BIRDS OF AGRICULTURAL IMPORTANCE IN KERALA

All India Network Project on Vertebrate Pest Management

College of Agriculture
Kerala Agricultural University
Vellanikkara, Thrissur, Kerala-680 656

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Preface

Avifaunal diversity is rich in Kerala and the number of bird species in the state is more than 500. Most of these birds have a complex status (beneficial/ depredatory/ neutral/ unknown). Out of total, only about seven per cent cause damage to human interest. Managing the depredatory birds is considerably different from the conventional pest management sciences. Indian Wildlife (Protection) Act, 1972 prohibits use of any measures to kill the national or endangered or threatened species of birds. The subject is developing fast owing to the capabilities of the avifauna *viz*., the audio sense, flight intelligences, adaptability to a new environment, distribution, migration capacity, complex ecological and population status of the birds. In agricultural ornithology, emphasis is given to protect the birds of prey (beneficial – feed on number of agriculturally important pests *viz*., insects and rodents) and the behavioural management of the problem birds (depredatory birds – those birds cause economical damage to the human interest). It is otherwise called as the conservation management or ecological management of birds.

In this compilation, we tried to make the subject very simple to the readers by providing the general characteristics of birds, bird survey methods, population data analysis and birds of importance in agricultural ecosystem with possible methods to reduce the crop loss due to birds. For identification of the birds, we provided the best possible photos so that the readers can identify the birds in nature. At the end of the bulletin, a list of described species of birds of Kerala as a ready reckoner and some bibliography for further reading.

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Index

I. Birds – General characteristics

Birds are homothermic vertebrates' animals that belongs to the class Aves and are distinguished by their feathers, toothless beaked jaws, hard-shelled egg laying, rapid metabolic rate, a four-chambered heart, and a robust yet lightweight skeleton. Their forelimbs have been transformed into wings. They have well-developed flight muscles that aid them in taking off and landing. Their hind limbs are adapted for walking, hopping, perching, grasping, wading and swimming and are covered with epidermal scales. Long hollow bones filled with air spaces, known as pneumatic bones, make up the endoskeleton. Their spindle-shaped bodies reduce wind resistance. By allowing air to travel through, the feathers aid to decrease heat loss and reduce air friction. Except for the oil gland, there are no other skin glands. A beak is formed by modifying the lower and upper jaws. Nectar, fruit, plants, seeds, carrion, and numerous tiny creatures, including other birds, make up a large part of a bird's diet. Many birds require water, despite the fact that their manner of excretion and lack of sweat glands lower physiological demands. They have excellent vision. There is a crop and a gizzard in the alimentary canal. The crops aid in softening the food, while the gizzard aids in crushing it. The gall bladder is absent in pigeons and other seed-eating birds. They breathe through lungs that are spongy and stretchy. At the base of the trachea is the syrinx, a particular vocal organ. There are 12 pairs of cranial nerves. All of the birds are oviparous and exhibit sexual dimorphism, with a single ovary and oviduct on the left side. Amnion, chorion, allantois, and yolk sac are the four embryonic membranes found in eggs. The parents normally lay the eggs in a nest and incubate them. Most birds are looked after for a long time by their parents after they hatch. Birds are social creatures who communicate with each other through visual signals, sounds, and songs, as well as cooperative breeding and hunting, flocking, and predator mobbing.

Migration: Many bird species migrate to take advantage of seasonal temperature changes around the world, maximizing the availability of food and nesting habitat. The migration patterns change depending on the group. Many land birds, shorebirds, and sea birds migrate large distances every year, which is mainly prompted by the duration of daylight and meteorological conditions. These birds have a breeding season in the temperate or polar regions,

followed by a non-breeding season in the tropical or opposite hemisphere. Before migrating, birds increase their body fat and reserves while shrinking the size of some of their organs.

Communication: Birds primarily communicate through visual and aural messages. Ritualized displays, which have evolved from non-signaling actions such as preening, feather position modifications, pecking, or other activity, may also be used by birds to communicate visually. These behaviors may indicate aggression or submission, or they may aid in the establishment of pair relationships. The syrinx produces bird calls and songs, which are the primary mechanism by which birds interact with sound. Some species may operate the two sides of the syrinx separately, permitting the production of two different melodies at the same time. Calls are used for a variety of purposes, including attracting mates, claiming and maintaining territories, identifying other individuals, and the warning of other birds of potential predators, sometimes with detailed information about the hazard.

Flocking: The main advantages of flocking are enhanced foraging efficiency and safety in numbers. In closed settings like forests, where ambush predation is widespread and several eyes can provide a helpful early warning system, predator defence is especially crucial. This has resulted in the formation of numerous mixed-species feeding flocks, which are often made up of small groups of many different species; these flocks provide safety in numbers but raise potential resource competition. Flocking has a cost, which includes bullying of socially subordinate birds by more dominant birds and, in some situations, a drop in feeding efficiency.

Resting and roosting: Birds' high metabolic rates during the active part of the day are supplemented by rest during the rest of the day. Vigilant sleep is a type of sleep-in which intervals of relaxation are punctuated by fast eye-opening "peeks," allowing them to be attentive to disruptions and make speedy escapes from threats. Swifts are thought to be able to sleep while flying, and radar data imply that when roosting, they orient themselves to face the wind. Certain types of sleep may be achievable even when in flight, according to some theories (‘Bird’, 2021).

II. How to identify a bird?

When you see a bird in the field, take note of its primary distinguishing characteristics, or "field marks," such as overall size and form, beak structure, plumage (head and body markings), and behaviors. Many birds may be identified only by their plumage colours and patterns, however sometimes plumages can be difficult to assess in the field. It is not possible to identify every bird in the field. The various features that aid in identification of birds are given hereunder.

i. Shape, Structure, and Size:

You can narrow it down to a few species by looking at the shape and structure of the bird and its parts. Look at the general shape of the bird - is it long? Is it quite spherical? Is the tail a long or short one? Is there a crest? etc…

ii. Colours and Markings:

The colours on a bird are bound to catch your attention. Examine any marks, such as bars or stripes, patterns, such as checks or streaks, and visible spots or colour flashes. A note on marks and patterns can sometimes be just as useful as the colour. Light, feather moult, time of year, and the angle from which the bird was seen may cause colours, markings, and patterns to alter. As a result, it's crucial to avoid depending simply on colour and other plumage features.

iii. Behaviour

Knowing what a bird does might also help you figure out what its name is. Different species and species-groups have distinct behavioural features that can help with bird identification. Keep an eye on the bird's movements. Is it a flycatcher that sits in one spot and flies only to collect and return one insect? Does it chase after its prey (plovers and pipits, for example)? Is it visible when singing (for example, grassbirds)? Is it a lone wolf or part of a pack (for example, Jungle Babblers are always in groups)? Is it fearful or aggressive (e.g., crows chasing raptors)? All of these details, as well as any others you notice, will assist you in identifying a bird.

iv. Sound

Bird songs, calls, and other noises are a crucial and frequently diagnostic way to distinguish between species. In fact, excellent and experienced birders rely on their ears just as much as their eyes. Learning sounds takes time, and our knowledge of the vocalizations of even common species is limited, so many people see this as an excellent opportunity to start contributing to our knowledge base.

v. Habitat

The area with biological and environmental qualities where a species has adapted to find critical resources such as food, water, shelter, and mates for reproduction is referred to as a bird habitat. What species you observe depends on where you are (and when). Bird identification is often a game of probability, and taking into account your location, habitat, and seasons can help you rule out species that are unlikely to be seen at a certain area and time. ('Identifying-birds', 2017)

Identification of birds using Apps and Databases

Some of the iOS and Android Apps and databases which aids in identification of birds are given below.

1.Merlin Bird ID: Merlin Apps provides quick identification assistance to all levels of bird watchers, allowing you to learn about birds from all around the world, including the Americas, Europe, Asia, Africa, and Oceania. Merlin wants you to describe the bird you saw, including its colour, size, and behaviour. Because no two people have the same definition of a bird. Merlin gives a selection of probable species based on descriptions from Cornell Lab scientists and thousands of bird enthusiasts who contributed to Merlin's "teaching" through online activities. More than 3 million descriptors have been given to assist Merlin match your input with the most likely birds. Merlin saves your record when you identify a species and click "This is My Bird" to help it perform better in the future. If you answer three simple questions about a bird you're trying to identify, Merlin will provide you with a list of likely matches. Merlin identifies the birds in following mode ('Merlin Bird ID', 2021).

• **Identify Bird Songs and Calls:** Sound ID listens to the birds around you and suggests who is singing in real time. To confirm what you heard, compare your tape to the songs and calls in Merlin.

•**Identify Birds in a Photo:** Photo ID will provide a brief list of possible matches after you take a snap of a bird or select one from your camera roll. Photo ID is fully offline, so no matter where you are, you can identify birds in your photos.

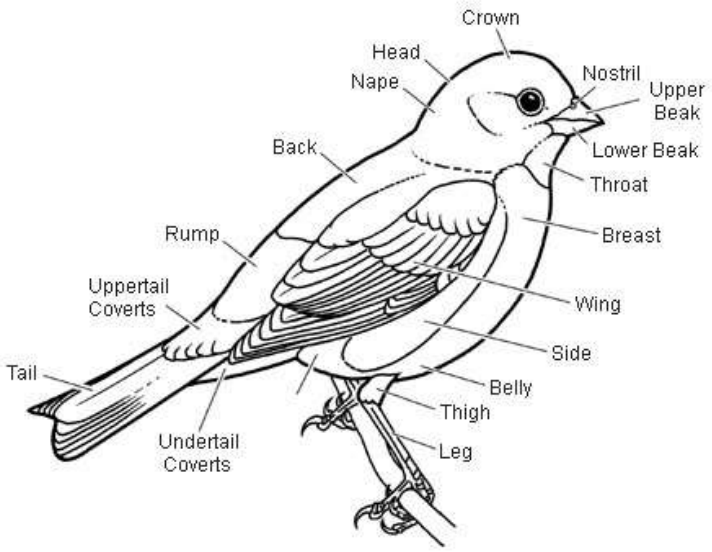
•**Save Birds to Your Life List:** Save My Bird allows you to create a digital scrapbook of your birding memories. Each time you identify a bird, tap "This is my bird!" and Merlin will add it to your growing life list.

2.Kili App: Field guides and reference books take up a lot of space in a birder's bag, but they aren't always practical to use while birding. As a result, LEO softwares created the Kili app, which can be used on mobile phones and tablets to assist supporters on the field ('Kili', 2018).

3. eBird: eBird is an online database of bird sightings that provides real-time data on bird distribution and abundance to scientists, researchers, and amateur naturalists. Through checklist data, eBird records the presence or absence of species as well as thier abundance. The bird watcher can submit their observations or view the results of interactive database searches using a web interface ('eBird', 2021).

III. Bird Topography

The parts of a bird and their locations are referred to as bird topography. It's critical to understand the sections of a bird if you want to improve your observation and identification skills. Learning the topography of a bird, such as its feathers and body components, will enable you to not only write a decent description when you see a bird, but also to understand other people's written descriptions of the same species. The topographic features will be used to determine the name of the bird. The Purple-rumped Sunbird, for example, has a purple rump. The topography of a bird is described below ('Peruaves', 2016).



Back: Bounded by the nape, leathering of the dorsum, mantle, bases of the wings and rump.

Belly: Area of the belly below the breast to vent area. There the feathers are overlap the bases of the undertail coverts.

Breast: Ventral leathering below the throat, extending over the breast muscles.

Crown: The top of the head is referred to as crown

Head: Area below the nape and reaching throat.

Forehead: The space between the bill and the crown.

Orbital Ring: A ring of unfeathered skin or a ring of unfeathered skin around the eye. Some birds have Orbital Rings that are vividly coloured, whereas others do not. The hue of an orbital ring can change over time.

Iris: The coloured region of the eye that surrounds the pupil, which is always black, is referred to as the iris. The iris colour of some birds changes as they become older.

Culmen: The ridge along the top of the upper mandible is referred as culmen.

Nostril: Equivalent to a channel in the nose of a bird.

Tomia: is the cutting edge of bill.

Gape: Corners at the base of the beak have fleshy margins. In the majority of birds, the gape is visible in young individuals.

Nape: The area behind the neck is referred as Nape.

Wing: Refers to the wing feathers (Primaries and Secondaries).

Primaries: Long flight feathers sprout from a wing's hand. The bottom of a folded wing is made up of primaries. Some sub-oscine passerines have nine primaries, while most birds have ten.

Secondaries: The forearm of the wing is covered in long flight feathers referred as secondaries. The outer Secondaries about the Primaries. The Secondaries in some ducks can be brilliantly coloured and adhere to the speculum.

Rump: Refers to the area below the mantle down to the uppertail coverts.

Back: Refers to the mantle, rump, and upper tail coverts collectively. A perched bird's rump is usually hidden beneath its folded wings.

Sides: The area around the wing's curve is referred as sides.

Tail: Refers to the feathers that conform the tail. Tail feathers occur in even numbers with the central pair on top in the folded tail, and the outer pair positioned at the bottom of the pile.

Throat: Refers to the area below the lower mandible.

Under tail Coverts: Feathers that overlap the bottom base of the tail.

Upper tail Coverts: Feathers that cover the upper base of the tail.

Vent: The area between the belly and undertail coverts is referred to vent.

IV. Bird survey methods

A survey is required if we need a reliable estimate or index of the population size of a certain species in a given area. There could be a variety of reasons for doing so. It could be that, as the owner of a nature reserve, we simply want to know how many individuals of a particular bird species are present, or that we need baseline data for an area or species that is poorly known. The counts, if repeated at regular intervals, allow us to track changes in bird

populations. Alternatively, it could be because a piece of land is being developed (e.g., turned into an industrial area) and we need to assess the likely impact of the development on the land's nature conservation value.

Bird survey data are frequently used to determine whether a piece of land should be legally protected by governments and their agencies; such designations are important to conservation because they are intended to constrain potentially harmful activities. Individual species population sizes can also be used to set priorities, allowing conservation efforts to be directed toward the most vulnerable species. In general, smaller population sizes are associated with a higher risk of extinction on a local, regional, or global scale. Such data is gathered by conducting surveys in various geographical areas. Baseline survey data collection methods include the point count method and the opportunistic count method.

Point count method: The basic method chosen is the point count method, which is based on establishing a single line at each site called transect. Birds can be identified visually or by their calls. This method entails identifying all of the birds you see or hear while standing at a series of points along transect (a straight line through the site). A systematic search (across a set area and/or for a fixed period), such as the one described here, also provides an index of individual and species abundance, which may be compared with other sites that employed the same systematic search strategy. Overestimates or underestimates of bird numbers can compromise the accuracy of the abundance index. To avoid overestimation, make sure that each individual bird is only recorded once, especially if numerous team members are observing.

The following steps are involved in point count methods:

1. Position the team at the transect's first sample point;

2. Note the identity and location of each bird species seen or heard on the corresponding diagram for 10 minutes. (See the following section for instructions on how to fill out the bird survey field data form.)

3. The bird names should be transcribed to the observation table by the conclusion of the recording period. Before moving on to the next sample point, all of the observations for the

initial recording period should be entered. Because the dawn chorus is brief, this should be done as soon as possible.

4. When the data transcription is finished, the team silently moves on to the next transect point. On the opportunistic sightings field data form, make a note of any birds you see while walking.

5. Steps 2, 3, and 4 should be repeated until all sample points in transect have been completed.

Data collecting form field includes

- Physical environment
- Climate
- Start time
- Finish time
- Bird species name
- Bird species count
- Observation type
- Number of individuals count

Opportunistic count method: Many species will be found while travelling to and from survey locations, or outside of conventional survey hours or survey sites, using the opportunistic count method. Birds can be identified in a variety of ways, including by their call or appearance. On the opportunistic bird sightings data sheet given, record all of these sightings, as well as their locations, dates, and times, for the duration of the survey (Claire, 1998).

Equipment needed for survey includes

- Compass
- Topographic map of survey area
- Clipboard, pencil and eraser
- Small notebook for making your own notes of special events seen
- Opportunistic animal sightings field data sheets and code tables.
- Code tables
- Plastic sheets or large clear plastic bag to protect data sheets when raining

- Bird field guide
- Camera
- Binoculars: 8-10X magnification and 40-50 millimeters field of view, that is, 8x40; 10x42; 10x50.

V. Diversity analysis

Bird data is typically collected using a point count method with designated circular shaped plots. Observations on bird species, number of individuals, time of encounter, bird behaviour and activity, and type of food, among other things, collected in good weather between 06:00-08:00am and 16:00-18:00pm can be subjected to the following types of analysis.

1. **Diversity Index**

To determine the diversity of species Shannon-Wiener diversity index used with the formula:

$H' = \Sigma\ pi \ln pi$

H '= Shannon diversity index,

Pi = (ni / N); Ni = number of individuals I,

N = Total number of individuals,

Ln = natural logarithm.

The index value of species diversity ranges from 1.5 to 3.5. A value of <1.5 indicates a low species diversity, then a value of 1.5 to 3.5 indicates a moderate diversity of>> 3.5 values indicates high biodiversity. (Shweta, S. 2018)

2. **Evenness Index**

To determine the proportion of species abundance present in each type of community, the Index of Evenness is used, ie the number of individuals of a species or abundance of each species in a community.

$E = H'/\ln S$

E = fairness index (range 0 - 1),

H '= Shannon diversity index,

S = number of types; Ln = natural logarithm)

3. Richness Index

To calculate species richness at each location using Margalef Index as follows:

R = (s-1/ln)

R = Margalef Index

S = Number of Types

N = Number of Individuals,

Ln = Natural logarithm)

4. Domain Type Domination Analysis

The dominant analysis of bird species was used to see the dominant, sub dominant and rare bird species composition in observed bird communities. The analysis used relative density parameters, the dominant bird category when relative density> 5%, sub dominant if relative density between 2% - 5% and rarely if relative density <2 %. The formula used to analyze was dominance.

Density Type (K) = The number of bird species/ Sample plot example;

Relative Density (KR) = (Density of a type/ Density of all types) x 100

5. Bird Spread Analysis

Spread analysis is used to view the horizontal distribution of each observation habitat by using the frequency value of the bird species found in the sample plots.

The formula used is: Frequency Type (Fj) = The number of plots found in bird species/ number of whole sample plots; Relative Frequency (FR) = (Frequency of a type/ Frequency of all types) x 100%.

6. Type of Meeting Rate Analysis

This analysis is used to calculate the level of encounter for each species of bird present in the study site, it was by dividing the total number of each bird species recorded by the total observation time multiplied by ten (10), resulting in a meeting rate of each bird species per ten hours of observation. Then the results of the calculation will be categorized, whether including "rare", "not common", "often", "general" or "overflow" (Shweta and Rajendran, 2018).

Abundance category (individual number per 10 hours observation	**Abundance Value**	**Order scale**
< 0	1	Rare
0,1 – 2,0	2	Not common
2,1– 10	3	Often
10,1 – 40	4	General
40,0	5	Overflow

VI. Birds of agricultural importance in Kerala

i. Depredatory birds: A wide variety of arable crops attract both granivorous and omnivorous birds, resulting in severe crop yield losses. Farmers face the challenge of crop damage caused by birds, and the losses resulting from agricultural depredation by birds are significant in terms of gross crop output.

ia. Omnivorous birds: Omnivorous birds consume a diverse range of foods, with both plant-based and animal-based materials constituting significant portions of their overall diets. The omnivorous birds present in agricultural landscape of Kerala are given below ('Melissa', 2019).

1. Red-naped Ibis (Black Ibis): *Pseudibis papillosa* (Family: Podicipedidae)

Photo courtesy: Dr Jishnu R

The red-naped ibis is a large black bird with long legs and a long downward curved bill. The wing feathers and tail are black with a blue-green gloss, while the neck and body are brown with no gloss. A white patch on the shoulders stands out, and the top of the featherless head has a patch of bright red warty skin. The warty patch, also known as a caruncle, is a triangular patch that develops in adult birds, with the apex at the crown and the base of the triangle behind the nape. The iris is an orange-red colour. Both sexes are identical, and young birds are browner and lack the bare head and crown at first. During the breeding season, the bills and legs turn reddish. The toes are slightly webbed at the base and have a fringing membrane.

They are usually silent, but they will call at dawn and dusk, and more frequently when nesting. The calls are a series of loud braying, squealing screams that gradually increase in volume. When viewed from a distance, this species can be confused with the glossy ibis, but the glossy ibis is smaller, more gregarious, associated with wetlands, lacks the white on the wing, and has a fully feathered head. They are typically found in small groups. When perched or walking, the white covert-patch is often hidden, but it is very visible in flight. They fly with their necks stretched out. The juveniles are a dull brown colour with no bare skin on the crown or nape. Their natural habitat consists of grasslands, cultivated fields, lakeshores, marsh edges, and garbage dumps, and they are the primary consumers of various agricultural crop plants, insects

and seeds ('Red-naped Ibis', 2021). There are distributed in Kannur, Mallapuram, Thrissur, Idukki, Kollam and Thiruvanathapuram districts of Kerala.

2. Black-headed Ibis: *Threskiornis melanocephalus* (Family: Podicipedidae)

Photo courtesy: Sreerag M S

The black-headed ibis is one of several large waterbird species in South and Southeast Asia, with adults measuring 65–76 cm long. The white plumage stands out against a naked black neck and head, as well as a black down-curved beak. Adults have light grey ornamental feathers on their tails that turn jet black during the breeding season. During the breeding season, the underwing bare patches turn blood-red. Some breeding adults' heads develop a blueish tinge, and only very rarely do they have a pink or bright red patch behind the neck. Some breeding adults develop tufts of white feathers behind the neck, and a yellowish coloration on the breast and back is rare. Although the sexes are identical, juveniles can be distinguished from adults by their greyish feathering on the neck and speckled brown-grey feathering on the wings and back. It lacks a true voice-producing mechanism, like storks and spoonbills, and is silent except for ventriloquist grunts uttered by pairs at the nest.

They are typically encountered in small groups and flies with neck outstretched. The rest of the neck is feathered white with dark specks, while the juvenile has bare skin only on the face. Breeds in colonies, where it is frequently found with herons, storks, and cormorants. Their

natural habitat includes marshes, wet and dry grasslands, paddy fields, saltmarshes, and coastal lagoons. They are found throughout kerala and are primary consumers of paddy seeds, plants, and insects ('Black-headed Ibis', 2021).

3. Glossy Ibis: *Plegadis falcinellus* (Family: Podicipedidae)

Photo courtesy: Sreerag M S

This is the most common ibis species, breeding in a variety of locations throughout Europe, Asia, Africa, Australia, and the Atlantic and Caribbean regions of the Americas. The glossy ibis is a resident of western India, despite being thought to be a migratory species. This species has a brownish bill, dark facial skin bordered in blue-gray to cobalt blue (non-breeding), and red-brown legs. Outside of the breeding season, birds from other populations may disperse widely. They are found in small groups and fly with their necks outstretched. The plumage of a juvenile is very similar to that of a dull non-breeding adult. Their natural habitat includes fresh water, marshes, lakesides, rivers with surrounding vegetation, paddy fields and coastal lagoons etc ('Glossy Ibis', 2021). The diet of the glossy ibis varies depending on the season and is heavily reliant on what is available. They are omnivorous, occasionally feeds on plants present in the natural habitat and adult and larval insects such as aquatic beetles, dragonflies, damselflies, grasshoppers, crickets, flies and caddisflies; leeches, molluscs, crustaceans and occasionally fish, amphibians, lizards, small snakes and nestling birds. There are found throughout Kerala.

4. Grey Francolin: *Francolinus pondicerianus* (Family: Phasianidae)

Photo courtesy: Christoph Moning

This francolin is a medium-sized bird, with males measuring 29–34 cm and females measuring 26–30 cm. The males weigh 260–340 g, while the females weigh 200–310 g. The francolin is barred all over and has a pale face with a thin black border around the pale throat. The only other species with a rufous vent is the painted francolin. Males can have up to two spurs on their legs, whereas females usually do not. Mecranensis, the palest subspecies, is found in arid North-Western India, Eastern Pakistan, and Southern Iran. The subspecies interpositus is darker and intermediate which is found in Northern India. In the Southern peninsula of India, the nominate race has populations with a darker rufous throat, supercilium, and a richer brown. They are weak fliers who fly short distances before vanishing into the undergrowth. It has a chestnut tail and dark primaries in flight. Southern races have a buff-orange throat, while Northern and North-Western races have a paler, whiter throat ('Grey Francolin', 2021). They are typically found in small groups in dry grassy plains with thorn scrub, stony semi-desert, and cultivated areas. They are omnivorous, feed occasionally on grassy plants, seeds and insects. There are found in Kasaragod, Kozhikode, Malappuram, Palakkad, Thrissur, Ernakulam and Idukki districts of Kerala.

5. Jungle Bush Quail: *Perdicula asiatica* (Family: Phasianidae)

Photo courtesy: Ramesh Desai

The male jungle bush quail is distinguished from the female by a white moustache, heavily barred white underparts, and variegated wings. The female has a rich chestnut breast and belly that is uniform. The male and female, however, both have red and white streaks on their heads. It measures approximately 16–18 cm in length and weighs 57–81 g. The jungle bush quail's diet consists primarily of seeds. It eats grasses in particular, but it also eats insects. Breeding occurs after the rains and lasts until the onset of colder weather, with the exact period varying across the range; five or six eggs are produced, and incubation takes 16 to 18 days. The species is not globally threatened because it has a wide range and avoids agricultural areas ('Jungle Bush Quail', 2021). Usually seen in groups of 6–20 birds. Often seen dust-bathing on tracks, eating in shrubby grassland, or travelling to favourite watering holes on well-trodden paths. Frequently flushed from beneath by a whirling wing explosion, then dropping into cover after a short flght. Their natural habitat includes grass areas in scrub jungle, grassy plains and hills with rocky scrub cover. They are primary consume seeds, plants and insects. There are distributed in Wayanad, Kozhikode, Palakkad, Thrissur, Idukki and Kollam districts of Kerala.

6. Indian Peafowl: ***Pavo cristatus*** **(Family: Phasianidae)**

Photo courtesy: Habeel sahal

Peacocks are larger birds, measuring 100–115 cm (39–45 in) from bill to tail and up to 195–225 cm (77–89 in) to the end of a completely grown train, and weighing 4–6 kg. Females, sometimes known as peahens, are smaller than males, measuring roughly 95 cm (37 in) in length and weighing 2.75–4 kg. The Indian peafowl is one of the largest and heaviest members of the Phasianidae family. So far as we know, only the wild turkey gains significant weight. Despite having a longer train on average than the male of the Indian variety, the green peafowl has a somewhat lighter body mass. Within their native distribution range, their size, colour, and crest form make them recognizable. The male's crown is metallic blue, and his head feathers are short and curled. The fan-shaped crest on the head is formed of feathers with bare black shafts and bluish-green webbing at the tips. Bare white skin forms a white stripe above the eye and a crescent-shaped white patch below the eye. Iridescent greenish blue feathers adorn the sides of the head. Scaly bronze-green feathers with black and copper patterns cover the back.

It spends much of the early morning and late afternoon in dense thickets before moving into the open, forest clearings, cultivated zones, and waterholes. Roosts at a high altitude among towering trees. During the presentation, he elevates and fans his tail, exhibiting dazzling ocelli. Their natural habitat includes deciduous forest with understory, scrub jungle, forest edges, were semi-feral also in cultivated fields and around human habitations ('Indian Peafowl', 2021). They

graze in pairs or small groups in agricultural fields, parks, and forest fringes. In crop ecosystems, peafowls graze on plant materials such as leaves, grass seeds and flowers, fruits and vegetables, standing cereal crops, and numerous insects (termites, grasshoppers, ants, and beetles). They are found throughout Kerala

7. White-Breasted Water Hen: ***Amaurornis phoenicurus*** **(Family: Phasianidae)**

Photo courtesy: Jishnu R

The upperparts and flanks of adult white-breasted waterhens are predominantly dark grey, with a white face, throat, and breast. Cinnamon coloration on the lower abdomen and undertail. To make it simpler to get through the reeds or thicket, the body gets flattened laterally. Their toes are long, their tail is short, and their bill and legs are yellow. Males and females are similar in size, but females are somewhat smaller. The downy chicks, like other rails, are black. For the widely dispersed populations, several subspecies have been named. The generic subspecies is documented from Sri Lanka, however it is sometimes expanded to include chinensis from mainland India and adjacent Asian countries, west to Arabia and east to Japan. The remaining subspecies are those found on islands, such as insularis from the Andaman and Nicobar Islands, midnicobaricus from the Central Nicobar Islands, leucocephala from Car Nicobar, and maldivus from the Maldives, *javanicus* of Java and leucomelanus of Sulawesi and the Lesser Sundas. It can be found in moist scrub and dense waterside vegetation, as well as bushes and trees. Juveniles have a duller grey-brown form of the adult, with grey-brown back ear-coverts, lores, and forehead. They feed on aquatic macrophytes and macro invertebrates associated with the plants

and several species of fishes. ('White-Breasted Water Hen', 2021). They are distributed throughout Kerala.

8. Purple Swamphen *Porphyrio porphyrio* (Family: Rallidae)

Photo courtesy: Sreerag M S

Purple Moorhen popularly known as the Grey headed swamphen (Porphyrio poliocephalus) has been emerging as a serious threat to paddy production in different parts of Kerala. They are migrant species of birds belongs to avian family Rallidae. Though they are identical to domesticated hen in both size and shape, but have characteristic purple blue plumages and possess long legs, beak and forehead which are red in colour. While walking, they move their tail both up and down wards, produce characteristic sound and are keen to perceive minute disturbances from surroundings and move quickly to safer zone.

They prefer to reside in fields which are adjacent to water bodies such as Kole lands of Thrissur, Pokkali areas of Alappuzha and marshy areas of Kannur. Both sexes are alike and found in groups; however, females are comparatively smaller. Their breeding season starts with onset of monsoon (June) and it extends up to September.

