R
Common Babbler <i>Turdoides caudatus</i> (Dumont, 1823)	Os	X	R
Large Grey Babbler <i>Turdoides malcolmi</i> (Sykes, 1832)	Os, Cs	U	R
Jungle Babbler <i>Turdoides striatus</i> (Dumont, 1823)	Tk, Ms, Bm, Cc, Os	C	R
Quaker Tit-Babbler <i>Alcippe poiocephala</i> (Jerdon, 1844)	Ms, Bm	U	R
Rufous-fronted Prinia <i>Prinia buchanani</i> Blyth, 1844	Os	O	R
Grey-breasted Prinia <i>P. hodgsonii</i> Blyth, 1844	Tk, Ms, Gr, Os	C	R
Jungle Prinia <i>P. sylvatica</i> Jerdon, 1840	Os	O	R
Ashy Prinia <i>P. socialis</i> Sykes, 1832	Gr, Os	U	R
Blyth's Reed Warbler <i>Acrocephalus dumetorum</i> Blyth, 1849	Ms, Os	C	W
Booted Warbler <i>Hippolais caligata</i> (Lichtenstein, 1823)	Os	O	W
Common Tailorbird <i>Orthotomus sutorius</i> (Pennant, 1769)	Tk, Ms, Bm, Cc, Os	C	R

