

Summary

The Bundala National Park (6216 ha), is located in the Hambantota District, within the Southeastern Arid Zone of Sri Lanka. The park consists mainly of dry thorny scrubland and lagoons, namely, Koholankala (390 ha), Malala (650 ha), Embilikala (430 ha) and Bundala (520 ha). These shallow water lagoons form a complex wetland system that harbours a rich bird life, including several species of migratory waterfowl. Bundala is Sri Lanka's first Ramsar wetland – a wetland of international importance especially for migratory waterfowl. Recent studies have indicated that the Bundala National Park and its wetlands are being degraded due to various adverse factors. Therefore, this survey was intended to document the present status of biodiversity in this protected area. The systematic survey on biodiversity extended from February to May 2001, during which the area was visited at fortnightly intervals. The fauna and flora were surveyed using scientifically valid inventorying techniques.

The park consist of 7 major terrestrial vegetation/habitat types (dry thorny scrubland, arid zone forests, sand dune vegetation, gentle sea shore vegetation, arid zone maritime grasslands/pastures, riverine forest, anomalous Mesquite scrublands) and 6 wetland types (salt marsh, mangrove, brackish water lagoons, sandy and rocky sea shore, seasonal water holes and tanks, saltern). A total of 383 plant species were documented from the above vegetation and habitat types in Bundala. These include 4 endemics and 3 species that are nationally threatened. Shrubs and herbs are the predominant plant life forms of Bundala. A total of 324 species of vertebrates were recorded from Bundala National Park, of which 11 species are endemic, while 29 species are nationally threatened. A total of 52 species of colourful butterflies were also recorded from the park.

At present, the biodiversity of Bundala National Park is facing several threats, which could be summerized under habitat deterioration and degradation, direct exploitation of species, spread of invasive alien species, prolonged drought, and inadequately planned land-use practices. It is envisaged that the findings of the survey would contribute to the conservation and management of this globally important Protected Area.

1. Introduction

The Bundala National Park, covering an area of 6216 ha, is located about 250 Km Southeast of Colombo, in the Hambantota District (6°08' – 6°14'N, 81°08' - 81°18'E) (Figure 1.1). The park falls within the Southeastern Arid Zone of Sri Lanka, with a general climate that can be classified as hot and dry. The average annual rainfall for the area is about 1,074 mm, with the highest monthly rainfall occurring in November. The mean annual temperature is about 27.1 ° C. Topographically, the park is generally flat with sand dunes bordering the coastline. Three streams, Malala Oya, Embilikala Oya and Kirindi Oya discharge their waters into the park and adjacent areas. The park consists mainly of dry thorny scrubland and lagoons. The shallow brackish water lagoons located within the park includes Koholankala (390 ha), Malala (650 ha), Embilikala (430 ha) and Bundala (520 ha). The Malala and Embilikala lagoons are interconnected by a natural canal, and receive drainage water from the Badagiriya and Kirindi Oya irrigation systems, respectively (IIMI, 1995). Drainage of irrigation water has resulted in chemical and biological changes in the above wetlands (IIMI, 1995; Amerasinghe *et al.*, 2001).

Recognizing the importance of Bundala as an important habitat for wildlife, it was declared a Sanctuary under the Fauna and Flora Protection Ordinance in 1969, and later upgraded to a National Park in 1992. As highlighted by previous research work, the shallow brackish water lagoons located within the park harbours a rich birdlife, including several species of migratory waterfowl (CEA/Euroconsult, 1993; De Silva, 1999). This led to the declaration of Bundala as Sri Lanka's first Ramsar wetland – a wetland of international importance especially for migratory waterfowl, in 1990. The Wetlands Conservation Project of the Central Environmental Authority took the initiative in 1993 to prepare a wetland site report and a conservation management plan for Bundala. Subsequently, a detailed management plan for Bundala was prepared by the Department of Wildlife Conservation in 1997, under the Global Environmental Facility funded project. The recommendations of the latter plan are being gradually implemented by the Department of Wildlife Conservation.

The Ramsar Convention requires contracting parties to assess the status of Ramsar wetlands at regular intervals. There is growing evidence that this protected area of global significance is deteriorating due to several anthropogenic factors. Therefore, with a view to contributing towards the future conservation and management of the Bundala National Park and Ramsar Wetland, IUCN – The World Conservation Union undertook a biodiversity assessment during the first half of the year 2001. It was intended to document the current status of biodiversity in the Bundala National Park, and the various threats that it faces at present, in order to facilitate management decisions.

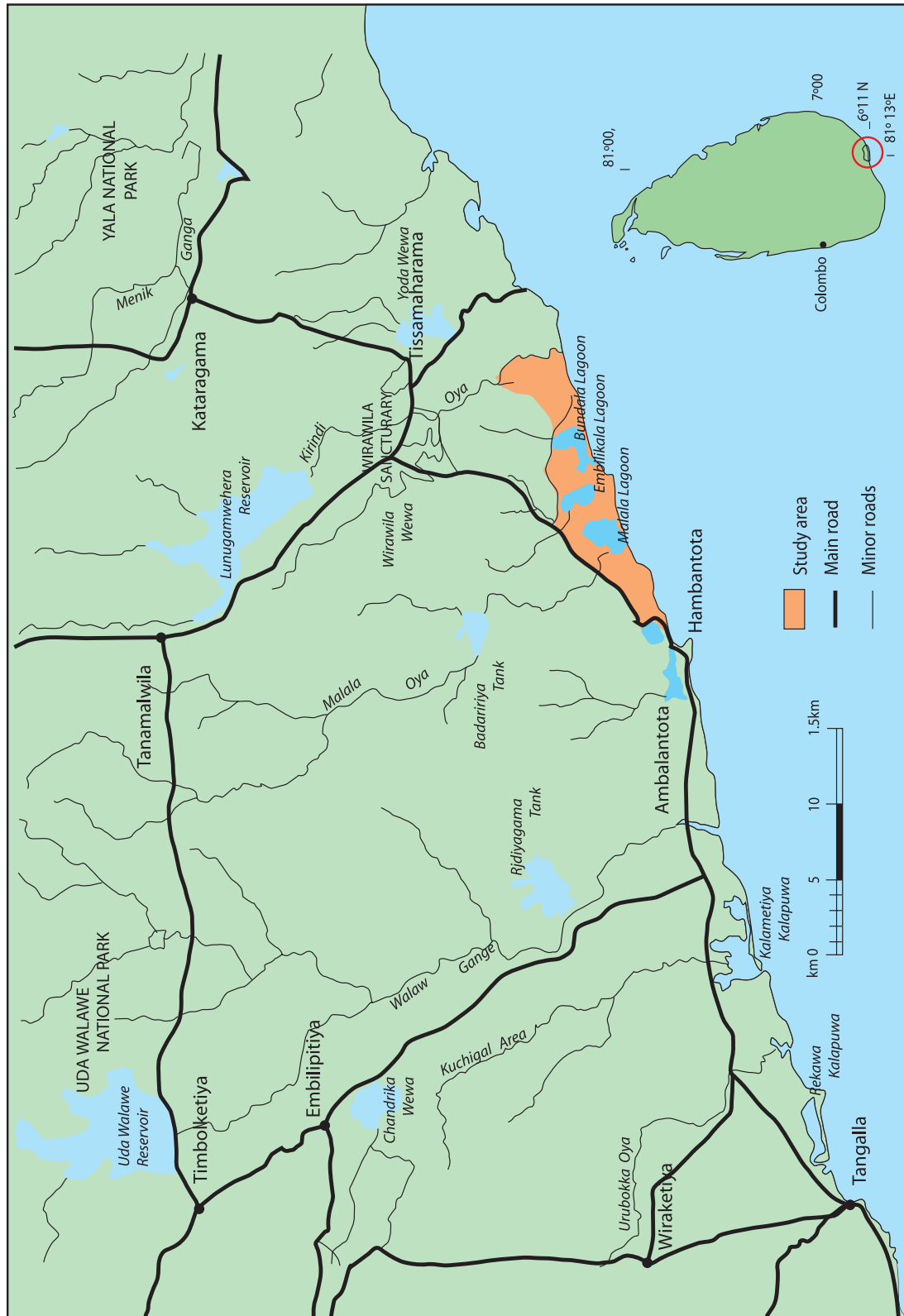


Figure 1.1: Location of the Bundala National Park
(Source: CEA/Euroconsult, 1993)

Figure 1.1: Location of the Bundala National Park
(Source: CEA/Euroconsult, 1993)

2. Methodology

The main elements of the biodiversity assessment technique adopted for the study in the Bundala National Park are as follows:

1. Review of existing published information on the study area and gathering of baseline information.
2. Initial reconnaissance survey of the study area to identify habitats and vegetation types, select representative sampling sites, plan out sampling schedules and verify and confirm the pre-planned sampling methods to document animals and plants.
3. Site-specific inventorying of fauna and flora, using standard scientific techniques.
4. Assessment of site-specific threats to biodiversity.

Period of field survey, sampling frequency and time

The field survey commenced at the beginning of February, 2001 and was completed by the end of May, 2001 (four months duration). Field sampling was carried out at fortnightly intervals; each sampling session spanning over six continuous days. Each selected sampling site was covered at different times of the day during the above survey period, in order to avoid a time bias for a particular sampling site when recording fauna. Nocturnal visits were also made to all sampling sites, during each sampling session.

Sampling sites

The sampling sites were selected in a random manner considering the accessibility, representative habitats and spatial distribution in the National Park, through an initial reconnaissance survey. The base maps on vegetation and land-use types of the Bundala National Park prepared by the Central Environmental Authority in 1990 and the Department of Wildlife Conservation in 1997 were used for this purpose.

Field sampling techniques

Sampling methods were designed to identify and quantify all groups of vertebrates, butterflies, and floral communities in representative habitats within the National Park.

Flora were documented in belt transects of three different sizes - 5mx10m, 25mx5m or 25mx10m, depending on the plant life form. Plant taxonomic data were compiled adhering to the standard practices of processing and analysing herbarium samples. The abundance of plant species (macrophytes) was investigated applying the Braun-Blanquet procedure (cited in Sutherland, 1996) for visual estimation of plant cover, according to the following scale:

<1% plant cover-F; 1-5% plant cover-E; 6-25% plant cover-D; 26-50% plant cover-C; 51-75% plant cover-B; 76-100% plant cover-A.

The Faunal surveys were carried out using standard sampling techniques specified in Sutherland (1996), with slight modifications to suit the existing field conditions. Fish were sampled by cast netting (10 random casts/site) and by observing the commercial catch. Herpetofauna were sampled along transects (50m x 5m) and by placing pitfall traps. Wetland birds were documented by 0.5 hour point counts (200m radius; 3 sites/wetland), while forest and scrubland birds were documented along 100m x 20m transects. Mammals were documented in a qualitative manner, using direct observations and indirect methods (defecation, tracks). Butterflies were documented along 100m x 5m transects.

Identification and nomenclature of fauna and flora

The fauna and flora of Bundala were identified and classified using the published guides stated in Table 2.1 below:

Table 2.1: Guides used for the identification and taxonomy of flora and fauna

Group	Source
Flora	Dassanayake, M. D. & Fosberg, F. R. (eds.) (1980 - 1991); Dassanayake, M. D., Fosberg, F. R. and Clayton, W. D. (eds.) (1994 - 1995) Dassanayake, M. D., and Clayton, W. D. (eds.) (1996 - 1999).
Fish	Pethiyagoda (1991); De Bruin <i>et al.</i> (1994).
Amphibians	Dutta & Manamendra-Aarachchi (1996).
Reptiles	Deraniyagala (1953); De Silva (1990); De Silva (1996).
Birds	Harrison & Worfolk (1999).
Mammals	Phillips (1980).
Butterflies	D’Abrera (1998).