Recently, the incidence purple moorhen has been reported from rice fields which are adjacent to water bodies and the extent of damage ranges between 10 to 35%. They make their nest in the rice fields and causing damage to the rice from seedling to maturity stages. They cut the

seedlings at ground level and also pull out the inner soft parts of the plants using their legs and beak. Usually, their attacks are seen during the day time, but in some area, they cause damage during night also ('Purple Swamphen', 2021). They are found throughout Kerala.

9. Eurasian coot: *Fulica atra* (Family: Rallidae)

Photo courtesy: Sreerag M S

The Eurasian coot measures 36–38 cm (14–15 in) in length and has a wing span of 70–80 cm (28–31 in); males weigh approximately 890 g and females weigh approximately 750 g. Except for the white bill and frontal shield, it is mostly black (which gives rise to the phrase "as bald as a coot", in use as early as 1430). The coot has partial webbing on its long, muscular toes as a swimming animal. Both the sexes are similar in appearance ('Eurasian coot', 2021). The juvenile is lighter than the adult, has a whitish breast, and lacks the facial shield; the adult black plumage develops when the bird is around 3–4 months old, but the white shield does not form until the bird is about a year old. This is a loud bird with a diverse repertoire of crackling, exploding, or trumpeting sounds, which are frequently given at night. The coot is an omnivore, consuming a wide range of small live prey, including the eggs of other water birds, as well as algae, vegetation, seeds, and fruits. Its feeding practises, such as grazing on land or in water, vary significantly. It may upend like a mallard in the water or dive for food. They are found all over Kerala.

10. White-Cheeked Barbet: M*egalaima viridis* (Family: Capitonidae)

Photo courtesy: Habeel sahal

The white-cheeked barbet has a length of 16.5–18.5 cm (6.5–7.3 in). It has a brownish head with white streaks that gives it a capped appearance at times. The bill is a delicate with pink colour. The size of the birds varies from the larger northern birds to the smaller southern birds. White-cheeked barbets, like many other Asian barbets, are green, sit steady, and perch upright, making them difficult to see. Their sounds get louder and more frequent during the breeding season, which begins at the beginning of summer. The rhythmic Kot-roo...Kotroo... call, which begins with an explosive trrr, is difficult to distinguish from that of the brown-headed barbet. They may also make a single note wut, similar to the call of a collared scops owl or a coppersmith barbet, during hot afternoons. During hostile situations, more nasty calls are made. Usually seen in pairs or small groups; can sometimes be antagonistic to other species when seen in mixed foraging flocks. Like a woodpecker, it frequently climbs tree trunks and branches. Thier natural habitat includes forest and woodland, plantations, parks and gardens. Barbets are arboreal and rarely venture to the ground. Their fruit diet provides them with the majority of the water they require ('White-Cheeked Barbet', 2021). They will drink and wash when water is available in a tree hole. These birds are generally frugivorous, but they will eat winged termites and other

insects when they can. As seed dispersers, these barbets serve a vital function in forests. They also visit *Bombax* flowers for nectar and may help with pollination. There are distributed throughout Kerala.

11. Brown Headed Barbet: *Megalaima zeylanica* (Family: Capitonidae)

Photo courtesy: Ganga Bedi

It is a fruit and insect-eating arboreal species that lives in gardens and forested areas. It is commonly observed in city parks and is fairly tolerant to humans. It lays 2-4 eggs in a tree hole. Both sexes incubate the eggs and use their Kura, kura sounds to communicate with one another. The adult has a yellow eye patch and a streaked brown head, throat, and breast. The rest of the feathers are green. It has a huge head, short neck, and short tail and is 27 cm (11 in) long. It makes a repeating kutroo...kutroo...kutroo sound in the summer, but is silent in the winter. When one begins, others pick up the call. Commonly seen alone or in small groups, with bigger groups, mixed with other fruit-eating species, in fruit-laden trees ('Brown Headed Barbet', 2021). *M. z. inornata* is native to Western India and their habitat includes broadleaved forests, wooded areas, plantations and trees around habitations. Mangoes, ripe jackfruit, papaya, banana, figs, and other cultivated fruit trees are among the foods it consumes. It prefers gardens in cities and rural areas, and avoids dense woodland. ('Brown Headed Barbet', 2021) They are

found in Kasaragod, Malappuram, Palakkad, Thrissur, Ernakulam, Idukki, Pathanamthitta, Kollam, Thiruvanathapuram districts of Kerala.

12. Coppersmith Barbet: ***Megalaima haemacephala*** **(Family: Capitonidae)**

Photo courtesy: Albin Jacob

The coppersmith barbet is green in colour and has a red head, yellow cheeks, and yellow neck. Its underside is speckled with grey and black stripes. During the nesting season, the top back plumage might become bluish due to wear and tear on the feathers. It's 15–17 cm (5.9–6.7 in) long and 30–52.6 g in weight. Usually found in pairs or small groups, however large groups can be seen in fruiting trees, where they are usually joined by other fruit-eating species. In youngsters, the red markings are nonexistent ('Coppersmith Barbet', 2021). They can be found in woodland areas, plantations, and gardens with plenty of trees. They are widespread resident and preferably feeds on banyan, peepul, and other wild figs, numerous drupes and berries, and the occasional insect caught in aerial sallies barbet. It eats flower petals as well. Every day, it consumes from 1.5 to almost 3 times its body weight in berries. They are found throughout Kerala.

13. **Black-Rumped Flameback:** ***Dinopium benghalense*** **(Family: Picidae)**

The black-rumped flameback is a big species with a length of 26–29 cm. The golden yellow wing coverts distinguish it from other woodpeckers. The rump of the lesser flameback is black, not red. White underbelly with dark chevron markings. It can be distinguished from other golden-backed woodpeckers in the Indian region by its black throat, which is delicately patterned with white. There is a brownish eye patch and a pale head with a black nape and throat. It lacks the dark moustachial stripes of the bigger

Photo courtesy: Sreerag M S

flameback. The crest and crown of the adult male are red. Females have a black forecrown with white spots and a red crest on the back. Young birds are similar to females, although they are duller. To catch insects, the long tongue can be thrust forward. The only golden-backed woodpecker with a black throat and rump is the black-rumped flameback. Birds that are deafeningly deafeningly deafeningly deaf Red-tipped feathers on the malar region of two male birds from the northern Western Ghats have been observed, virtually forming a malar stripe. Usually seen in pairs or family groups, but can sometimes be found in mixed-species feeding groups. The Sri Lankan race D. b. psarodes (3b) has red upperparts in both sexes. Their natural habitat includes open woodland, light forest, open country with trees, groves, plantations and

well-wooded gardens. They are widespread resident and feed on insects from under the bark, primarily beetle larvae, and also visit termite mounds and nectar ('Black-Rumped Flameback', 2021). They frequently hide themselves from prospective predators by hopping among branches. They make good use of artificial structures, fallen fruits, and even food waste in human-modified habitats. They are distributed throughout Kerala.

14. Jerdon's Bushlark: *Mirafra affinis* (Family: Alaudidae)

Photo courtesy: Habeel sahal

The breast of the Jerdon's bush lark bears arrowhead-like markings pointing upwards. It looks a lot like the Indian bush lark (M. erythroptera), except it has buffy lores, less white behind the ear coverts, a darker centre to the wing coverts, and central tail feathers. The major coverts have dark centres, while the wing panels are duller and rufous. The race ceylonensis has a darker and more rufous underbelly and a longer bill and seen in the southern Western Ghats. The underparts of the Jerdon's bush lark are lighter and greyish-brown. From its perch, the Jerdon's bush lark sings a dry rattling. Habits are similar to Indian Bushlark ('Jerdon's Bushlark', 2021). Sings mainly from a perch, on the ground or in a song-flight similar to that of Indian Bushlark. They primarily found in fields edged with bushes or trees, scrub-covered rocky ground and scrubby areas of open forest and widely distributed in Eeast and South India and Sri Lanka.

They are omnivorous, primary consumers of seed of cereals and millets, vegetables and insects. There are found all over Kerala.

15. Oriental Skylark: ***Alauda gulgula*** **(Family: Alaudidae)**

Oriental skylarks have a length of around 16 cm (6.3 in). Their upper plumage is streaked yellow-brown, with white outer tail feathers and a small crest. Both sexes have a lot in common. On the ground, he forages. Skylark has a shorter primary projection and a shorter tail. Sings from a low perch or, more commonly, from a very high display flight, where it gives a magnificent song on trembling wings before descending in stages to the earth. The greyer race *A. g. inconspicua* (4b) is found In the North-West India. They are commonly seen in grassland, crop fields, grass bordering saltpans and coastal mudflats, also playing fields in urban areas, where it feeds on seeds and insects ('Oriental Skylark', 2021). They are found throughout Kerala.

Photo courtesy: Albin Jacob

16. Malabar Lark: ***Galerida malabarica*** **(Family: Alaudidae)**

This is a smallish lark, similar to the Eurasian skylark in size. It bears a spiky, lengthy erectile crest. It's greyer than the skylark and lacks the white wing and tail edges of that species, which comes to India in the winter. It looks a lot like the crested lark, which is found in northern India. The Malabar lark is smaller and has dark streaks on its reddish-brown plumage, whereas the

crested lark has grey plumage. The stomach is white. The sexes are comparable. Sykes's lark is a smaller, shorter-billed Indian relative with a stiff upright crest and plain rufous underparts, as well as reddish-brown plumage. Similar to Crested Lark's actions, Sings primarily from the ground or from a low perch, but also from the air. They are found in open sparse scrub, forest clearings, grass-covered stony hillsides, cultivations and grassy edges of coastal mudflats. They feed on paddy seeds and insect present in the crop fields. ('Malabar Lark', 2021) There are found in Kasaragod, Kannur, Wayanad, Kozhikode, Malappuram, Palakkad, Thrissur, Ernakulam, Idukki, Kottayam, Pattanamthitta, Kollam and Thiruvanathapuram districts of Kerala.

Photo courtesy: Sreerag M S

17. Indian Golden Oriole: *Oriolus kundoo* (Family: Oriolidae)

Photo courtesy: Habeel Sahal

The Indian golden oriole is quite similar to the Eurasian golden oriole, but the tail is yellower and the iris and bill are a softer shade of red. The male has a broad carpal patch on the wing and wide yellow tips to the secondaries and tertiaries, as well as a black eye stripe that extends behind the eye. Females have more distinct streaks on their undersides than females of the Eurasian golden oriole. Adult males of the European species had wing lengths of 149–162 mm, compared to 136–144 mm in *O. kundoo*. The wing formula is also different with primary 2 longer than 5 in *O. oriolus* while primary 5 is longer than 2 in *O. kundoo*. Mostly arboreal, attracted to fruiting trees, and frequently found in mixed-species feeding parties with jungle babblers, drongos, and flycatchers. Juvenile females are similar to adult females, except their bills are dark brown ('Indian Golden Oriole', 2021).

Their natural habitat includes open woodland, groves, cultivations and urban gardens with large trees and widely distributed in Central and North-East areas, summer visitor to the North and North-West, winter visitor in the South and East regions of India. Fruits, nectar, and insects are the main sources of food for Orioles. They can disperse the seeds of a wide variety of berry-bearing plants, including the invasive Lantana camara. Southern flying lizards have been observed being eaten by an oriole. They are found throughout Kerala.

18. Black-Hooded Oriole: *Oriolus xanthornus* (Family: Oriolidae)

Photo courtesy: Sreerag M S

The male is distinctive, with black and yellow coloration typical of orioles. The plumage is mostly yellow, with a solid black hood, as well as black in the wings and tail centre. Young birds have dark streaks on their underparts and a hood that isn't completely black, especially on the throat, like the female. This species can be distinguished from the Indian golden oriole, which is a summer visitor to northern India, by its black head. Orioles are shy birds, and even the male can be difficult to spot among the canopy's mottled yellow and green leaves. The flight of the black-hooded oriole resembles that of a thrush: it is robust and direct, with some slight dips over longer distances. When foraging, the species uses tactics such as foliage gleening, wood gleening, and sallying. Arboreal in nature, found singly, in pairs, or in small groups; drawn to fruiting trees. The head of the juvenile is duller, with a yellow forehead and eye-ring; the throat and upper breast are pale and striped black ('Black-Hooded Oriole', 2021). They are found in open broadleaved forest, well-wooded areas, cultivations, groves, parks and gardens. The black-headed oriole forages in the canopy, consuming both small fruits and huge insects. Caterpillars are the main food for the young ones. They are distributed throughout Kerala.

19. Chestnut- Tailed Starling: *Sturnia malabarica* (Sturnidae)

Photo courtesy: Abiraj A R

The adults are about 20 centimetres in length (7.9 in). Their upperparts are grey, and their remiges are blackish, although the colour of the rest of their plumage varies per subspecies. The underparts (including the undertail) of the nominate subspecies and blythii are rufous, but the underparts of nemoricola are whitish tinted rufous, notably on the flanks and crissum (the undertail coverts surrounding the cloaca). The head of the nominate and nemoricola is light grey with pale striping (especially on crown and collar region). White irises and a yellow beak with a pale blue base distinguish both subspecies. Mostly forages in trees. *S. m. blythii* is found in SW India, while *S. m. nemoricola* is found in the northeast ('Chestnut- Tailed Starling', 2021). Their natural habitat includes open woodland and open country with scattered trees. Like most starlings, the chestnut-tailed starling is fairly omnivorous, eating fruit, nectar and insects. They are found all over Kerala.

20. Brahminy Starling: *Sturnia pagodarum* (Sturnidae)

Photo courtesy: Rajesh Mangal

This myna has a loose crest and a pale buff creamy cap. The bill is golden in colour and has a bluish base. The iris is pale, and the skin around the eye is bluish. White patches can be found on the outer tail feathers, but no white patches can be found on the black primaries of the wings. The adult male has a larger crest and longer neck hackles than the female. The calibre of

juveniles is lower, and the calibre of juveniles is lower. Juveniles have a duller appearance and a browner cap. The name pagodarum is assumed to come from the fact that the species can be found on structures and temple pagodas in southern India ('Brahminy Starling', 2021). Mostly forages on the ground, often in the company of cattle; also eats fruit and flowering trees. They are found associated with open deciduous forests, thorn-scrub, cultivations and around human habitations. They are primary consumers of seeds and plant parts and insects. They are distibuted throughout Kerala.

21. Rosy Starling: *Pastor roseus* (Sturnidae)

Photo courtesy: Bhaarat Vyas

With its pink body, pale orange legs and bill, and glossy black head, wings, and tail, the adult rosy starling is easily identified. Males have extended head feathers that form a wispy crest that fluffs up and becomes more apparent when the bird is agitated during the breeding season. The crest is shorter in the winter, and the edges of black feathers within the plumage grow whiter as the edges erode. Males' winter plumage is drab in comparison. Females, on the other hand, have a small crest and no clear distinction between pink and black. The juvenile starlings are distinguishable from the common starling (Sturnus vulgaris) by their paler plumage and short yellow bill. In the autumn, young birds moult into a more subdued form of the adult plumage, but without the crest. In their second year, the latter develop plumage that is quite similar to adult females, but with longer crests and paler feather edges than female juvenile

birds. Juveniles are pale grey-brown above and dirty buff below, with dark brown-black wings and a pale yellowish bill ('Rosy Starling', 2021). The habitat includes open country, wooded areas including orchards. Rosy starlings (Pastor Roseus) are gregarious birds that congregate in huge, noisy groups, which can be a concern for cereal crop or orchard growers; the birds are attracted to flowering trees. They are, nevertheless, extremely valuable to farmers since they prey on pests like locusts and grasshoppers, reducing their population. They are found throughout Kerala.

22. Common Myna: ***Acridotheres tristis*** **(Sturnidae)**

Photo courtesy: Sreerag M S

The brown body, black hooded head, and naked yellow patch behind the eye easily distinguish the common myna. The bill and legs have a vibrant yellow colour. The outer primaries have a white patch, and the wing lining on the underside is white. Birds are frequently observed in pairs, and both sexes appear similar. The common myna follows Gloger's rule in that birds from northern India are paler than those from southern India. It's a sweetie. Primarypatches are visible in flight. They found in and around human habitations and cultivations. The common myna, like other starlings, is omnivorous. Insects, arachnids, crustaceans, reptiles, small mammals, seeds, grain, and fruits, as well as abandoned trash from human habitation, are among its favourite foods. It forages for insects on the ground amid the grasses, particularly

grasshoppers, from which it gets its generic name, Acridotheres, which means "grasshopper hunter." It, on the other hand, eats a broad variety of insects, most of which are picked up off the ground. It pollinates flowers like Salmalia and Erythrina by cross-pollination. It is an opportunistic feeder on insects disturbed by grazing cattle as well as burned grass fields, and it moves on the ground with intermittent hops ('Common Myna', 2021). They are distributed throughout Kerala.

23. Rufous Treepie: *Dendrocitta vagabunda* (Family: Corvidae)

Photo courtesy: Sreerag M S

The body is cinnamon in colour with a black head and a long graduated tail that is bluish grey with a black tip. A white patch covers the wing. The grey treepie, which lacks the bright rufous mantle, is the sole species that causes confusion. With a hooked tip, the bill is stout. With white wing coverts and black primaries, the underparts and lower back have a warm tawny-brown to orange-brown colour. Black is the colour of the bill, legs, and feet. Several subspecies have been identified in the widely distributed populations. The nominate subspecies can be found south of Hyderabad in the northeastern section of peninsular India. The desert form is paler and called pallida, vernayi of the Eastern Ghats is brighter while parvula of the Western Ghats is smaller in size. Typically, they are encountered in pairs or small parties, with much larger groups where food is plentiful; also joins other species to feed in fruiting trees ('Rufous Treepie', 2021). Juvenile

has a brown head and upper breast. Their natural habitat includes open wooded areas, cultivations, parks and gardens. The rufous treepie is predominantly an arboreal omnivore that feeds on fruits, nectar (of Bombax ceiba), seeds, insects, tiny reptiles, and bird eggs and young; nevertheless, it has been observed eating flesh from recently murdered carcasses. They are found throughout Kerala.

24. House Crow (Indian House Crow): *Corvus splendens* (Family: Corvidae)

Photo courtesy: Sreerag M S

It's about the same size as a jackdaw and a carrion crow (40 cm (16 in) in length), but it's thinner. The forehead, crown, throat, and upper breast are glossy black, while the neck and breast are a lighter grey-brown. The tail, wings, and legs are all black. The thickness of the bill and the richness of colour in different sections of the plumage vary by region. Bold and gregarious. They are commonly foiund in villages, towns and cities, often common around ports; also in cultivated areas. House crows eat garbage, tiny reptiles and mammals, as well as insects and other small invertebrates, eggs, nestlings, grain, and fruits in the vicinity of human habitations. They are exceptionally opportunistic birds, and their omnivorous diet allows them to eat almost anything edible. These birds can be observed hunting for scraps at marketplaces and waste dumps. They've also been seen eating sand after eating carcasses (‘House Crow’, 2021). They are commonly found throughout Kerala.

25. Large-Billed Crow: *Corvus macrorhynchos* (Family: Corvidae)

Large-billed crows are 46–59 cm long on average, with a wingspan of 100–130 cm. Regional differences in body proportions exist. All taxa have a long bill, with the top one being particularly broad and arched, giving it a heavy, raven-like appearance. The rear of the head, neck, shoulders, and lower body of all taxa exhibit dark grey plumage. They have glossy black wings, tails, faces, and throats. The grey shading's depth varies across

Photo courtesy: Amit Kher

its range. Typically seen alone, in pairs, or in small groups. The Eastern Jungle Crow *C. m. levaillanti*, which is found in the northeast, and the Indian Jungle Crow *C. m. culminatus*, which is found throughout much of the region outside of the northern mountains and the northeast, are frequently regarded full species. Their natural habitat including wooded areas, open country and near habitations. It may eat from the ground or from trees, making it a very flexible feeder ('Large-Billed Crow', 2021). They eat a broad variety of things and will try to eat anything that looks edible, whether alive or dead, plant or animal. It is also one of the most persistent and brave species, particularly in metropolitan environments. They are distributed throughout Kerala.

26. Red-Vented Bulbul: ***Pycnonotus cafer*** **(Family: Pycnonotidae)**

Photo courtesy: Bajith K B

The small crest on the head of the red-vented bulbul distinguishes it from other bulbuls. The head is darker or black, while the body is dark brown with a scaly pattern. The vent is crimson, while the rump is white. The black tail has a white tip. The Himalayan races have a more pronounced crest and their undersides are more streaked. It's on a list of the top 100 worst invasive alien species on the planet. Tame; generally, in groups of two or three. The darker race *P. c. bengalensis* is found in the North and North- Eastern parts of India ('Red-Vented Bulbul', 2021). Their natural habitat includes open deciduous forest, scrub and gardens. Red-vented bulbuls eat fruits, flower petals, nectar, insects, and even house geckos (*Hemidactylus flaviviridis*). They've also been seen eating Medicago sativa leaves. They are found throughout Kerala.

27. **Jungle Babbler:** ***Turdoides striata*** **(Family: Timaliinae)**

Forest and agriculture lands are the habitats of the jungle babbler. This species, like the majority of babblers, is non-migratory with short, rounded wings and a poor flight. The sexes are identical, with a brownish grey body and a yellow bill, making them only slightly distinguishable from the endemic yellow-billed babblers of peninsular India and Sri Lanka. There is some mottling on the throat and breast, and the top regions are usually slightly darker in tone. The Maharashtra race T. s. somervillei has a dark primary flight feather and a rufous

tail. The dark loreal zone between the bill and the eye, as well as the absence of a contrasting light crown, distinguish the jungle babbler from the white-headed babbler. The calls of the two species, on the other hand, are different and distinct. The jungle babbler's sounds are harsh and nasal, but the white-headed babbler's calls are high pitched. The huge grey babbler is another urban babbler; however, it has a characteristic long tail with white outer tail feathers. They are commonly found in deciduous forests, cultivations and gardens ('Jungle Babbler', 2021). They eat insects primarily, but also grains, nectar, and berries. The tribes maintain territory and defend them against neighbours, although they also accept them on occasion. They are found throughout Kerala.

Photo courtesy: Adarsh V

28. Yellow-Billed Babler: *Turdoides affinis* (Family: Timaliinae)

The upperparts of these birds are grey brown, with a pale buff belly and a grey throat and breast with considerable mottling. The eyes are bluish white, with a grey head and nape. The nominate race, which may be found in southern India, has a whitish crown and nape, as well as a darker mantle. The rump is pale, while the tail tip is wide and dark. A. a. taprobanus is a drab pale grey Sri Lankan subspecies. Birds in India's extreme south are extremely similar to the Sri Lankan subspecies, with the crown and back of the nominate race being more grey ('Yellow-Billed Babler', 2021). The Sri Lankan subspecies resembles the jungle babbler, *Turdoides striatus*, although that species does not occur on the island. There are seven unique vocalisations in this

species, and its call is higher pitched than the jungle babbler's. The calls of the jungle babbler are rougher and more nasal. They reside in open forest and secondary woodland, dry scrub, cultivations and gardens. They eat insects primarily, but also fruit, nectar, and human food scraps. They are distributed throughout Kerala.

Photo courtesy: Adarsh V

29. House Sparrow: *Passer domesticus* (Family: Passeridae)

Photo courtesy: Habeel Sahal

The house sparrow, particularly its relatives in the genus Passer, can be confused with a variety of other seed-eating birds. Many of these relatives, such as the Dead Sea sparrow, are smaller

and have a neater or "cuter" appearance. The dull-colored female is often difficult to identify from other females and looks very similar to Spanish and Italian sparrows. The Eurasian tree sparrow has a chestnut crown and a black patch on each cheek and is smaller and slenderer. The chestnut crowns of male Spanish and Italian sparrows identify them. The Sind sparrow is similar to the Common sparrow, but it is smaller, with less black on the male's throat and a distinct light supercilium on the female. In the winter, vast groups of these birds feed away from metropolitan areas, making them a familiar companion in and near cities ('House Sparrow', 2021). The natural habitat includes urban areas, including towns and cities; post breeding also in cultivations and scrub jungle. The house sparrow mostly feeds on grain and weed seeds as an adult, although it is opportunistic and versatile, eating whatever foods are available. The amount of seeds in the house sparrow's diet has been estimated to be over 90% in several studies conducted in temperate agricultural areas. It will eat practically any seed, but prefers oats and wheat when given the option. In addition to seeds, the house sparrow eats buds, berries, and fruits including grapes and cherries. The house sparrow has an uncommon springtime habit of destroying flowers, particularly yellow ones, in temperate locations. Animals, primarily insects, are another major portion of the house sparrow's diet, with beetles, caterpillars, dipteran flies, and aphids being particularly important. Non-insect arthropods, as well as mollusks and crustaceans, earthworms, and even vertebrates like lizards and frogs, are consumed. They are distributed throughout Kerala.

30. Chestnut-Shouldered Petronia (Yellow-Throated Sparrow) ***Gymnoris xanthocollis*** **(Family: Passeridae)**

It has a finer bill than regular Passer sparrows and no stripes on its plumage, unlike them. On the otherwise dull grey-brown sparrow, the white double wing bar on the shoulder is diagnostic. Males have a chestnut shoulder patch that might be difficult to see at times. In fresh plumage, they also have a faint yellow patch on the throat. Females have a duller appearance and do not have the chestnut shoulder patch. Females have a considerably smaller yellow mark or none at all. This species prefers trees, but it can also be seen on wires and on the ground, where it hops. The typical call is a chirrup, but the song, chilp chalp cholp, is different and repetitive. It takes a bounding flying pattern and dives deep before rising. In the winter, it forms

big flocks with House Sparrows and Black-headed Buntings, foraging largely on the ground. They are found in open country and low hills with trees, scrub jungle, groves and trees near cultivations and villages. They feed on grains primarily, but also insects, nectar, and berries. The petals of flowers like *Madhuca indica* are an interesting dietary item. Their foreheads are covered in pollen when they visit flowers such as Capparis, Salmalia, Erythrina, and Bassia. They roost in large groups in low shrubs. Some populations are migratory, relocating when the weather changes ('Chestnut-Shouldered Petronia', 2021). They are found throughout Kerala.

Photo courtesy: Balaji P B

31. Baya weaver: *Ploceus philippinus* (Family: Ploceinae)

Photo courtesy: Adarsh V

These are sparrow-sized (15 cm) and in their non-breeding plumage, both males and females resemble female house sparrows. They have a short square tail and a thick conical bill. Non-breeding males and females have dark brown streaked fulvous buff above and plain (unstreaked) whitish fulvous below, long and buff-colored eyebrows, horn-colored bill, and no mask. Breeding males have a bright yellow crown, dark brown mask, blackish brown bill, dark brown upper parts streaked with yellow, yellow breast, and cream buff underneath. Extremely gregarious. Roosts and feeds in big groups, frequently with other weavers, waxbills, sparrows, and starlings. The North East is home to *P. p. burmanicus.* They are generally found in open areas with nearby water, including grassland scrub with scattered trees, paddyfields, cultivated areas and mangroves. They roost on reed beds at the edges of bodies of water. For both food (eating on seedlings in the germination stage as well as early stages of grain and nesting material, they rely on wild grasses like Guinea grass (Panicum maximum) and crops like rice ('Baya weaver', 2021). They also eat insects (including butterflies), and will occasionally take small frogs, geckos, and mollusks to feed their young. Food availability determines their seasonal movements. They are distributed throughout Kerala.

32. Streaked Weaver: ***Ploceus manyar*** **(Family: Ploceinae)**

Photo courtesy: Sreerag M S

It is a weaver bird species found in Bangladesh, Bhutan, Cambodia, China, Egypt, India, Indon esia, Myanmar, Nepal, Pakistan, Singapore, Sri Lanka, Thailand, and Vietnam. These birds are

not as abundant as baya weavers, although they look similar and have striped underparts. Gregarious. Breeds in small scattered colonies and forages and roosts in flocks. Their natural habitat includes reed-beds, reed swamps, tall grass and seasonally flooded areas. They are omnivorous, primary consumer seed, plant parts and insects. ('Streaked Weaver', 2021) They are found in Kannur, Wayanad, Malappuram, Palakkad, Thrissur, Ernakulam, Alappuzha, Kottayam, Pattanamthitta, Kollam and Thiruvanathapuram districts of Kerala.

ib. Granivorous birds

Granivorous birds eat seeds and grain predominantly, though not usually entirely. Many sorts of birds, particularly game birds, sparrows, and finches, eat this as their principal source of nutrition. Many of the most popular backyard birds are granivorous, and they flock to bird feeders that offer a variety of birdseed. ('Melissa', 2019)

1. Bar-Headed Goose: *Anser indicus* (Family: Anatidae)

Photo courtesy: Asabul Islam

The bird is pale grey in colour and has black stripes on its head, which distinguish it from other grey geese of the genus Anser. It's also a lot paler than the rest of the genus' geese. In flight, it makes a goose-like honking sound. It is a medium-sized goose with a total length of 71–76 cm

(28–30 in) and a weight of 1.87–3.2 kg. The head and hind-neck of the juvenile are dark grey, and the black nape stripes are absent. It makes a nasal honking noise during the flight. The natural habitat includes high altitude lakes and marshes, winters by large rivers and lakes, and on coastal islands of Bangladesh and they are distributed in North-West India (Ladakh), more widespread during winter ('Bar-Headed Goose', 2021). The bar-headed goose migrates across the Himalayas to spend the winter in South Asia (from Assam to Tamil Nadu and Kerala in the south. The species' current winter habitat is cultivated fields, where it feeds on barley, rice, and wheat and may cause crop damage. They are commonly found in Kannur, Kozhikode, Malappuram, Thrissur, Ernakulam, Alappuzha, Kottayam, Pattanamthitta, Kollam and Thiruvanathapuram districts of Kerala.

2. Lesser Whistling Duck (Lesser Tree Duck) ***Dendrocygna javanica*** **(Family: Anatidae)**

Photo courtesy: Jishnu R

It's a chestnut brown duck that's commonly mistaken for the fulvous whistling duck (D. bicolor), but it has chestnut upper-tail coverts instead of the latter's creamy white. The ring surrounding the eye is a bright orange-yellow colour. As with other Dendrocygna species, their head is held below the level of the body when flying straight. The crown is black, and both sexes have the same plumage. As they circle overhead, they fly slowly but quickly, fluttering their wings and making a wheezy seasick call. They are nocturnal creatures who sleep a lot throughout the day.