Species	Habitat	Frequency	Status
Common Chiffchaff <i>Phylloscopus collybita</i> (Vieillot, 1817)	Ms, Gr, Os, Wl	O	W
Olivaceous Leaf-Warbler <i>P. griseolus</i> Blyth, 1847	Tk, Ms	O	W
Hume's Warbler <i>P. humei</i> (Brooks, 1878)	Tk, Ms	O	W
Greenish Leaf-Warbler <i>P. trochiloides</i> (Sundevall, 1837)	Tk, Ms, Bm, Cc	C	W
Large-billed Leaf-Warbler <i>P. magnirostris</i> Blyth, 1843	Tk	U	W
Western Crowned Warbler <i>P. occipitalis</i> (Blyth, 1845)	Tk, Ms	U	W
Common Lesser Whitethroat <i>Sylvia curruca</i> (Linnaeus, 1758)	Os	C	W
Asian Brown Flycatcher <i>Muscicapa dauurica</i> Pallas, 1811	Ms, Cc	U	W
Brown-breasted Flycatcher <i>M. muttui</i> (Layard, 1854)	Ms	X	W
Red-throated Flycatcher <i>Ficedula parva</i> (Bechstein, 1792)	Tk, Ms, Bm, Os	C	W
Ultramarine Flycatcher <i>F. superciliaris</i> (Jerdon, 1840)	Ms, Bm	O	W
Verditer Flycatcher <i>Eumyias thalassina</i> (Swainson, 1838)	Tk, Ms, Bm, Cc	O	W
Tickell's Blue-Flycatcher <i>Cyornis tickelliae</i> Blyth, 1843	Tk, Ms, Bm, Os	C	R
Grey-headed Flycatcher <i>Culicicapa ceylonensis</i> (Swainson, 1820)	Tk, Ms, Bm	O	W
Asian Paradise-Flycatcher <i>Terpsiphone paradisi</i> (Linnaeus, 1758)	Tk, Ms, Bm, Cc, Os	O	S
Black-naped Monarch-Flycatcher <i>Hypothymis azurea</i> (Boddaert, 1783)	Tk, Ms, Bm	C	R
White-browed Fantail-Flycatcher <i>R. aureola</i> Lesson, 1830	Tk, Cc, Os	C	R
Great Tit <i>Parus major</i> Linnaeus, 1758	Tk, Ms, Bm, Cc, Os	C	R
Black-lored Yellow Tit <i>Parus xanthogenys</i> Vigors, 1831	Tk, Ms, Bm	O	R
Thick-billed Flowerpecker <i>Dicaeum agile</i> (Tickell, 1833)	Tk, Ms, Bm	C	R
Tickell's Flowerpecker <i>D. erythrorhynchos</i> (Latham, 1790)	Ms	O	R
Purple Sunbird <i>Nectarinia asiatica</i> (Latham, 1790)	Tk, Ms, Bm, Cc	C	R
Oriental White-eye <i>Zosterops palpebrosus</i> (Temminck, 1824)	Tk, Ms, Bm, Cc	C	R
Crested Bunting <i>Melophus lathamii</i> (Gray, 1831)	Os	X	W
Black-headed Bunting <i>Emberiza melanocephala</i> Scopoli, 1769	Cs	U	W
Common Rosefinch <i>Carpodacus erythrinus</i> (Pallas, 1770)	Tk, Ms	O	W
Red Munia <i>Amandava amandava</i> (Linnaeus, 1758)	Gr, Os	C	R
White-throated Munia <i>Lonchura malabarica</i> (Linnaeus, 1758)	Os, Cs	C	R
White-rumped Munia <i>L. striata</i> (Linnaeus, 1766)	Cs	O	LM
Spotted Munia <i>L. punctulata</i> (Linnaeus, 1758)	Os, Cs	O	R
Black-headed Munia <i>L. malacca</i> (Linnaeus, 1766)	Cs	O	LM
House Sparrow <i>Passer domesticus</i> (Linnaeus, 1758)	Tk, Gr, Os, Cs	C	R
Yellow-throated Sparrow <i>Petronia xanthocollis</i> (Burton, 1838)	Tk, Ms, Bm, Cc, Gr	C	LM
Baya Weaver <i>Ploceus philippinus</i> (Linnaeus, 1766)	Gr, Os, Cs	O	LM
Grey-headed Starling <i>Sturnus malabaricus</i> (Gmelin, 1789)	Tk, Ms, Bm	O	R
Brahminy Starling <i>S. pagodarum</i> (Gmelin, 1789)	Tk, Ms, Bm, Cc	C	R
Rosy Starling <i>S. roseus</i> (Linnaeus, 1758)	Tk	O	W
Common Starling <i>S. vulgaris</i> Linnaeus, 1758	Os, Cs	U	W
Asian Pied Starling <i>S. contra</i> Linnaeus, 1758	Tk	U	R
Common Myna <i>Acridotheres tristis</i> (Linnaeus, 1766)	Tk, Ms, Cc, Os, Cs	C	R
Jungle Myna <i>A. fuscus</i> (Wagler, 1827)	Ms	X	LM
Eurasian Golden Oriole <i>Oriolus oriolus</i> (Linnaeus, 1758)	Tk, Ms, Cc	O	R
Black-headed Oriole <i>O. xanthornus</i> (Linnaeus, 1758)	Tk, Ms, Bm, Cc	C	R
Black Drongo <i>Dicrurus macrocercus</i> Vieillot, 1817	Tk, Gr, Os, Cs	C	R
Ashy Drongo <i>D. leucophaeus</i> Vieillot, 1817	Tk, Ms	O	W
White-bellied Drongo <i>D. caerulescens</i> (Linnaeus, 1758)	Tk, Ms	C	R
Greater Racket-tailed Drongo <i>D. paradiseus</i> (Linnaeus, 1766)	Tk, Ms, Bm	C	R
Ashy Woodswallow <i>Artamus fuscus</i> Vieillot, 1817	Cs	X	LM
Indian Treepie <i>Dendrocitta vagabunda</i> (Latham, 1790)	Tk, Ms, Bm, Cc	C	R
House Crow <i>Corvus splendens</i> Vieillot, 1817	Cs	X	R
Jungle Crow <i>C. macrorhynchos</i> Wagler, 1827	Tk, Ms, Bm, Gr, Os, Cs	C	R

Habitat codes:

Tk	Teak forest
Ms	Miscellaneous forest (teak mixed, <i>Anogeissus-Boswellia</i> stand, hill forest, and <i>zizyphus</i> stand)
Bm	Bamboo dominant forest
Cc	<i>Cleistanthus collinus</i> woodland
Gr	Grassland – Savanna
Os	Open scrub jungle (dominated by <i>Lantana</i>)
Cs	Countryside / Cultivation
Wl	Wetlands (river, streams, ponds, and reservoir)