3. Structure and Composition of Flora in Different Habitats and Vegetation types of Bundala

Habitats and vegetation types of Bundala

A total of 11 major habitats/vegetation types were documented from the Bundala National Park. These include 7 terrestrial vegetation types and 7 wetland types. The terrestrial habitats consist of dry thorny scrubland, arid zone forests, sand dune vegetation, gentle sea shore vegetation, arid zone maritime grasslands/pastures, riverine forests, and anomalous Mesquite (*Prosopis*) scrublands, while the wetland types include saltmarsh, mangrove, brackish water lagoons, sea shore (sandy and rocky), saltern, water holes/tanks and streams.

Species composition of flora and their life forms

A total of 383 plant species, belonging to 90 families were documented from the above vegetation and habitat types in Bundala (Appendix 3.1). These include six endemics and seven species that are nationally threatened (IUCN Sri Lanka, 2000), while 15 are invasive alien species. Of the total plant species documented from Bundala, 121 are woody plant species. Among the different vegetation types, the highest number of plant species was documented from the arid zone forest (107 species), while the lowest number of plant species was documented in the salt marsh (6 species) (Figure 3.1). The dominant plant species in the different vegetation/habitat types of Bundala are listed in Table 3.1. Shrubs (woody multi-stemmed plants) and herbs (plants with leaves and non-woody stems) are the predominant plant life forms of Bundala.

Table 3.1 - Dominant plant species in different habitats and vegetation types of Bundala

Habitat	Scientific Name	Family	Local name
Arid zone forests	<i>Manilkara hexandra</i>	Sapotaceae	Palu
	<i>Flueggea leucopyrus</i>	Euphorbiaceae	Katupila
	<i>Erythroxylon monogynum</i>	Erythroxylaceae	
	<i>Ziziphus oenoplea</i>	Rhamnaceae	Eraminiya
	<i>Cassia auriculata</i>	Fabaceae	Ranawara
	<i>Salvadora persica</i>	Salvadoraceae	Maliththan
	<i>Dichrostachys cinerea</i>	Fabaceae	Andara
	<i>Eupatorium odoratum</i>	Asteraceae	Podisinnomaran
Sand dune vegetation	<i>Spinifex littoreus</i>	Poaceae	Maharawana revula
	<i>Remaira maritima</i>	Cyperaceae	
	<i>Hydrophylax maritima</i>	Rubiaceae	Mudu geta kola
	<i>Azima tataracantha</i>	Salvadoraceae	
	<i>Cyperus bulbosus</i>	Cyperaceae	

	<i>Manilkara hexandra</i>	Sapotaceae	Palu
Thornscrubs	<i>Dicrostachys cinerea</i>	Fabaceae	Andara
	<i>Flueggea leucopyrus</i>	Euphorbiaceae	Katupila
	<i>Capparis divaricata</i>	Capparidaceae	
	<i>Carissa spinarum</i>	Sapotaceae	Karamba
	<i>Azima tetracantha</i>	Salvadoraceae	
	<i>Randia dumetorium</i>	Rubiaceae	Kukurumanna
	<i>Cassia auriculata</i>	Fabaceae	Ranawara
	<i>Salvadora persica</i>	Salvadoraceae	Maliththan
	<i>Ziziphus mauritiana</i>	Rhamnaceae	Mahadebara
Gentle sea shore vegetation	<i>Spinifex littoreus</i>	Poaceae	Maharawana revula
	<i>Ziziphus oenoplea</i>	Rhamnaceae	Eraminiya
	<i>Launaea sarmentosa</i>	Asteraceae	
	<i>Opuntia dellenii</i>	Euphorbiaceae	Pathok
	<i>Phaseolus trilobus</i>	Fabaceae	
	<i>Capparis divaricata</i>	Capparidaceae	
	<i>Cyperus bulbosus</i>	Cyperaceae	
	<i>Hydrophylax maritima</i>	Rubiaceae	Mudu geta kola
	<i>Ipomoea pescapre</i>	Convolvulaceae	Mudu bimtamburu
	<i>Bauhinia racemosa</i>	Fabaceae	Maila
	<i>Evolvulus alsinoides</i>	Convolvulaceae	Vishnukranthi
	<i>Lantana camara</i>	Verbenaceae	Hinguru
	<i>Lowsonia inermis</i>	Lythraceae	Marathondi
	<i>Salvadora persica</i>	Salvadoraceae	Maliththan
Grasslands	<i>Cynodon dactylon</i>	Poaceae	Belathana
	<i>Cyperus rotandus</i>	Cyperaceae	Kalanduru
	<i>Eragrostis gangetica</i>	Poaceae	
	<i>Kyllinga nemoralis</i>	Cyperaceae	Mottu thana
	<i>Panicum repens</i>	Poaceae	
Saltmarsh community	<i>Halosarcia indica</i>	Chenopodiaceae	
	<i>Cynodon dactylon</i>	Poaceae	Belathana
	<i>Cyperus stoloniferus</i>	Cyperaceae	
	<i>Prosopis juliflora</i>	Fabaceae	Katu andara
	<i>Salvadora persica</i>	Salvadoraceae	Maliththan
Riverine forests	<i>Terminalia arjuna</i>	Combretaceae	Kumbuk
	<i>Cassine glauca</i>	Celastraceae	Neralu

	<i>Ipomoea aquatica</i>	Convolvulaceae	Kankung
	<i>Thespesia populnea</i>	Malvaceae	Gansuriya
	<i>Bauhinia racemosa</i>	Fabaceae	Maila
	<i>Toddalia asiatica</i>	Rutaceae	Kudumiris
	<i>Ziziphus mauritiana</i>	Rhamnaceae	Mahadebara
	<i>Clerodendrum phlomidis</i>	Verbenaceae	
	<i>Eupatorium odoratum</i>	Asteraceae	Podisinnomaran
	<i>Flueggea leucopyrus</i>	Euphorbiaceae	Katupila
Wetlands	<i>Typha angustifolia</i>	Typhaceae	Hambu
	<i>Ceratophyllum demersum</i>	Ceratophyllaceae	
	<i>Cyperus rotundus</i>	Cyperaceae	
	<i>Elaeocharis geniculata</i>	Cyperaceae	
	<i>Cynodon dactylon</i>	Poaceae	Belathana
Anomalous Prosopis woodlands	<i>Prosopis juliflora</i>	Fabaceae	Katu andara
	<i>Opuntia dillenii</i>	Cactaceae	Pathok
	<i>Capparis zeylanicus</i>	Capparidaceae	Wellangiriya
	<i>Flueggea leucopyrus</i>	Euphorbiaceae	Katupila
	<i>Salvadora persica</i>	Salvadoraceae	Maliththan

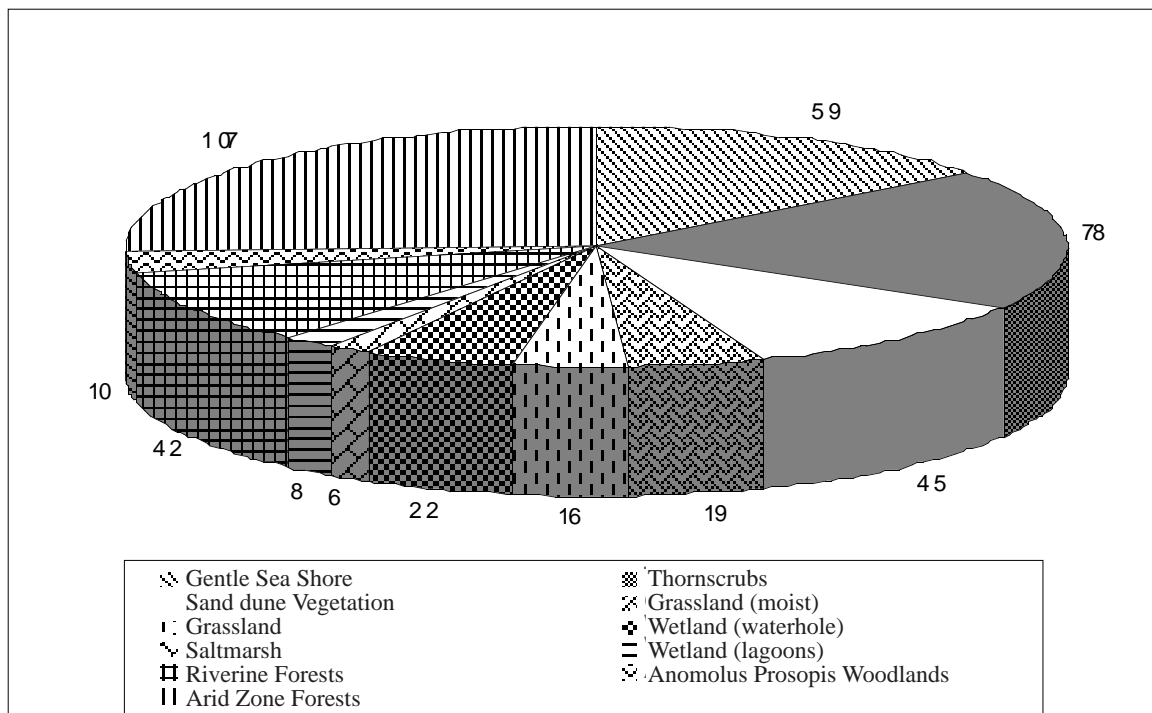
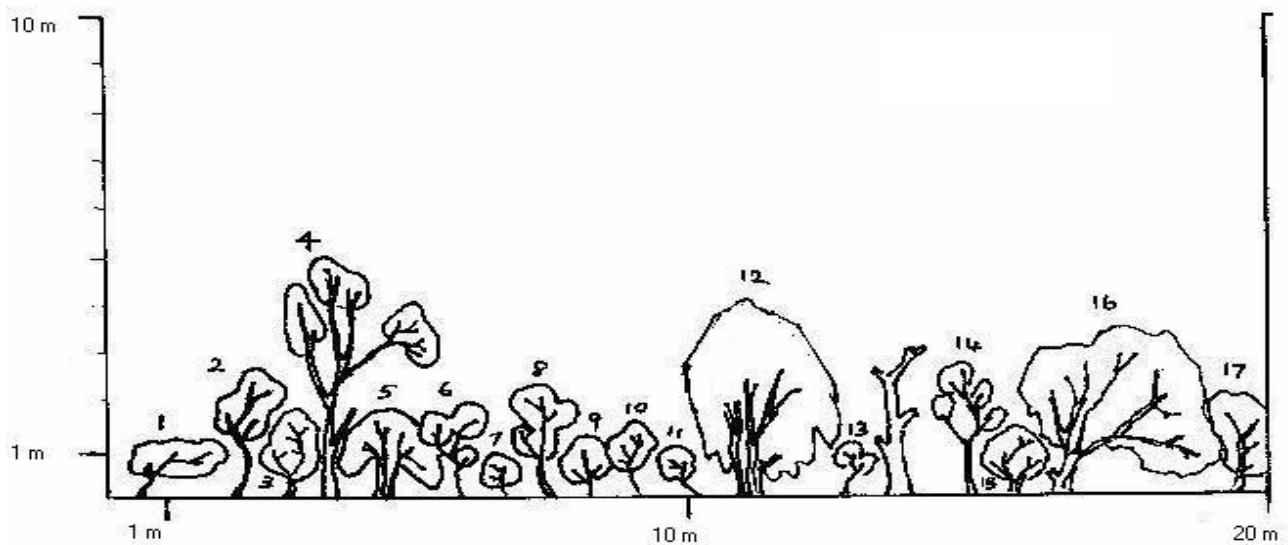


Figure 3.1: Species composition of flora in different vegetation/habitat types.