The inner vane of the outermost main feather has been changed. While flying, they make a very loud whistling sound. Usually seen in small flocks of a dozen or more birds, but can also be seen in much larger groups. The chestnut forewing is visible in flight. They are mainly associated with freshwater pools, lakes and swamps with fringing vegetation, but may occur on wet agricultural land and coastal lagoons ('Lesser Whistling Duck', 2021). The lesser whistling duck is a gregarious species. They eat mostly aquatic vegetation as well as grains from cultivated rice, as well as small fish, frogs, and invertebrates like mollusks and worms. They both dabble and dive in the water. They frequently waddle on the ground, and Common mynas have been observed following them through the grass. There are distributed throughout Kerala.

3. Ruddy Shelduck: *Tadorna ferruginea* (Family: Anatidae)

Photo courtesy: Manish Panchal

The ruddy shelduck is 58–70 cm (23–28 in) long with a 110–135 cm (43–53 in) wingspan. A short black collar separates the male's torso from his softer orange-brown head and neck. The rump, flight feathers, tail-coverts, and tail feathers are completely black, with iridescent green speculum feathers on the inner surfaces of the wings. The upper and lower wing-coverts are both white, a feature that is most obvious when the bird is flying but hardly visible when it is resting. The legs are black, while the bill is dark grey. The female is similar to the male except that she has a more pale, yellowish head and neck and does not have the black collar. In both sexes, the colouring varies and fades as the feathers grow. When the birds moult at the end of the breeding season, the male loses his black collar, but a partial moult between December and April recovers it. Females and juveniles are identical in appearance, with the exception that

juveniles are darker brown in colour. The call is made up of a series of loud, nasal honking notes that may be differentiated between those produced by the male and those produced by the female. The noises vary depending on the situations in which they are pronounced, and the calls are produced both on the ground and in the air. In flight, the forewing has a lot of white on it, both above and below. Juvenile females are similar to adult females, but significantly duller. They breed near high-altitude swamps and lakes ('Ruddy Shelduck', 2021). The ruddy shelduck is mostly a night bird. It eats grasses, plant new shoots, grain, and water plants, as well as invertebrates from both the aquatic and terrestrial worlds. It grazes on the foliage on land, dabbles in the shallows in the water, and up-ends at higher depths, but does not dive. ('Ruddy Shelduck', 2021). They are found in Kasaragod, Kannur, Thrissur, Ernkulam and Alappuzha districts of Kerala.

4. Pintail (Northern Pintail) *Anas acuta* (Family: Anatidae)

Photo courtesy: Arjun Suresh

The northern pintail is a fairly large duck with a wing chord of 23.6–28.2 cm (9.3–11.1 in) and wingspan of 80–95 cm (31–37 in). The male is significantly larger than the female, which is 51–64 cm (20–25 in) long and weighs 454–1,135 g. The male is 59–76 cm (23–30 in) long and weighs 450–1,360 g. The northern pintail is comparable in size to the similarly ubiquitous duck, although it is more slender, elongated, and gracile, with a longer neck and tail (in males). A chocolate-brown head and white breast with a white stripe reaching up the side of the neck distinguish the breeding plumaged male. Its upperparts and sides are grey, but from the

shoulder area, elongated grey feathers with black centre stripes drape across the back. The yellow vent area contrasts with the black underside of the tail, which features centre feathers that are up to 10 cm long (3.9 in). The beak is blue-grey in colour, while the legs are blue-grey in colour. In flight, the long neck and tail give the bird an extended appearance. They are gregarious and often congregate in big groups ('Pintail', 2021). Their natural habitat includes paddy fields, freshwater marshes, open freshwater areas, coastal lagoons and estuaries. The pintail feeds mostly plant material, such as seeds and rhizomes from aquatic plants, although it also eats roots, grain and other seeds in fields, though less frequently than other Anas ducks. ('Pintail', 2021) They are found in Kasaragod, Kannur, Wayanad, Kozhikode, Malappuram, Palakkad, Thrissur, Ernkulam, Alappuzha, Kottayam, Pattanamthitta, Kollam and Thiruvanathapuram districts of Kerala.

5. Teal (Common Teal): *Anas crecca* (Family: Anatidae)

Photo courtesy: Jeff Stacey

The Eurasian teal is one of the smallest extant dabbling ducks at 34–43 cm (13–17 in) length and with an average weight of 360 g in drake (males) and 340 g in hens (females). The wings are 17.5–20.4 cm (6.9–8.0 in) long, yielding a wingspan of 53–59 cm (21–23 in). The bill measures 3.2–4 cm (1.3–1.6 in) in length, and the tarsus 2.8–3.4 cm (1.1–1.3 in). The nuptial drakes appear grey from afar, with a dark head, a yellowish back, and a white stripe running along the flanks. Their head and upper neck are chestnut, with a large, iridescent dark green half-moon or

teardrop patch that begins just before the eye and extends to the upper hindneck. A single line of that colour continues from the patch's forward end, curving down the base of the bill, and is surrounded by thin yellowish-white lines. The breasts are buff with little dark patches on them. Even at a distance, the centre of the belly is white, and the remainder of the body plumage is largely white with thin and dense blackish vermiculations, seeming medium grey. When the bird is resting, the outer scapular feathers are white, with a black border to the outer vanes, and form the white side-stripe. The major remiges are dark greyish brown, and the speculum feathers, which are iridescent blackish-green with white ends and form the speculum with the yellowish-white tips of the bigger upperwing coverts, are iridescent blackish-green with white tips (which are otherwise grey). With grey remiges, thick dark marking on the inner coverts, and a dark leading edge, the underwing is whitish. The tail and tail coverts are black with a brilliant yellowish-buff triangular patch in the middle of each side's coverts. Gregarious. A fast-paced flight with a lot of twisting and turning. They are found in freshwater lakes and pools with fringing vegetation, brackish marshes and estuaries ('Teal', 2021).

The common teal feeds by dabbling, upending, or grazing and cause damages to paddy crops in various places. It will occasionally submerge its head and dive for food. During the breeding season, it eats crustaceans, insects and their larvae, mollusks, and worms, among other aquatic invertebrates. It switches to a mostly granivorous diet in the winter, eating on seeds of aquatic plants and grasses, including as sedges and grains. Throughout the breeding season, they are diurnal, but during the winter, they are sometimes crepuscular or even nocturnal feeders. They are distributed in Kasaragod, Kannur, Wayanad, Kozhikode, Malappuram, Palakkad, Thrissur, Ernkulam, Alappuzha, Kottayam, Pattanamthitta, Kollam and Thiruvanathapuram districts of Kerala.

6. Garganey: ***Anas querquedula*** **(Family: Anatidae)**

With its brown head and breast and a large white crescent over the eye, the adult male is easily identifiable. Grey plumage with loose grey scapular feathers. The bill and legs are grey. It has a pale blue speculum with a white border when in flight. Its tertials have distinct white borders when swimming. He has a dark crown (anatomy) and a reddish-brown face. The brown female

must be distinguished from the similar common teal with some care, although the stronger face markings and more frequent head shaking when dipping are useful markers. It's possible to confuse this species with the female of the blue-winged teal, although the head and bill shapes are distinct, and the latter species has yellow legs. Pale eyebrow, dark eye line, and pale lore spot with a second dark line. In general, shy, and prefers to stay close to aquatic vegetation. From above, the male's pale grey forewing is separated from the green speculum by a white wing-bar in flight. From afar, it can appear to have pale wings ('Garganey', 2021). Often in big flocks, gregarious. Their natural habitat includes freshwater lakes and marshes with extensive vegetation, lakes and coastal lagoons. They feed on aquatic plants, weeds, seeds, roots, tubers, shoots, leaves, aquatic insects, small fish, crustaceans, molluscs and frogs. They are found in Kasaragod, Kannur, Wayanad, Kozhikode, Malappuram, Palakkad, Thrissur, Ernkulam, Alappuzha, Kottayam, Pattanamthitta, Kollam and Thiruvanathapuram districts of Kerala.

Photo courtesy: Arjun Suresh

7. Spot-Billed Duck (Indian Spot-Billed Duck): *Anas poecilorhyncha* (Family: Anatidae)

This duck has a scaly patterned body with a green speculum edged by white and is about the same size as a mallard. In the nominate subspecies, the white stripe stands out at repose, and the long neck and bill with yellow tip and orange red dots at the base are distinguishing features. In haringtoni, the red dots at the base of the bills are absent. It has a body mass of 790–1,500 g and measures 55–63 cm (22–25 in) in length and 83–95 cm (33–37 in) across the wings. Grey

ducks with a lighter head and neck and a black beak tipped bright yellow are the most common. The male has a red mark on the base of the bill, which is absent or inconspicuous in the smaller but otherwise similar female. The wings are whitish with black flight feathers below, and from above reveal a white-bordered green. There is no eclipse plumage on the male. Legs and feet range in colour from bright orange to coral red ('Spot-Billed Duck', 2021). Adults are browner and duller than juveniles. In flight, a prominent white patch on the tertials and a green speculum can be seen from above; from below, dark primaries and secondaries contrast with white coverts. They are found in well-vegetated freshwater lakes, pools and marshes and feed on plants, including crops such as rice, as well as invertebrates including snails. They are found throughout Kerala.

Photo courtesy: Aravind A M

8. Knob-Billed Duck (Comb Duck) *Sarkidiornis melanotos* (Family: Anatidae)

This common species is easily identified. It is one of the largest duck species. Sizes range from 56 to 76 cm (22 to 30 in) in length, 116 to 145 cm (46 to 57 in) in wingspan, and 1.03 to 2.9 kg in weight. Adults have a pristine white neck and underparts, as well as a white head freckled with dark dots. The upperparts are glossy blue-black, with bluish and greenish iridescence conspicuous on the secondaries in particular (lower arm feathers). The male has a big black knob on his beak and is significantly larger than the female. Young birds have dull buff underparts, face, and necks, with dull brown upperparts, top of head, and eyestripes. When compared to

comb ducks, knob-billed ducks are often larger and have lighter flanks (light grey, in females sometimes whitish). If there are no other birds present to compare size and colour, immature knob-billed ducks can be difficult to distinguish from a large greyish female cotton pygmy geese (*Nettapus coromandelicus*). Knob-billed ducks with immature plumage, on the other hand, are rarely seen without adults nearby, thus they are usually easy to spot. Except for a faint croak when flushed, the knob-billed duck is completely silent. All of the wings in flight are dark. The back of the juvenile is scaled with buff fringes. Brownishblack hindneck, head, and eye-stripe, pale buff supercilium. The underbelly, foreneck, and face are often pale buff. They breed and survives in lowland swamps, pools and lakes in wooded country, feeding on nearby wet grassland. This duck eats on plants by grazing or dabbling, as well as tiny fish, invertebrates, and seeds to a lesser extent. It has the potential to be a concern for rice growers. Knob-billed ducks are frequently seen perched in trees ('Knob-Billed Duck', 2021). During the wet season, they are encountered in small flocks, but during the dry season, they can number up to 100. They sometimes split based on gender. They are found in Kasaragod, Kannur, Thrissur, Ernkulam, Alappuzha, Kottayam, Pattanamthitta, Kollam and Thiruvanathapuram districts of Kerala.

Photo courtesy: Panchami Manoo Ukil

9. Watercock: *Gallicrex cinerea* (Family: Rallidae)

The body of this rail has been flattened laterally to make passing through reeds or thicket easier. Its toes are long and its tail is short. Male watercocks are 43 cm (17 in) length and weigh 476–

650 g when fully grown. Their plumage is mostly black-grey, with red legs, bill, and enlarged frontal shield and horn. The colour of young males is buff, but as they grow older, their colour darkens. Their legs are green and their bill is yellow. Female birds are smaller than males, measuring 36 cm (14 in) and weighing 298–434 g. They are dark brown on top and paler on the bottom. With darker markings, the plumage is streaked and barred. The legs are green and the bill is yellow. The downy chicks, like other rails, are black. Although it is primarily a nocturnal, skulking forager, it can swim over open water ('Waterstrik', 2021). Juvenile females have less barring below than mature females. They live in reed or grassy marshes, paddy fields, and vegetation around waterways. These birds use their bill to probe dirt or shallow water for food, as well as picking up food by sight. They eat aquatic plant seeds, fish, and invertebrates. They hunt for food on the ground. They are distributed throughout Kerala.

Photo courtesy: Minal Patel

10. Black-Tailed Godwit: *Limosa limosa* (Family: Scolopacidae)

The black-tailed godwit has a long beak (7.5 to 12 cm (3.0 to 4.7 in) as well as a lengthy neck and legs. The bill has a yellowish or orange-pink base and dark tip during the breeding season, and a pink base in the winter. Legs are dark grey, brown, or black in colour. The sexes are similar in appearance, but the male's brighter, more widespread orange breast, throat, and head can be distinguished in breeding plumage. Adult black-tailed godwits have a uniform brown-grey breast and upperparts in the winter (as opposed to the streaked back of the bar-tailed godwit).

The neck and breasts of juveniles have a faint orange hue. Its striking black and white wings and white rump are easily seen in flight. It's difficult to tell the black-tailed godwit from from the similar Bar-tailed Godwit when they're on the ground, but the black-tailed godwit's longer, straighter bill and longer legs are diagnostic. Black-tailed godwits are similar to bar-tailed godwits in size and shape, but they stand taller. Gregarious. In flight, the upperwing has a prominent white wing-bar, a white rump, and a black tail. Juvenile is identical to breeding adult except that the neck is more buff, the mantle feathers are fringed pale buff, and the underparts are not barred. The Eastern race, L. l. melanuroides (not pictured), is smaller and has darker chestnut patches that run further down the flanks, with a less noticeable white wing-bar. The natural habitat includes lakes shores, grassland, mudflats and estuaries. During the winter during migration, they feed mostly invertebrates, although they also eat aquatic vegetation. ('Black-Tailed Godwit', 2021) They are found in Kasaragod, Kannur, Kozhikode, Malappuram, Thrissur, Ernkulam, Alappuzha, Kottayam, Pattanamthitta, Kollam and Thiruvanathapuram districts of Kerala.

Photo courtesy: Arjun Suresh

11. Ruff (Reeve: female): *Philomachus pugnax* (Family: Recurvirostidae)

With a small head, medium-length beak, longish neck, and pot-bellied body, the ruff has a distinct gravy boat appearance. It has long, yellow or orange legs that vary in colour. It has a deeper, slower wing stroke than other waders of similar size, and a thin, indistinct white bar on the wing and white ovals on the sides of the tail in flight. Sexual dimorphism is present in this

species. Although a small fraction of males look like females, the average male is substantially larger and has elaborate breeding plumage than the female. He's roughly 180 g and measures 29–32 cm (11–13 in) long with a 54–60 cm (21–24 in) wingspan. The normal male's legs, bill, and warty bare face skin are orange during the breeding season in May and June, and he has unique head tufts and a neck ruff. Individual birds have different ornaments, which might be black, chestnut, or white, with solid, barred, or irregular colouring. The grey-brown back has a scale-like pattern, and the underparts are white with considerable black on the breast. The high variety of the major breeding plumage is thought to have evolved to enhance individual identity in a species that has communal breeding displays but is typically deafeningly silent. Breeding males unmistakable, very variable. In moult males have a non-breeding type plumage splattered with dark blotches on the breast. In flight, the upper wing has a thin white wing-bar and uppertail coverts have conspicuous white sides. When foraging, it is known to wade up to its belly and swim and peck the surface like a phalarope ('Ruff', 2021). They are found in lake, pool and river margins, marshes and wet grassland, also coastal mudflats and feed on the seeds of rice and other cereals, sedges, grasses and aquatic plants and aquatic invertebrates. They are found in Kasaragod, Kannur, Kozhikode, Malappuram, Thrissur, Ernkulam, Alappuzha, Kottayam, Pattanamthitta, Kollam and Thiruvanathapuram districts of Kerala.

Photo courtesy: Dick Daniels

12. Rock Pigeon: *Columba rupestris* (Family: Columbidae)

The nominate subspecies of the rock dove measures 29 to 37 cm (11 to 15 in) in length and has a wing span of 62 to 72 cm (24 to 28 in). The weight of wild or feral rock doves varies between 238 and 380 grammes. Overfed domestic and semi-domestic animals can weigh more than normal. The iris is orange, red, or golden in colour, with a whiter inner ring, and the naked skin around the eye is bluish-grey in colour. The bill is grey-black with a prominent off-white cere and purplish-red foot. the bill is around 1.8 cm (0.71 in), and the tarsus is 2.6 to 3.5 cm (1.0 to 1.4 in). The adult female resembles the male in appearance, but the iridescence on her neck is less vivid and limited to the back

Photo courtesy: Sreerag M S

and sides, and the iridescence on the breast is often obscured. Small flocks of colonial birds are common. With a whitish midland on the tail, it looks like a very pale variant of Rock Dove ('Rock Pigeon', 2021). The voice is a high-pitched, rolling *gut-gut-gut-gut*. Their natural habitat includes cliffs, gorges and caves in open rugged country, also in villages. Rock Pigeon are omnivorous, but prefer plant matter, chiefly fruits and grains. They are distributed throughout Kerala.

13. Spotted Dove: ***Spilopelia chinensis suratensis*** **(Family: Columbidae)**

This long and thin dove has a rosy buff ground colour that fades into grey on the head and belly. On the back and sides of the neck is a half collar comprised of black feathers that bifurcate and have white patches at the two tips. In the Indian and Sri Lankan subspecies, the median coverts have brown feathers with rufous patches at the tips, which are split at the tip by a broadening grey shaft streak. The dark brown wing feathers have grey margins. The vent and the centre of the abdomen are white. When the bird lifts off, the white tips on the outer tail feathers become visible. Both sexes are similar, however juveniles are duller than adults and do not have neck spots until they reach adulthood. The length is between 28 and 32 cm ('Spotted Dove', 2021). In the wild, abnormal plumages such as leucism can occur. In flight, the dark tail has white corners. Juveniles are sandy-brown, with pale fringes and no collar pattern, and are slightly darker above. The race *S. c. tigrina*) is found in the North-East part of India. They are found in cultivated areas, open forests and around human habitations. Spotted doves feed in pairs or small groups on grass seeds, grains, fallen fruits, and other plant seeds from the ground. They do, however, eat insects on occasion and have been seen eating winged termites. They are distributed throughout Kerala.

Photo courtesy: Abhiraj A R

14. Rose-Ringed Parakeet: *Psittacula krameri* (Family: Psittacidae)

The rose-ringed parakeet is sexually dimorphic. The adult male has a red and black neck ring, while the hen and immature birds of both sexes have either no neck rings or light to dark grey shadow-like neck rings. In the wild, both sexes have a characteristic green colour, and captive-bred ringnecks come in a variety of colours, including turquoise, cinnamon, olive, white, blue, violet, grey, and yellow. The tail feathers, which make up a substantial amount of the total length of rose-ringed parakeets, measure on average 40 cm (16 in) in length. Their single-wing length ranges from 15 to 17.5 cm on average (5.9 to 6.9 in). This is a loud species in the wild, with a distinct squawking call. It is possible to teach captives to speak. They are a non-migratory herbivorous species. Small groups are common, but big flocks can form at food sources or roosts. Fruit, nuts, and cereals are among its favourite foods. Fast and direct flight. Juveniles are yellower than adult females and have an unclear collar ('Rose-Ringed Parakeet', 2021).The bill of *P. k. borealis*, which lives in the north of the region, is entirely red. They are found in open woodland, groves, parks and gardens. Rose-ringed parakeets feed on buds, fruits, vegetables, nuts, berries, and seeds in the wild. Wild flocks also travel long distances to graze in farmlands and orchards, wreaking havoc. They are distributed all over Kerala.

Photo courtesy: Habeel Sahal

15. Plum-Headed Parakeet: *Psittacula cyanocephala* (Family: Psittacidae)

Photo courtesy: Sreerag M S

The plum-headed parakeet is a 33-cm-long green parrot with a 22-cm-long tail. The male has a red head with purple-blue highlights on the back of the crown, neck, and cheeks, while the female has a blueish-gray head. There's a black chin stripe that extends from the lower mandible and a slender black neck collar with verdigris below on the nape. The rump and tail are bluish-green, with the latter tipped white, and there is a red shoulder patch. The top mandible is orangish-yellow in colour, whereas the lower jaw is dark in colour. The female has a dull blue grey head and a yellow collar instead of the black and verdigris collar. There's no black chin stripe or red shoulder patch, and the upper mandible is corn-yellow. Both mandibles are yellowish in immature birds, which have a green head. After a year, the dark head is obtained. A combination of blue from optical effects caused by the rami of the feather and a red pigment in the barbules produces a delicate bluish red appearance resembling the bloom of a peach. It is most common in small groups, but it can sometimes be found in considerably bigger flocks where food is sufficient. Fruit, seeds, buds, and fleshy sections of plants are all food variables. Quick and agile flight, especially when threading through trees ('Plum-Headed Parakeet', 2021). The juvenile has a yellow-orange forehead and a green head. The hybrid 'intermedia' (perhaps

a mix between this species and the Slaty-headed parakeet) was sometimes supposed to be a separate species called Intermediate or Rothschild's parakeet. They are found in forests, well-wooded areas and cultivations. It moves around in small groups, primarily due to the availability of the fruit and blooms that make up its food. Grain, fruits, and the fleshy petals of flowers (Salmalia, Butea) are among their favourite foods, and they occasionally invade agricultural fields and orchards. They are found throughout Kerala.

16. Malabar Parakeet (Blue- Winged Parakeet) *Psittacula columboides* (Family: Psittacidae)

The blue-winged parakeet has a long yellow-tipped tail and is bluish grey in colour. Both guys and females can wear the black neck ring. The lower border of the black collar on the male is bluish-green, and the upper mandible is red with a white tip, whereas the female has an all-black bill and only the black collar. The female resembles the plum-headed parakeet's female, but the plum-headed parakeet's female can be distinguished by her broad yellow collar. Flocks of birds move through the woodland, screaming out in a screeching keek-keek-keek pattern. After the northeast Monsoon, they

Photo courtesy: Prabhakar Manjunath

breed in the dry season, and the chicks fledge before the southwest Monsoon in June. They build their nests in tree holes (typically in tall Mesua ferrea species), particularly in old woodpecker and barbet nests. In December, the birds begin breeding, and eggs are laid in December and January. The average clutch size is four eggs, which hatch in about 23 days. The female broods

with the male delivering food at first, but the male eventually takes over. In about a month, the chicks fledge and depart the nest ('Malabar Parakeet', 2021). They are frequently found in small groups and fly quickly and agilely. Grain, seeds, and fruits are its main sources of nutrition. Juvenile female with an unclear collar, similar to an adult female. Their natural habitat includes tropical evergreen and moist deciduous forest, secondary growth, discarded plantations, nearby cultivations. They are found throughout Kerala.

17. Koel (Common, Asaian or Indian Koel) *Eudynamys scolopaceus* (Family: Cuculidae)

The taxonomy of the common koel complex is difficult and controversial, with some recognising only a single species (common koel, Eudynamys scolopaceus, with subspecies melanorhynchus and orientalis), two species (common koel, Eudynamys scolopaceus, with orientalis as a subspecies, and black-billed koel, *Eudynamys melanorh*. The female koel's plumage is brown with brown bands and speckles. Her brood parasitism is undiscovered because she camouflages her approach to her host's nest. Feeding of noisy miner and wattle birds' fledglings has been reported. The sexually

Photo courtesy: Habeel Sahal

dimorphic plumage of the male is black, similar to that of a raven. They're around the same size as ravens and have territories that overlap with ravens. In the same way as ravens are mobbed by noisy miners and wattle birds, they have been witnessed being mobbed by noisy miners and

wattle birds (egg predators). The male kole could be a raven impersonator, allowing the female to approach the host's nest, either intentionally or opportunistically, while the host flock is (distracted) mobbing the male. Unobtrusive, preferring dense foliage, the first glimpse is usually of a bird slowly flying from tree to tree ('Koel', 2021). Blackish juvenile with white mantle and wing feather tips and varied white banding below. They are found in open woodlands, forest edge, scrub, orchards and gardens. They are found all over Kerala.

18. Purple-Rumped Sunbird: *Leptocoma zeylonica* (Family: Nectariniidae)

Purple-rumped sunbirds are little, measuring less than 10 centimetres in length. They have brush-tipped tubular tongues and medium-length slender down-curved bills, both adaptations for nectar eating. Sunbirds with purple rump are sexually dimorphic. The males have a dark maroon upperside with a gleaming blue-green crown, vivid green shoulder patch, and violet/purple rump patch that is buried under the wings. The underparts are whitish, with a dark throat, maroon breast band, and a purple/violet patch visible in some angles. The hue of the iris is usually reddish. It can overlap with the crimson-backed sunbird in some areas of the Western Ghats, but the male of that species

Photo courtesy: Sreerag M S

has reddish upperparts, a larger breast band, and often darker eyes. The female has a yellowish breast and a white neck. The topside is olive or brownish in colour. The uppertail coverts are black, and there may be a weak supercilium apparent. The Indian variant flaviventris (which

includes two further putative populations whistleri from Maddur in Karnataka and sola from Pondicherry) has a richer pinkish hue than the nominate subspecies from Sri Lanka ('Purple-Rumped Sunbird', 2021). In the midst of flowers and greenery, an active, acrobatic forager. Juvenile looks like a female, but its underbelly is all yellow. They are found in open jungle, secondary jungle, cultivations and gardens. They are distributed throughout Kerala.

19. Purple Sunbird: *Cinnyris asiaticus* (Family: Nectarinidae)

This small sunbird has a relatively short bill, a dark and short square ended tail with distinctive sexual dimorphism. They have a down-curved bill with brush-tipped tubular tongues that help them eat on nectar. Their bill is less than 10 cm long. The upper parts of the male are a glossy metallic bluish to purplish black, with dark brown wings. Non-breeding males may have a central streak of black on yellow underparts, while breeding males have purplish black underparts as well. (The eclipse plumage of birds was originally classified as a species, C. currucaria.) The male can be mistaken for the syntopic Loten's sunbird, which has a large bill and a distinguishing broad maroon stripe on the breast in breeding plumage. In presentations, breeding males will occasionally reveal their yellow pectoral tufts. Breeding males have a vivid blue patch on their

Photo courtesy: Habeel Sahal

shoulders. The maroon sheen on the collar feathers around the neck is most noticeable during breeding season. Forager who is active and agile and is drawn to flowering trees and shrubs. It prefers to sing from a perch that is high and exposed. Their natural habitat includes deciduous forests, thorn-scrub, cultivations and gardens ('Purple Sunbird', 2021). They rarely hover over flowers, preferring instead to perch and feed for nectar. Some plant species, such as Butea monosperma, Acacia, Woodfordia, and Dendrophthoe, rely on them for pollination. They do, however, occasionally steal nectar by slicing the base of blooms like Hamelia patens. They have been observed eating tiny fruits and insects. They are found throughout Kerala.

20. White-Rumped Munia: ***Lonchura striata*** **(Family: Estrildidae)**

Photo courtesy: Ardra Raju

The white-rumped munia has a long black pointed tail and a stubby grey bill. Adults are brown above and, on the breast, with a brighter underbelly, and a white rump. The sexes are nearly impossible to discern in all subspecies; males have a bulkier head and bill. Gregarious, typically in small groups, with larger flocks in winter; forages on the ground or on seedheads; gregarious, usually in small groups, with larger flocks in winter. *L. s. acuticauda* is a rufous race found in the Himalayan foothills and the northeast.They are found in lightly wooded areas, open dry scrub, forest edge and clearings, cultivations and gardens. They've been seen munching on algae and are frequently located near water ('White-Rumped Munia', 2021). It's been claimed that they get

their protein from algae, particularly Spirogyra, which blooms in rice fields. It has the potential to become a nuisance pest of millets and other related cereals in its native environment. They are distributed all over Kerala.

21. Scaly-Breasted Munia (Spotted Munia or Spice Finch) *Lonchura punctulata* (Family: Estrildidae)

The scaly-breasted munia is 11–12 centimetres long (4.3–4.7 in) and weighs 12–16 grammes. The adult has a stubby dark bill, brown upperparts, and a dark brown head, all of which are typical of grain-eating birds. White underbelly with dark scale patterns. Males have darker underside markings and a darker throat than females, but the sexes are nearly identical. Immature birds have pale brown upperparts, lack the dark head seen in adults, and have uniform buff underparts, making them easily mistaken for juveniles of other munia species such as the tricolored munia (Lonchura malacca) in Asian and island populations, and the black-throated munia (Lonchura kelaarti) in parts of India and Sri Lanka. The plumage colour and size of populations throughout their large There are found region vary. These species, like other Estrildines, are assumed to have originated in Asia. Because of its appeal as a cage bird, the species has been imported to various regions of the world, and wild populations have grown. After breeding, forages on the ground or on grass stems, frequently in small groups with larger flocks ('Scaly-Breasted Munia', 2021). They are found in open country with scrub and trees, bushy hillsides, secondary growth with grass patches, cultivations and gardens.

Photo courtesy: Sreerag M S

The scaly-breasted munia eats grass seeds, small fruit such as Lantana berries, and insects. Despite the bill's suitability for breaking small grains, it lacks the lateral movements of the lower mandible that aid European greenfinches in seed dehusking. Prior to the breeding season, they may graze on algae, a rich protein source, as do certain other munias. They are found throughout Kerala.

22. Tricoloured Munia: *Lonchura malacca* (Family: Estrildidae)

The black-headed munia, like the chestnut munia, has been given this name. Immatures of other munias, such as the scaly-breasted munia, have pale brown upperparts, lack the dark head observed in adults, and have uniform buff underparts that can be confused with immatures of other munias. Forages on the ground in pairs or small groups; after breeding, larger flocks, often mixed with other species, emerge. The species *L. m. atricapilla* is found in the north and northeast and is sometimes considered a distinct species (Chestnut Munia). The natural habitat includes edges of marshes or swamps, reed-beds, grasslands and cultivation edge. The tricolored munia is a little social bird that eats primarily grains and seeds ('Tricoloured Munia', 2021). It prefers to live in wet grassland settings. It can also be found in tropical moist forest habitats in the lowlands. They are found throughout Kerala.