Frequency codes:

C	Common
O	Occasional
U	Uncommon
X	Rare

Status codes:

R	Resident
W	Winter visitor
S	Summer visitor
LM	Local migrant
V	Vagrant / Straggler

A glimpse of the breeding biology of the Purple-rumped Sunbird *Nectarinia zeylonica* (Linnaeus, 1766)

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Presented here are the data (Table 1) on 14 pairs of eggs: their dates / times of deposition (Egg-laying), incubation period and, the brooding and the fledging of the nestlings of the Purple-rumped Sunbird *Nectarinia zeylonica* (Linnaeus, 1766). The upright arrows in the table stand for the time at which eggs were noticed in the nests, their time of exact laying was not known. The timings without the arrows were almost exact in that they were arrived at from the behaviour of the female and her position in the nest. When she was about to eject the eggs she stood with her breast thrust up and forward, blocking the entrance hole, the head lifted and rocking forward and backward. The egg ejected, she sat immediately on it, adjusting it, indicative of the egg being in the nest.

Egg pairs nine and ten were of a single pair of birds. This pair had the misfortune of having to make three nests for two clutches of eggs, all in a line in the *Prosopis* sp., fence by my window. Their first nest, initiated on 9th November 1990 and completed on the 15th was abandoned, the reason being I presume my agitating the nest-twig to know if the female was occupying it for the night. The same pair, continuing in the fence, built another nest 3m away and, completing it on 24th November 1990, laid two eggs, one each on 27th and 28th, brooding the young successfully to fledging stage. The nestlings fledging on 28th December 1990, the parents started another nest on 21st January 1991 about 30cm away from the second nest, initiated a clutch on 4th February 1991 to carry it through to fledging on 6th March 1991.

The following conclusions are made from the above data: The species breeds throughout the year with a break of two months, May-June. The gap between the second egg of a clutch and the initiation of the following clutch, if any, is 68 days. The period between the second egg of a clutch and the starting of the next nest is 54 days; the gap between the

fledging of one brood of young and nest-site selection for the next nest is 24 days; that between one fledging and the laying of the first egg of the succeeding clutch is 38 days. How many clutches a pair of birds brings forth per season is not known. A striking behaviour is the making of a separate nest for every fresh clutch a pair lays. This may imply that the species, spending much energy on nest construction, is a poor breeder. But then, this is compensated for by the fact of the species being a year-round breeder.

The recent information on the bird's behaviour (Kumar 2003) throws up a few points of interest. The eggs of the birds of Palayamkottai and Thiruchirappalli are a deviant in being plain grey without markings and the greenish tinge. That the bird laid another clutch immediately on the loss of a clutch in the same nest is not corroborated by my data. On the contrary, as per the data on pairs nine and ten, the bird has the potency to delay the deposition of the egg in case of nest / clutch catastrophe. In this light, the Hyderabad bird had it seems, only delayed the laying, by a day or so, and the egg she did lay was the 'exceptional' third egg (Ali and Ripley 1987) of the clutch that was to have been. The plausibility of the bird delaying by a couple of days, the initiation of the clutch under normal situation, it appears, is that the eggs do not enter the oviduct till the nest is completed. The completed nest is the stimulant for ovulation to take place. Hence she waits, of necessity, for that number of days either in the nest or outside it during the nights. And the waiting may or may not be to assess the security situation only, as I have argued elsewhere (Wesley 1996). It may serve the twin purpose¹.

¹ **Editors' Note:** The reason why the egg was laid quickly in Hyderabad and not so at Tiruchirappalli cannot be fully explained just by the reasons given by Mr. Wesley. There are several other things that need to be considered. For instance, the nest, which Mr. Wesley had observed and found a larger 'gap', than reported by Mr. Ashok Kumar, was disturbed by the former, which had scared the bird. Whereas at the Hyderabad nest, the bird had the eggs, damaged