Dry Thorny Scrubland

This is the most common vegetation type in Bundala. Three distinct vegetation strata characterize this habitat. The upper most sparse tree layer is composed of species such as *Limonia acidissima*, *Cassia auriculata*, *Bauhinia racemosa*, *Salvadora persica* and *Azadirachta indica*. Below the scattered tree layer, shrubby plants such as *Dicrostachys cinerea*, *Carissa spinarum*, *Flueggea leucopyrus* and *Ziziphus* spp. occur. Underneath the woody strata is a ground herbaceous layer consisting of plants such as *Eragrostis* spp., *Phyllanthus* spp., *Desmodium* spp., *Euphorbia hirta* and *Abutilon indicum*. Presently many scrubland sites are modified and rendered inferior due to invasion of *Opuntia dillenii* and *Prosopis juliflora*. A profile diagram of this vegetation type is presented in Figure 3.2.



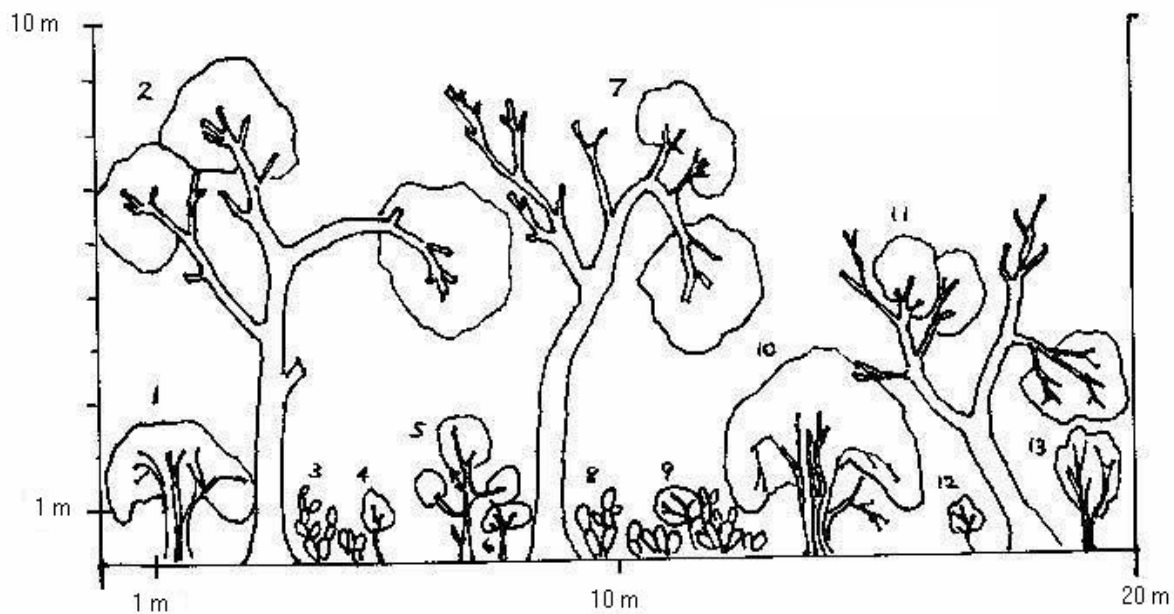
Plant species:

Azadirachta indica (Meliaceae) – 8; *Bauhinia racemosa* (Fabaceae) – 16; *Carmona retusa* (Boraginaceae) – 13; *Cassia auriculata* (Fabaceae) – 6; *Dichrostachys cinerea* (Fabaceae) – 1; *Flueggea leucopyrus* (Euphorbiaceae) - 7, 9, 10, 11; *Limonia acidissima* (Rutaceae) – 4; *Maytenus emarginata* (Celastraceae) – 3; *Ochna lanceolata* (Ochnaceae) – 14; *Randia dumetorum* (Rubiaceae) - 15, 17; *Salvadora persica* (Salvadoraceae) – 12; *Tarenna asiatica* (Rubiaceae) – 2; *Ziziphus oenoplia* (Rhamnaceae) - 5

Figure 3.2: Profile diagram of thornscrub showing the vertical structure

Arid Zone Forests

These forests represent the natural climax type of vegetation in Bundala and occupy the highest biomass per unit area. The canopy is about 6-9m tall, consisting almost exclusively of *Manilkara hexandra* trees. However, short stature forests could be seen towards the seashore where strong landward winds prevail. The understorey (2-3m) is characterized by scrub species such as *Salvadora persica*, *Flueggea leucopyrus* and *Cassia auriculata*. The ground vegetation (upto 1m) consists of herbaceous species such as *Eupatorium odoratum*, *Vernonia cinerea* and *Cynodon dactylon*. At present, the invasive cactus *Opuntia dillenii* is fast replacing the ground vegetation especially where the canopy is open. A profile diagram of this vegetation type is presented in Figure 3.3.



Plant species:

Azima tetraantha (Salvadoraceae) – 13; *Cassia auriculata* (Fabaceae) – 5;

Dichrostachys cinerea (Fabaceae) – 9; *Erythroxylum monogynum* (Erythroxylaceae) – 4;

Flueggea leucopyrus (Euphorbiaceae) - 6, 12; *Manilkara hexandra* (Sapotaceae) - 2, 7, 11; *Opuntia dillenii* (Cactaceae) - 3, 8; *Salvadora persica* (Salvadoraceae) - 1, 10

Figure 3.3: Profile diagram of arid zone forests showing the vertical structure

Sand dune vegetation

This is a unique landscape type in Bundala. The vegetation in this habitat type shows adaptations to withstand wind and desiccation. A series of plant assemblages representing different phases of dune succession can be observed in Bundala, each characterized by its plant height and species composition. The early phase dunes are characterized by short running or creeping species such as *Cyperus bulbosus*, *Remairia maritima* and *Spinifex littoreus*. Stunted and gnarled woody vegetation consisting of *Manilkara hexandra*, *Carissa spinarum* and *Bauhinia racemosa* characterize the more stabilized older dunes. The pioneer small plants responsible for the initiation and early development of dunes are generally absent or very rare while much of the ground is covered by profusely branched shrubs and dune trees such as *Cassia auriculata*, *Ziziphus* spp., *Bauhinia racemosa*, *Capparis* spp., *Canthium coromandelicum* and *Flueggea leucopyrus*. The direct impact of strong desiccating winds and salt spray prevents plants growing to their normal size. Most plants remain stunted with heavily wind-cut crowns. This restricted growth is a consequence of external influences and adaptations that help plants to persist in an extremely hostile situation.

Gentle sea shore vegetation

The gentle seashore vegetation is the most widespread belt of coastal cover. This vegetation is located in the zone beyond the direct impact of waves and tides and supports a carpet of densely growing creepers and small shrubs that show adaptations to withstand wind and desiccation. The commonest species, which, predominate the carpet are *Spinifex littoreus*, *Ipomoea pescapre*, and *Evolvulus alsinoides*.

Arid zone maritime grasslands/pastures

These occur mainly around seasonal water holes (ie., Pathiraja area) and consist of grasses (ie., *Cynodon dactylon*) and sedges (ie., *Cyperus rotundus*). The vegetation is influenced by several species of grazing mammals.

Riverine forests

The riverine forest in Bundala is restricted to a small, degraded patch bordering the lower reaches of the 'Kirindi Oya' stream. The vegetation here is characterized by tall trees such as *Terminalia arjuna* and *Thespesia populnea*.

Anomalous Mesquite (Prosopis) scrublands

This vegetation type consists of uniform stands of the invasive alien plant Mesquite (*Prosopis juliflora*). This species was deliberately introduced to Bundala as a cover plant, a few decades ago. However, it has become a problematic plant today, spreading into natural scrubland areas and displacing native scrub species such as *Salvadora persica*. Large stands of Mesquite can be commonly observed bordering the Embilikala lagoon. In most instances, another invasive alien plant – Prickly pear cactus (*Opuntia dillenii*), occurs underneath the Mesquite trees. A profile diagram of this vegetation type is presented in Figure 3.4.

Salt marsh (Tidal flats)

These are periodically inundated areas adjoining the lagoons, and the vegetation consists of herbaceous, salt tolerant plants such as *Salicornia brachiata* and *Halosarcia indica*. These are creeping species that can withstand desiccation as well.

Mangrove

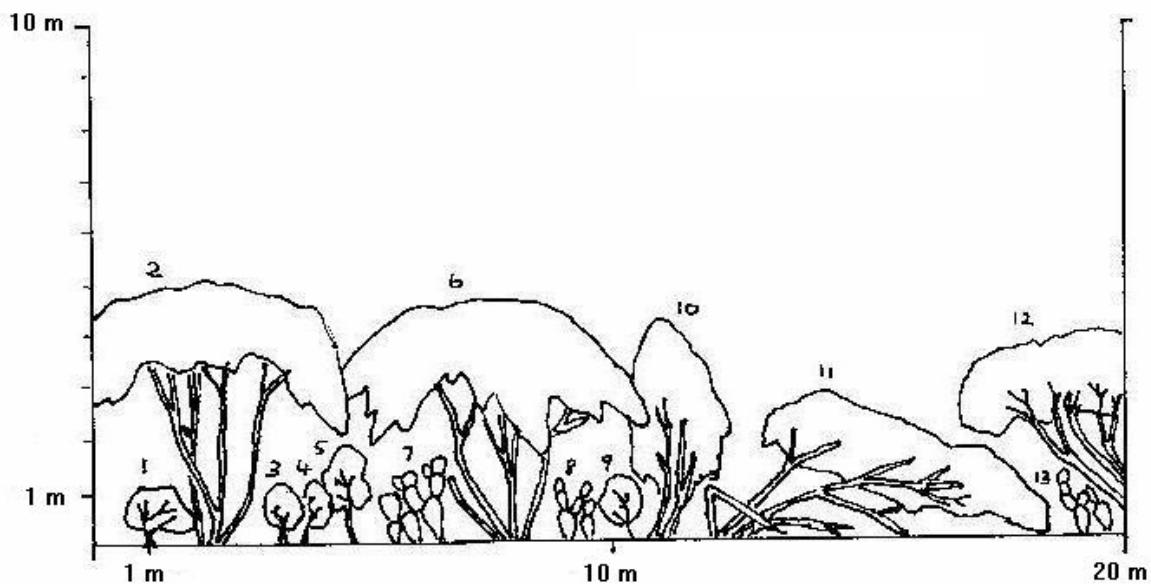
A very small and degraded patch of mangrove occurs in the Bundala lagoon outlet area, consisting of just one mangrove species – *Lumnitzera racemosa*.

Brackish water lagoons

These are the typical wetlands of Bundala that harbor a rich bird life. The brackish water lagoons also harbour a few species of aquatic plants. For instance, the Embilikala and Malala lagoons contain Cattail reeds (*Typha angustifolia*) and sedges, while the Bundala lagoon contains thick mats of filamentous and gelatinous algae. The thick stands of cattail provide ideal nesting sites for several species of aquatic birds.

Water Holes and Tanks

The saline water holes and tanks in Bundala also harbour a few species of sedges, Cattail (*Typha angustifolia*), Hornwort (*Ceratophyllum demersum*) and Pondweed (*Najas marina*).



Plant species:

Capparis zeylanica (Capparaceae) – 1; *Flueggea leucopyrus* (Euphorbiaceae) - 3, 4, 5, 9; *Opuntia dillenii* (Cactaceae) - 7, 8, 13; *Prosopis juliflora* (Fabaceae) - 2, 6, 11, 12; *Salvadora persica* (Salvadoraceae) – 10.

Figure 3.4: Profile diagram of anomalous *Prosopis* woodlands showing the vertical structure

4. Fauna of Bundala

Species composition of vertebrate fauna and butterflies

A total of 324 species of vertebrates were recorded from Bundala National Park, of which 11 species are endemic, while 29 species are nationally threatened. The vertebrates include 32 species of fish, 15 species of amphibians, 48 species of reptiles, 197 species of birds, and 32 species of mammals. Among the invertebrates are 52 species of colourful butterflies.