Photo courtesy: Sreerag M S

23. Red Avadavat (Red Munia or Strawberryfinch) *Amandava amandava* (Family: Estrildidae)

The rounded black tail and seasonally red bill make this tiny bird easily identifiable. Except for a black eye-stripe, lower belly, and wings, the breeding male has a red rump and is red on much of his upper body. On the red body and wing feathers, white dots may be seen. The non-breeding male is duller but has a red rump, whilst the female is duller and has less white patterning on her feathers. In the summer, tiny flocks forage on the ground or on grass-heads; in the winter, flocks are much larger and may include other species. They are found in swampy grassland, sugarcane fields, reeds and tall grass near marshes and watercourses, grass and scrub near cultivations; also gardens in the North West ('Red Avadavat', 2021). They eat grass seeds primarily, but when termites are available, they will eat them as well. They construct a grass-bladed spherical nest. They are found in Kasaragod, Kannur, Wayanad, Kozhikode, Malappuram, Palakkad, Thrissur, Ernkulam, Idukki, Kottayam, Pattanamthitta and Thiruvanathapuram districts of Kerala.

Photo courtesy: Albin Jacob

24. Common Rosefinch (Scarlet Rosefinch): *Carpodacus erythrinus* (Family: Fringillidae)

The common rosefinch has a length of 13–15 cm (5.1–5.9 in). Its bill is robust and conical. The mature male's head, breast, and rump are vivid rosy-carmine, with a large bill, dark brown wings with two faint bars, and a white belly. Females and young males are dull-colored above,

with a yellowish-brown rump and a greyer head; buff below. Adults moult between September and November, when they are in their winter quarters. The male's crimson fades after moulting and brightens over the winter as the feathers wear down ('Common Rosefinch', 2021). Skulking, forages on the ground or in low vegetation, bushes, and trees, in pairs or small groups; in winter, typically in larger flocks mixed with other finches, sparrows, or buntings. Their natural habitat include streamside willows, rock and scrub, bush-covered slopes and open conifer forest; winters in open wooded country, scrub, bushes and cultivation. They are disributed in Kasaragod, Kannur, Wayanad, Malappuram, Palakkad, Thrissur, Ernkulam, Idukki, Pattanamthitta and Thiruvanathapuram.

Photo courtesy: Habeel sahal

25. Black-Headed Bunting: ***Emberiza melanocephala*** **(Family: Emberizinae)**

Photo courtesy: Manish Panchal

This bird is larger than a reed bunting, at 15 cm (5.9 in) long with a long tail. The breeding male has a black hood, bright yellow underparts, and chestnut upperparts. With whiter underparts, a grey-brown back, and a greyish head, the female is a washed-out counterpart of the male. The juvenile is similar, but the vent is yellow, and both can be difficult to distinguish from the closely related red-headed bunting's matching plumages, albeit the black-headed bunting's cheeks are darker than the throat. Males in their first year have a grey crown and chestnut and grey patches on their backs. Female red-headed buntings can be difficult to distinguish from first-year females, despite having more streaking on the crown than on the lower back. Yellow is the colour of the vent ('Black-Headed Bunting', 2021). The crested bunting and the black- and red-headed buntings are sister species that constitute a clade. When disturbed, it forages primarily on the ground and retreats into surrounding bushes or trees; it is frequently seen in huge flocks with Red-headed Buntings. Males' head and back colours are hidden by light fringes throughout the winter. As it forages for seeds on grasslands, the black-headed bunting gathers in flocks. They lay their eggs in a low bush or on the ground and reproduce in the summer. When feeding young, it eats insects, but generally it eats seeds. They are distributed in Kasaragod, Kannur, Kozhikode, Thrissur, Ernkulam, Thiruvanathapuram districts of Kerala.

26. Red-Headed Bunting: ***Emberiza bruniceps*** **(Family: Emberizinae)**

Photo courtesy: Prashant Tewari

It is large Bunting with a long tail, large and stocky. The breeding male can be distinguished by his rusty-red head and yellow body; the non-breeding male has restricted red on the head and a streaky brown back. Females and juveniles are pale brown with streaked backs and wings, making them difficult to distinguish from Black-headed Bunting. Keep an eye out for Red-less headed's widespread crown streaking and less "compact" apex. They are mainly found in cereal grown areas. The red-headed bunting prefers open scrubby regions, such as agricultural land, to breed. It builds a nest in a tree or bush and lays three to five eggs. Its natural food consists of seeds or insects while it is young. ('Red-Headed Bunting', 2021) They are commonly seen in Kasaragod, Kannur, Kozhikode, Malappuram, Thrissur, Ernkulam, Alappuzha, Pattanamthitta, Thiruvanathapuram districts of Kerala.

Damage caused by depredatory birds in various crop plants

Parakeet damage in okra

Parakeet damage in cowpea

Peafowl damage in pumpkin

Peafowl damage in cowpea

Parakeet damage in banana

Parakeet damage in bajra

Purple moorhen damage in paddy

Purple moorhen damage paddy

Streak weaver damage in paddy

Peafowl damage in okra

Baya weaver damage in paddy

Munia damage in paddy

ic. Management of depredatory birds present in agroecosystem

Because birds that live in the agro-ecosytem and cause significant damage to agricultural crops are protected under the Indian Wildlife (Protection) Act- 1972, using deadly control tactics that endanger their lives is currently prohibited and punished by law. As a result, the following environmentally friendly management measures can be used to keep them away from agricultural fields ('Chellappan', 2019).

1. **Habitat Manipulation**
    2. Creating continuous disturbance to the nesting site of the depredatory breeding birds in and around the cropped areas that the bird will force to leave the breeding ground and shift to another area.
    3. **Roosting site clearance-** The aquatic plants present in the roosting site gives protection to the birds which cause significant damage to paddy from predators. Hence, clearing the aquatic plants discourages the bird's roost in the vicinity of the crop plants.
2. **Netting**
    - It is the best method and give complete protection to the crops. The nylon net having mesh size sufficiently prevent the passage of even granivorous birds can be used to protect the crops.
    - The rice seedlings can be protected from the attack of birds using nets of various kind's *viz.*, nylon, polythene, cotton and polthene coated iron with mesh size of ¼ to ¾ inches. Though, require comparatively higher initial investment, netting is durable and can be used for subsequent cropping periods also.
3. **Rope grid over the crop canopy**
    - Erecting rope grid over the canopy of rice plants minimizes the attack of birds. The level of rope grid needs to be raised as the height of rice plant increases is one of the limitations of this method.

4. **Scarecrow**

- A scarecrow is a humanoid figure dressed in old clothes that is set in open fields to deter birds like crows and sparrows from disrupting and eating newly cast seed and growing crops.

5. **Use of Reflective ribbon**

    - Reflective ribbon is a polyester film with metallic shining coating with red/yellow on one side and silver in other side. Reflective ribbon works on the principle that sudden bright flashes of light produce a startling response and drive the bird from an area. The AINPVPM Thrissur center has developed a metallized reflective ribbon cutting machine and supplying 3 types of ribbon viz., red, yellow, hologram for field level application. The reflective ribbon should be erected in parallel manner (1.5-2m apart) in the field at 45 cm above the crop canopy in North- West direction and it should be fixed at 5m interval using bamboo pole and string. Both the reflection of sun light and humming sound produced by the wind helps to get rid of birds from the field.

6. **Solar based flickering light**

    - It works on the same principle of reflective ribbon, but can be used also for deterring the birds during night hours. This equipment possess miniature solar panel and battery units are getting charged during day time and produces intermittent flashes during the night hours.

7. **Bio-acoustics**

    - The bioacoustics technology uses only natural sounds of predators, distress and alarm calls of of depredatory birds. The calls are broadcast in a field by using an electronic platform with sound drives. Bioacoustics tries to convey the message 'this area is dangerous' to the target birds in their own language. On hearing the sounds, the birds start avoiding the area, thus saving the crop from being damaged.

8. **Automatic cracker station**

    - The Automatic cracker station be used for deterring the birds during both day and night hours. The sound produced from the crackers at regular interval from the equipment act as an auditory repellent for the birds.

9. Screen crop/Lure crop

- Thick planting of fodder sorghum/ maize varieties on the periphery of cereals/vegetable crop fields significantly reduces the parakeet damage. Besides giving better yields, this practice also provides additional fodder.

10. Use of Botanical repellents

- Neem cake solution can be prepared by soaking 1 kg of neem cake in 200-30 litres of water and keep for fermentation for 8-10 days. Decant the fermented solution and spray above the crops. Similarly, neem cake solution @ 200 g/ lire of water showed effective in controlling the bird damage. Spraying of BioBird Repellent solution, Tobacco leaf decoction (10%) also reduces the incidence of depredatory birds in crops

11. Seed treatment for protecting the sprouting seeds

- Seed coating with Thiram (0.5%) and Copper oxy chloride (1%) is very effective in reducing the seedling loss due to granivorous birds in various crop ecosystem.

 Reflective ribbon	 Netting
 Bio-acoustics	 Solar based flickering light
 Reflective ribbon	 Automatic cracker station

ii. Beneficial Birds:

Beneficial birds, like beneficial insects, play an important role in agricultural production. We think of certain birds as Beneficials or Pests, however depending on the season, their life cycles, and the food sources available, several species alter roles. Insect-eating birds, often known as insectivores, eat predominantly insects but also seeds, fruits, and leaves.

1. Great White Egret (Great Egret): ***Ardea alba*** **(Family*: O*rderidae)**

Photo courtesy: Habeel sahal

The great egret is a huge white heron. This species can grow to be up to 1 m tall, with a length of 80 to 104 cm and a wingspan of 131 to 170 cm. The average body mass is roughly 1,000 g, with a range of 700 to 1,500 g. As a result, it is only somewhat smaller than the great blue or grey heron (*A. cinerea*). The great egret is differentiated from other white egrets by its yellow bill and black legs and feet, though the beak darkens and the lower legs lighten during the breeding season. Delicate decorative feathers are carried on the back in breeding plumage. Males and females are visually identical, and juveniles resemble nonbreeding adults. The gape, which extends well beyond the back of the eye in the great egret but ends just behind it in the intermediate egret (Mesophoyxintermedius), distinguishes it from the intermediate egret (Mesophoyxintermedius). When foraging, keep your neck erect and walk quietly ('Great White Egret', 2021). The bill is black, the lores are bluish, and the tibia is pinkred right before breeding. Colonially breeds and roosts. The natural habitat includes freshwater and saltwater areas and it

is widespread resident over much of the region. The major diet includes fishes. They also feed on crabs, frogs, salamanders, snakes, and aquatic insects. They feed on grasshoppers and rodents in open fields. They are distributed throughout Kerala.

2. Cattle Egret: *Bubulcus ibis* (Family: Ardeidae)

Photo courtesy: Bajith K B

The cattle egret is a stocky heron with a wingspan of 88–96 cm, a length of 46–56 cm, and a weight of 270–512 g. It has a slumped posture, a short, thick neck, and a strong bill. The nonbreeding adult's plumage is primarily white, with a yellow bill and greyish-yellow legs.Adults of the nominate western subspecies have orange-buff plumes on the back, breast, and crown during the breeding season, and their bill, legs, and irises turn brilliant red for a brief period before mating. The sexes are similar, but the male is slightly larger and has longer breeding plumes than the female; immature birds have black bills and lack coloured plumes.The breeding plumage of *B. i. coromandus* differs from that of the nominate subspecies in that the buff colour on the head continues to the cheeks and throat, and the plumes are more golden. The bill and tarsus of this subspecies are on average longer than those of *B. i. ibis*. The other kinds of *B. i. seychellarum* are smaller and have shorter wings. Like *B. i. ibis*, it has white cheeks and throat, but its nuptial plumes are golden, like *B. i. coromandus* ('CattleEgret', 2021). There have been reports of individuals with unusually grey, melanistic plumages. Often seen in groups preying on insects disturbed by grazing animals, and frequently perches on the backs of

larger animals. Breeds and roosts in groups. The natural habitat includes grassland, flooded fields, paddyfields, also lake, pond and river surrounds and rubbish dumps and it is widespread resident over much of the region. Cattle egrets eat insects in general. Insects like locusts and grasshoppers make up their food. Rodents, lizards, frogs, crabs, tadpoles, mollusks, fish, and small birds are also eaten by these birds. Furthermore, they frequently scavenge in garbage dumps. They are found throughout Kerala.

3. Intermediate Egret: *Egrettab intermedia* (Family: Ardeidae)

Photo courtesy: Anonymous eBirder

This species is intermediate in size between the great egret and lesser white egrets such as the little egret and cattle egret, albeit it is closer to the little egret than the great. It has all-white plumage, dark legs, and a thickish yellow bill, and measures 56–72 cm long with a 105–115 cm wingspan and weighs around 400 g ('Intermediate Egret', 2021). A reddish or black bill, greenish yellow gape skin, loose filamentous plumes on the breast and back, and dull yellow or pink on the upper legs are all characteristics of breeding birds (regional variations). The sexes are comparable. During breeding season, the bill turns black. Breast and back plumes are absent in non-breeding adults. Breeds and roosts in groups. The natural habitat includes freshwater lakes, rivers and marshes, also tidal creeks and mangrove swampsand it is widespread resident over much of the region. In shallow coastal or fresh water, including flooded fields, the Intermediate

Egret hunts its food carefully. Fish, crabs, and insects are among its favourite foods. They are distributed throughout Kerala.

4. Little Egret: *Egretta garzetta* (Family: Ardeidae)

The adult little egret averages size is 55–65 cm in length and has a wingspan of 88–106 cm. It weighs 350–550 g. Although there are dark varieties with mostly bluish-grey

Photo courtesy: Sreerag M S

plumage, its plumage is generally totally white. During the breeding season, the adult develops two long plumes that form a crest on the nape. The plumes are around 150 mm long, pointed, and extremely slender. On the breast, there are similar feathers, but the barbs are more widely spaced. Several elongated scapular feathers with long loose barbs, up to 200 mm long, can also be found. The plumage is similar in the winter, but the scapulars are shorter and more normal in appearance. The bill is long and slender, and it is black, as are the lores.At the base of the lower jaw and around the eye, there is a patch of greenish-grey exposed skin with a yellow iris. The legs are black and the feet are yellow. Juveniles have greenish-black legs and duller yellow feet than non-breeding adults, and may have a proportion of greyish or brownish feathers.The nigripes subspecies has yellow skin between the beak and eye, as well as blackish feet. The lores glow red during courtship, and the yellow-footed races' feet turn red as well ('LittleEgret', 2021). The bill is black. Lores are yellow, yellow-orange, or reddish when they first begin to reproduce, but afterwards they are greyish. Frequently feeds by darting back and forth with its wings

flapping open. Adults and youngsters who aren't reproducing don't have plumes on their heads, breasts, or backs. Breeds and roosts in colonies. The natural habitat includes lakes, rivers, marshes, rice fields, saltpans and estuaries and it is widespread resident over most of the region. Little egrets are carnivorous birds. They feed mostly on fishes, but they also devour frogs, tiny reptiles, mammals, and birds, as well as crabs, mollusks, insects, spiders, and worms. They are found throughout Kerala.

5. Indian Pond Heron: *Ardeolagrayii* (Family: Ardeidae)

Photo courtesy: Habeel Sahal

With a short neck, short thick bill, and buff-brown back, they appear stocky. Adults have long neck feathers in the summer. When they take flight, their dreary colours are replaced by the white of their wings, which makes them stand out. It looks a lot like the squacco heron, *Ardeolaralloides*, except it has a darker back.The Chinese pond heron, Ardeolabacchus, takes its place to the east of its range. Individuals with red legs have been observed during the breeding season. The numbers do not indicate that this is a typical change in adults throughout the breeding season, and some have speculated that it could be genetic variances.In flight, the tail and wings are white, with a pale buff wash on the secondary feathers ('Indian Pond Heron', 2021). Adult Chinese Pond Heron is probably indistinguishable from non-breeding non-breeding Chinese Pond Heron. The natural habitat includes various wetlands, including

marshes, ponds, paddy fields, ditches, mangrove creeks and tidal mudflats and it is widespread resident over most of the region. Crustaceans, aquatic insects, fish, tadpoles, and occasionally leeches are the principal foods of these birds (Herpobdelloides sp.). Outside of wetlands, these herons eat insects, fish, and amphibians. They are found throughout Kerala.

6. **Night Heron:** ***Nycticoraxnycticorax*** **(Family: Ardeidae)**

Unmistakably adult. Back and wings of the juvenile are dark brown with buff-white spots; head, throat, and underparts are pale streaked brown. Crepuscular or nocturnal in nature. Small groups of birds can be seen flying from daylight roosts, but they usually forage alone. Unless feeding young, sits crouched amid the leaves of trees during the day. The natural habitat includes very varied watery areas, including marshes,

Photo courtesy: Sreerag M S

lakes and rivers with extensive border vegetation; also mangroves and estuaries and widespread resident over much of the region ('Night Heron', 2021). They feed on leeches, earthworms, aquatic and terrestrial insects, prawns and crayfish, clams, mussels, squid,

freshwater and marine fish, amphibians, lizards, snakes, turtles, small mammals, birds, eggs, carrion, plant materials, and garbage/refuse from landfills. They are found throughout Kerala.

7. Black-Shouldered Kite (Black-WingedKite) *Elanuscaeruleus* (Family: Accipitridae)

The adult black-shouldered kite is approximately 35 cm in length and has a wingspan of 80 to 100 cm. The female is slightly heavier than the male, weighing around 300 g on average vs 260 g on average. Both sexes have the same plumage. The head and underparts are white, while the crown, neck, and upperparts are pale grey.A black comma-shaped marking runs in front of, above, and behind the deep red eye, which is bordered by a black orbital ring. The outer wing's leading edge is black. This provides the species its distinctive black "shoulders" when perched. The tail's middle rectrices are pale grey, while the rest of the feathers are white ('Black-Shouldered Kit'e, 2021). The bill is short, and the upper mandible has a sharp, hooked tip. The bill is black, while the nostrils and cere are bright or dull yellow.

Photo courtesy: Albin Jacob

The legs and feet are also yellow or golden-yellow, with three forward-facing toes and one backward-facing toe. When looking for prey, it frequently hovers. Large black patch on upper wing-coverts visible in flight.Juvenile's upper portions are brownish with pale fringes, while the breast and crown are rusty. The natural habitat includes grassland mixed with scattered trees or cultivations and semi-desert and widespread resident over most of the region. Mostly feed little rodents (particularly house mice), with small birds, lizards, and big insects thrown in for

good measure (especially grasshoppers). Hovering head into wind and descending onto prey on the ground with wings held high above back is how it hunts most of the time, although it also hunts from perches and during level flight. They are found throughout Kerala.

8. **Black Kite:** ***Milvusmigrans*** **(Family: Accipitridae)**

Photo courtesy: Arjun Suresh

The slightly smaller size, less forked tail (seen in flight), and mainly dark plumage without any rufous distinguish black kites from red kites. The male is slightly smaller and less aggressive than the female (this is the case in most birds of prey). Although the upper plumage is brown, the head and neck are lighter. The area around the eye looks to be darker. The outer flight feathers are black, and the inner flight feathers are speckled at the base and contain dark cross bars. The lower half of the body is pale brown, and it gets lighter as it gets closer to the chin. The dark shafts of the body feathers give it a streaking appearance. The bill is black, while the cere and gape are yellow (unlike that of the yellow-billed kite). The claws are black and the legs are yellow.They have a piercing whistle that is followed by a quick whinny sound. Males and females have the same plumage, although females are somewhat longer and have a wider wingspan than males. Their wingspan is approximately 150 centimetres. Gregarious. Scavenger who frequents garbage dumps. With a lot of twisting of the tail, the flight action is 'loose'; the fork of the tail typically disappears when the tail is stretched.Juvenile grey-buff with black,

delicate fringes on the mantle and wings, as well as a dark eye-ring ('Black Kite', 2021). The Himalayan breeder and widespread northern winter visitor *M. m. lineatu s* (Black-eared Kite) is sometimes regarded a distinct species. The natural habitat includes mountains, urban areas including cities and towns and widespread resident. Feeds on a broad variety of animal leftovers, including slaughterhouse or fishery offal, trash, scraps, and any sort of carrion. Voles and other small rodents, moles, young rabbits and hares, bats; small birds, both terrestrial and aquatic, fish, lizards, amphibians, and invertebrates, such as grasshoppers, locusts, crickets, beetles, termites, flying ants, earthworms, crustaceans, and mollusks; and invertebrates, such as grasshoppers, locusts, crickets make up their diet. They are found throughout Kerala.

9. **Brahminy Kite (Red-BackedKite): *Haliasturindus* (Family: Accipitridae)**

Photo courtesy: Sreerag M S

With chestnut plumage except for the white head and breast and black wing tips, the brahminy kite is striking and contrastingly coloured. The juveniles are browner, but the paler look, shorter wings, and rounded tail separate them from both the resident and migratory races of black kites in Asia.Buteo buzzards are distinguished by a squarish pale patch on the underwing carpal region. The brahminy kite is roughly the same size as the black kite (*Milvusmigrans*) and has a normal kite flight with angled wings, but unlike the *Milvus* species, red kite, and black kite, it has a rounded tail instead of a forked tail ('BrahminyKite', 2021). The two genera, however, are

quite closely related.Often seen sitting in a tall tree with a view of water, where it swoops down to catch prey on the surface. Juveniles are rusty-brown with rusty-buff mantle and wings, rusty-buff underparts and head, rusty-buff underwing with large pale patch at base of primaries, and rusty-grey tail. The natural habitat includes typically near water, such as lakes, rivers, marshes, flooded paddyfields, coastal lagoons, and estuaries and fishing villages. Their natural deit includes mammals, birds, reptiles, amphibians, fish, arthropods, crustaceans, sellfish, cuttlefish, road-killed vertebrates, big corpses, and offal, as well as domestic fowl, are among the tiny creatures and carrion. Quartering and high soaring, or still hunting from a prominent perch; occasionally searches on the ground. They are distributed throughout Kerala.

10. Shikra: *Accipiter badius* (Family: Accipitridae)

Photo courtesy: Sreerag M S

The shikra is a small raptor (26–30 cm long), with short rounded wings and a narrow and slightly long tail, similar to most other Accipiter hawks. Adults have a whitish underside with tiny rufous streaks, with grey upperparts. The thighs are pale and the lower belly is less banded.Females have a lighter red (yellowish orange) iris and brownish upperparts, with thicker barring on the undersides. Females are slightly larger than males. On the throat, the mesial stripe is dark but narrow. When viewed from below, the male has a light wing lining (underwing coverts) and blackish wing tips ('Shikra', 2021).When viewed from above, the tail bands on the lateral tail feathers are weakly defined and not as prominent as in the Eurasian

sparrowhawk. The tail feathers in the centre are unbanded, with only a dark terminal band. The upper breast of juveniles contains dark streaks and dots, the wing is narrowly barred, and the tail has dark but narrow bands.The underside contour feathers of a post-juvenile transitional plumage have very strong barring. Pee-wee is the call, with the first note being higher and the second note being longer. The calls are shorter and harsher in flight, *kik-ki... kik-ki.* The Chinese sparrowhawk has a similar look to the American sparrowhawk, but it has inflated brilliant orange ceres and yellow legs, with black wing tips.Takes prey, mostly lizards or birds, from trees or the ground, from a hidden, leafy perch; does not normally engage in aerial chases after prey. Juveniles are brown on top and pale buff underneath, with dark brown streaks on the breast and brown bars on the flanks, and a black line along the centre of the throat. The natural habitat includes open woodland, forest edge and wooded cultivations and widespread resident over most of the region. Their natural deit includes nestlings, eggs, gerbils, bats, rodents, frogs, and insects, as well as lizards, geckos, skinks, and small birds up to the size of exotic Budgerigars, bee-eaters, rollers, and even small gamebirds as they leave their nests; also nestlings, eggs, gerbils, bats, rodents, frogs, and insects, rarely carrion, and seen chasing domestic chickens. They are found all over Kerala.

11. **Kestrel:** ***Falco tinnunculus*** **(Family: Pandiondae)**

Photo courtesy: Habeel Sahal

According to a comparison of mtDNA cytochrome b sequence data and morphology, most species called kestrels appear to form a separate group among the falcons. Around the Miocene–Pliocene border (Messinian to Zanclean, or around 7–3.5 mya), this Falco appears to have diverged from other Falco. The most primitive "true" kestrels are three species from Africa and its environs that lack a malar stripe and, in one case, have huge bands of grey on their wings, similar to falcons but not true kestrels.The primary branch of real kestrels originated around during the Gelasian epoch (Late Pliocene or Early Pleistocene, circa 2.5–2 mya), and this includes the species with a malar stripe. This, too, appears to have originated in Africa and moved over the Old World until they arrived in Australia around one million years ago during the Middle

Pleistocene.Several taxa found on Indian Ocean islands are included in this group. Due to their overall shape and habits, a group of three primarily grey species from Africa and Madagascar are commonly referred to as kestrels, but they are likely distinct from the actual kestrels described above.When hunting for prey, it frequently hovers or rests on a post or other exposed perch from which it drops on its target ('Kestrel', 2021). Usually seen in pairs or singly. Claws that are black.The natural habitat includes mountains slopes, hills, plains and cultivated areas and resident in the Himalayas, W Pakistan, SW India and Sri Lanka, very widespread post breeding. There mostly feed small mammals, mostly voles, with occasional mice and shrews; open-area passerines, though fledglings are frequently seasonally significant; lizards and insects, such as beetles, grasshoppers, locusts, and crickets; and other invertebrates, such as earthworms. They are found in Kasaragod, Kannur, Wayanad, Kozhikode, Malappuram, Palakkad, Thrissur, Ernakulam, Idukki, Kottayam, Kollam and Thiruvanathapuram districts of Kerala.

12. **Lesser Florican:** ***Sypheotides indicus*** **(family: Jacanidae)**

The head, neck, and lower regions of a male in breeding plumage are all black. His throat, on the other hand, is white. Three four-inch long ribbon-like feathers emerge from beneath the ear-coverts on each side of the head, curving up and ending in a spatulate point. White is speckled on the back and scapulars, with V shaped marks. The coverts on the wings are white.The male tends to have some white in his wing after the breeding season. Females are slightly bigger than males. In non-breeding plumage, females and males are buff with black streaks and darker

markings on the head and throat. The back is black, speckled, and barred. The buff streaks on the neck and upper breast fade as they approach the belly button. On the inner-web, the males' outer primaries are slender and

Photo courtesy: Samyukth Sridharan

notched. The iris is yellow, and the leg is pale yellow. A male lesser florican from the Indian state of Rajasthan. A conspicuous U-shaped mark on the neck near the throat can be seen in young birds. Endangered. Non-breeding male with whitish wing-coverts and black underwing, similar to female.The male upper wing has a lot of white on the coverts, whereas the female has a lot less white and whitish-buff coverts with brownish feather centres. Flies with their necks spread out.During the display, the male leaps into the air with shallow wing-beats, neck expanded and head flung back, and the wings are held at the top of the jump to show off the white wing-patch before the bird drops to the ground to repeat the performance ('Lesser Florican', 2021). The natural habitat includes tall dry grassland with scattered bushes and fields of cotton or millet and it is breeds in NW India, much more widespread after breeding. Their natural deit includes shoots, grass, herbs, seeds, and berries, as well as grasshoppers, beetles (particularly Mylabris blister beetles during specific seasons), centipedes, lizards, and frogs. They are found in Kasaragod, Kannur, Kozhikode and Thrissur.

13. Red-wattled Lapwing: *Vanellusindicus* (Family: Charadriidae)

Red-wattled lapwings are huge waders that measure approximately 35 cm (14 in) in length. The head, a bib on the front, and the back of the neck are black, while the wings and back are light brown with a purple to green sheen. Between these two colours, a prominent white patch extends from belly to tail, bordering the neck to the sides of the head. The short tail has a black tip.The long legs are yellow, with a red fleshy wattle in front of each eye and a black-tipped red bill. The white on the secondary coverts form

Photo courtesy: Habeel Sahal

noticeable white wing bars in flight. Turkey's *V. i. aigneri* Race *aigneri* is found in Turkey, Iran, Iraq, Afghanistan, and the Indus valley, and is slightly paler and larger than the nominate race. The Brahmin race can be found throughout India.The lankae race from Sri Lanka is smaller and darker, but the atronuchalis race from north-eastern India and eastern Bangladesh has a white cheek bordered by black. It usually happens in pairs or small groups ('Red-wattled Lapwing', 2021). The upperwing is dark in flight, with a white bar on the secondary-coverts; the rump is white, and the tail is black. The race *V. i.* atronuchalis is found in the region's northeast. The natural habitat includes open areas such as farmland and grassland with nearby water and it is widespread resident. Their natural deit includes ants, butterfly and fly larvae, grasshoppers, crickets, bugs, earwigs, and termites, as well as mollusks, worms, and crustaceans, are all

examples of insects. They feed mostly during dawn and dusk, as well as at night when the moon is visible. They are found throughout Kerala.

14. Yellow-wattled Lapwing: *Vanellusmalabaricus* (Family: Charadriidae)

These birds are easily identifiable and can be found in dry stony, open grassland, or scrub habitats. They are medium-sized pale brown waders with a black crown and huge yellow facial wattles that are separated from the brown on the neck by a narrow white band. The chin and throat are black, and a short blackish line separates the brown neck and upper breast from the white belly.A subterminal black band runs along the tail but does not extend into the outer tail feathers. The inner portion of the wing has a white wingbar. The base of the bill is yellow. Their carpal spurs are a small yellow colour. In shows, the crown feathers can be lifted slightly ('Yellow-wattled Lapwing', 2021). They are primarily sedentary, but in

Photo courtesy: Albin Jacob

response to the monsoons, populations travel large distances.They are regular visitors to Nepal's Kathmandu valley, and a vagrant was spotted in Malaysia. Usually found in pairs, although after breeding can form small flocks. In flight, the upper wing's secondary-coverts have a noticeable white bar that contrasts with the black flight feathers and brown forewing; the lower rump is white, and the tail is black with white sides. Juvenile like adult, but brown crown and upper parts with pale fringes. The natural habitat includes dry grasslands, open dry country, also the fringes of wetlands and it is widespread resident, mainly India. Mostly feeding on

insects such as grasshoppers and beetles and their larvae, as well as mollusks and feeds mostly during night. They are found throughout Kerala.

15. **Black-Winged Stilt:** ***Himantopushimantopus*** **(Family: Recurvirostidae)**

They have long pink legs, a long thin black bill, and are blackish above and white below, with a white head and neck flecked with black. Males have a dark back with a greenish sheen. The backs of females are brown, which contrasts with the black remiges.Females have less black on their head and neck all year, whereas males have a lot of black, especially in the summer, in populations where the top of the head is generally white at least in the winter. However, this distinction isn't always evident, and males often have all-white heads in the winter.Gregarious. The pattern on the crown and hindneck ranges from white to slaty-grey ('Black-Winged Stilt', 2021). The upperparts of juveniles are browner, with

Photo courtesy: Sreerag M S

buff fringes. The natural habitat includes various wetlands including saltmarshes, saltpans, lakes and marshes and resident in NW and Sri Lanka, winter visitor elsewhere. Carnivorous, feeding on a wide range of tiny invertebrates and vertebrates, mostly aquatic invertebrates and vertebrates, as well as seeds. Their natural deit includes aquatic insect larvae and adults, particularly beetles, mayflies, caddisflies, water-bugs, dragonflies, flies, alderflies, and butterflies andmoths; also bivalves and gastropods, crustaceans, spiders, oligochaete and

polychaete worms, and tadpoles, small fish and their eggs; and bivalves and gastropods, crustaceans, spider. They are found throughout Kerala.

16. Storn-Curlew (Thick-Knee): *Burhinusoedicnemus indicus* (Family: Burhinidae)

His ground bird is about 41 cm long, stocky and brown with huge eyes. It looks like a plover and has dark stripes on a sandy brown background. Below the eye, a dark stripe borders a creamy moustachial stripe on the big head. A slender creamy supercilium is also seen. The group is called "thick-knee" because the legs are stout and the knees are thick.Their eyes are huge and golden. The juvenile is paler than the adult, with more prominent buff and streaks on the underparts. They have two prominent white and a white patch on the darker primaries in flight, and a broad pale band on the wing at rest. The Indian stone curlew is most active at dawn and dusk, and makes most of its sounds at night.The call is a series of harsh whistling notes that sound like pick-wick, pick-wick. They live in tiny groups and can be observed standing still in the shade of a bush during the day. Timid. During the day, it is mostly crepuscular and typically remains stationary in the shade, making it difficult to discern against the scrub or stone background.Race that is greyer and larger B. o. harterti (1b) is found in the region's northwest corner ('Storn-Curlew', 2021). When known as Indian Thick-knee or Indian Stone-curlew, *B. o. indicus* is sometimes considered

Photo courtesy: Natthaphat Chotjuckdikul

a complete species. The habitat is open stony or scrubby desert; also, semi-desert and riverside scrub and widespread resident. They feed mostly on Coleoptera and Orthoptera (particularly tenebrionid beetles, Chrotogonus grasshoppers, and big *Camponotus compressus* ants), but worms, tiny reptiles, giant millipedes, and seeds are also preferred. They are found in Kasaragod, Kannur, Kozhikode, Malappuram, Thrissur, Ernakulam and Thiruvanathapuram districts of Kerala.

17. **Indian Courser: *Cursorius coromandelicus* (Family: Glareolidae)**

Photo courtesy: Aravind Amirtharaj

This courser is found throughout South Asia, where it overlaps with other species such as the cream-colored courser. This species, on the other hand, is brighter in colour and has a wider black eye-stripe that starts at the base of the beak than the cream-colored courser. The chestnut crown contrasts with the rufous breast. The long, larger feathers composing the white stripe merge in a dark black patch on the neck. The rump appears white in flight, and the wing tip is not as black as it is in the cream-colored courser. Both sexes are the same. The long, pale legs have only three forward-pointing toes, like other coursers ('Indian Courser', 2021). As a Creamcolored Courser, I'm out foraging. In flight, the black primaries and inner secondaries stand out against the rest of the wing and body; the tail is grey-brown, and the lower rump is white. The habitat is less arid areas than Cream-coloured Courser. Occurs on dry fields, stony plains and dry riverbeds and it is widespread resident. Their natural deit includes beetles and

their larvae, particularly tenebrionids; grasshoppers, mole crickets and other insects, including ants; tiny mollusks Grasps insects by sprinting quickly, pausing, and dipping forward to peck at the ground. Occasionally seen in large flocks, more commonly 5–10 birds in the post-breeding season, and sometimes with *C. cursor*. They are distributed in Thiruvanathapuram district of Kerala.

18. Collared Pratincole: *Glareola pratincola* (Family: Glareolidae)

Photo courtesy: Yeray Seminario

This pratincole has a wingspan of 60–70 cm (9.4–11.0 in) and a length of 24–28 cm (9.4–11.0 in). Its adaption to aerial eating includes short legs, long pointed wings, a long forked tail, and a short bill. Brown on the back and head, with darker flying feathers on the wings. The stomach is white. The underwings are chestnut, although the undersides appear dark.To differentiate this species from other pratincoles that may occur in its area, such as the black-winged pratincole and the oriental pratincole, very good views are required. The later species has a chestnut underwing as well, but its tail is shorter ('Collared Pratincole', 2021). Gregarious.In flight, the secondaries have a white trailing edge, a white rump, and a deeply forked tail. Chestnut coverts can be seen on the underwing. The habitat is open dry areas, areas surrounding lakes, swamps and on coastal creeks and breeds in Pakistan. Winter visitor to India and Sri Lanka. Their natural deit includes locusts and grasshoppers, beetles, termites, flies and other, mainly large, insects;

also, some spiders and molluscs. They are found in Kasaragod, Kannur, Thrissur, Kottayam and Alappuzha districts of Kerala.

19. Small Pratincole: *Glareolalacteal* (Family: Glareolidea)

Photo courtesy: Vyom Vyas

Short legs, long pointed wings, and a short tail characterise this bird. Its small beak is a result of its preference for aerial foraging. It appears to be mostly pale grey on the ground (hence lactea, milky). Brown is the colour of the crown of the head. The wings are grey on top, with black primaries and black and white bands on the inner flight feathers' back edges. The majority of the underwings are black. The tail is white and has a black triangle at the end. The stomach is white. Gregarious. In flight, the lowerwing has mostly white secondaries and inner primaries, with the latter having a black trailing border; the upperwing has a similar appearance, but all primaries are black. Tail with a square end ("Small Pratincole," 2021). The natural habitat includes margins of large rivers and lakes and widespread resident. There are mostly feeding in beetles, bugs, termites, flies, and other insects, including dipterans, coleopterans, and hemipterans, are dipterans, coleopterans, and hemipterans. Like a swallow, it forages in huge flocks on the wing, either high in the air or low over water or land, in zigzagging flight; like a plover, it may also collect insects by sprinting on the ground. When eating, it may remind you of the pipistrelle bat, with which it frequently travels at dusk. They are found in Kasaragod,

Kannur, Wayanad, Kozhikode, Malapuram, Palakkad, Thrissur, Ernakulam, Idukki, Kottayam, Alappuzha, Pattanamthitta, Kollam and Thiruvanathapuram districts of Kerala.

20. Whiskered Tern: *Chlidonias hybrid* (Family: Laridae)

The size, black cap, strong bill (29–34 mm in males, 25–27 mm and stubbier in females, with a noticeable gonys) and more positive flight recall common or Arctic tern, while the short, forked-looking tail and dark grey breeding plumage above and below

Photo courtesy: Sreerag M S

are hallmarks of marsh tern. Summer adults have white cheeks, red legs, and a crimson bill.In the juvenile, the crown is flecked with white, and the hindcrown is more consistently blackish, though it is flecked with white in the winter adult. The black ear-coverts are linked to the hindcrown's black, and the area above is mottled with white, resulting in a C-shaped ring of black. White streaks go down the sides of the neck and occasionally across the nape.The collar is a little less distinct. The rump is pale grey throughout the year. The mantle (279 mm) of the juvenile displays a multicoloured pattern. Dark brown back and scapular feathers with large broad buff edgings and frequently subterminal buff bars or centres. Early in the fall, there is frequently an admixture of new grey feathers, especially on the mantle.In adults, the mantle is silvery-gray. The call is a distinctive krekk. Plunge-diving is a type of buoyant foraging flight that dips to pick up prey from the water's surface on a frequent basis. Non-breeding plumage

has a paler rump and a shallowly forked tail ('Whiskered Tern', 2021). The natural habitat includes vegetated lakes, pools and marshes; post breeding also occurs on coastal waters and breeds in the N and NW, more widespread post breeding. Their natural deit includes water beetles, Odonata and their larvae, grasshoppers, flying ants, spiders, tadpoles and frogs, little crabs, and small fish are examples of terrestrial and aquatic insects. They are found throughout Kerala.

21. Greater Coucal: *Centro pussinensis* (Family: Cuculidae)

Photo courtesy: Merin P Manachery

With a length of 48 cm, this cuckoo is a huge species. The head, upper mantle, and bottom are all black with a purple gloss. The back and wings of this bird are a chestnut brown colour. The coverts have no pale shaft streaks. The eyes are ruby red in colour. Juveniles have a duller black with whitish bands on the underside and tail, as well as dots on the crownThere are various geographical races, and some of these populations are classified as entire species on occasion. This name was previously used to refer to the brown coucal (C. (s.) andamanensis). According to Rasmussen &Anderton (2005), the race parroti could be a complete species - the southern coucal of peninsular India (northern boundary unclear).The Assam and Bangladesh race intermedius is smaller than the nominate race found in the sub-Himalayan zone. The races' songs are thought to differ significantly. The southern Indian race parroti has a black head and blue underparts, with a brownish forehead, face, and throat. The plumage of both sexes is

identical, but females are slightly larger ('Greater Coucal', 2021).There have been reports of leucicistic specimens. When seeking for food, skulks in plants or walks with tail held horizontally.Flight is clunky and shaky. Juvenile has a brownish-black head and underparts with white bars, rufous barred dark brown upperparts, and a black tail with white bars. C. s. parroti (Southern Coucal) (5b) is found across much of peninsular India and Sri Lanka, and is regarded a complete species by some sources. The natural habitat includes Scrub, tall grassland, thickets, waterside vegetation and gardens and widespread resident. Their natural consist of mice, hedgehogs, lizards, snakes, and frogs; caterpillars, grasshoppers, katydids, beetles, rhinoceros beetle larvae; centipedes, scorpions, spiders, crabs, snails, slugs; eggs and nestlings of tiny birds; fruits and seeds; centipedes, scorpions, spiders, crabs, snails, slugs; centi. They are distributed throughout Kerala.

22. **Commen Hawk-cuckoo:** ***Hierococcyx varius*** **(Family: Cuculidae)**

Photo courtesy: Martjan Lammertink

The common hawk-cuckoo, about the size of a pigeon, is a medium- to large-sized cuckoo (ca. 34 cm). The plumage is ashy grey above and whitish below, with brown crossbars. The tail is barred all around. Both sexes are the same. Their eyes have an unique golden ring around them. Subadults have streaked breasts like immature shikras, and their bellies feature big brown chevron marksThey may be mistaken for a hawk at first glance. When they fly, they flap and glide like sparrowhawks (especially the shikra), and when they fly upwards and land on a

perch, they shake their tails from side to side. Many small birds and squirrels sound the alarm in the same way that a hawk would ('Commen hawk-cuckoo', 2021). Males and females are similar, but males are larger. Arboreal. Above, juveniles are barred brown and rufous; below, they are white, speckled, and barred blackish. In Sri Lanka, the race H. v. ciceliae (not pictured) is darker on top with more rufous streaking on the throat. The natural habitat includes wooded country, groves and gardens and it is widespread resident. They feed mostly on insects, primarily caterpillars and cutworms, but also grasshoppers, locusts, flying termites, ants, and lizards; and also wild banyan fig fruits and berries. They are found all over Kerala.

23. Indian Cuckoo: *Cuculus micropterus* (Family: Cuculidae)

Photo courtesy: Martjan Lammertink

Both sexes of this medium-sized cuckoo look alike. It has grey upperparts with extensive black banding on the underside. With a broad subterminal dark band and a white tip, the tail is barred. White markings on the crown, chin, and throat of young birds contrast with a dark face. The head and wing feathers of juveniles are white with large white tips. The eye-ring varies in colour from grey to golden (a feature shared with the common hawk-cuckoo). The iris ranges from light brown to reddish in colour. The female is significantly paler grey on the throat than the male and has more brown on the breast and tail than the male. The belly barring is narrower in females than in males. The mouth of nestlings is orange-red, and the gape has yellow flanges. It's found in the tree canopy's foliage ('Indian Cuckoo', 2021). When compared to the Cuckoo,

the underparts are darker grey-brown, with more widely spaced barring and a large blackish subterminal band on the tail. Head, neck, and underparts of juvenile banded brown and white; mantle and wings grey-brown with whitish fringes. The natural habitat includes deciduous, evergreen and secondary forests and resident or summer visitor over much of the region apart from the North West India. They feed mostly on hairy caterpillars, as well as butterflies, grasshoppers, and ants; fruit. They are found all over Kerala.

24. Barn Owl: *Tyto alba* (Family: Tytonidae)

The barn owl is a pale-colored, medium-sized owl with long wings and a squarish tail. The size of the subspecies varies greatly, with a typical specimen measuring 33 to 39

Photo courtesy: Sharif Uddin

cm in overall length and a length ranging from 29 to 44 cm. Barn owls have an average wingspan of 80 to 95 cm, ranging from 68 to 105 cm in severe cases. Men Galapagos owls (T. a. punctatissima) weigh around 260 g on average, whereas male eastern barn owls (T. javanica) weigh around 555 g on average, with the weight of all barn owls ranging from 224 to 710 g. A powerful female T. alba of a big subspecies weighing over 550 grammes is larger than a male barn owl. The largest-bodied species of barn owl, *T. a. furcata*, from Cuba and Jamaica, is smaller and lighter than other owls found on tiny islands, maybe because they rely more on insect prey

and need to be more manoeuvrable, It's also an island race, albeit it's located on larger islands with more prey and fewer larger owls to compete with for dietary resources. When seen in the air, the shape of the barn owl's tail helps to differentiate it from other owls. The undulating flight pattern and hanging, feathery legs are also noticeable traits. The flying bird's pale face, with its heart shape and black eyes, resembles a flat mask with enormous, oblique black eye-slits, and the ridge of feathers above the beak resembles a nose ('Barn Owl', 2021). In flight, it appears to be all white. Although it hunts throughout the day, it is primarily nocturnal. *T. a. deroepstorffi* (Andaman Barn Owl) is a buff race that lives on the Andaman Islands and is regarded a complete species by some authors. The natural habitat includes cultivations and around habitations and widespread resident. Their natural deit includes shrews, moles and flying squirrels are among the small animals eaten. Wood rats, rice rats, hares, and rabbits are among the bigger species whose juveniles are collected. They are found throughout Kerala.

25. Spotted Owlet: *Athene brama* (Family: Strigidae)

Photo courtesy: Anirudh Kamakeri

The spotted owlet is a small, stocky bird with a wingspan of just 21 centimetres (8.3 in). The upperparts are a grey-brown colour with white spots. The underparts are white with brown streaks. The iris is yellow and the face disc is light. A white neckband and supercilium are present. The sexes are very similar. There are a lot of twists and turns during their flight. The

nominate type is darker than the paler *indica* varieties seen in dry climates. Although sometimes spotted in daylight abroad, this species is nocturnal and crepuscular ('Spotted Owlet', 2021). Usually roosts in tree hollows or in the foliage. In North and Central India, the paler race *A. b. indica* (8b) is found. The natural habitat includes around cultivations and habitations and widespread resident. Their natural diet include little roosting birds, mice, shrews, geckos, toads, reptiles, and small animals are mostly small insects. They are found throughout Kerala.

26. House Swift: *Apus nipalensis* (Family: Apodidae)

Tail with a little fork. Little Swift is often mistaken for this species, albeit the latter is paler and has a square-ended tail. Little Swift-like actions and habits. The natural habitat includes towns, cities and mountain areas and Resident in the Himalayas and the NE of the region ('House Swift', 2021). When foraging far from nesting grounds, it is rarely observed feeding low, although it is frequently spotted foraging at considerable height. Occasionally gregarious with other Apodidae and hirundines. They are found throughout Kerala.

Photo courtesy: Albin Jacob

27. Asian Palm Swift: *Cypsiurus balasiensis* (Family: Apodidae)

From India to the Philippines, it is a widespread resident breeder throughout tropical Asia. The saliva is used to bond the down and feather nest to the underside of a palm leaf, as well as to secure the two or three eggs. This is an open-country and agricultural bird that is closely

associated with oil palms. The predominant colour of this 13-cm-long species is pale brown. Long, swept-back wings resemble a crescent or a boomerang. The tail is large and deeply forked, but it is normally retained closed. The scream is loud and harsh. The only difference between the sexes is that young birds have shorter tails than adults. Because swifts never sett, Asian palm swifts have very short legs that they primarily use for clinging to vertical objects. Swifts spend the majority of their life in the air, feeding on insects caught in their beaks. Asian palm swifts frequently feed near the ground and drink while flying ('Asian Palm Swift', 2021). Slim. With fluttering wingbeats and short glides, the flight is nimble and quick. The natural habitat includes open country and cultivations, but generally with nearby palms and widespread resident. Their natural deit includes coleoptera, Isoptera, Hymenoptera, Diptera, Homoptera, and Ephemeroptera were identified in the nestling diet, with flying ants, termites, and beetles dominating. They are distributed throughout Kerala.

Photo courtesy: P. B. Samkumar

28. Common Kingfisher *Alcedo atthis* (Family: Alcedinidae)

His species features the traditional kingfisher morphology of a short-tailed, dumpy-bodied, large-headed, and long-billed bird. A. a. ispida, the adult male of the western European subspecies, has green-blue upperparts with pale azure-blue back and rump, a rufous patch by the beak base, and a rufous ear-patch. It has a green-blue neck stripe, rufous underparts, and a black beak with some red at the base, as well as a white neck blaze and throat. Legs and feet are

a vivid crimson colour. It's around 16 centimetres long with a 25 centimetre wingspan and weighs 34–46 grammes. The female resembles the male except for her lower mandible, which is orange-red with a black tip. The juvenile has duller and greener upperparts than the adult, as well as paler underparts. It has a black bill, and its legs are initially black as well. Between July and November, feathers gradually moult and renew, with the major flying feathers needing 90–100 days to moult and regrow. Some people who moult late may put their moult on hold during the frigid winter months. Often seen as a blue flash flying low along a river, calling out in a high-pitched tone ('Common Kingfisher', 2021). It dives for small fish from a prominent perch on a regular basis. The female's lower mandible has an orange-red base. Birds from S India and Sri Lanka *A. a. taprobana* (not shown) are bluer on upperparts. The natural habitat includes rivers, streams and ponds, in winter also in mangroves and estuaries and widespread resident. The primary prey is fish and are they are found throughout Kerala.

Photo courtesy: Sreerag M S

29. White-Throated Kingfisher: *Halcyon smyrnensis* (Family: Alcedinidae)

This is a big kingfisher, measuring 27–28 cm long. The back, wings, and tail of an adult are all vivid blue. It has a chestnut head, shoulders, flanks, and lower belly, and a white throat and breast. The brilliant red bill and legs stand out. The white-throated kingfisher flies quickly and directly, its tiny, rounded wings whirling. Large white patches can be seen on the blue and black wings when they are in flight. Although the sexes are similar, juveniles are a duller version of

adults. This species forms a superspecies with *Halcyon cyanoventris* and most major works recognize four geographic races. They vary clinally in size, the shades of blue on the mantle which is more greenish in *smyrnensis* and *fusca* and more blue or purplish in saturatior. *H. s. gularis* of the Philippines has only the neck and throat white. H. gularis is sometimes classified as a separate species. Race fusca is located in Peninsular India and Sri Lanka, it is smaller, bluer, and has a deeper brown underside than the nominate race, which is found in northwestern India. The Andaman Islands' race saturatior is larger and has darker brown underparts ('White-Throated Kingfisher', 2021). Race perpulchra (not generally recognised) is smaller than race fusca and has whiter underparts. It is found in northeastern India. Albinism has been observed on several occasions. Frequently found far from water. A big pale bluepatch at the base of the primaries can be seen in flight. The natural habitat includes very cosmopolitan, including roadside trees, plantations, forest edge, freshwater and coastal wetlands and widespread resident. They feed mosly on earwigs, cockroaches, bugs, beetles, mantises, termites, flying ants, moths and caterpillars are among the insects eaten; tiny scorpions, centipedes, snails, crabs, crustaceans, earthworms, fish, and frogs. They are distributed throughout Kerala.

Photo courtesy: Sreerag M S

30. Chestnut-headed Bee-eater: *Meropsleschenaulti* (Family: Meropidae)

Lores black, continues as a band under the eye and ear-coverts ; forehead, crown, neck, lower face, and ear-coverts bright chestnut rump and higher tail-coverts pale shining blue; primary

and secondaries green, rufous on the inner webs; wing-coverts, lower back, and tertiaries green, the latter tipped with bluish; rump and upper tail-coverts faint shining blue and all tipped dusky ; central tail-feathers bluish on the outer, and green on the inner webs ; the others green, margined on the inner web with brown and all tipped dusky ; sides of face, chin and throat yellow ; below this a broad band of chestnut extending to the sides of the neck and meeting the chestnut of the upper plumage; below this, a brief black band and then an ill-defined yellow band; the rest of the lower plumage is green, touched with blue, especially on the vent and under tail-coverts ('Chestnut-headed Bee-eater', 2021). Bee-eater feeding behaviours are typical, however they frequently sit at the tops of trees. *M. l. andamanensis* birds from the Andaman Islands have a chestnut mask. The natural habitat includes near water in deciduous forests and the resident in the SW, NE, Sri Lanka and the Andamans. They feed on honeybees, wasps, ants, termites, dragonflies, butterflies, and grasshoppers. They are found all over Kerala.

Photo courtesy: Sreerag M S

31. **Blue-Tailed Bee-eater:** ***Merops philippinus*** **(Family: Meropidae)**

This species, like other bee-eaters, is a slender, brightly coloured bird. It has a primarily green face with a narrow blue patch and a black eye stripe, as well as a yellow and brown throat, a blue tail, and a black beak. The bases of the three outer toes are joined together. It can grow to be 23–26 cm long, including the two extended central tail feathers, which can be two inches longer than the other ten. Both sexes are the same. This species, like other bee-eaters, prefers to

eat flying insects, particularly bees (as large as the Xylocopa sp.), wasps, and hornets, which are caught in the air by sorties from an open perch. They may even forage while flying over estuaries, backwaters, and even the sea, although only a short distance from the coast. This species is thought to eat nearly equal amounts of bees and dragonflies. The collected insects are hammered on the perch to kill them and shatter their exoskeletons. Many other members of the Coraciiformes group exhibit this behaviour. They generally call with a rolling chirping whistling teerp while in flight. Blue-cheeked Bee-eater-like behaviours and habits Juvenile Blue-cheeked Bee-eater having a blue tinge to the tail, upper tail-coverts, and rump, similar to the juvenile Blue-cheeked Bee-eater ('Blue-Tailed Bee-eater', 2021).

Photo courtesy: Sreerag M S

The natural habitat includes wooded country, near water and distribution is summers in the N, winters in the S, Sri Lanka and the Andamans. They are mostly feeding on beetles, bugs, flies, moths, butterflies, and a variety of other hymenopterans, as well as beetles, bugs, beetles, bugs, flies, moths, butterflies, and numerous dragonflies, eat honeybees, wasps, hornets, and a variety of other hymenopterans, beetles, bugs, flies, moths, butterflies, and numerous dragonflies. They are found throughout Kerala.

32. Green Bee-eater: ***Merops orientalis*** **(Family: Meropidae)**

Photo courtesy: Abiraj A R

This species, like other bee-eaters, is a slender, brightly coloured bird. It's roughly 9 inches (16–18 cm) length, with the enlarged middle tail-feathers accounting for around 2 inches. Visually, the sexes are indistinguishable. The plumage is bright green with a blue tinge, particularly on the chin and throat. The crest and upper back have a golden rufous hue. The flying feathers are rufous with a green wash and a blackish tip. In front of and behind the eye, a faint black line runs. The bill is black and the iris is scarlet, while the legs are dark grey. With the three toes linked at the base, the feet are feeble. The crown and face of Southeast Asian birds are rufous, and the underparts are green, but the Arabian beludschicus has a green crown, blue face, and BLUE underparts. The beak is black and the wings are green. In youngsters, the extended tail feathers are missing. Both sexes are the same. The call is a nasal trill tree-tree-tree-tree-tree-tree-tree-tree-tree-tree-tree-tree-tree-tree-tree-tree- Darts from wire or branch to catch flying insects; cattle backs have also been used as a moving perch ('Green Bee-eater', 2021). Roosts in trees in large groups, snuggled together on a branch. Juveniles have a duller appearance and lack the black throat-band. M. o. ferrugeiceps, a chestnut-headed race, is found in the Northeast. The natural habitat includes open country with scattered trees, semi-deserts and grazing land and mainly a widespread resident. Their natural deit includes hymenoptera, as well as beetles,

termites, bugs, moths, and a variety of flies ranging in size from fruit flies to enormous clegs; a few butterflies, crickets, dragonflies, spiders, and caterpillars; and a few butterflies, crickets, dragonflies, spiders, and caterpillars. There are distributed throughout Kerala.

33. **Indian Roller *Coracias benghalensis:* (Family: Coraciidae)**

Photo courtesy: Habeel sahal

The Indian roller is a huge, broad-winged bird with a short neck and legs and a massive head. It measures 30–34 cm in length, 65–74 cm in wingspan, and weighs 166–176 g. The skin surrounding the eyes is a dull orange colour, while the legs and feet are a yellow-brown colour. The bill's base is tinted with brown. The iris is a greyish-brown colour. Roller-like actions and habits; also seen grabbing fish from the water's surface or plunging like a kingfisher. In flight, primaries have a bright pale blue patch. Juvenile is a less vibrant variant of adult, with darker striping on the breast and throat ('Indian Roller', 2021). In the Northeast, the much darker race *C. b. affinis* is found. The natural habitat includes open country with trees and bushes, cultivations, parkland and large gardens and widespread resident. Their natural deit includes grasshoppers, crickets, earwigs, mantises, bugs, termites, beetles, moths, wasps, ants, larvae,

scorpions , spiders, lizards, snakes, frogs, toads, mice, shrews, occasional fish, and juvenile birds are examples of large arthropods and tiny vertebrates. They are found throughout Kerala.

34. **Hoopoe (Common or Eurasian Hoopoe): *Upupa epops*** (Family: Upupidae)

Photo courtesy: Habeel sahal

Even in flight, where it resembles a huge butterfly, it is unmistakable. The crest is fanned when agitated or landing. Forages primarily on the ground, usually in couples or singly. 26–32cm in length. The natural habitat includes open country with scattered trees, cultivations and around villages and mainly a widespread resident ('Hoopoe', 2021). Prey consists mostly of bigger insects and their soft soil-dwelling larvae and pupae; prey body size seldom surpasses bill length. Spiders, termites, ants, locusts, ant-lions, Tipula larvae, shieldbugs, centipedes; also spiders, lizards, snakes, frogs, geckos. They are distributed throughout Kerala.

35. **Dusky Crag Martin: *Ptyonoprogne concolor*** (Family: Hirundinidae)

The body, wings, and tail of the dusky crag martin are all 13 cm (5 in) long. It has a streaked mild dull rufous chin, throat, and foreneck, as well as sooty-brown upperparts and significantly brighter underparts. The tail is short and square, with little white patches near the tips of all pairs of feathers except the central and outermost. The legs are brownish-pink, the underwing coverts are dark brown, the eyes are brown, the short bill is mostly black, and the underwing

coverts are dark brown. The sexes are similar, except the upperparts and wings of youngsters have rufous grey tips. The darker underparts distinguish this species from the Eurasian crag martin and rock martin, and the white tail patches are smaller than those of the Eurasian crag martin. In the Eurasian crag martin, the under-tail coverts are the same colour as the underside of the abdomen, although they are darker ('Dusky Crag Martin', 2021). Slow flight with numerous gliding spells; normally in pairs or small groups, with bigger groupings after breeding. Pale dots can be seen on the stretched tail. The natural habitat includes mountainous and hilly areas with cliffs, caves and gorges; also old buildings and urban areas and widespread resident over much of India W of the E Ghats. Feeds alone, in couples, or in small groups on occasion; frequently associates with other hirundines. Forages in the vicinity of structures and cliffs; sluggish flying with frequent glides. They are found in Kasaragod, Kannur, Wayanad, Kozhikode, Malappuram, Palakkad, Thrissur, Ernakulam, Idukki, Pattanamthitta, Kollam and Thiruvanathapuram districts of Kerala.

Photo courtesy: Santanu Manna

36. Barn Swallow: *Hirundo rustica* (Family: Hirundinidae)

The nominate subspecies *H. r. rustica*'s adult male barn swallow is 17–19 cm long, with 2–7 cm of enlarged outer tail feathers. It has a 32–34.5 cm wingspan and weighs 16–22 g. A thick dark blue breast band separates the off-white underparts from the steel blue upper parts, which have a rufous forehead, chin, and throat. The outer tail feathers are extended, giving the "swallow

tail" its distinctive deep fork. A line of white dots runs across the upper tail's outer end. The female's tail streamers are shorter, the blue of the top parts and breast band is less glossy, and the underparts are paler than the male's ('Barn Swallow', 2021). The juvenile is browner, with a rufous face that is lighter, and whiter underparts. It also lacks the adult's lengthy tail streamers. A quick and agile flier who twists and spins to catch flying insects. In large flocks, post-breeding is common. Rusty competition *H. r. tytleri* is a seasonal visitor to the Northeast. The natural habitat includes open country and cultivations, usually not far from water and breeds in the Himalayas and the NW; widespread throughout the region in winter. They mostly feed on flying insects; however, it does occasionally collect dead or moribund insects on the ground during bad weather. They are found throughout Kerala.