A total of 32 species of fish were recorded from the lagoons, tanks and streams of Bundala (Appendix 4.1). These include salt water dispersants (E.g., Short-finned Eel – *Anguilla bicolor*), marine forms (E.g., Snake-head Glass Perchlet – *Ambassis gymnocephalus*), brackish water forms (E.g., Milk fish – *Chanos chanos*) and freshwater forms (E.g., Murrel – *Channa striata*). The Deep Body Silverbiddy (*Gerres abbreviatus*), Otomebora Mullet (*Liza melinoptera*) and the exotic Mozambique Tilapia (*Oreochromis mossambicus*) are species that are abundant in the lagoons, while the Dwarf Panchax (*Aplocheilichthys parvus*) and Bloch's Gizzard Shad (*Nematalosa nasus*) are also common species.

Although it is located in the Arid Zone of Sri Lanka, Bundala harbours 15 species of amphibians (Appendix 4.2), which is approximately 25% of the total amphibian species recorded from the entire island. Of these, one species (Athukorale's Dwarf Toad – *Bufo atukoralei*) is endemic and threatened as well. The amphibians in Bundala include toads (E.g., Common Toad – *Bufo melanostictus*), narrow-mouthed frogs (E.g., Ornate Narrow-mouthed Frog – *Microhyla ornatus*), common frogs (E.g., Skipper Frog – *Euphlyctis cyanophlyctis*) and tree frogs (E.g., Chunam Tree-Frog – *Polypedates maculatus*). Most of these species could be observed after a short spell of rain, in roadside areas and water holes, mainly at dusk. The Common Toad (*Bufo melanostictus*) and the Paddy Field Frog (*Limnonectes limnocharis*) are species that are very common in Bundala.

A total of 48 species of reptiles were documented from Bundala (Appendix 4.3). These include 6 endemic species and 13 species that are nationally threatened. The reptilian fauna of Bundala occupies a wide range of ecological niches, such as marine (E.g., Marine Turtles), freshwater (E.g., Flapshell Turtle – *Lissemys punctata*, Mugger Crocodile – *Crocodylus palustris*), terrestrial (E.g., Star Tortoise – *Geochelone elegans*, Cobra – *Naja naja*), fossorial (E.g., Skinks, Common Blind Snake – *Ramphotyphlops braminus*) and arboreal (E.g., Geckoes, Green Vine Snake – *Ahaetulla nasutus*) habitats. Bundala is an ideal place to see the largest reptiles in Sri Lanka; the two species of crocodiles (*Crocodylus palustris* and *C. porosus*), the Indian Python (*Python molurus*) and the Leatherback Turtle (*Dermochelys coreacea*). The serpents of Bundala include three highly venomous species in Sri Lanka; the Cobra – *Naja naja*, Russell's Viper – *Daboia russellii* and Saw-scaled Viper – *Echis carinatus*.

The Bundala National Park, including its complex system of wetlands, has made it a paradise for birds, including many species of migratory birds. A total of 197 species of birds have been recorded from the park, over the past 3 years (Appendix 4.4). These include 139 residents and 58 winter

visitors. Among the resident birds, three species are endemic, while 10 species are nationally threatened. Of the migratory species, 46 are regular migrants, while 12 are occasional visitors or vagrants. The birds of Bundala can be categorized into several groups; Wetland birds (Waders, Gulls and Terns, Ducks, Herons, Egrets and Storks, Flamingoes, Cormorants, Kingfishers, Others), Forest birds (Woodpeckers, Barbets, Pigeons, Raptors), Scrubland birds (Bulbuls, Doves) and Grassland birds (Munias, Prinias, Pipits, Larks and Raptors).

The lagoons, inter-tidal mudflats and salterns provide ideal resting and feeding habitats for numerous species of winter migrants, especially the wading birds. The vast numbers of migratory Stints, Sandpipers, Plovers, Terns, Gulls, Ducks and Flamingo share the wetlands with resident wetland birds such as Herons, Egrets, Pelicans, Cormorants, Teals, Storks and Stilts. The migratory bird species begin to arrive in Bundala by mid-August, with the commencement of the harsh winter season in the Northern hemisphere (Eastern Europe) and continue to stay in Bundala till late April. The migratory birds that arrive in Bundala mainly come through the North-Eastern coastal migratory route in Sri Lanka. The highlight of Bundala is the migratory Greater Flamingo (*Phoenicopterus ruber*), which visits in large flocks of over 1000 individuals, from Rann of Kutch – India. It is important to note that since of recent (past 6 years), a flock of about 350 flamingo have remained in Bundala year-round, without returning to their breeding grounds. A recent survey has revealed that brackish-water adapted species such as the Greater Flamingo use the irrigation-affected Malala and Embilikala lagoons to a lesser extent, compared to their use of the unaffected Bundala lagoon (Amerasinghe *et al.*, 2001)

The mammals recorded from Bundala consist of 32 species, including one endemic and five threatened species (Appendix 4.5). These include small mammals (Rats, Mice and Shrews), bats, large herbivores (Elephant, Deer, Sambar), carnivores (Fishing cat, Rusty-spotted cat, Mongoose), scavengers (Jackal, Wild boar) and arboreal (Macaque, Grey Langur) species. The elephants in the park can be divided into three categories; permanent residents (6-8 individuals), semi-residents (20-25 individuals) and seasonal migratory herds (about 50-60 individuals). The migratory herds consist of animals that roam the Yala-Lunugamvehera-Udawalawe-Bundala area. Grey Langur (*Semnopithecus entellus*), Black-naped Hare (*Lepus nigricollis*) and Water Buffalo (*Bubalus bubalis* – mostly feral) are the most commonly seen mammals in Bundala. Among the wild cats in Sri Lanka, the Fishing Cat (*Prionailurus viverrina*) and the Rusty-spotted Cat (*Prionailurus rubiginosus*) occur in the park, but these shy animals cannot be observed easily.

The butterflies documented from Bundala consist of 52 species (Appendix 4.6). These include the largest butterfly in Sri Lanka – the Birdwing (*Troides darsius*), which is an endemic that is threatened as well. A majority of the butterfly species are found in the scrubland habitat. The most common species in Bundala include three species of the Family Pieridae; Lesser Albatross (*Appias paulina*), Yellow Orange Tip (*Ixias pyrene*) and the Small Salmon Arab (*Colotis amata*). Large aggregations of pierid butterflies can be seen in the mud flats of lagoons, engaged in puddling behavior.

5. Threats to the Biodiversity of Bundala

According to the observations made during the IUCN survey, several human related activities as well as biological factors are posing a threat to the biodiversity associated with the Bundala National Park. The major threats that affect the biodiversity of Bundala can be summarized under 4 major categories; habitat deterioration/degradation; direct exploitation of species; prolonged drought and spread of invasive alien species and inadequately planned land-use practices.

Habitat deterioration/degradation

The factors that contribute to deterioration/degradation of habitats in Bundala include shell mining, discharge of irrigation water into lagoons, driving of vehicles off the recommended tracks, release of sludge from the Bundala saltern into Bundala lagoon, damage caused by driving motor vehicles in sensitive areas and death of *Manilkara hexandra* trees in the arid zone forest.

Illegal mining of shell deposits, carried out over the past several decades, has resulted in the degradation of scrubland areas. Since the shells are burnt in kilns using fuel wood, local vegetation is over-harvested for the supply of fuel wood. This practice has been controlled to a great extent by the Department of Wildlife Conservation, through constant raids and taking legal action against offenders.

Establishment of the Badagiriya and the Kirindi Oya irrigation systems has resulted in the drainage of irrigation water containing residues of agro-chemicals into Malala and Embilikala lagoons. This has changed the quality of water in these lagoons, and hence may lead to adverse impacts on aquatic animals, as highlighted by previous studies (Matsuno *et al.*, 1998). A recent study by Amerasinghe *et al* (2001) revealed that the Malala and Embilikala lagoons were mesotrophic-eutrophic for nitrate and hypertraophic-eutrophic for phosphates.

The Bundala Salt Company releases a thick sludge (with concentrated chemicals) that is accumulated in the saltern directly into the Bundala lagoon on a regular basis, resulting in adverse affects on the quality of water. The impact of this practice is clearly evident, where several species of fish can be observed dead in the lagoon. The richness of birds in the Bundala lagoon is temporarily reduced due to this practice, until its effects are subdued.

Some visitors tend to drive their sophisticated vehicles off the recommended tracks, causing damage to small animals and vegetation types. The sand dune habitats are regularly subjected to this threat, and the tour guides in particular promote this practice. The sand dunes are a unique ecosystem in Bundala, and this practice tends to deteriorate the quality of this habitat.

The arid zone forest vegetation type, that is dominated by *Manilkara hexandra* trees is affected by the death of this species in certain areas of the Park. For example, large tracts of these trees closer to the southern border of Malala and Embilikala lagoons have started to die off, after 1996. As highlighted

by Panabokke (1998), the above phenomenon could be attributed to the hydrological changes resulting from the new Kirindi Oya irrigation system established in 1986. In the old Kirindi Oya irrigation system, there had been sufficient provision for the riverbed below the Ellegala anicut to get scoured out during peak river flows in the *Maha* (wet) season. This natural flushing out of the whole system in a periodic manner had prevented the building up of salts. However, construction of the large Lunugamvehera reservoir under the new Kirindi Oya irrigation system and subsequent regulation of water flow resulted in the leaching of soluble sodium salts and modification of hydrology of the lower floodplain, where Bundala is located. The concentrated sodium salts in the ground water table seep out at specific interflow points, leading to increased soil salinity in such areas (IIMI, 1995; Panabokke, 1998). The death of *Manilkara* trees in Bundala has occurred only in some areas of Bundala, and it may well be possible that these areas are located in such interflow points where soil salinity is high, and the trees die off due to intolerable salinity levels. The prolonged drought conditions experienced in Bundala since 1999 may also have aggravated the above condition, by contributing to further increase of soil salinity.

Direct exploitation of species

Factors that contribute to direct exploitation of species include poaching, felling of trees, road kills and disturbances to animals by careless visitors.

Although the Department of Wildlife Conservation is vigilant on poaching, illegal hunting of animals is still prevalent in Bundala. Poachers either shoot wild animals, or set noose traps in the forest. The survey team removed several noose traps from the Pathiraja scrubland, close to the fishing village. Many poachers enter the park disguised as fishermen who are fishing in the Malala and Embilikala lagoons. Poachers also collect turtle eggs along the Bundala coastline.

Felling of trees is evident mainly in the border areas of the park, closer to residential areas. Timber species such as *Manilkara hexandra*, *Drypetes sepiaria* and *Tamarindus indica* are subjected to illegal extraction in these areas.

Careless visitors who drive their vehicles at high speed results in many animals (especially amphibians, reptiles, ground-dwelling birds and small mammals) being subjected to road kills daily. In addition to this, some visitors disturb wild animals unnecessarily, resulting in accidents as well.

Prolonged drought

The Bundala National Park is subjected to extremely dry conditions each year especially during the period of May-August. The recent prolonged drought resulted in the death of several species of animals, due to scarcity of water. All the water holes and tanks dry off completely during the prolonged drought period, causing severe stress on wild animals.

Spread of invasive alien species

The spread of invasive alien species and unmanaged domestic animals pose serious threats to the biodiversity of Bundala. The invasive animals recorded from Bundala include domestic/feral cats and dogs, which not only attack wild animals, but also transmit harmful diseases. The feral dogs have formed into hunting packs, and attack wild animals at regular intervals. These dogs also dig out turtle eggs along the Bundala coast and feed on these eggs. Observations made during the present survey and information gathered from local villagers and wildlife staff reveals that about 5000-6000 buffaloes and 3000 – 4000 cattle roam the park at present. These cattle and feral buffalo pose a threat to wild herbivores such as deer and elephants, by competing for food resources. It has been reported that the dung accumulated around the lagoons has contributed to an increase in nitrate levels of the water in the lagoons, that may lead to eutrophication (Bopitiya *et al.*, 1998).