Photo courtesy: Sreerag M S

37. Wire-tailed Swallow *Hirundo smithii* (Family: Hirundinidae)

The wire-tailed swallow is a tiny swallow with a length of 18 cm (7.1 in). It features a chestnut head and bright blue upper parts with dazzling white underparts. Immature birds have dark brown (rather than chestnut) crowns and no tail wires. The long filamentous outermost tail feathers, which trail behind like two wires, give the species its name. The male and female have similar appearances, but the female's "wires" are shorter. The head, back, and tail of juveniles are all brown. *H. s. filifera,* the Asian variant, is larger and has longer tails than the common African H. s. smithii. Fast, low-flying flight over water. Juveniles have a brown crown and lack

the long, fine outer tail filaments. The natural habitat includes grassland, cultivations and urban areas, usually near water and widespread resident ('Wire-tailed Swallow', 2021). Their natural deit includes flies, beetles, bugs, butterflies and moths, mayflies, Hymenoptera, and termites are all part of the diet. Mixes with other swallows and swifts when foraging in couples or small groups. They are found throughout Kerala.

Photo courtesy: Ayuwat Jearwattanakanok

38. Red-rumped Swallow *Cecropsis daurica* (Family: Hirundinidae)

The habits and appearance of red-rumped swallows are similar to that of other airborne insectivores, such as related swallows and unrelated swifts (order Apodiformes). They have a blue upper body and a dark underbelly. They look like barn swallows but have darker underbelly and light or reddish rumps, face, and neck collar. They don't have a breast band, but their undertails are black. They are swift fliers who swoop down on insects while in the air. Their wings are large but pointed. Red-rumped swallows lay three to six eggs in quarter-sphere nests with a tunnel entrance lined with mud collected in their beaks. They prefer to make their nests under cliff overhangs in their mountain homes, although they can easily adapt to structures like mosques and bridges. Outside of the breeding season, they are social but do not form big breeding colonies. On the Indian plains, hundreds can be spotted at a time. Slow and beautiful flight with a lot of gliding and soaring ('Red-rumped Swallow', 2021). At least six races have been identified in the region, with the main difference being the intensity of streaking on

the underparts; the Sri Lanka race *C. d. hyperythra* is sometimes regarded a distinct species. The natural habitat includes open hilly country, lightly wooded areas, rocky gorges and cliffs; also open scrub, cultivations and paddyfields and widespread resident and winter visitor. Flies, beetles, bugs, termites, Orthoptera, and Hymenoptera are all part of the adult diet. Other hymenopterans, dipterans, coleopterans, and a cockroach make up the balance of the diet. Theyare found throughout Kerala.

Photo courtesy: Sreerag M S

39. Brown Shrike *Lanius cristatus* (Family: Laniidae)

The upper parts of this shrike are mostly brown, and the tail is rounded. The black mask features a white brow and might be paler in the winter. The belly and flanks are rufous, while the underside is creamy. The wings are brown with no white "mirror" spots on them. The bottom of the female's mask is finely scalloped, and the mask is dark brown and not as strongly marked as the male's. The distinction is difficult to make in the wild, but it has been tested with breeding birds in Japan, where the presence of a brood patch helps identify the female. The utilisation of various measurements enables for the sex discrimination of roughly 90% of the birds. The grey crown of Subspecies lucionensis blends into the brown upperparts, and the rump is more rufous than the rest of the upper back. The tail is browner and less reddish than that of the red-backed shrike. Younger lucionensis birds have a brown crown and no grey on their heads. The large white supercilium of the subspecies superciliosus is complemented by a deeper crimson crown.

The tail is redder and has a white tip ('Brown Shrike', 2021). Similar to the Red-backed Shrike in behaviour. The upperparts of the juvenile are banded dark from the forehead to the tail. The greyer race L. c. lucionensis visits Sri Lanka, the Andamans, and the Nicobar Islands in the winter. The natural habitat includes forest edge, scrub and open cultivation and widespread winter visitor. Insects are the major source of food, but other arthropods and small vertebrates are also eaten. Their natural diet include small mammals, lizards, amphibians, and small passerine birds are the principal prey of orthoptera and beetles; vertebrates are primarily small mammals, lizards, amphibians, and small passerine birds. They are found throughout Kerala.

Photo courtesy: Sreerag M S

40. **Long-tailed Shrike:** ***Laniusschach*** **(Family: Laniidae)**

A typical shrike, the long-tailed shrike prefers dry open areas and can be seen perched high atop a bush or on a wire. In most subspecies, the dark mask through the eye is broad and covers the forehead, whereas in subspecies tricolour and nasutus, the entire head is black. The tail is thin and graded, with the outer feathers being pale rufous. The grey on the mantle and upper back of subspecies erythronotus is tinged with rufous, whereas the grey on the mantle and upper back of subspecies caniceps is pure grey. At the base of the primaries, there is a small bit of white. The bay-backed shrike is smaller, has a more noticeable white patch on the wing, and is more contrastingly patterned ('Long-tailed Shrike', 2021). The plumage of both sexes is identical.

Noisy, restless, and aggressive, with reports of it robbing other birds of their food; otherwise, it behaves similarly to the Red-backed Shrike. In flight, the primary feathers have white bases and the rump is rufous. Juveniles are dull greyish-brown banded on top and dark brown on the bottom. In the Himalayas, the black-headed race *L. s. tricolour* can be found. The rufous on the scapulars of birds from peninsular India and Sri Lanka is substantially less. The natural habitat includes open wooded country, cultivations and gardens and widespread resident. They mostly feedf on insects, lizards, frogs, crabs, and tiny birds, even nestlings up to the size of Laughing Doves. They are found throughout Kerala.

Photo courtesy: Anirudh Kamakeri

41. Bay-backed Shrike: *Lanius vittatus* (Family: Laniidae)

It's a little shrike, measuring 17 cm in length, with a maroon-brown upper body, pale rump, and long black tail with white borders. The underparts are white, whereas the flanks are buff. The crown and nape are grey, with a black bandit mask through the eye, as is customary for shrikes. The bill and legs are dark grey, with a little white wing patch ('Bay-backed Shrike', 2021). Young birds are washed-out counterparts of adults, although sexes are comparable. Territorial, taking the same prominent vantage points every day. Similar to the Red-backed Shrike in behaviour. White rump, white patches at primaries' bases, and white outer tail feathers in flight. Juvenile duller with more dark barring above. The natural habitat includes Open dry country with scattered trees and scrub and widespread resident. Insects, primarily beetles (Coleoptera) and

Orthoptera, as well as Lepidoptera, Neuroptera, flies (Diptera), and Hymenoptera; lizards, mice (Muridae), and nestling birds, are the most common prey. They are found throughout Kerala.

Photo courtesy: Selvaganesh K

42. White-bellied Drongo: *Dicrurus caerulescens* (Family: Dicruridae)

Photo courtesy: Habeel Sahal

The Indian version, which is the nominate subspecies, is black with no glossy feathers on the upperside and greyish on the throat and breast, while the belly and vent are totally white. The fork of the tail is shallower than that of the black drongo, which is found in similar environments. The undersides of young black drongos can have a lot of white, but it's usually scaly. The white is limited to the vent in the Sri Lankan forms insularis of the northern dry zone

and leucopygialis of the southern wet zone. Birds under a year old lack the white on their underbelly and are browner above and grey below. Males have a somewhat shorter tail than females on average ('White-bellied Drongo', 2021). Fly-catching sallies are made from the tops of trees, and it's common to see mixed-species gatherings. Sri Lanka is home to the dark-bellied race *D. c. leucopygialis.* The natural habitat includes clearings and edges of open forest and well-wooded areas and widespread resident. They are mostly insectivorous, feeding crickets and grasshoppers, moths (Lepidoptera), alate termites, and other flying insects; small birds, such as Old-World warblers, are occasionally taken. They are found in Wayanad, Malappuram, Palakkad, Thrissur, Ernakulam and Idukki districts of Kerala.

43. Ashy Woodswallow: *Artamus fuscus* (Family: Artamidae)

Photo courtesy: Bajith K B

The upperparts of this stocky woodswallow are ashy grey, with a darker head and a short pale stripe on the rump. The underside is pinkish grey, with a white tip on the short, slaty black tail. The bill, which resembles that of a sparrow, is silvery. The long wing seems very broad at the base in flight, giving it a highly trapezoidal shape. The first primary is only a few sentences long. The birds' legs are short, and they prefer to sit on high vantage spots where they can perform aerial sallies ('Ashy Woodswallow', 2021). There are no geographic variations in plumage, and there are no subspecies. Gregarious; groups frequently perch on bare treetop branches, wires, or palm leaf stalks, from which they launch aerial sallies to catch flying insects. The natural

habitat includes open wooded country with nearby palms and resident, mainly in the E, SE, NE and S of the region. Obtains the majority of its prey while in flight. Glides and circles in the air in search of food; sometimes sallies from a treetop or other perch in pursuit of flying insects. Items on the ground or other solid substrate are occasionally captured. They are found all over Kerala.

44. **Common Woodshrike:** ***Tephrodornis pondicerianus*** **(Family: Artamidae)**

Photo courtesy: Albin Jacob

The common woodshrike is ashy brown in colour and has a huge head with a powerful hooked beak, similar to other woodshrikes. They feature a large creamy brow that sits above a dark cheek patch, as well as white outer tail feathers that contrast with the dark tail. The crown of young birds has streaks and spots, while the mantle has white spots. In juvenile birds, the underside is similarly streaked, and the breast is highly marked ('Common Woodshrike', 2021). The Sri Lankan variety is darker on the underside, with a buffy sub-moustachial line and a white rump bordering the dark cheek. Forages among foliage in pairs or small groups; occasionally grabs invertebrate prey from the ground or during aerial sallies. *T. p. affinis* (Sri Lanka Woodshrike) is found in Sri Lanka and is considered a complete species by some. The natural habitat includes light deciduous woodland, secondary growth, scrub and wooded gardens and widespread resident. They mostly feed on beetles, adult and larval lepidopterans, orthopterans, hymenopterans, and hemipterans, as well as spiders. They are found throughout Kerala.

45. Black-headed Cuckooshrike: *Coracinamelanoptera* (Family: Campephagidae)

They are usually observed individually, in couples, or in small groups; they are frequently found in mixed-species feeding flocks. Away from the northwest coast of India, the race C. m. sykesi exists. SIZES: 18cm ('Black-headed Cuckooshrike', 2021). The natural habitat includes light broadleaved forest and secondary growth and widespread, breeds in N and C areas, resident in parts of the S, the NE and Sri Lanka, elsewhere an inter-region migrant. Mostly feed on insects, mainly caterpillars, but will also eat fruits like Lantana berries and figs. They are found throughout Kerala.

Photo courtesy: Shalu Amana

46. Small Minivet: *Pericrocotuscinnamomeus* (Family: Campephagidae)

The 16-centimeter minivet has a sharp dark beak and lengthy wings. The male has grey upperparts and head, not glossy black, and orange underparts, fading to yellow on the belly, orange tail margins, rump, and wing patches, which set it apart from most other common minivets. The female has yellow underparts (including the face), tail margins, rump, and wing patches, and is grey above. There is a lot of racial diversity. The male P. c. pallidus of the northwest Indian subcontinent has pale grey upperparts with whitish underparts save on the throat and sides, whereas the male *P. c. malabaricus* of peninsular and southern India has darker upperparts with more widespread scarlet below ('Small Minivet', 2021). The

southern race's female is also a brighter yellow below. Active, flitting about in pursuit of insects, as well as making brief fly-catching sallies; often found in mixed-species feeding groups. Races with redder underparts have a more varied plumage. The C Himalayas, NE India, and Bangladesh are home to *P. c. vividus*(4b). The natural habitat includes foothill forests, scrub jungle, acacia and subtropical dry woodland and widespread resident. They feed on moths and caterpillars, as well as other insects like as beetles and cicadas; larvae in a Bangladesh nest are fed tiny spiders, caterpillars, and other insects. They are found throughout Kerala.

Photo courtesy: Manish Panchal

47. Orange Minivet: *Pericrocotus flammeus* (Family: Campephagidae)

With a strong dark beak and big wings, this bird is 20–22cm long. The male has scarlet underparts, tail margins, rump, and wing patches, as well as black upperparts and head. Across populations, the shape and colour of the wing patches, as well as the shade of orange in the male, differ. Scarlet/orange is completely replaced by yellow in the subspecies nigroluteus and marchesae from the Philippines ('Orange Minivet', 2021). The female has yellow underparts (including the face), tail margins, rump, and wing patches, and is grey above. Gleans insects off the vegetation, as well as hovering or making brief sallies to catch flying insects. A common member of mixed-species feeding flocks, forages primarily in the forest canopy. The N, *P. f. speciosus* (not shown), which is sometimes considered a distinct species, is larger and redder. The natural habitat includes forests and wooded areas and widespread over much of the region.

Caterpillars, grasshoppers, green crickets, cicadas, and spiders are among the insects it eats. They are found throughout Kerala.

Photo courtesy: Habeel Sahal

48. Common Iora: *Aegithina tiphia* (Family: Irenidae)

Ioras have a straight culmen and a pointed and notched beak. The common iora is sexually dimorphic, with males having a black cap and back during the breeding season, as well as a black wing and tail at all times. Females have olive-colored wings and a greenish tail. Both have yellow undersides, and the male's two white stripes on his wings are particularly noticeable in his breeding plumage. Males in breeding plumage have a very varied distribution of black on the upperparts and can be mistaken for Marshall's iora, which has white tips on the tail. Males of this population are extremely similar to females or have only a small amount of black on the crown. The nominate subspecies is located along the Himalayas, and males of this population are very similar to females or have only a small amount of black on the crown. Septentrionalis males in breeding plumage have a black cap and olive on the top mantle in northwestern India, and humei males in breeding plumage have a black head and olive on the upper mantle in the northern plains of India. Multicolor possesses breeding males with a jet black crown and mantle in southwestern India and Sri Lanka ('Common Iora', 2021). The rest of southern India's variants are a cross between *multicolor* and *humei*, with a more grey-green rump (formerly considered as

deignani but now used for the Burmese population). Acrobatically forages in the canopy. The race *A. t. multicolor* is found in extreme southern India and Sri Lanka, while the race *A. t. humei* is found in central India. The natural habitat includes open forests, forest edge, scrub jungle and cultivations and widespread resident. They feed mostly on insects and other arthropods. They are found throughout Kerala.

Photo courtesy: Bhaarat Vyas

49. Jerdon's Leafbird: *Chloropsis jerdoni* (Family: Irenidae)

The male has a green body, a yellowish head, and a black face and throat. There is a blue moustachial line on it. The female has a greener head and a blue throat, whereas juvenile birds are similar to the female but lack the blue neck patch ('Jerdon's Leafbird', 2021). The call of Jerdon'sleafbird, like that of other leafbirds, is a rich blend of imitations of the cries of numerous other bird species. They are afraid of water and will only come down to sip for a brief time before fleeing. Forages in trees, acrobatically hunting for insects, fruit, and nectar; frequently found in mixed-species feeding groups. The natural habitat includes open forests, secondary growth, orchards and wooded gardens and resident over peninsular India and in Sri Lanka. Their natural diet includes arthropods and fruits. They are found throughout Kerala.

Photo courtesy: Albin Jacob

50. Golden-fronted Leafbird: *Chloropsis aurifrons* (Family: Irenidae)

Photo courtesy: Habeela Sahal

The adult is green-bodied with a black face and throat bordered with yellow. It has dark brown irises and blackish feet and bill. The forehead is bright orange, and the moustachial line is blue (but lacks the blue flight feathers and tail sides of blue-winged leafbird). Young birds have a plain green head and lack the black on their face and throat. In females, the black of the face and throat seems slightly duller. C. a. frontalis, a southern Indian race, has a thinner yellow border to the black face. It features a duller orange forehead and a black throat with a blue sub-

moustachial band ('Golden-fronted Leafbird', 2021). The race insularis, which is slightly smaller than frontalis, is found in the extreme south of India and Sri Lanka. In the thick foliage of trees, acrobatic forager. C. a. insularis is found in far southwest India and Sri Lanka. The natural habitat includes broadleaved forests and secondary growth and resident in NE, W, E, S and parts of C India, Bangladesh, the Himalayas and Sri Lanka. Arthropods, fruits, and nectar make up the majority of their diet. Loners, couples, or small groups forage for arthropods on canopy foliage, frequently acrobatically on thin outer branches. They are found throughout Kerala.

51. **White-browed Fantail:** ***Rhipidura aureola*** **(Family: Rhipidurinae)**

Photo courtesy: Christoph Moning

The white-browed fantail is around 18 cm long as an adult. It has dark brown upperparts and yellowish underparts, with white markings on the wings. The long white supercilia meet on the forehead, and the fan-shaped tail is bordered in white. The throat and eyemask are blackish, while the moustachial stripes are pale ('White-browed Fantail', 2021). Typically seen alone, in pairs, or in small groups. It forages restlessly in the woods and undergrowth, and it is frequently found in mixed-species feeding flocks. Makes sallies for collecting flies. Frequently stands with tail erect and fanned. The natural habitat includes forests, wooded areas, areas with scattered trees and groves and widespread resident. They feed on flies (Diptera) and bugs, which are tiny flying insects (Hemiptera). They are found in Kasaragod, Kannur, Wayanad, Kozhikode,

Malappuram, Palakkad, Thrissur, Ernakulam, Idukki, Kottayam, Alappuzha, Pattanamthitta and Thiruvanathapuram districts of Kerala.

52. Zitting Cisticola: *Cisticola juncidiscursitans* (Family: Sylviinae)

Photo courtesy: Abhraj A R

The length of the zittingcisticola is 10 to 12 cm. It's brown on top, with a lot of black markings. The species' alternative name comes from the whitish underparts and broad, white-tipped tail that is regularly flipped. Adult males have greater back marking and less crown streaking than females, but there is no significant variation between the sexes or the eighteen regional races ('Zitting Cisticola', 2021). It is distinguished from the golden-headed cisticola by the absence of a nuchal collar (*Cisticolaexilis*). They hide in the grass during the non-breeding season and can be difficult to spot. Singing from an exposed perch or leaping song-flight are the best times to find them. C. j. salimalii is a brightly coloured race found in the Kerala region in SW India. They mostly feed on insect larvae, mantids, dragonflies, moths and caterpillars, mayflies, flies, aphids, weevils and tenebrionid beetles, ants, spiders, snails, and some grass seeds are among the insects and small invertebrates eaten in the Palearctic; other prey include insect larvae, mantids, dragonflies, moths and caterpillars. The natural habitat includes grasslands and widespread resident. They are found all over Kerala.

53. **Grey-breasted Prinia:** ***Prinia hodgsonii*** **(Family: Sylviinae)**

Photo courtesy: Swapnil Thatte

They have a longish grey tail with graded white-tipped feathers, robust pinkish legs, and a short black bill, and they are 11 to 13 centimetres long. Orange is the colour of the eye ring. In most populations, the sexes are nearly identical, with the exception of *P.h. pectoralis* from Sri Lanka, where the female can be distinguished by an incomplete breast band. During the breeding season, the buff white underparts contrast with the white throat, and the grey breast band contrasts with the white throat. The upperparts are smoky grey during the mating season and olive brown during the non-breeding season, with a rufous wing panel. Non-breeding birds often lack the breast band and have a short, indistinct white supercilium. Young birds have the same coloration as non-breeding adults, but are more rufous above. P. h. pectoralis, a characteristic greyer endemic race in Sri Lanka, keeps its summer plumage all year ('Grey-breasted Prinia', 2021). The lower mandible of young birds is pale. Summer plumage has shorter tail feathers than non-breeding winter plumage. Active, quick to move through bushes or vegetation; often seen in groups after breeding The natural habitat includes scrub jungle, bushes in open forest or forest edge, also bushes in cultivations and gardens and widespread resident. Insects, such as small beetles, small moths and caterpillars, and grasshoppers, are the main sources of food. As birds commonly have pollen-stained faces, it is thought that they drink

nectar from various trees and bushes, however this is most likely obtained when hunting for insects in flowers. They are found throughout Kerala.

54. Plain Prinia: *Prinia inornata* (Family: Sylviinae)

Photo courtesy: Bhaarat Vyas

Short rounded wings, a longish tail, powerful legs, and a short black bill characterise these 13–14-cm long warblers. Adults are grey-brown above, with a small white supercilium and rufous fringes on closed wings in breeding plumage. The underbelly is a whitish-buff colour. The sexes are the same. The upper parts are a warmer brown in the winter, while the underparts are more buff. The tail is longer in the winter than it is in the summer ('Plain Prinia', 2021). There are several races with different shades of plumage. The indigenous race in Sri Lanka keeps its summer plumage all year, including the shorter tail. Keeps low in vegetation and is unobtrusive. The natural habitat includes scrubby grassland, reed-beds, mangroves and cultivations and widespread resident. They mostly feed on tiny invertebrates, primarily insects and their larvae, are taken; documented items include small flies, grasshoppers, ants, small beetles, and caterpillars. Pollen staining on the forehead of birds suggests nectar consumption, although pollen might also have been obtained when hunting for insects in flowers. They are found throughout Kerala.

55. Great Reed Warbler: ***Acrocephalusarundinaceus*** **(Family: Sylviinae)**

Photo courtesy: Arjun Surash

One of the largest Old World warbler species is the thrush-sized warbler. It's 16–21 cm long, with a wingspan of 25–30 cm and a weight of 22–38 g. The adult has a dull buffish-white chin and underparts with unstreaked brown upperparts. The beak is robust and sharp, and the forehead is flattened. It has a supercilium that is stronger than that of a giant Eurasian reed warbler (A. scirpaceus). As with most old world warblers, the sexes are identical, but young birds have a richer buff below. The song of the warbler is loud and resonant ('Great Reed Warbler', 2021). The main phrase of the song is a chattering and creaking cree-cree-jet-jet, to which whistles and vocal Clumsy gestures when feeding frequently give away the presence of birds. The primary projection is quite long. The natural habitat includes reed-beds and vagrant, recorded from India and Pakistan. Their natural diet includes insects, spiders, certain snails, and tiny vertebrates. They feed on fruit and berries during mating season when food sources are scarce. They are found throughout Kerala.

56. Blyth's Reed Warbler: ***Acrocephalusdumetorum*** **(Family: Sylviinae)**

This little passerine bird can be found in scrub or clearings, frequently near water, but not in marshes. In a shrub, 4-6 eggs are laid in a nest. This is a medium-sized warbler with a length of 12.5-14 cm. The back of the adult is plain brown, with pale underparts. It's easy to mix it up with reed warblers, marsh warblers, and a few Hippolais warblers. The back is greyer, the forehead

is less flattened, and the beak is less robust and pointed than the reed warbler. As with most warblers, the sexes are identical, but juvenile birds are yellower below. Mostly arboreal, with a tail that fans and flicks ('Blyth's Reed Warbler', 2021). Primary projection is brief. The natural habitat includes forest-edge bushes, cultivated areas, overgrown watercourses, parks and gardens and widespread winter visitor and passage migrant. They mostly feed on mayflies, dragonflies, stoneflies, orthopterans, larval earwigs bugs lacewings of the family adult and larval lepidopterans, caddis flies dipteran flies hymenopterans (including sawflies, ants, bees, and wasps), adult and larval beetles spiders harvestmen snails. They are found throughout Kerala.

Photo courtesy: Albin Jacob

57. Common Tailorbird (Indian or Long-tailed Tailorbird) *Orthotomussutorius* (Family: Sylviinae)

A brightly coloured bird with bright green upperparts and white underparts, the common tailorbird is a brightly coloured bird. They are 10 to 14 cm in length and weigh 6 to 10 grammes. They feature a sharp bill with a curved point to the upper jaw, short rounded wings, a long tail, strong legs, and a sharp bill with a curved tip to the upper mandible. They have a long erect tail that they move around like a wren. The upperparts are primarily olive green, with a rufous head. The underside is a light cream colour. Although the trustworthiness of sexing data accompanying museum specimens used in assessing this sexual dimorphism has been

questioned, the sexes are identical save for the male having long central tail feathers during the breeding season. Young birds have a duller appearance ('Common Tailorbird, 2021). The upperparts are mostly olive green and the head is rufous. It has a creamy white underside. Although the accuracy of sexing data accompanying museum specimens used in assessing this sexual dimorphism has been questioned, the sexes are identical save for the male having long central tail feathers during the breeding season. Young birds have a lower level of intelligence. Various races populate the region: nominate occurs in Sri Lanka; *O. s. guzuratus* occurs in Pakistan and peninsular India; *O. s. luteus* occurs in the NE. The natural habitat includes forest and cultivation edge, bushy cover in urban areas and mangroves and widespread throughout the region. Their natural diet include insects, mostly tiny beetles, bugs, ants, and jassid flies, as well as small butterflies and moths. Feeds mostly on nectar from Salmalia, Bombax, Erythrina, and Butea, but also visits a range of other blooming tree and shrub species; face may become discoloured by pollen when feasting on flowers. It eats in pairs, generally in hiding, and climbs through dense vegetation. They are found all over Kerala.

Photo courtesy: Sreerag M S

58. Thick-billed Warbler: *Phragamaticola* (*Iduna*) *aedon* (Family: Sylviinae)

This is a huge warbler, measuring 16–17.5 cm long and resembling the great reed warbler in size. The adult has a brown back with no streaks and buff underparts, with few distinguishing traits. The bill is small and pointed, and the forehead is rounded. As with other warblers, the

sexes are identical, but immature birds have a richer buff below ('Thick-billed Warbler', 2021). It is insectivorous, like other warblers, but will also eat other tiny prey items. The song is quick and loud, and it sounds like a marsh warbler with a lot of mimicry and acrocephaline whistles. While hunting in weeds and bushes, he is evasive and awkward. The natural habitat includes tall grass, marshy areas with reeds and bushes and widespread winter visitor, mainly to the SW and NE. They feed mostly on insects, including many grasshoppers. Items recorded in nestling diet were small caterpillars, large caterpillars of hawk moths, caterpillars and moths of families Noctuidae and Geometridae, spiders and their cocoons, orthopterans, flies beetles' bugs and lacewings. They are found throughout Kerala.

Photo courtesy: Ayuwat Jearwattanakanok

59. Paddy field Warbler: *Acrocephalus agricola* (Family: Sylviinae)

It breeds in the central Palearctic's temperate zone. It is a migratory bird that spends the winter in Bangladesh, India, and Pakistan. Although there are small breeding colonies along the western sides of the Black Sea along the Bulgarian-Romanian border, it is an uncommon vagrant to Western Europe. This kind of passerine bird can be found in low vegetation including long grass, reeds, and rice. In a grass nest, 4–5 eggs are laid. Paddy field is similar in size to the Eurasian reed warbler, at 13 centimetres (5.1 in) long with a wingspan of 15–17.5 centimetres (5.9–6.9 in). With a warm brown rump, the adult has an unstreaked pale brown back and buff underparts. The bill is small and pointed, with a distinct whitish supercilium. As with other

warblers, the sexes are identical, but immature birds have a richer buff below ('Paddy field Warbler', 2021). It eats insects like most warblers. The song is rapid and comparable to that of a marsh warbler, with a lot of mimicry and typical acrocephaline whistles thrown in for good measure. Its singing is more rhythmic and weaker than that of its sibling. Tail is constantly cocked and flicked. Forages in low-cover areas and on the ground. The natural habitat includes waterside vegetation and paddyfields and mainly a widespread winter visitor; has bred in W Baluchistan. Most of the natural deits include mayflies (Ephemeroptera), dragonflies (Odonata), bugs (Hemiptera, including cicadids), caddis flies (Trichoptera), flies (Diptera, including chironomids), hymenopterans (including ants and Ichneumonoidea), beetles (Coleoptera), spiders (Araneae), and earthworms are among the recorded foods At least locally, little flies, mayflies, and caddis flies appear to be the most significant prey. They are found throughout Kerala.

Photo courtesy: Abhishek Das

60. Oriental Magpie-robin: *Copsychus saularis* (Family: Muscicapidae)

When hopping on the ground, this species is 19 cm long, including the long tail, which is generally maintained cocked erect. When they sing, their tails are normal, just like other birds'. It looks like a tiny European robin, but it has a longer tail. Apart from a white shoulder patch, the male has black upperparts, head, and throat ('Oriental Magpie-robin', 2021). The underparts of the long tail are white, as are the sides. Females have a greyish black upper body and a greyish white underbelly. The upperparts and head of young birds are scaly brown. Confident;

normally outgoing, but during the non-breeding season might become more reclusive. The natural habitat includes open forests, groves, parks and garden and widespread resident. They feed on crickets, beetles (including weevils, scarabs, and ladybirds), locusts, ants, caterpillars, dragonflies, wasps, termites, and flies and their maggots are among the most common insects. They also feed on other invertebrates include leeches, earthworms, molluscs, millipedes, crabs, and especially spiders, as well as tiny vertebrates like geckos. They are found throughout Kerala.

Photo courtesy: Bajith K B

61. Brown Rock Chat: *Cercomelafusca* (Family: Muscicapidae)

Photo courtesy: Nikolaj Mølgaard Thomsen

The brown rock chat, which is about 17 cm long, is larger than the Indian robin, which has a similar appearance. It is consistently rufous brown in colour, with slightly darker wings and tail. On the undersides, the brown fades to a dark grey-brown vent. It looks like a female blue rock thrush in flight and can be found single or in couples on old buildings or rocky regions. In the field, the sexes are indistinguishable. When it feeds on the ground, it will occasionally open its wings and tail. It also has a propensity of raising its tail, fanning it, and bobbing its head slowly. They eat mostly insects that they find on the ground. They have been observed feeding late at night and foraging on insects drawn to artificial light ('Brown Rock Chat', 2021). Drops from a low vantage point to catch food on the ground. Flexes legs and spreads and raises tail as a habit. The natural habitat includes low rocky hills, sandstone cliffs and old buildings and resident in NE Pakistan and NC India. Their natural diet includes spiders and insects, such as ants and beetles. They are distributed all over Kerala.