Two species of invasive alien plants – Prickly Pear Cactus (*Opuntia dillenii*) and Mesquite (*Prosopis juliflora*) have spread throughout the park, displacing native plants and wildlife habitats. The severity of the problem was clearly evident in examination of the foliage cover of these species through a random survey of 100 plots within the Park (Figure 5.1 & 5.2). In most places, these two species were observed to co-occur, with *Prosopis* dominating the canopy and *Opuntia* occupying the undergrowth. Native plants such as *Salvadora persica* and *Cassia auriculata* are rapidly displaced by the spread of Mesquite. Feral buffalo and cattle facilitate the spread of Mesquite, by feeding on the pods of this plant. Prickly Lantana (*Lantana camara*) and Siam Weed (*Chromolaena odorata*) have recently established in the park. In addition, 13 other invasive alien plants have been documented from the Park.

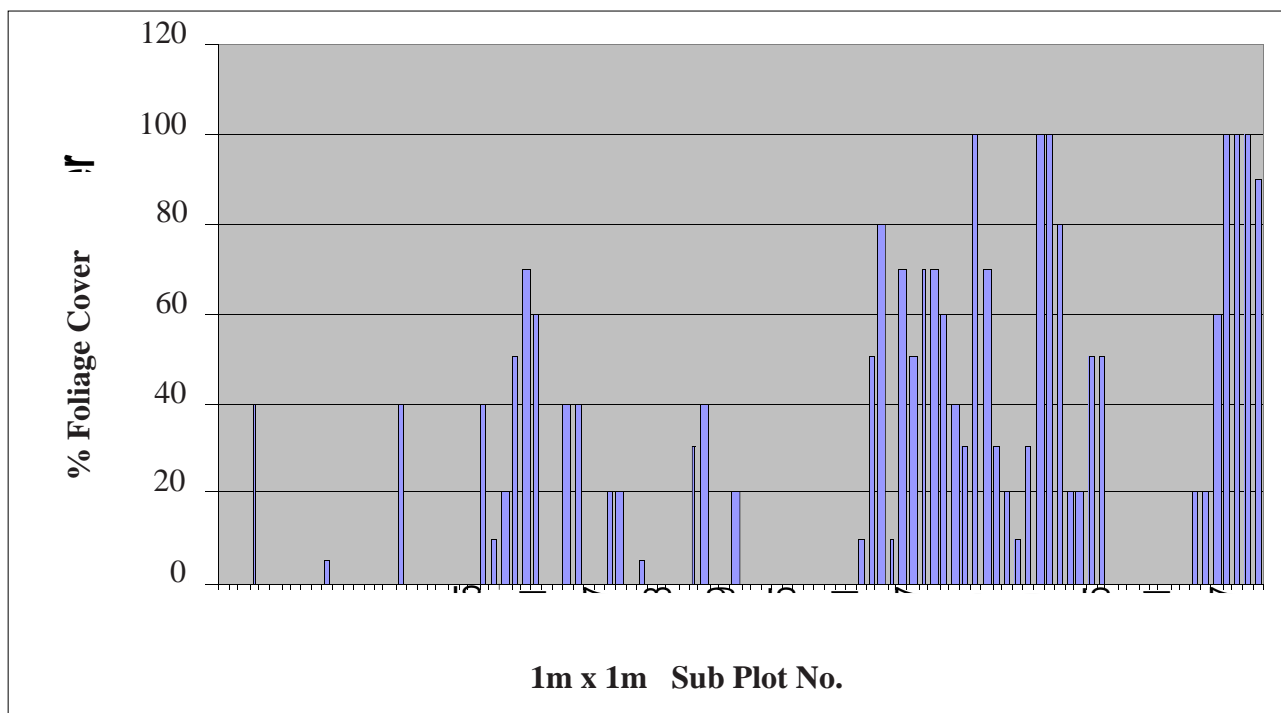


Figure 5.1. Foliage cover (%) of *Opuntia dillenii* in Bundala National Park

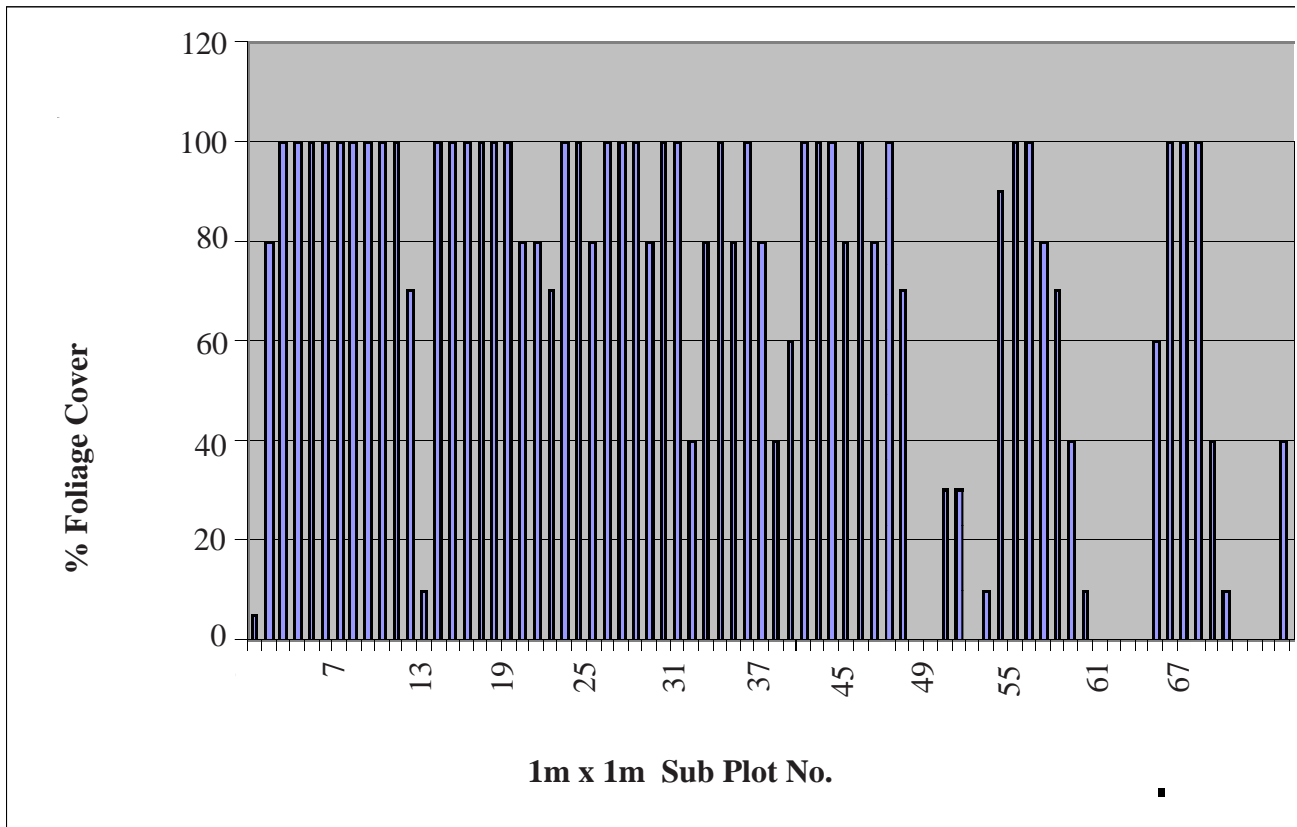


Figure 5.2. Foliage cover (%) of *Prosopis juliflora* in Bundala National Park

Inadequately planned land-use practices

Inadequately planned land use practices around the park (including the buffer zone) has led to increasing human-animal conflicts. For instance, cultivation of banana and paddy in surrounding areas has led to increased crop raiding by elephants and other wild herbivores, which are in turn harassed by farmers. Monitoring of elephants in and around the Bundala National Park during the survey period revealed that elephants frequently visit an area that has already been identified for Banana cultivation. An investigation on plant species in this area revealed the presence of several food plant species of elephants, and this may well be the reason for their frequent visits.



“Palu” tree (*Manilkara hexandra*)
Photograph: Channa Bambaradeniya



Greater Flamingo (*Phoenicopterus ruber*)
Photograph: Sanjiv De Silva



Grey Langur (*Semnopithecus entellus*)
Photograph: Ruchira Somaweera



Indian Peafowl (*Pavo cristatus*)
Photograph: Channa Bambaradeniya



Spinifex creeper (*Spinifex littoreus*)
Photograph: Naalin Perera



Marsh Crocodile (*Crocodylus palustris*)
Photograph: Sanjiv De Silva



Dry thorny scrubland
Photograph: Suranjan Fernando



Sand dunes
Photograph: Suranjan Fernando



Lagoon
Photograph: Charmalee Jayasinghe



Rocky Sea shore
Photograph: Suranjan Fernando



Seasonal water holes and wet grasslands
Photograph: Suranjan Fernando



Arid zone forest
Photograph: Channa Bambaradeniya

6. Conservation Recommendations

The present survey has clearly revealed that the Bundala National Park/Ramsar Wetland harbours a rich biodiversity, including several endemic as well as threatened species of plants and animals, and a large number of migratory species. However, the study also revealed that this wetland is now being threatened by various anthropogenic activities. Considering the overall findings, the following recommendations are made to facilitate the future management of the Bundala National Park and Ramsar Wetland.

1. Re-demarcate the park boundary

The boundaries of the park have not been established clearly, resulting in several issues. At present, about 180 families (1000 individuals) are residing within the park boundary, and cultivating land within the park. The northern scrubland (buffer zone of the PA) is a species-rich area that is currently subjected to unplanned land use practices such as cultivation of Banana and chenas, which has resulted in increased human-animal conflicts. This area is frequently visited by elephants, due to the availability of food plants.

Proposed activities:

- Extend the Park Boundary to incorporate the northern scrubland (upto the Wellagongoda new road – an area of approximately 600 ha), including the area identified for a banana cultivation, into the existing PA.
- Evacuate the families living inside the park and relocate them else where.

2. Initiate a programme to manage the entry and spread of invasive alien species (IAS)

A programme has to be initiated to manage the spread of IAS in the existing habitats. Priority should be placed on management of mesquite (*Prosopis juliflora*) and prickly-pear cactus (*Opuntia dillenii*).

Proposed activities:

- Initiate an eradication programme for mesquite and prickly-pear cactus, selecting the worst affected habitats. This will have to be conducted through community participation, and involvement of NGO volunteers. Since there is a great demand for fuel wood for the sweet-meat ('Kalu Dodol') industry in Hambanthota, mesquite can be promoted as a fuel wood.
- Establish a nursery of native plants in Bundala, and reintroduce these plants into areas cleared of invasive alien plants.
- Eradicate the existing feral dogs and cats within the park.
- Regulate the entry of domestic cattle and buffaloes into the park.

3. Create appropriate irrigation structures to halt the flow of irrigation water into Malala and Embilikala lagoons, and create new tanks/ponds to store water

As mentioned earlier, flow of irrigation water from the Kirindioya irrigation scheme has led to changes in the quality of water in the Malala and Embilikala lagoons. The lowering of salinity in these wetlands might lead to changes in food resources available for birds. As the park faces extreme dry conditions leading to scarcity of water during the dry season, steps will have to be taken to address this issue as well. Therefore, appropriate irrigation structures will have to be created to address both these issues.

Proposed activities:

- Construct a barrage that would separate the Malala and Embilikala lagoons, as most of the irrigation water is accumulated in the latter lagoon.
- Divert the irrigation canals into a system of cascading tanks/ponds created in the northern area of the park, which would function as water storage tanks during the dry season.

4. Action to mitigate poaching activities

Poaching of birds, mammals and marine turtles is a serious problem to the animals of the park. Therefore, the following activities are recommended to mitigate this problem.