62. Indian Robin: *Saxicoloidesfulicatus* (Family: Muscicapidae)

The Indian robin's plumage is sexually dimorphic, with the male being mostly black with a white shoulder patch or stripe that varies in size depending on posture. The upper plumage of northern populations is brownish, whereas the upper plumage of southern populations is black. Males have chestnut undertail coverts, which are visible when the bird raises its 6–8 cm long tail to its full heightThe females are brownish above,

Photo courtesy: Albin Jacob

without a white shoulder stripe, and greyish below, with a paler chestnut vent than the males. Northern Indian and Sri Lankan birds are larger than their southern counterparts. The throat of juvenile birds is speckled, similar to that of females ('Indian Robin', 2021). Confident; hops or runs with tail held upright or well over back on a regular basis. Brownish-backed race *S. f. cambaiensis* occurs in the N and NW. The natural habitat includes dry stony foothills with scrub, cultivation edges, in and around human habitations and widespread resident. They feed mostly on termites, ants, beetles, flies, caterpillars, grasshoppers, bees, and wasps, as well as their eggs. They are found throughout Kerala.

63. Orange-headed Thrush: *Geokichla citrina* (Family: Muscicapidae)

Photo courtesy: Charles Thomas

The orange-headed thrush is a medium-sized bird that is 205–235 mm in length and weighs 47–60 g. The nominate subspecies of this little thrush has a completely orange head and underparts, grey upperparts and wings, and white median and undertail coverts as an adult male. It has a slate-colored bill, brown fronts, and pink or yellowish backs on its legs and feet. The female has browner or more olive upperparts and warm brown wings than the male, though some older females are nearly identical to the male ('Orange-headed Thrush', 2021). The juvenile has grey wings and is dull brown with buff stripes on its back and a rufous tone to its head and face. The legs and feet are brown, and the bill is brownish horn. Shy; after breeding, small flocks may develop. The distinctive peninsular race *G. c. cyanota*; birds from the Andamans *G. c.*

*andamanensis*and the Nicobars*G. c. albogularis*(not shown) lack the white in the wing. The natural habitat includes moist, shady areas in forests and fairly widespread resident, summer visitor in the Himalayas. Their natural diet includes are insects earthworms, leeches, slugs, and snails, berries, fruit, and grass seed. They are found throughout Kerala.

64. Paddy field Pipit: *Anthus rufulus* (Family: Motacillidae)

Photo courtesy: Tapan Kane

This is a huge pipit, measuring 15 cm in length, although it otherwise has an unremarkable appearance, mostly streaked grey-brown above and pale below, with breast streaking. It has a long tail and a large dark bill and is long-legged. The sexes are very similar. The summer and winter plumages are nearly identical. Young birds have more vibrant colours on the underside than adults, and the pale margins of their upper-body feathers are more noticeable, with more apparent spotting on the breast ('Paddy field Pipit', 2021). The waitei population from northwestern India and Pakistan is light, whereas the malayensis population from the Western Ghats is larger, darker, and more extensively streaked with the nominate rufulus intermediate. On the ground, he forages. The best method to differentiate the Richard's Pipit from the similar but larger Richard's Pipit is by its call note. When alert, he often stands more upright than indicated. The natural habitat includes open short grassland, paddyfields, stubble fields and cultivations and widespread resident. They feed mostly on adult and larval insects are the most common. Weevils (Curculionidae), ants (Hymenoptera), termites (Isoptera), beetles

(Hemiptera), and spiders (Araneae) were among the stomach contents, as were weed seeds and vegetable debris. They are found throughout Kerala.

65. Yellow Wagtail: *Motacilla flava* (Family: Motacillidae)

The t is a slender 15–16 cm long bird with the genus's characteristic long, swaying tail. The European wagtail has the shortest tail of all the wagtails. The breeding mature male is mostly olive on top and yellow on the bottom ('Yellow Wagtail', 2021). The yellow in other plumages may be subdued by white. Depending on the subspecies, breeding males' heads appear in a variety of colours and patterns. It's a high-pitched jeet call. Citrine Wagtail's actions are comparable to Citrine Wagtail's. Various races can be found in the area, including *M. f. beema*(main illustration), *M. f. leucocephala*, *M.f. thunbergi*, *M. f. feldegg*, *M. f. melanogrisea*, *M. f. 'superciliaris'* , *M. f. plexa*, *M. f. taivana*, *M. f. lutea* . The natural habitat includes damp grassland and pastures and widespread winter visitor. A broad range of terrestrial and aquatic invertebrates are consumed, as well as some plant material, particularly seeds. They mostly feed on invertebrates include tiny flies (Diptera), bugs (Hemiptera), beetles (Coleoptera), grasshoppers (Orthoptera), butterflies (Lepidoptera), cockroaches (Blattodea), termites (Isoptera), and ants (Hymenoptera) to crustaceans. They are found throughout Kerala.

Photo courtesy: Sreerag M S

66. Citrine Wagtail: *Motacilla citreola* (Family: Motacillidae)

It's a slender 15.5–17 cm long bird with a long, swaying tail that's typical of the *Motacilla* genus. In breeding plumage, the adult male is mostly grey or black above, with white on the remiges, and bright yellow below and on the entire head save for the black nape. Its yellow underparts may be diluted by white in winter plumage, and the head is brownish with a yellowish supercilium. Females in winter plumage resemble washed-out versions of males. Similar to the White Wagtail, but with less tail swaying; perches on foliage, poles, and wires on a frequent basis. M. c. calcarata breeds in the Himalayas and western Pakistan. The natural habitat includes highaltitude wet grassland; winters in freshwater wetlands and breeds in W Pakistan and the Himalayas; widespread in winter ('Citrine Wagtail', 2021). Their natural deit include odonata (adult and larvae), Coleoptera (beetle larvae), Diptera (adult and larvae), and spiders are among the water invertebrates that the Citrine Wagtail feeds on. They are found in Thrissur, Ernakulam, Kottayam, Pattanamthitta and Thiruvanathapurram disticts of Kerala.

Photo courtesy: Sidharth Srinivasan

67. White Wagtail: *Motacilla alba* (Family: Motacillidae)

The white wagtail is a thin bird ranging 16.5 to 19 cm in length (East Asian variants are taller, measuring up to 21 cm), with the genus's signature long, swaying tail. Its typical weight is 25 g, and it can live for up to 12 years in the wild. With a nodding head and a wagging tail, he walks. An agile forager who captures insects by rushing, jumping, or doing acrobatic brief fluttering flights. M. a. alboides, the main image, breeds in the Himalayas, east of NE Pakistan, and is more

prevalent in the winter. *M. a. personata* breeds in the NW and is more widespread in winter; *M. a. dukhunensis* widespread in winter;

Photo courtesy: Karan Matalia

M. a. leucopsis winters in N India; *M. a. baicalensis* widespread in winter; *M. a. ocularis* uncommon visitor in the N and NE ('White Wagtail', 2021). The natural habitat includes Rocky streams, riverbeds and wet fields; winters in open areas near water and Breeds in the Himalayas; widespread winter visitor. The food of white wagtails varies depending on where they live, but terrestrial and aquatic insects, as well as other tiny invertebrates, make up the majority of their diet. They are distributed all over Kerala.

68. White-browed wagtail: *Motacillamadera spatensis* (Family: Motacillidae)

Photo courtesy: Sreerag M S

With a length of 21 cm, the white-browed wagtail is the largest of the wagtail species. It is a small, slender bird with the genus's typical long, swaying tail. It has black upperparts, a white supercilium, and a wide white wingbar, as well as a black head and breast. It never has white on the forehead, unlike white wagtails ('White-browed wagtail', 2021). The remainder of the underbelly is white. The black in the female is less intense than it is in the male. Juveniles are brown-grey in colour, similar to females, whereas adults are black. Wags his tail from side to side. During the winter, flocks of birds congregate in tamarisks or reeds to roost. The natural habitat includes embankments of watercourses; also, villages and gardens with nearby water and it is widespread resident. This species, like other wagtails, feed mostly on insects such as orthopterans, caterpillars, bugs and also spiders. They've been observed eating annelids in captivity. They are found throughout Kerala.

iia. Promotion of beneficial birds

Beneficial birds, such as insectivorous and carnivorous species, are considered beneficial to agriculture because they keep insect and rodent pest populations under check. These birds, on the other hand, are far less common than granivorous and omnivorous birds. The various strategies to be followed for promoting the presence of beneficial birds in crop ecosystem and thereby managing the pest species are given below.

1. Planting of nectar and fruit yielding plants and trees

Since, agro-ecosystems are less diversified than natural ecosystems, trees that produce nectar and fruits are essential for attracting birds. When creating habitat, native plants should be chosen because they support birds and beneficial insects better than nonnative plants. Habitat management as retaining treelines or planting hedgerow, has been shown to greatly increase the diversity and abundance of bird on agriculture lands. Planting hedgerows along field margins is a serious financial undertaking, but such habitat also harbors beneficial insects and birds that provide pollination and pest control services.

2. Provide water sources

Most birds require a steady supply of water for drinking and bathing, and others utilize it to construct mud nests. Bathing is essential for keeping their feathers healthy, removing parasites, and ensuring adequate bodily insulation in cold weather. When there are no natural year-round water sources in the crop fields, water can be easily given by placing a pan underneath to collect water that birds can drink.

3. Install artificial nesting structures

Artificial nesting structures can help increase the number of beneficial birds in locations where natural nesting sites are scarce or inappropriate. Artificial nesting structures cannot completely replace natural nesting habitats, but they can help to enhance the number of nesting sites accessible in a given area. Barn owls, the efficient predators of small rodents such as mice, voles, rats, shrews, and gophers do not create their own holes for their nests. Instead, they typically use hollow trees or cavities left by other birds, as well as open buildings or nest boxes. For the ecologically safe management of rodent species, the placement of owl nest boxes made out of wood should be encouraged.

4. Installation of bird perches

Insectivorous birds prefer perches because they save energy by allowing them to spend less time spotting their prey insects than they would if they were hunting on the wing. In paddy fields, using coconut tree stumps or leaf fronds as bird perches encourages insectivorous birds to visit, which helps to manage the insect pest population.

5. Safe use of pesticides

While pesticides can be an efficient way to reduce crop pests, they also pose a substantial risk to beneficial birds. Avian thermoregulation (maintenance of core temperature), reproduction, and food consumption are all affected by cholinesterase inhibitors, which are active chemicals in organophosphate and carbamate insecticides. It's possible that eating insect stages exposed to pesticide spray and drinking water from contaminated water bodies will have negative

consequences for birds. As a result, beneficial avian fauna should be considered when formulating integrated pest management strategies.

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Perch</td>
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Provide water sources</td>
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VII. List of birds in Kerala

	Common name	Scientific name	Order	Family
1	Black-headed Babbler	*Rhopocichla atriceps*	Passeriformes	Vireonidae
2	Common Babbler	*Turdoides caudata*	Passeriformes	Leiothrichidae
3	Indian Rufous Babbler	*Turdoides subrufa*	Passeriformes	Leiothrichidae
4	Jungle Babbler	*Turdoides striata*	Passeriformes	Leiothrichidae
5	Spotted Babbler	*Pellorneum ruficeps*	Passeriformes	Pellorneidae
6	White-headed Babbler	*Turdoides leucocephala*	Passeriformes	Leiothrichidae
7	Yellow-eyed Babbler	*Chrysomma sinense*	Passeriformes	Paradoxornithidae
8	Brown-headed Barbet	*Megalaima zeylanica*	Piciformes	Megalaimidae
9	Coppersmith Barbet	*Megalaima haemacephala*	Piciformes	Megalaimidae
10	Crimson-throated Barbet	*Psilopogon malabaricus*	Piciformes	Megalaimidae
11	White-cheeked Barbet	*Megalaima viridis*	Piciformes	Megalaimidae
12	Oriental Bay-owl	*Phodilus badius*	Strigiformes	Tytonidae
13	Black Baza	*Aviceda leuphotes*	Accipitriformes	Accipitridae
14	Jerdon's Baza	*Aviceda jerdoni*	Accipitriformes	Accipitridae
15	Blue-bearded Bee-eater	*Nyctyornis athertoni*	Coraciiformes	Meropidae
16	Blue-tailed Bee-eater	*Merops philippinus*	Coraciiformes	Meropidae
17	Chestnut-headed Bee- eater	*Merops leschenaulti*	Coraciiformes	Meropidae
18	European Bee- eater	*Merops apiaster*	Coraciiformes	Meropidae
19	Small Bee- eater	*Merops orientalis*	Coraciiformes	Meropidae
20	Black Bittern	*,Ixobrychus flavicollis*	Pelecaniformes	Ardeidae
21	Chestnut Bittern	*Ixobrychus cinnamomeus*	Pelecaniformes	Ardeidae
22	Great Bittern	*,Ardea stellaris Linnaeus*	Pelecaniformes	Ardeidae
23	Little Bittern	*Ixobrychus minutus*	Pelecaniformes	Ardeidae
24	Yellow Bittern	*Ixobrychus sinensis*	Pelecaniformes	Ardeidae

25	Black-capped Blackbird	*Turdus merula nigropileus*	Passeriformes	Turdidae
26	Bourdillon's Blackbird	*Turdus merula bourdilloni*	Passeriformes	Turdidae
27	Nilgiri Blackbird	*Turdus merula simillimus*	Passeriformes	Turdidae
28	Tickell's Blue-Flycatcher	*Cyornis tickelliae*	Passeriformes	Muscicapidae
29	White-bellied Blue-Flycatcher	*Muscicapula pallipes, Cyornis pallipes*	Passeriformes	Muscicapidae
30	Bluethroted Blue-Flycatcher	*Cyornis rubeculoides*	Passeriformes	Muscicapidae
31	Brown Booby	*Sula leucogaster*	Suliformes	Sulidae
32	Masked Booby	*Sula dactylatra*	Suliformes	Sulidae
33	BrainfeverBird Booby	*Hypsipetes leucocephalus*	Passeriformes	Pycnonotidae
34	Black Bulbul	*Hypsipetes leucocephalus*	Passeriformes	Pycnonotidae
35	Grey-headed Bulbul	*Brachypodius priocephalus*	Passeriformes	Pycnonotidae
36	Red-vented Bulbul	*Pycnonotus cafer*	Passeriformes	Pycnonotidae
37	Red-whiskered Bulbul	*Pycnonotus jocosus*	Passeriformes	Pycnonotidae
38	Ruby-throated Bulbul	*Pycnonotus melanicterus*	Passeriformes	Pycnonotidae
39	White-browed Bulbul	*Pycnonotus luteolus*	Passeriformes	Pycnonotidae
40	Yellow-browed Bulbul	*Acritillas indica*	Passeriformes	Pycnonotidae
41	Bunting,Grey-necked	*Emberiza buchanani*	Passeriformes	*Emberizidae*
42	Bushchat, Pied	*Saxicola caprata*	Passeriformes	Muscicapidae
43	Bush-Lark, Jerdon's	*Mirafra affinis*	Passeriformes	Alaudidae
44	Jungle Bush-Quail	*Perdicula asiatica*	Galliformes	Phasianidae
45	Painted Bush-Quail	*Perdicula erythrorhyncha*	Galliformes	Phasianidae
46	Rock Bush-Quail	*Perdicula argoondah*	Galliformes	Phasianidae
47	Bush-Robin, Rufous-breasted	*Tarsiger hyperythrus*	Passeriformes	Muscicapidae
48	Common Button-Quail	*Turnix susciator*	Charadriiformes	Turnicidae
49	Small Button-Quail	*Turnix sylvatica dussumier*	Charadriiformes	Turnicidae
50	Yellow-legged Button-Quail	*Turnix tanki*	Charadriiformes	Turnicidae

51	Common Buzzard	*Buteo buteo*	Accipitriformes	Accipitridae
52	Long-legged Buzzard	*Buteo rufinus*	Accipitriformes	Accipitridae
53	White-eyed Buzzard	*Butastur teesa*	Accipitriformes	Accipitridae
54	Chiffchaff,	*Phylloscopus collybita*	Passeriformes	Phylloscopidae
55	Gold-fronted Chloropsis(leafbird)	*Chloropsis aurifrons*	Passeriformes	Chloropseidae
56	Jerdon's Chloropsis	*Chloropsis cochinchinensis jerdoni*	Passeriformes	Chloropseidae
57	Collared-dove, Eurasian	*Streptopelia decaocto*	Columbiformes	Columbidae
58	Coot, Common	*Fulica atra*	Gruiformes	Rallidae
59	Great Cormorant	*Phalacrocorax carbo*	Suliformes	Phalacrocoracidae
60	Little Cormorant	*Microcarbo niger*	Suliformes	Phalacrocoracidae
61	Greater Coucal	*Centropus sinensis*	Cuculiformes	Cuculidae
62	Lesser Coucal	*Centropus bengalensis*	Cuculiformes	Cuculidae
63	Courser, Indian	*Cursorius coromandelicus*	Charadriiformes	Glareolidae
64	Crab-Plover	*Dromas ardeola*	Charadriiformes	Dromadidae
65	Dusky Crag-Martin	*Ptyonoprogne concolor*	Passeriformes	Hirundinidae
66	Eurasian Crag-Martin	*Ptyonoprogne rupestris*	Passeriformes	Hirundinidae
67	Baillon's Crake	*Zapornia pusilla*	Gruiformes	Rallidae
68	Ruddy-breasted Crake	*Zapornia fusca*	Gruiformes	Rallidae
69	Slaty-legged Crake	*Rallina eurizonoides*	Gruiformes	Rallidae
70	House Crow	*Corvus splendens*	Passeriformes	Corvidae
71	Jungle Crow	*Corvus culminatus*	Passeriformes	Corvidae
72	Banded Bay Cuckoo	*Cacomantis sonneratii*	Cuculiformes	Cuculidae
73	Common Cuckoo	*Cuculus canorus*	Cuculiformes	Cuculidae
74	Drongo Cuckoo	*Surniculus dicruroides*	Cuculiformes	Cuculidae
75	Indian Cuckoo	*Cuculus micropterus*	Cuculiformes	Cuculidae
76	Indian Plaintive Cuckoo	*Cacomantis passerinus*	Cuculiformes	Cuculidae

77	Lesser Cuckoo	*Cuculus poliocephalus*	Cuculiformes	Cuculidae
78	Pied Crested Cuckoo	*Clamator jacobinus*	Cuculiformes	Cuculidae
79	Red-winged Crested Cuckoo	*Clamator coromandus*	Cuculiformes	Cuculidae
80	Black-headed Cuckoo-Shrike	*Lalage melanoptera*	Passeriformes	Campephagidae
81	Black-winged Cuckoo-Shrike	*Lalage melaschistos*	Passeriformes	Campephagidae
82	Large Cuckoo-Shrike	*Coracina macei*	Passeriformes	Campephagidae
83	Curlew	*Numenius arquata*	Charadriiformes	Scolopacidae
84	Darter	*Plotus anhinga*	Suliformes	Anhingidae
85	Emerald Dove	*Chalcophaps indica*	Columbiformes	Columbidae
86	Little Brown Dove	*Spilopelia senegalensis*	Columbiformes	Columbidae
87	Spotted Dove	*Spilopelia chinensis*	Columbiformes	Columbidae
88	Ashy Drongo	*Dicrurus leucophaeus*	Passeriformes	Dicruridae
89	Black Drongo	*Dicrurus macrocercus*	Passeriformes	Dicruridae
90	Bronzed Drongo	*Dicrurus aeneus*	Passeriformes	Dicruridae
91	Greater Racket-tailed Drongo	*Dicrurus paradiseus*	Passeriformes	Dicruridae
92	Spangled Drongo	*Dicrurus bracteatus*	Passeriformes	Dicruridae
93	White-bellied Drongo	*Dicrurus caerulescens*	Passeriformes	Dicruridae
94	Comb Duck	*Sarkidiornis sylvicola*	Anseriformes	Anatidae
95	Spot-billed Duck	*Anas poecilorhyncha*	Anseriformes	Anatidae
96	Dunlin	*Calidris alpina*	Charadriiformes	Scolopacidae
97	Black Eagle	*Ictinaetus malaiensis*	Accipitriformes	Accipitridae
98	Bonelli's Eagle	*Aquila fasciata*	Accipitriformes	Accipitridae
99	Booted Eagle	*Hieraaetus pennatus*	Accipitriformes	Accipitridae
100	Eastern Imperial Eagle	*Aquila heliaca*	Accipitriformes	Accipitridae
101	Greater Spotted Eagle	*Clanga clanga*	Accipitriformes	Accipitridae
102	Indian Spotted Eagle	*Clanga hastata*	Accipitriformes	Accipitridae

103	Rufous-bellied Eagle	*Lophotriorchis kienerii*	Accipitriformes	Accipitridae
104	Steppe Eagle	*Aquila nipalensis*	Accipitriformes	Accipitridae
105	Tawny Eagle	*Aquila rapax*	Accipitriformes	Accipitridae
106	Eurasian Eagle Owl	*Bubo bubo*	Strigiformes	Strigidae
107	Forest Eagle Owl	*Bubo nipalensis*	Strigiformes	Strigidae
108	Eared-Nightjar, Great Eagle	*Lyncornis macrotis*	Caprimulgiformes	Caprimulgidae
109	Cattle Egret	*Bubulcus ibis*	Pelecaniformes	Ardeidae
110	Large Egret	*Ardea alba*	Pelecaniformes	Ardeidae
111	Little Egret	*Egretta garzetta*	Pelecaniformes	Ardeidae
112	Median Egret	*Ardea intermedia*	Pelecaniformes	Ardeidae
113	Fairy-Bluebird, Asian	*Irena puella*	Passeriformes	Irenidae
114	Amur Falcon	*Falco amurensis*	Falconiformes	Falconidae
115	Peregrine Falcon	*Falco peregrinus*	Falconiformes	Falconidae
116	Red-headed Falcon	*Falco chicquera*	Falconiformes	Falconidae
117	White-browed Fantail-Flycatcher	*Rhipidura aureola*	Passeriformes	Rhipiduridae
118	White-throated Fantail-Flycatcher(White-spotted)	*Rhipidura albogularis*	Passeriformes	Rhipiduridae
119	Golden-headed Fantail-Warbler(cisticola)	*Cisticola exilis*	Passeriformes	Cisticolidae
120	Streaked Fantail-Warbler	*Cisticola juncidis*	Passeriformes	Cisticolidae
121	Finch-Lark, Rufous-tailed	*Ammomanes phoenicura*	Passeriformes	Alaudidae
122	Greater Grey-headed Fish-Eagle	*Haliaeetus ichthyaetus*	Accipitriformes	Accipitridae
123	Lesser Grey-headed Fish-Eagle	*Haliaeetus humilis*	Accipitriformes	Accipitridae
124	Fish-Owl, Brown	*Ketupa zeylonensis*	Strigiformes	Strigidae
125	Flamingo, Greater	*Phoenicopterus roseus*	Phoenicopteriformes	Phoenicopteridae
126	Florican, Lesser	*Sypheotides indicus*	Otidiformes	Otididae
127	Plain Flowerpecker	*Dicaeum minullum*	Passeriformes	Dicaeidae
128	Thick-billed Flowerpecker	*Dicaeum agile*	Passeriformes	Dicaeidae

129	Tickell's Flowerpecker	*Dicaeum erythrorhynchos*	Passeriformes	Dicaeidae
130	Asian Brown Flycatcher	*Muscicapa dauurica*	Passeriformes	Muscicapidae
131	Black-and-Orange Flycatcher	*Ficedula nigrorufa*	Passeriformes	Muscicapidae
132	Blue-throated Flycatcher	*Cyornis rubeculoides*	Passeriformes	Muscicapidae
133	Brown-breasted Flycatcher	*Muscicapa muttui*	Passeriformes	Muscicapidae
134	Grey-headed Flycatcher	*Culicicapa ceylonensis*	Passeriformes	Stenostiridae
135	Kashmir Flycatcher	*Ficedula subrubra*	Passeriformes	Stenostiridae
136	Nilgiri Flycatcher	*Eumyias albicaudatus*	Passeriformes	Muscicapidae
137	Rusty-tailed Flycatcher	*Ficedula ruficauda*	Passeriformes	Muscicapidae
138	Yellow-rumped Flycatcher	*Ficedula zanthopygia*	Passeriformes	Muscicapidae
139	Red-throated Flycatcher	*Ficedula albicilla*	Passeriformes	Muscicapidae
140	Ultramarine Flycatcher	*Ficedula superciliaris*	Passeriformes	Muscicapidae
141	Verditer Flycatcher	*Eumyias thalassinus*	Passeriformes	Muscicapidae
142	Flycatcher-Shrike, Pied (Bar-winged)	*Hemipus picatus*	Passeriformes	Vangidae
143	Francolin, Grey	*Francolinus pondicerianus*	Galliformes	Phasianidae
144	Christmas Island Frigate bird	*Fregata andrewsi*	Suliformes	Fregatidae
145	Great Frigate bird	*Fregata minor*	Suliformes	Fregatidae
146	Lesser Frigate bird	*Fregata ariel*	Suliformes	Fregatidae
147	Frogmouth, Ceylon	*Batrachostomus moniliger*	Caprimulgiformes	Podargidae
148	Gadwall Frigate bird	*Mareca strepera*	Anseriformes	Anatidae
149	Garganey	*Spatula querquedula*	Anseriformes	Anatidae
150	Bar-tailed Godwit	*Limosa lapponica*	Charadriiformes	Scolopacidae
151 152	Black-tailed Godwit	*Limosa limosa*	Charadriiformes	Scolopacidae
153	Golden-Plover, Pacific	*Pluvialis fulva*	Charadriiformes	Charadriidae
154	Goose, Bar-head	*Anser indicus*	Anseriformes	Anatidae
155	Crested Goshawk	*Accipiter trivirgatus*	Accipitriformes	Accipitridae

156	Northern Goshawk	*Accipiter gentilis*	Accipitriformes	Accipitridae
157	Pale Grasshopper-Warbler	*Locustella naevia*	Passeriformes	Locustellidae
158	Rusty-rumped Grasshopper-Warbler	*Acrocephalus agricola*	Passeriformes	Locustellidae
159	Bristled Grass-Warbler	*Schoenicola striatus*	Passeriformes	Locustellidae
160	Broad-tailed Grass-Warbler	*Schoenicola platyurus*	Passeriformes	Locustellidae
161	Grebe, Little	*Tachybaptus ruficollis*	Podicipediformes	Podicipedidae
162	Orange-breasted Green-Pigeon	*Treron bicinctus*	Columbiformes	Columbidae
163	Pompadour Green-Pigeon	*Treron pompadora affinis*	Columbiformes	Columbidae
164	Yellow-legged Green-Pigeon	*Treron phoenicoptera*	Columbiformes	Columbidae
165	Greenshank, Common	*Tringa nebularia*	Charadriiformes	Scolopacidae
166	Black-headed Gull	*Chroicocephalus ridibundus*	Charadriiformes	Laridae
167	Brown-headed Gull	*Chroicocephalus brunnicephalus*	Charadriiformes	Laridae
168	Yellow-legged Gull	*Larus michahellis*	Charadriiformes	Laridae
169	Heuglin's Gull	*Larus fuscus heuglini*	Charadriiformes	Laridae
170	Pallas's Gull	*Ichthyaetus ichthyaetus*	Charadriiformes	Laridae
171	Slender-billed Gull	*Chroicocephalus genei*	Charadriiformes	Laridae
172	Hanging-Parrot, Indian	*Loriculus vernalis*	Psittaciformes	Psittaculidae
173	Hen Harrier	*Circus cyaneus*	Accipitriformes	Accipitridae
174	Montagu's Harrier	*Circus pygargus*	Accipitriformes	Accipitridae
175	Pallid Harrier	*Circus macrourus*	Accipitriformes	Accipitridae
176	Pied Harrier	*Circus melanoleucos*	Accipitriformes	Accipitridae
177	Hawk-Cuckoo , Large	*Hierococcyx sparverioides*	Cuculiformes	Cuculidae
178	Changeable Hawk-Eagle	*Nisaetus cirrhatus*	Accipitriformes	Accipitridae
179	Mountain Hawk-Eagle	*Nisaetus nipalensis*	Accipitriformes	Accipitridae
180	Hawk-Owl, Brown	*Ninox scutulata*	Strigiformes	Strigidae

181	Grey Heron	*Ardea cinerea*	Pelecaniformes	Ardeidae
182	Little Green Heron	*Butorides striatus*	Pelecaniformes	Ardeidae
183	Purple Heron	*Ardea purpurea*	Pelecaniformes	Ardeidae
184	Hill-Myna, Southern	*Gracula religiosa*	Passeriformes	Sturnidae
185	Hobby, Oriental	*Falco severus*	Falconiformes	Falconidae
186	Honey-Buzzard , Crested	*Pernis ptilorhynchus*	Accipitriformes	Accipitridae
187	Hoopoe, Common	*Upupa epops*	Bucerotiformes	Upupidae
188	Great Pied Hornbill	*Buceros bicornis*	Bucerotiformes	Bucerotidae
189	Indian Grey Hornbill	*Ocyceros birostris*	Bucerotiformes	Bucerotidae
190	Malabar Grey Hornbill	*Ocyceros griseus*	Bucerotiformes	Bucerotidae
191	Malabar Pied Hornbill	*Anthracoceros coronatus*	Bucerotiformes	Bucerotidae
192	Houbara Hornbill	*Chlamydotis undulata*	Otidiformes	Otididae
193	House-Martin, Common	*Delichon urbica*	Passeriformes	Hirundinidae
194	Black Ibis	*Pseudibis papillosa*	Pelecaniformes	Threskiornithidae
195	Glossy Ibis	*Plegadis falcinellus*	Pelecaniformes	Threskiornithidae
196	Oriental White Ibis	*Threskiornis melanocephalus*	Pelecaniformes	Threskiornithidae
197	Green Imperial-Pigeon	*Ducula aenea*	Columbiformes	Columbidae
198	Mountain Imperial-Pigeon	*Ducula badia*	Columbiformes	Columbidae
199	lora, Common (iora)	*Aegithina tiphia*	Passeriformes	Aegithinidae
200	Bronze-winged Jacana	*Metopidius indicus*	Charadriiformes	Jacanidae
201	Pheasant-tailed Jacana	*Hydrophasianus chirurgus*	Charadriiformes	Jacanidae
202	Parasitic Jaeger	*Stercorarius parasiticus*	Charadriiformes	Stercorariidae
203	Pomarine Jaeger	*Stercorarius pomarinus*	Charadriiformes	Stercorariidae
204	Junglefowl, Grey	*Gallus sonneratii*	Galliformes	Phasianidae
205	Common Kestrel	*Falco tinnunculus*	Falconiformes	Falconidae
206	Black-capped Kingfisher	*Halcyon pileata*	Coraciiformes	Alcedinidae
207	Blue-eared Kingfisher	*Alcedo meninting*	Coraciiformes	Alcedinidae

208	Collared Kingfisher	*Todiramphus chloris*	Coraciiformes	Alcedinidae
209	Pied Kingfisher	*Ceryle rudis*	Coraciiformes	Alcedinidae
210	Oriental Dwarf Kingfisher	*Ceyx erithaca*	Coraciiformes	Alcedinidae
211	Small Blue Kingfisher(Common)	*Alcedo atthis*	Coraciiformes	Alcedinidae
212	Stork-billed Kingfisher	*Pelargopsis capensis*	Coraciiformes	Alcedinidae
213	White-breasted Kingfisher	*Halcyon smyrnensis*	Coraciiformes	Alcedinidae
214	Black Kite	*Milvus migrans*	Accipitriformes	Accipitridae
215	Black-eared Kite	*Milvus migrans lineatus*	Accipitriformes	Accipitridae
216	Black-shouldered Kite	*Elanus axillaris*	Accipitriformes	Accipitridae
217	Brahminy Kite	*Haliastur indus*	Accipitriformes	Accipitridae
218	Knot, Great	*Calidris tenuirostris*	Charadriiformes	Scolopacidae
219	Koel, Asian	*Eudynamys scolopaceus*	Cuculiformes	Cuculidae
220	Laggar	*Falco jugger*	Falconiformes	Falconidae
221	Grey-headed Lapwing	*Vanellus cinereus*	Charadriiformes	Charadriidae
222	Red-wattled Lapwing	*Vanellus indicus*	Charadriiformes	Charadriidae
223	Sociable Lapwing	*Vanellus gregarius*	Charadriiformes	Charadriidae
224	White-tailed Lapwing	*Vanellus leucurus*	Charadriiformes	Charadriidae
225	Yellow-wattled Lapwing	*Vanellus malabaricus*	Charadriiformes	Charadriidae
226	Greater Short-toed Lark	*Calandrella brachydactyla*	Passeriformes	Alaudidae
227	Malabar Crested Lark	*Galerida malabarica*	Passeriformes	Alaudidae
228	Sykes's Crested Lark	*Galerida deva*	Passeriformes	Alaudidae
229	Blanford's Laughing thrush(Palani laughingthrush)	*Montecincla fairbanki*	Passeriformes	Leiothrichidae
230	Jerdon's Laughing thrush	*Garrulax jerdoni*	Passeriformes	Leiothrichidae
231	Kerala Laughing thrush	*Garrulax jerdoni fairbanki*	Passeriformes	Leiothrichidae
232	Nilgiri Laughing thrush	*Montecincla cachinnans*	Passeriformes	Leiothrichidae

233	Wynaad Laughing thrush	*Pterorhinus delesserti*	Passeriformes	Leiothrichidae
234	Greenish Leaf-Warbler	*Phylloscopus trochiloides*	Passeriformes	Phylloscopidae
235	Large-billed Leaf-Warbler	*Phylloscopus magnirostris*	Passeriformes	Phylloscopidae
236	Tytler's Leaf-Warbler	*Phylloscopus tytleri*	Passeriformes	Phylloscopidae
237	Magpie-Robin,Oriental	*Copsychus saularis*	Passeriformes	Muscicapidae
238	Red-faced Malkoha	*Phaenicophaeus pyrrhocephalus*	Cuculiformes	Cuculidae
239	Sirkeer Malkoha	*Taccocua leschenaulti*	Cuculiformes	Cuculidae
240	Small Green-billed Malkoha (Blue-faced)	*Phaenicophaeus viridirostris*	Cuculiformes	Cuculidae
241	Marsh-Harrier, Western	*Circus aeruginosus*	Accipitriformes	Accipitridae
242	Pale Martin	*Riparia diluta*	Passeriformes	Hirundinidae
243	Plain Martin(Grey-throated)	*Riparia chinensis*	Passeriformes	Hirundinidae
244	Merlin	*Falco columbarius*	Falconiformes	Falconidae
245	Ashy Minivet	*Pericrocotus divaricatus*	Passeriformes	Campephagidae
246	Rosy Minivet	*Pericrocotus roseus*	Passeriformes	Campephagidae
247	Scarlet Minivet	*Pericrocotus speciosus*	Passeriformes	Campephagidae
248	Small Minivet	*Pericrocotus cinnamomeus*	Passeriformes	Campephagidae
249	White-bellied Minivet	*Pericrocotus erythropygius*	Passeriformes	Campephagidae
250	Monarch-Flycatcher (Black-naped)	*Hypothymis azurea*	Passeriformes	Monarchidae
251	Common Moorhen	*Gallinula chloropus*	Gruiformes	Rallidae
252	Purple Moorhen(Grey-headed swamphen)	*Porphyrio porphyrio poliocephalus*	Gruiformes	Rallidae
253	Black-headed Munia(Tricoloured)	*Lonchura malacca*	Passeriformes	Estrildidae
254	Black-throated Munia	*Lonchura kelaarti*	Passeriformes	Estrildidae
255	Green Munia(Green avadavat)	*Amandava formosa*	Passeriformes	Estrildidae
256	Red Munia(Red avadavat)	*Amandava amandava*	Passeriformes	Estrildidae

257	Spotted Munia(Scaly-breasted)	*Lonchura punctulata*	Passeriformes	Estrildidae
258	White-rumped Munia	*Lonchura striata*	Passeriformes	Estrildidae
259	White-throated Munia(Indian silverbill)	*Euodice malabarica*	Passeriformes	Estrildidae
260	Common Myna	*Acridotheres tristis*	Passeriformes	Sturnidae
261	Jungle Myna	*Acridotheres fuscus*	Passeriformes	Sturnidae
262	Brown-backed Needletail	*Hirundapus giganteus*	Apodiformes	Apodidae
263	White-rumped Needletail(spinetail)	*Zoonavena sylvatica*	Apodiformes	Apodidae
264	Black-crowned night heron	*Nycticorax nycticorax*	Pelecaniformes	Ardeidae
265	Malayan Night-Heron	*Gorsachius melanolophus*	Pelecaniformes	Ardeidae
266	IndianNightjar	*Caprimulgus asiaticus*	Caprimulgiformes	Caprimulgidae
267	Franklin's Nightjar(Savanna nightjar)	*Caprimulgus affinis*	Caprimulgiformes	Caprimulgidae
268	Indian Jungle Nightjar	*Caprimulgus indicus*	Caprimulgiformes	Caprimulgidae
269	Jerdon's Nightjar	*Caprimulgus atripennis*	Caprimulgiformes	Caprimulgidae
270	Lesser Noddy	*Anous tenuirostris*	Charadriiformes	Laridae
271	Chestnut-bellied Nuthatch	*Sitta cinnamoventris*	Passeriformes	Sittidae
272	Velvet-fronted Nuthatch	*Sitta frontalis*	Passeriformes	Sittidae
273	Openbill-Stork, Asian	*Anastomus oscitans*	Ciconiiformes	Ciconiidae
274	Black-headed Oriole	*Oriolus larvatus*	Passeriformes	Oriolidae
275	Black-naped Oriole	*Oriolus chinensis*	Passeriformes	Oriolidae
276	Eurasian Golden Oriole	*Oriolus oriolus*	Passeriformes	Oriolidae
277	Osprey Oriole	*Pandion haliaetus*	Accipitriformes	Pandionidae
278	Barn Owl	*Tyto alba*	Strigiformes	Tytonidae
279	Grass Owl	*Tyto longimembris*	Strigiformes	Tytonidae
280	Long-eared Owl	*Asio otus*	Strigiformes	Strigidae
281	Short-eared Owl	*Asio flammeus*	Strigiformes	Strigidae

282	Jungle Owlet	*Glaucidium radiatum*	Strigiformes	Strigidae
283	Spotted Owlet	*Athene brama*	Strigiformes	Strigidae
284	Oystercatcher, Eurasian	*Haematopus ostralegus*	Charadriiformes	Haematopodidae
285	Painted-Snipe, Greater	*Rostratula benghalensis*	Charadriiformes	Rostratulidae
286	Palm-Swift, Asian	*Cypsiurus balasiensis*	Apodiformes	Apodidae
287	Paradise-Flycatcher, Asian	*Terpsiphone paradisi*	Passeriformes	Monarchidae
288	Alexandrine Parakeet	*Psittacula eupatria*	Psittaciformes	Psittaculidae
289	Blue-winged Parakeet(Malabar parakeet)	*Psittacula columboides*	Psittaciformes	Psittaculidae
290	Plum-headed Parakeet	*Psittacula cyanocephala*	Psittaciformes	Psittaculidae
291	Rose-ringed Parakeet	*Psittacula krameri*	Psittaciformes	Psittaculidae
292	Red-breasted Parakeet	*Psittacula alexandri*	Psittaciformes	Psittaculidae
293	Peafowl, Indian	*Pavo cristatus*	Galliformes	Phasianidae
294	Great White Pelican	*Pelecanus onocrotalus*	Pelecaniformes	Pelecanidae
295	Spot-billed Pelican	*Pelecanus philippensis*	Pelecaniformes	Pelecanidae
296	Piculet, Speckled	*Picumnus innominatus*	Piciformes	Picidae
297	Pigeon, Blue Rock	*Columba livia*	Columbiformes	Columbidae
298	Pintail, Northern	*Anas acuta*	Anseriformes	Anatidae
299	Blyth's Pipit	*Anthus godlewskii*	Passeriformes	Motacillidae
300	Brown Rock Pipit	*Anthus similis*	Passeriformes	Motacillidae
301	Nilgiri Pipit	*Anthus nilghiriensis*	Passeriformes	Motacillidae
302	Oriental Tree Pipit(Olive-backed pipit)	*Anthus hodgsoni*	Passeriformes	Motacillidae
303	Paddyfield Pipit	*Anthus rufulus*	Passeriformes	Motacillidae
304	Richard's Pipit	*Anthus richardi*	Passeriformes	Motacillidae
305	Pitta, Indian	*Pitta brachyura*	Passeriformes	Pittidae
307	Common Ringed Plover	*Charadrius hiaticula*	Charadriiformes	Charadriidae
308	Greater Sand Plover	*Charadrius leschenaultii*	Charadriiformes	Charadriidae

309	Grey Plover	*Pluvialis squatarola*	Charadriiformes	Charadriidae
310	Kentish Plover	*Charadrius alexandrinus*	Charadriiformes	Charadriidae
311	Lesser Sand Plover	*Charadrius mongolus*	Charadriiformes	Charadriidae
312	Little Ringed Plover	*Charadrius dubius*	Charadriiformes	Charadriidae
313	Ferruginous Pochard	*Aythya nyroca*	Anseriformes	Anatidae
314	Tufted Pochard	*Aythya fuligula*	Anseriformes	Anatidae
315	Pond-Heron, Indian	*Ardeola grayii*	Pelecaniformes	Ardeidae
316	Oriental Pratincole	*Glareola maldivarum*	Charadriiformes	Glareolidae
317	Small Pratincole	*Glareola lactea*	Charadriiformes	Glareolidae
318	Ashy Prinia	*Prinia socialis*	Passeriformes	Cisticolidae
319	Franklin's Prinia	*Prinia hodgsonii*	Passeriformes	Cisticolidae
320	Jungle Prinia	*Prinia sylvatica*	Passeriformes	Cisticolidae
321	Plain Prinia	*Prinia inornata*	Passeriformes	Cisticolidae
322	Blue-breasted Quail	*Excalfactoria chinensis*	Galliformes	Phasianidae
323	Common Quail	*Coturnix coturnix*	Galliformes	Phasianidae
324	Rain Quail	*Coturnix coromandelica*	Galliformes	Phasianidae
325	Rail, Blue-breasted	*Lewinia striata*	Galliformes	Rallidae
326	Common Redshank	*Tringa totanus*	Charadriiformes	Scolopacidae
327	Spotted Redshank	*Tringa erythropus*	Charadriiformes	Scolopacidae
328	Redstart, Black	*Phoenicurus ochruros*	Passeriformes	Muscicapidae
329	Blyth's Reed-Warbler	*Acrocephalus dumetorum*	Passeriformes	Acrocephalidae
330	Indian Great Reed-Warbler	*Acrocephalus stentoreus*	Passeriformes	Acrocephalidae
331	Reef-Egret, Western	*Egretta gularis*	Pelecaniformes	Ardeidae
332	Indian Robin	*Copsychus fulicatus*	Passeriformes	Muscicapidae
333	Indian Blue Robin	*Larvivora brunnea*	Passeriformes	Muscicapidae
334	Blue Rock-Thrush	*Monticola solitarius*	Passeriformes	Muscicapidae
335	Blue-headed Rock-Thrush	*Monticola cinclorhyncha*	Passeriformes	Muscicapidae
336	European Roller	*Coracias garrulus*	Coraciiformes	Coraciidae

337	Indian Roller	*Coracias benghalensis*	Coraciiformes	Coraciidae
338	Oriental Broad-billed Roller	*Eurystomus orientalis*	Coraciiformes	Coraciidae
339	Rosefinch, Common	*Carpodacus erythrinus*	Passeriformes	Fringillidae
340	Ruff	*Calidris pugnax*	Charadriiformes	Scolopacidae
341	Sanderling	*Calidris alba*	Charadriiformes	Scolopacidae
342	Sandgrouse, Chestnut-bellied	*Pterocles exustus*	Pterocliformes	Pteroclidae
343	Broad-billed Sandpiper	*Calidris falcinellus*	Charadriiformes	Scolopacidae
344	Common Sandpiper	*Actitis hypoleucos*	Charadriiformes	Scolopacidae
345	Curlew Sandpiper	*Calidris ferruginea*	Charadriiformes	Scolopacidae
346	GreenSandpiper	*Tringa ochropus*	Charadriiformes	Scolopacidae
347	Marsh Sandpiper	*Tringa stagnatilis*	Charadriiformes	Scolopacidae
348	Spoon-billed Sandpiper	*Calidris pygmaea*	Charadriiformes	Scolopacidae
349	Terek Sandpiper	*Xenus cinereus*	Charadriiformes	Scolopacidae
350	Wood Sandpiper	*Tringa glareola*	Charadriiformes	Scolopacidae
351	Scimitar-Babbler, Indian	*Pomatorhinus horsfieldii*	Passeriformes	Timaliidae
352	Collared Scops-Owl	*Otus lettia*	Strigiformes	Strigidae
353	Oriental Scops-Owl	*Otus sunia*	Strigiformes	Strigidae
354	White-bellied Sea-Eagle	*Haliaeetus leucogaster*	Accipitriformes	Accipitridae
355	White-tailed Sea-Eagle	*Haliaeetus albicilla*	Accipitriformes	Accipitridae
356	Serpent-Eagle, Crested	*Spilornis cheela*	Accipitriformes	Accipitridae
357	Shag, Indian(Indian cormorant)	*Phalacrocorax fuscicollis*	Suliformes	Phalacrocoracidae
358	Shama, White-rumped	*Copsychus malabaricus*	Passeriformes	Muscicapidae
359	Flesh-footed Shearwater	*Ardenna carneipes*	Procellariiformes	Procellariidae
360	Persian Shearwater	*Puffinus persicus*	Procellariiformes	Procellariidae
361	Shelduck, Brahminy	*Tadorna ferruginea*	Anseriformes	Anatidae
362	Shikra	*Accipiter badius*	Accipitriformes	Accipitridae
363	Rufous-bellied Shortwing	*Sholicola major*	Passeriformes	Muscicapidae

364	White-bellied Shortwing	*Sholicola major*	Passeriformes	Muscicapidae
365	Shoveller, Northern	*Spatula clypeata*	Anseriformes	Anatidae
366	Bay-backed Shrike	*Lanius vittatus*	Passeriformes	Laniidae
367	Brown Shrike	*Lanius cristatus*	Passeriformes	Laniidae
368	Philippine Shrike	*Lanius cristatus lucionensis*	Passeriformes	Laniidae
369	Rufous-backed Shrike (Long-tailed shrike)	*Lanius schach*	Passeriformes	Laniidae
370	Southern Grey Shrike	*Lanius excubitor*	Passeriformes	Laniidae
371	Skua, Brown	*Stercorarius antarcticus*	Charadriiformes	Stercorariidae
372	Skylark, Eastern	*Alauda gulgula*	Passeriformes	Alaudidae
373	Snake-Eagle, Short-toed	*Circaetus gallicus*	Accipitriformes	Accipitridae
374	Common Snipe	*Gallinago gallinago*	Charadriiformes	Scolopacidae
375	Jack Snipe	*Lymnocryptes minimus*	Charadriiformes	Scolopacidae
376	Pintail Snipe	*Gallinago stenura*	Charadriiformes	Scolopacidae
377	Swinhoe's Snipe	*Gallinago megala*	Charadriiformes	Scolopacidae
378	Wood Snipe	*Gallinago nemoricola*	Charadriiformes	Scolopacidae
379	House Sparrow	*Passer domesticus*	Passeriformes	Passeridae
380	Yellow-throated Sparrow	*Gymnoris xanthocollis*	Passeriformes	Passeridae
381	Besra Sparrow hawk	*Accipiter virgatus*	Accipitriformes	Accipitridae
382	Eurasian Sparrow hawk	*Accipiter nisus*	Accipitriformes	Accipitridae
383	Spiderhunter, Little	*Arachnothera longirostra*	Passeriformes	Nectariniidae
384	Spoonbill, Eurasian	*Platalea leucorodia*	Pelecaniformes	Threskiornithidae
385	Sparrow-Lark, Ashy-crowned	*Eremopterix griseus*	Passeriformes	Alaudidae
386	Painted Spurfowl	*Galloperdix lunulata*	Galliformes	Phasianidae
387	Red Spurfowl	*Galloperdix spadicea*	Galliformes	Phasianidae
388	Common Starling	*Sturnus vulgaris*	Passeriformes	Sturnidae
389	Blyth's Starling	*Sturnia blythii*	Passeriformes	Sturnidae

390	Brahminy Starling	*Sturnia pagodarum*	Passeriformes	Sturnidae
391	Grey-headed Starling (Chestnut-tailed starling)	*Sturnia malabarica*	Passeriformes	Sturnidae
392	Rosy Starling	*Pastor roseus*	Passeriformes	Sturnidae
393	Stilt, Black-winged	*Himantopus himantopus*	Charadriiformes	Recurvirostridae
394	Little Stint	*Calidris minuta*	Charadriiformes	Scolopacidae
395	Long-toed Stint	*Calidris subminuta*	Charadriiformes	Scolopacidae
396	Temminck's Stint	*Calidris temminckii*	Charadriiformes	Scolopacidae
397	Stonechat, Common	*Saxicola torquata*	Passeriformes	Muscicapidae
398	Stone-Curlew	*Burhinus grallarius*	Charadriiformes	Burhinidae
399	Stone-Plover, Great	*Esacus recurvirostris*	Charadriiformes	Burhinidae
400	Black Stork	*Ciconia nigra*	Ciconiiformes	Ciconiidae
401	European White Stork	*Ciconia ciconia*	Ciconiiformes	Ciconiidae
402	Painted Stork	*Mycteria leucocephala*	Ciconiiformes	Ciconiidae
403	White-necked Stork	*Ciconia episcopus*	Ciconiiformes	Ciconiidae
404	Storm-Petrel, Wilson's	*Oceanites oceanicus*	Procellariiformes	Oceanitidae
405	Crimson Sunbird	*Aethopyga siparaja*	Passeriformes	Nectariniidae
406	Loten's Sunbird	*Cinnyris lotenius*	Passeriformes	Nectariniidae
407	Purple Sunbird	*Cinnyris asiaticus*	Passeriformes	Nectariniidae
408	Purple-rumped Sunbird	*Leptocoma zeylonica*	Passeriformes	Nectariniidae
409	Small Sunbird	*Leptocoma minima*	Passeriformes	Nectariniidae
410	Common Swallow	*Hirundo rustica*	Passeriformes	Hirundinidae
411	House Swallow	*Hirundo rustica*	Passeriformes	Hirundinidae
412	Red-rumped Swallow	*Cecropis daurica*	Passeriformes	Hirundinidae
413	Streak-throated Swallow	*Petrochelidon luvicola*	Passeriformes	Hirundinidae
414	Wire-tailed Swallow	*Hirundo smithii*	Passeriformes	Hirundinidae
415	Alpine Swift	*Tachymarptis melba*	Apodiformes	Apodidae
416	House Swift	*Apus nipalensis*	Apodiformes	Apodidae

417	Pacific Swift	*Apus pacificus*	Apodiformes	Apodidae
418	Swift let, Indian Edible-nest	*Aerodramus unicolor*	Apodiformes	Apodidae
419	Tailorbird, Common	*Orthotomus sutorius*	Passeriformes	Cisticolidae
420	Common Teal	*Anas crecca*	Anseriformes	Anatidae
421	Cotton Teal	*Nettapus coromandelianus*	Anseriformes	Anatidae
422	Black-bellied Tern	*Sterna acuticauda*	Charadriiformes	Laridae
423	Black-naped Tern	*Sterna sumatrana*	Charadriiformes	Laridae
424	Bridled Tern	*Onychoprion anaethetus*	Charadriiformes	Laridae
425	Caspian Tern	*Hydroprogne caspia*	Charadriiformes	Laridae
426	Common Tern	*Sterna hirundo*	Charadriiformes	Laridae
427	Gull-billed Tern	*Gelochelidon nilotica*	Charadriiformes	Laridae
428	Large Crested Tern	*Thalasseus bergii*	Charadriiformes	Laridae
429	Lesser Crested Tern	*Thalasseus bengalensis*	Charadriiformes	Laridae
430	Little Tern	*Sternula albifrons*	Charadriiformes	Laridae
431	River Tern	*Sterna aurantia*	Charadriiformes	Laridae
432	Sandwich Tern	*Thalasseus sandvicensis*	Charadriiformes	Laridae
433	Saunders's Tern	*Sternula saundersi*	Charadriiformes	Laridae
434	Sooty Tern	*Onychoprion fuscatus*	Charadriiformes	Laridae
435	Whiskered Tern	*Chlidonias hybrida*	Charadriiformes	Laridae
436	White-cheeked Tern	*Sterna repressa*	Charadriiformes	Laridae
437	White-winged Black Tern	*Chlidonias leucopterus*	Charadriiformes	Laridae
438	Orange-headed Thrush	*Geokichla citrina*	Passeriformes	Turdidae
439	White-throated Ground Thrush	*Zoothera citrine cyanothus*	Passeriformes	Turdidae
440	Pied Thrush	*Geokichla wardii*	Passeriformes	Turdidae
441	Scaly Thrush	*Zoothera dauma*	Passeriformes	Turdidae
442	Black-lored Yellow Tit	*Machlolophus xanthogenys*	Passeriformes	Paridae
443	Great Tit	*Parus major*	Passeriformes	Paridae

444	Pied Tit	*Machlolophus nuchalis*	Passeriformes	Paridae
445	Tit-Babbler, Quaker	*Alcippe poioicephala*	Passeriformes	Alcippeidae
446	IndianTreepie	*Dendrocitta vagabunda*	Passeriformes	Corvidae
447	White-bellied Treepie	*Dendrocitta leucogastra*	Passeriformes	Corvidae
448	Tree-Swift, Crested	*Hemiprocne coronata*	Apodiformes	Hemiprocnidae
449	Trogon, Malabar	*Harpactes fasciatus*	Trogoniformes	Trogonidae
450	Grey-backed Tropicbird	*Phaethon aethereus*	Phaethontiformes	Phaethontidae
451	Yellow-billed Tropicbird(White-tailed)	*Phaethon lepturus*	Phaethontiformes	Phaethontidae
452	Turnstone, Ruddy	*Arenaria interpres*	Charadriiformes	Scolopacidae
453	Turtle-Dove, Oriental	*Streptopelia orientalis*	Columbiformes	Columbidae
454	Cinereous Vulture	*Aegypius monachus*	Accipitriformes	Accipitridae
455	Egyptian Vulture	*Neophron percnopterus*	Accipitriformes	Accipitridae
456	Indian White-backed Vulture	*Gyps bengalensis*	Accipitriformes	Accipitridae
457	Long-billed Vulture	*Gyps indicus*	Accipitriformes	Accipitridae
458	Red-headed Vulture	*Sarcogyps calvus*	Accipitriformes	Accipitridae
459	Citrine Wagtail	*Motacilla citreola*	Passeriformes	Motacillidae
460	Forest Wagtail	*Dendronanthus*	Passeriformes	Motacillidae
461	Grey Wagtail	*Motacilla cinerea*	Passeriformes	Motacillidae
462	Large Pied Wagtail	*Motacilla maderaspatensis*	Passeriformes	Motacillidae
463	White Wagtail	*Motacilla alba*	Passeriformes	Motacillidae
464	Yellow Wagtail	*Motacilla flava*	Passeriformes	Motacillidae
465	Booted Warbler	*Iduna caligata*	Passeriformes	Acrocephalidae
466	Dusky Warbler	*Phylloscopus fuscatus*	Passeriformes	Phylloscopidae
467	Hume's Warbler	*Phylloscopus humei*	Passeriformes	Phylloscopidae
468	Orphean Warbler	*Curruca hortensis*	Passeriformes	Sylviidae
469	Paddyfield Warbler	*Acrocephalus agricola*	Passeriformes	Acrocephalidae

470	Sykes's Warbler	*Iduna rama*	Passeriformes	Acrocephalidae
471	Thick-billed Warbler	*Arundinax aedon*	Passeriformes	Acrocephalidae
472	Tickell's Warbler	*Phylloscopus affinis*	Passeriformes	Phylloscopidae
473	Western Crowned Warbler	*Phylloscopus occipitalis*	Passeriformes	Phylloscopidae
474	Willow Warbler	*Phylloscopus trochilus*	Passeriformes	Phylloscopidae
475	Yellow-browed Warbler	*Phylloscopus inornatus*	Passeriformes	Phylloscopidae
476	Watercock	*Gallicrex cinerea*	Gruiformes	Rallidae
477	Waterhen, White-breasted	*Amaurornis phoenicurus*	Gruiformes	Rallidae
478	Baya Weaver	*Ploceus philippinus*	Passeriformes	Ploceidae
479	Streaked Weaver	*Ploceus manyar*	Passeriformes	Ploceidae
480	Desert Wheatear	*Oenanthe deserti*	Passeriformes	Muscicapidae
481	Isabelline Wheatear	*Oenanthe isabellina*	Passeriformes	Muscicapidae
482	Whimbrel	*Numenius phaeopus*	Charadriiformes	Scolopacidae
483	Large Whistling-Duck	*Dendrocygna bicolor*	Anseriformes	Anatidae
484	Lesser Whistling-Duck	*Dendrocygna javanica*	Anseriformes	Anatidae
485	Whistling-Thrush, Malabar	*Myophonus horsfieldii*	Passeriformes	Muscicapidae
486	White-eye, Oriental (Indian white-eye)	*Zosterops palpebrosus*	Passeriformes	Zosteropidae
487	Common Lesser White-throat	*Sylvia curruca*	Passeriformes	Sylviidae
488	Hume's Lesser White-throat	*Curruca curruca*	Passeriformes	Sylviidae
489	Wigeon, Eurasian	*Mareca penelope*	Anseriformes	Anatidae
490	Woodcock, Eurasian	*Scolopax rusticola*	Charadriiformes	Scolopacidae
491	Brown Wood-Owl	*Strix leptogrammica*	Strigiformes	Strigidae
492	Mottled Wood-Owl	*Strix ocellata*	Strigiformes	Strigidae
493	Black-shouldered Woodpecker (white)	*Chrysocolaptes festivus*	Piciformes	Picidae
494	Brown-capped Pigmy Woodpecker	*Yungipicus nanus*	Piciformes	Picidae
495	Common Golden-backedWoodpecker (Common flameback)	*Dinopium javanense*	Piciformes	Picidae

496	Great Black Woodpecker(White - bellied)	*Dryocopus javensis*	Piciformes	Picidae
497	Greater Golden-backed Woodpecker	*Chrysocoloptos lucidus*	Piciformes	Picidae
498	Heart-spotted Woodpecker	*Hemicircus canente*	Piciformes	Picidae
499	Lesser Golden-backed Woodpecker (Black-rumped flameback)	*Dinopium benghalense*	Piciformes	Picidae
500	Little Scaly-bellied GreenWoodpecker (Streak-throated)	*Picus xanthopygaeus*	Piciformes	Picidae
501	Rufous Woodpecker	*Micropternus brachyurus*	Piciformes	Picidae
502	Small Yellow-naped Woodpecker (Lesser yellownape)	*Picus chlorolophus*	Piciformes	Picidae
503	Yellow-fronted PiedWoodpecker (Yellow-crowned)	*Leiopicus mahrattensis*	Piciformes	Picidae
504	Wood-Pigeon, Nilgiri	*Columba elphinstonii*	Columbiformes	Columbidae
505	Common Woodshrike	*Tephrodornis pondicerianus*	Passeriformes	Vangidae
506	Large Woodshrike	*Tephrodornis virgatus*	Passeriformes	Vangidae
507	Ashy Woodswallow	*Artamus fuscus*	Passeriformes	Artamidae
508	Eurasian Wryneck	*Jynx torquilla*	Piciformes	Picidae

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