Proposed activities:

- Issue a licenses to the legitimate fishermen who are engaged in fishing activities in the lagoons. They should be registered in the Park Office.
- Provide facilities (communication equipment and transport facilities) for field staff to carry out their raids in a regular, successful manner.
- Initiate a turtle conservation programme through the active participation of a local CBO/NGO. Night patrol operations along the Bundala coastline should be initiated to monitor and conserve turtles that nest along the seashore.
- Enforce strict legal action against poachers.

5. Management of livestock in the villages around the Park

Rearing of cattle and buffalo in villages around the park for the production of curd has been a traditional practice in Bundala. These animals are released into the park for grazing, leading to pressure on the limited food resources for native herbivores. However, these livestock help to sustain the livelihoods of local communities. Therefore, appropriate livestock management interventions should be considered to address this issue, in ways that would benefit both local communities and the wildlife of the park.

Proposed activities:

- Identify grazing areas outside the park/buffer zone for the release of livestock.
- Introduce hybrid cattle varieties that produce more milk, with support from the Livestock Development Board.
- Provide opportunities such as a market place for local villagers to sell their produce to tourists who visit Bundala, and thereby enable them to reap benefits of nature-based tourism activities.

6. Action to mitigate the expansion of the death of *Manilkara hexandra* trees

In order to flush out the concentrated sodium salts and re-establish a stable salinity equilibrium which existed in the lower flood plain prior to the new Kirindi Oya irrigation system, water should be released from the Lunugamvehera reservoir on at least one day for a year, during the *Maha* (wet) season (C. R. Panabokke pers. comm.).

7. Acknowledgements

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Appendix 3.1: Checklist of flora in the Bundala National Park

Family	Species	Family	Species
Acanthaceae	<i>Andrographis alata</i>	Capparaceae	<i>Maerua arenaria</i>
Acanthaceae	<i>Asystasia gangetica</i>	Celastraceae	<i>Cassine glauca</i>
Acanthaceae	<i>Barleria mysorensis</i>	Celastraceae	<i>Maytenus emarginata</i>
Acanthaceae	<i>Barleria prionitis</i>	Celastraceae	<i>Pleurostyliya opposita</i>
Acanthaceae	<i>Blepharis maderaspatensis</i>	Ceratophyllaceae	<i>Ceratophyllum demersum</i>
Acanthaceae	<i>Dipteracanthus patulus</i>	Chenopodiaceae	<i>Halosarcia indica</i>
Acanthaceae	<i>Dyschoriste madurensis</i>	Chenopodiaceae	<i>Salicornia brachiata</i>
Acanthaceae	<i>Ecbolium ligustrinum</i>	Chenopodiaceae	<i>Suaeda maritima</i>
Acanthaceae	<i>Hygrophila schulli</i>	Clusiaceae	<i>Calophyllum inophyllum</i>
Acanthaceae	<i>Justicia adhatoda</i>	Colchicaceae	<i>Gloriosa superba</i>
Acanthaceae	<i>Justicia betonica</i>	Combretaceae	<i>Lumnitzera racemosa</i>
Acanthaceae	<i>Justicia diffusa</i>	Combretaceae	<i>Terminalia arjuna</i>
Acanthaceae	<i>Justicia procumbens</i>	Commelinaceae	<i>Commelina attenuata</i>
Acanthaceae	<i>Rhinacanthus nasutus</i>	Commelinaceae	<i>Commelina benghalensis</i>
Acanthaceae	<i>Rungia repens</i>	Commelinaceae	<i>Commelina clavata</i>
Acanthaceae	<i>Stenosiphonium cordifolium</i>	Commelinaceae	<i>Commelina diffusa</i>
Aizoaceae	<i>Trianthema decandra</i>	Commelinaceae	<i>Commelina kurzii</i>
Aloaceae	<i>Aloe vera</i>	Commelinaceae	<i>Commelina sp.</i>
Amaranthaceae	<i>Achyranthes aspera</i>	Commelinaceae	<i>Cyanotis sp.</i>
Amaranthaceae	<i>Aerva lanata</i>	Commelinaceae	<i>Cynotis adscendens</i>
Amaranthaceae	<i>Allimania nodiflora</i>	Convolvulaceae	<i>Argyrea osyrensis</i>
Amaranthaceae	<i>Alternanthera pungens</i>	Convolvulaceae	<i>Cressa cretica</i>
Amaranthaceae	<i>Amaranthus graecizans</i>	Convolvulaceae	<i>Evolvulus alsinoides</i>
Amaranthaceae	<i>Gomphrena celosioides</i>	Convolvulaceae	<i>Ipomoea aquatica</i>
Amaranthaceae	<i>Pupalia orbiculata</i>	Convolvulaceae	<i>Ipomoea pes-caprae</i>
Amaryliidaceae	<i>Crinum zeylanicum</i>	Convolvulaceae	<i>Ipomoea sepiari</i>
Apocynaceae	<i>Carissa spinarum</i>	Convolvulaceae	<i>Merremia emarginata</i>
Araceae	<i>Pistia stratiotes</i> ^{IAS}	Convolvulaceae	<i>Merremia tridentata</i>
Arecaceae	<i>Borassus flabellifer</i>	Crassulaceae	<i>Kalanchoe pinnata</i>
Arecaceae	<i>Phoenix pusilla</i>	Cucurbitaceae	<i>Coccinia grandis</i>
Aristolochiaceae	<i>Aristolochia indica</i>	Cucurbitaceae	<i>Trichosanthes cucumerina</i>
Asclepiadaceae	<i>Calotropis gigantea</i>	Cyperaceae	<i>Bulbostylis barbata</i>
Asclepiadaceae	<i>Ceropegia candelabrum</i> ^T	Cyperaceae	<i>Bulbostylis puberula</i>
Asclepiadaceae	<i>Gymnema sylvestre</i>	Cyperaceae	<i>Cyperus arenarius</i>
Asclepiadaceae	<i>Heterostemma tanjorensis</i>	Cyperaceae	<i>Cyperus bulbosus</i>
Asclepiadaceae	<i>Oxystelma esculentum</i>	Cyperaceae	<i>Cyperus exaltatus</i>
Asclepiadaceae	<i>Pentatropis carpensis</i>	Cyperaceae	<i>Cyperus haspan</i>
Asclepiadaceae	<i>Pergularia daemia</i>	Cyperaceae	<i>Cyperus iria</i>
Asclepiadaceae	<i>Sarcostemma brunonianum</i>	Cyperaceae	<i>Cyperus nutans</i>
Asclepiadaceae	<i>Tylophora indica</i>	Cyperaceae	<i>Cyperus pilosus</i>
Asclepiadaceae	<i>Wattakaka volubilis</i>	Cyperaceae	<i>Cyperus rotundus</i>
Asparagaceae	<i>Asparagus racemosus</i>	Cyperaceae	<i>Cyperus stoloniferus</i>
Asteraceae	<i>Acanthospermum hispidum</i>	Cyperaceae	<i>Eleocharis geniculata</i>
Asteraceae	<i>Blumea obliqua</i>	Cyperaceae	<i>Fimbristylis falcata</i>
Asteraceae	<i>Elephantopus scaber</i>	Cyperaceae	<i>Fimbristylis ovata</i>
Asteraceae	<i>Emilia sonchifolia</i>	Cyperaceae	<i>Fimbristylis triflora</i>
Asteraceae	<i>Emilia sp.</i>	Cyperaceae	<i>Fuirena capitata</i>
Asteraceae	<i>Epaltes divaricata</i>	Cyperaceae	<i>Kyllinga brevifolia</i>
Asteraceae	<i>Eupatorium odoratum</i> ^{IAS}	Cyperaceae	<i>Kyllinga nemoralis</i>
Asteraceae	<i>Launaea sarmentosa</i>	Cyperaceae	<i>Lipocarpha sphacelata</i>
Asteraceae	<i>Mikania cordata</i> ^{IAS}	Cyperaceae	<i>Mariscus pedunculatus</i>
Asteraceae	<i>Sphaeranthus indicus</i>	Cyperaceae	<i>Pycnus polystachyos</i>
Asteraceae	<i>Synedrella nodiflora</i>	Cyperaceae	<i>Remirea maritima</i>
Asteraceae	<i>Tridax procumbens</i>	Datisceae	<i>Tetrameles nudiflora</i>
Asteraceae	<i>Vernonia cinerea</i>	Dioscoreaceae	<i>Dioscorea oppositifolia</i>
Asteraceae	<i>Vernonia zeylanica</i> ^E	Dracaenaceae	<i>Sansevieria zeylanica</i>
Asteraceae	<i>Xanthium indicum</i> ^{IAS}	Ebenaceae	<i>Diospyros affinis</i>
Azollaceae	<i>Azolla pinnata</i>	Ebenaceae	<i>Diospyros ferrea</i>
Boraginaceae	<i>Carmona retusa</i> ^E	Elatinaceae	<i>Bergia capensis</i>
Boraginaceae	<i>Coldenia procumbens</i>	Erythroxylaceae	<i>Erythroxylum monogynum</i>
Boraginaceae	<i>Cordia oblongifolia</i>	Euphorbiaceae	<i>Acalypha ciliata</i>
Boraginaceae	<i>Cordia sinensis</i>	Euphorbiaceae	<i>Acalypha indica</i>
Boraginaceae	<i>Cordia subcordata</i> ^T	Euphorbiaceae	<i>Blachia umbellata</i>
Boraginaceae	<i>Heliotropium indicum</i>	Euphorbiaceae	<i>Croton aromaticus</i>
Boraginaceae	<i>Heliotropium supinum</i> ^T	Euphorbiaceae	<i>Croton bonplandianus</i>
Cactaceae	<i>Opuntia dillenii</i> ^{IAS}	Euphorbiaceae	<i>Croton hirtus</i>
Capparaceae	<i>Capparis divaricata</i>	Euphorbiaceae	<i>Croton lacciferus</i>
Capparaceae	<i>Capparis rotundifolia</i>	Euphorbiaceae	<i>Croton officinalis</i>
Capparaceae	<i>Capparis sepiaria</i>	Euphorbiaceae	<i>Drypetes sepiaria</i>
Capparaceae	<i>Capparis zeylanica</i>	Euphorbiaceae	<i>Euphorbia antiquorum</i>
Capparaceae	<i>Cleome viscosa</i>	Euphorbiaceae	<i>Euphorbia hirta</i>
Capparaceae	<i>Crateva adansonii</i>	Euphorbiaceae	<i>Euphorbia tirucalli</i>

Family	Species	Family	Species
Euphorbiaceae	<i>Excoecaria agallocha</i>	Lamiaceae	<i>Ocimum canum</i>
Euphorbiaceae	<i>Flueggea leucopyrus</i>	Lauraceae	<i>Cassytha filiformis</i>
Euphorbiaceae	<i>Glochidion stellatum</i> ^F	Lemnaceae	<i>Lemna perpusilla</i>
Euphorbiaceae	<i>Mallotus rhamniifolius</i>	Lemnaceae	<i>Spirodela polyrhiza</i>
Euphorbiaceae	<i>Phyllanthus amarus</i>	Linaceae	<i>Hugonia mystax</i>
Euphorbiaceae	<i>Phyllanthus debilis</i>	Loganiaceae	<i>Strychnos nux-vomica</i>
Euphorbiaceae	<i>Phyllanthus maderaspatensis</i>	Loganiaceae	<i>Strychnos potatotrurum</i>
Euphorbiaceae	<i>Phyllanthus pinnatus</i>	Loranthaceae	<i>Dendrophthoe falcata</i>
Euphorbiaceae	<i>Phyllanthus polyphyllus</i>	Lythraceae	<i>Lawsonia inermis</i>
Euphorbiaceae	<i>Phyllanthus reticulatus</i>	Malvaceae	<i>Abutilon crispum</i>
Euphorbiaceae	<i>Phyllanthus rotundifolius</i>	Malvaceae	<i>Abutilon hirtum</i>
Euphorbiaceae	<i>Phyllanthus simplex</i>	Malvaceae	<i>Abutilon indicum</i>
Euphorbiaceae	<i>Sauropus assimilis</i>	Malvaceae	<i>Gossypium barbadense</i>
Euphorbiaceae	<i>Suregada lanceolata</i>	Malvaceae	<i>Hibiscus micranthus</i>
Euphorbiaceae	<i>Tragia plukenetii</i>	Malvaceae	<i>Hibiscus vitifolius</i>
Fabaceae	<i>Abrus precatorius</i>	Malvaceae	<i>Pavonina odorata</i>
Fabaceae	<i>Acacia eburnea</i>	Malvaceae	<i>Pavonina zeylanica</i>
Fabaceae	<i>Acacia planifrons</i>	Malvaceae	<i>Sida acuta</i>
Fabaceae	<i>Aeschynomene indica</i>	Malvaceae	<i>Sida alnifolia</i>
Fabaceae	<i>Alysicarpus monilifer</i>	Malvaceae	<i>Sida cordata</i>
Fabaceae	<i>Alysicarpus vaginalis</i>	Malvaceae	<i>Sida cordifolia</i>
Fabaceae	<i>Atylosia albicans</i>	Malvaceae	<i>Sida spinosa</i>
Fabaceae	<i>Bauhinia racemosa</i>	Malvaceae	<i>Thespesia populnea</i>
Fabaceae	<i>Caesalpinia bonduc</i>	Malvaceae	<i>Urena lobata</i>
Fabaceae	<i>Canavalia ensiformis</i>	Marsiliaceae	<i>Marsilia quadrifolia</i>
Fabaceae	<i>Canavalia rosea</i>	Martyniaceae	<i>Martynia annua</i>
Fabaceae	<i>Canavalia virosa</i>	Melastomataceae	<i>Memecylon umbellatum</i>
Fabaceae	<i>Cassia absus</i>	Meliaceae	<i>Aglaia elaeagnoidea</i>
Fabaceae	<i>Cassia auriculata</i>	Meliaceae	<i>Azadirachta indica</i>
Fabaceae	<i>Cassia mimosoides</i>	Meliaceae	<i>Munronia pinnata</i>
Fabaceae	<i>Cassia occidentalis</i>	Meliaceae	<i>Walsura trifoliolata</i>
Fabaceae	<i>Centrosema pubescens</i>	Menispermaceae	<i>Cissampelos pareira</i>
Fabaceae	<i>Crotalaria laburnifolia</i>	Menispermaceae	<i>Pachygone ovata</i>
Fabaceae	<i>Crotalaria nana</i>	Molluginaceae	<i>Gisekia pharnaceoides</i>
Fabaceae	<i>Crotalaria pallida</i>	Molluginaceae	<i>Mollugo disticha</i>
Fabaceae	<i>Crotalaria prostrata</i>	Molluginaceae	<i>Mollugo oppositifolia</i>
Fabaceae	<i>Crotalaria retusa</i>	Moraceae	<i>Ficus amottiana</i>
Fabaceae	<i>Derris scandens</i>	Moraceae	<i>Ficus mollis</i>
Fabaceae	<i>Desmodium gangeticum</i>	Moraceae	<i>Streblus asper</i>
Fabaceae	<i>Desmodium heterophyllum</i>	Myrtaceae	<i>Syzygium cumini</i>
Fabaceae	<i>Desmodium triflorum</i>	Najadaceae	<i>Najas marina</i> ^{IAS}
Fabaceae	<i>Dichrostachys cinerea</i>	Nyctaginaceae	<i>Boerhavia diffusa</i>
Fabaceae	<i>Indigofera hirsuta</i>	Nymphaeaceae	<i>Nymphaea pubescens</i>
Fabaceae	<i>Indigofera karnatakana</i>	Ochnaceae	<i>Ochna lanceolata</i>
Fabaceae	<i>Indigofera linnaei</i>	Oleaceae	<i>Jasminum angustifolium</i>
Fabaceae	<i>Indigofera nummulariifolia</i>	Oleaceae	<i>Jasminum auriculatum</i>
Fabaceae	<i>Indigofera tinctoria</i>	Oleaceae	<i>Jasminum sp.</i>
Fabaceae	<i>Indigofera trita</i>	Onagraceae	<i>Ludwigia adscendens</i>
Fabaceae	<i>Mimosa invisa</i> ^{IAS}	Orchidaceae	<i>Vanda spathulata</i>
Fabaceae	<i>Mimosa pudica</i>	Oxalidaceae	<i>Oxalis corniculata</i>
Fabaceae	<i>Neptunia oleracea</i>	Pandanaceae	<i>Pandanus odoratissimus</i>
Fabaceae	<i>Parkinsonia aculeata</i> ^{IAS}	Pandanaceae	<i>Pandanus tectorius</i>
Fabaceae	<i>Pongamia pinnata</i>	Passifloraceae	<i>Passiflora foetida</i>
Fabaceae	<i>Prosopis juliflora</i> ^{IAS}	Pedaliaceae	<i>Pedaliium murex</i>
Fabaceae	<i>Rothia indica</i>	Periplocaceae	<i>Hemidesmus indicus</i>
Fabaceae	<i>Stylosanthes fruticosa</i>	Poaceae	<i>Alloteropsis cimicina</i>
Fabaceae	<i>Tamarindus indica</i>	Poaceae	<i>Aristida setacea</i>
Fabaceae	<i>Tephrosia pumila</i>	Poaceae	<i>Brachiaria distachya</i>
Fabaceae	<i>Tephrosia purpurea</i>	Poaceae	<i>Chloris barbata</i>
Fabaceae	<i>Tephrosia villosa</i>	Poaceae	<i>Chloris montana</i>
Fabaceae	<i>Teramnus labialis</i>	Poaceae	<i>Cynodon barberi</i>
Fabaceae	<i>Vigna trilobata</i>	Poaceae	<i>Cynodon dactylon</i>
Fabaceae	<i>Zornia diphylla</i>	Poaceae	<i>Cyrtococcum trigonum</i>
Flacourtiaceae	<i>Flacourtia indica</i>	Poaceae	<i>Dactyloctenium aegyptium</i>
Gentianaceae	<i>Enicostema axillare</i>	Poaceae	<i>Digitaria bicornis</i>
Goodeniaceae	<i>Scaevola plumieri</i>	Poaceae	<i>Digitaria longiflora</i>
Goodeniaceae	<i>Scaevola taccada</i>	Poaceae	<i>Echinochloa colona</i>
Hippocrateaceae	<i>Salacia oblonga</i>	Poaceae	<i>Eleusine indica</i>
Hydrocharitaceae	<i>Hydrilla verticillata</i> ^{IAS}	Poaceae	<i>Eragrostiella bifaria</i>
Hydrocharitaceae	<i>Ottelia alismoides</i>	Poaceae	<i>Eragrostis gangetica</i>
Lamiaceae	<i>Anisomeles indica</i>	Poaceae	<i>Eragrostis nutans</i>
Lamiaceae	<i>Hyptis capitata</i>	Poaceae	<i>Eragrostis tenella</i>
Lamiaceae	<i>Leonotis nepetifolia</i>	Poaceae	<i>Eragrostis viscosa</i>
Lamiaceae	<i>Leucas zeylanica</i>	Poaceae	<i>Heteropogon contortus</i>

Family	Species	Family	Species
Poaceae	<i>Imperata cylindrica</i> ^{IAS}	Typhaceae	<i>Typha angustifolia</i> ^{IAS}
Poaceae	<i>Iseilema laxum</i>	Verbenaceae	<i>Clerodendrum inerme</i>
Poaceae	<i>Leersia hexandra</i>	Verbenaceae	<i>Clerodendrum phlomidis</i>
Poaceae	<i>Mnesithea laevis</i>	Verbenaceae	<i>Gmelina asiatica</i>
Poaceae	<i>Panicum phoinicladus</i>	Verbenaceae	<i>Lantana camara</i> ^{IAS}
Poaceae	<i>Panicum psilopodium</i>	Verbenaceae	<i>Phyla nudiflora</i>
Poaceae	<i>Panicum repens</i> ^{IAS}	Verbenaceae	<i>Premna latifolia</i>
Poaceae	<i>Paspalidium flavidum</i>	Verbenaceae	<i>Premna obtusifolia</i>
Poaceae	<i>Paspalum distichum</i>	Verbenaceae	<i>Premna tomentosa</i>
Poaceae	<i>Paspalum vaginatum</i>	Violaceae	<i>Hybanthus enneaspermus</i>
Poaceae	<i>Perotis indica</i>	Viscaceae	<i>Viscum capitellatum</i>
Poaceae	<i>Spinifex littoreus</i>	Vitaceae	<i>Cayratia pedata</i>
Poaceae	<i>Stenotaphrum dimidiatum</i>	Vitaceae	<i>Cissus quadrangularis</i>
Poaceae	<i>Zoysia matrella</i>	Vitaceae	<i>Cissus vitiginea</i>
Pontederiaceae	<i>Potamogeton vaginalis</i>	Vitaceae	<i>Cyphostemma setosum</i>
Portulacaceae	<i>Portulaca quadrifida</i>	Zygophyllaceae	<i>Tribulus terrestris</i>
Portulacaceae	<i>Portulaca tuberosa</i>		
Portulacaceae	<i>Portulaca wightiana</i>		
Potamogetonaceae	<i>Ruppia maritima</i>		
Potamogetonaceae	<i>Potamogeton nodosus</i>		
Ranunculaceae	<i>Naravelia zeylanica</i>		
Rhamnaceae	<i>Colubrina asiatica</i>		
Rhamnaceae	<i>Scutia myrtina</i> ^F		
Rhamnaceae	<i>Ziziphus mauritiana</i>		
Rhamnaceae	<i>Ziziphus napeca</i>		
Rhamnaceae	<i>Ziziphus oenoplia</i>		
Rhamnaceae	<i>Ziziphus rugosa</i>		
Rhizophoraceae	<i>Cassipourea ceylanica</i>		
Rubiaceae	<i>Benkara malabarica</i>		
Rubiaceae	<i>Canthium coromandelicum</i>		
Rubiaceae	<i>Catunaregam spinosa</i>		
Rubiaceae	<i>Dentella repens</i>		
Rubiaceae	<i>Hydrophylax maritima</i>		
Rubiaceae	<i>Ixora coccinea</i>		
Rubiaceae	<i>Mitracarpus hirtus</i>		
Rubiaceae	<i>Morinda coreia</i>		
Rubiaceae	<i>Oldenlandia corymbosa</i>		
Rubiaceae	<i>Pavetta indica</i>		
Rubiaceae	<i>Psilanthus wightiana</i>		
Rubiaceae	<i>Psydrax dicoccos</i>		
Rubiaceae	<i>Spermacoce hispida</i>		
Rubiaceae	<i>Tamilnadia uliginosa</i>		
Rubiaceae	<i>Tarenna asiatica</i>		
Rutaceae	<i>Atalantia monophylla</i>		
Rutaceae	<i>Atalantia racemosa</i>		
Rutaceae	<i>Chloroxylon swietenia</i>		
Rutaceae	<i>Glycosmis cyanocarpa</i>		
Rutaceae	<i>Limonia acidissima</i>		
Rutaceae	<i>Murraya koenigii</i>		
Rutaceae	<i>Pleiospermium alatum</i>		
Rutaceae	<i>Toddalia asiatica</i>		
Salvadoraceae	<i>Azima tetracantha</i>		
Salvadoraceae	<i>Salvadora persica</i>		
Salviniaceae	<i>Salvinia molesta</i> ^{IAS}		
Sapindaceae	<i>Allophylus cobbe</i>		
Sapindaceae	<i>Lepisanthes tetraphylla</i>		
Sapindaceae	<i>Sapindus emarginata</i>		
Sapindaceae	<i>Schleichera oleosa</i>		
Sapotaceae	<i>Manilkara hexandra</i>		
Scrophulariaceae	<i>Bacopa monnieri</i>		
Scrophulariaceae	<i>Scoparia dulcis</i>		
Solanaceae	<i>Datura lasiocarpum</i>		
Solanaceae	<i>Solanum indicum</i>		
Solanaceae	<i>Solanum melongena</i>		
Solanaceae	<i>Solanum virginianum</i>		
Sonneratiaceae	<i>Sonneratia caseolaris</i>		
Sterculiaceae	<i>Waltheria indica</i>		
Thymelaeaceae	<i>Aquilaria agallocha</i>		
Tiliaceae	<i>Corchorus aestuans</i>		
Tiliaceae	<i>Grewia carpinifolia</i>		
Tiliaceae	<i>Grewia damine</i>		
Tiliaceae	<i>Grewia orientalis</i>		
Tiliaceae	<i>Grewia rothii</i>		
Tiliaceae	<i>Grewia tenex</i>		

90 Families, 383 species (4 Endemics, 3 Nationally Threatened, 15 Invasive Alien Species)

Status: E - Endemic, T - Nationally Threatened; IAS - Invasive Alien Species

Appendix 4.1: List of fish species recorded from the Bundala Wetlands

Habit: SD - Salt water dispersant, M - Marine, F - Freshwater, B - Brackish water

Habitat: L - Lagoon, T - Tank, S - Stream

Abundance: VC - Very Common, C - Common, UC - Uncommon, R - Rare, VR - Very Rare

FAMILY	SPECIES	HABIT	HABITAT	ABUNDANCE
Ambassidae	Snakehead glass perchlet - <i>Ambassis gymnocephalus</i>	M	L	VR
Anguillidae	Short-finned Eel - <i>Anguilla bicolor</i>	SD	L	R
Aplocheilidae	Dwarf panchax - <i>Aplocheilus parvus</i>	B,F	L,S	C
Ariidae	Blackfin sea catfish - <i>Arius jella</i>	M,B	L	UC
	Spotted catfish - <i>Arius maculatus</i>	M,B	L	R
Bagridae	Long-whiskered catfish - <i>Mystus gulio</i>	B,F	L,S	UC
Belonidae	Spot- tail Needle fish - <i>Strongylura strongylura</i>	M,B	L	R
Chanidae	Milkfish - <i>Chanos chanos</i>	B,SD	L,S	R
Channidae	Murrel - <i>Channa striata</i>	F	L,S,T	R
Carangidae	<i>Carangoides</i> sp.	M	L	UC
Cichlidae	Tilapia - <i>Oriochromis mossambicus</i>	B,F	L,S,T	VC
	Nile tilapia - <i>Oriochromis niloticus</i>	B,F	L,S,T	VR
Clupeidae	Bloch's gizzard shad - <i>Nematalosa nasus</i>	M,B	L	C
Cyprinidae	Scarlet- banded barb - <i>Puntius amphibius</i>	F,B	S	R
	Olive barb - <i>Puntius sarana</i>	F,B	L,T	R
Engraulididae	<i>Encrasicholina</i> sp.	M	L	R
	Indian anchovy - <i>Stolephorus commersonii</i>	B,M	L	R
	Moustached anchovy - <i>Thryssa mystax</i>	B,M	L	UC
	Oblique thryssa - <i>Thryssa puruwa</i>	B,M	L	VR
Gerreidae	Deepbody silverbidy - <i>Gerres abbreviatus</i>	M,B	L	VC
Gobiidae	Bar-eyed goby - <i>Glossogobius giuris</i>	B,F	L,S,T	UC
Hemiramphidae	Congaturi halfbeak - <i>Hyporhamphus limbatus</i>	B,M	L	R
	Half beek - <i>Hemiramphus</i> sp.	B,M	L	R
Leiognathidae	Tooth pony - <i>Gazza minuta</i>	B,M	L	R
Megalopidae	Indo-pacific tarpon - <i>Megalops cyprinoides</i>	B,M	L	R
Mugilidae	Otomebora mullet - <i>Liza melinoptera</i>	B,M	L,S	VC
	Largescale mullet - <i>Liza macrolepis</i>	B,M	L	VR
	Flathead mullet - <i>Mugil cephalus</i>	B,M	L	UC
Sillaginidae	Silver sillago - <i>Sillago sihama</i>	M	L, T	UC
Terapontidae	Jarbua terapon - <i>Terapon jarbua</i>	B,M	L	UC
	Smallscaled terapon - <i>Terapon puta</i>	B,M	L	R
	Daggertooth pike conger - <i>Muraenesox cinereus</i>	B,SD	L	R

Appendix 4.2: List of amphibians recorded at Bundala National Park

Status: ^E Endemic; ^T Threatened

Habitat: H - Home Gardens; P - *Prosopis* Scrubland; S - Dry Thorny Scrubland; F - Evergreen Forest;

WB - Around water bodies;

Abundance: VC - Very Common, C - Common, UC - Uncommon, R - Rare, VR - Very Rare

Family	Species	Habitat	Abundance
Bufonidae	Common Toad - <i>Bufo melanostictus</i>	P, H, F,S	VC
	Athukorale's Dwarf Toad - <i>Bufo atukoralei</i> ^{E,T}	P, H	UC
	Ferguson's Dwarf Toad - <i>Bufo fergusonii</i>	H	UC
Microhylidae	Common Bull Frog - <i>Kaloula taprobanica</i>	H	UC
	Ornate Narrow-mouthed Frog - <i>Microhyla ornatus</i>	H	UC
	White-bellied Pugsnout Frog - <i>Ramanella variegata</i>	H	R
	Baloon Frog - <i>Uperodon systoma</i>	H	UC
	Red Narrow-mouthed Frog - <i>Microhyla rubrum</i>	H	R
Ranidae	Common Paddy field Frog - <i>Limnonectes limnocharis</i>	H,F,WB	VC
	Indian Bull Frog - <i>Hoplobatrachus crassus</i>	S;WB	C
	Banded Sand Frog - <i>Tomopterna breviceps</i>	F,S	R
	Marbled Sand Frog - <i>Tomopterna rolandae</i>	S	R
	Six-toed Green Frog - <i>Euphlyctis hexadactyla</i>	H;WB	C
Rhacophoridae	Skipper Frog - <i>Euphlyctis cyanophlyctis</i>	H;F;WB;S	C
	Chunam Tree-Frog - <i>Polypedates maculatus</i>	H;S;F	C

Appendix 4.3: List of reptiles recorded at Bundala National Park

Status: ^E Endemic; ^T Threatened

Habitat: H - Home Gardens; P - *Prosopis* Scrubland; S - Dry Thorny Scrubland; F - Evergreen Forest;

L - Lagoons; WT - Water holes and tanks; SD - Sand dunes; SM - Salt marsh; SS - Sea shore.

Abundance: VC - Very Common, C - Common, UC - Uncommon, R - Rare, VR - Very Rare

Family	Species	Habitat	Abundance
Crocodylidae	Estuarine Crocodile - <i>Crocodylus porosus</i> ^T	L,WT	UC
	Mugger - <i>Crocodylus palustris</i> ^T	L,WT	UC
Trionychidae	Flapshell Turtle - <i>Lissemys punctata</i> ^T	WT	R
Bataguridae	Parker's Black Turtle - <i>Melanochelys trijuga</i> ^T	WT	UC
Testudinidae	Star Tortoise - <i>Geochelone elegans</i>	S,F	UC
Cheloniidae	Loggerhead Turtle - <i>Caretta caretta</i> ^T	SS	VR
	Green Turtle - <i>Chelonia mydas</i> ^T	SS	VC
	Hawksbill Turtle - <i>Eretmochelys imbricata</i> ^T	SS	R
	Olive Ridley Turtle - <i>Lepidochelys olivacea</i> ^T	SS	R
Dermochelidae	Leatherback Turtle - <i>Dermochelys coriacea</i> ^T	SS	R
Varanidae	Water Monitor - <i>Varanus salvator</i>	WT	R
	Land Monitor - <i>Varanus bengalensis</i>	S,F,H,P	VC
Agamidae	Green Garden Lizard - <i>Calotes calotes</i>	S,F,H,P	C
	Common Garden Lizard - <i>Calotes versicolor</i>	S,F,H,P	VC
	Fanthroat Lizard - <i>Sitana ponticeriana</i>	SD,SM,S	R
Gekkonidae	Common House Gecko - <i>Hemidactylus frenatus</i>	H,F,S	VC
	Kandyan Gecko - <i>Hemidactylus depressus</i> ^{E,T}	F	R
	Spotted House Gecko - <i>Hemidactylus brooki</i> ^E	H	C
	Fourclaw Gecko - <i>Gehyra mutilata</i>	H	VC
	Termitehill - <i>Hemidactylus triedrus</i>	H,F,S	C
	Bark Gecko - <i>Hemidactylus leschenaulti</i>	H,F,S	C
Scincidae	Common Lanka Skink - <i>Lankascincus fallax</i> ^E	H,S	UC
	Common skink - <i>Mabuya carinata</i> ^E	H,S	UC
	Bibron's Sand Skink - <i>Mabuya bibronii</i>	H,S	R
	Dotted Garden Skink - <i>Riopa punctatus</i>	H,S	R
Colubridae	Green vine snake - <i>Ahaetulla nasutus</i>	F,S	UC
	The Olive Keelback - <i>Atretium schistosum</i>	WT	UC
	Rat Snake - <i>Ptyas mucosus</i>	H,S	C
	Common Bronzeback - <i>Dendrelaphis tristis</i>	H,S,F	UC
	Common Pond Snake - <i>Xenochrophis asperrimus</i> ^{E,T}	WT	UC
	Checkered Keelback - <i>Xenochrophis piscator</i>	WT	C
	Buff-striped Keelback - <i>Amphiesma stolata</i>	WT	C
	Sri Lanka Cat Snake - <i>Boiga ceylonensis</i>	H,S	R
	Gamma Cat Snake - <i>Boiga trigonata</i>	H,S	UC
	Forsten's Cat Snake - <i>Boiga forsteni</i>	H,S	UC
	Shaw's Wolf Snake - <i>Lycodon striatus</i>	H,S	UC
	Trinket Snake - <i>Elaphe helena</i>	F	R
	Dumerul's Kukri Snake - <i>Oligodon sublineatus</i> ^E	H,S	UC
	Varigated Kukri Snake - <i>Oligodon taeniolatus</i>	H,S	UC
	Kukri Snake - <i>Oligodon arnensis</i>	H,S	UC
Ornate Snake - <i>Chrysopelea taprobanica</i>	S,F	R	
Elapidae	Cobra - <i>Naja naja</i>	H,S,F	UC
	Sri Lanka Coral Snake - <i>Calliophis melanurus</i>	S	R
Typhlopidae	Common Blind Snake - <i>Ramphotyphlops braminus</i>	H	R
Viperidae	Russell's Viper - <i>Daboia russellii</i>	S,F,H	UC
	Saw-scaled Viper - <i>Echis carinatus</i>	S,SD	R
Boidae	Indian Python - <i>Python molurus</i> ^T	F,S	UC
	Sand Boa - <i>Eryx conicus</i> ^T	SD,S	VR

Appendix 4.4: List of birds recorded at Bundala National Park

Habitats: L - Lagoons; T - Tanks; S - Scrubland; F - Forest.

Status: ^E Endemic; ^T Threatened; ^M Winter Migrant; ^V Vagrant

Abundance: VC - Very Common, C - Common, UC - Uncommon, R - Rare, VR - Very Rare

Order, Family & Species	Habitat	Abundance
Podicipediformes: Podicipedidae		
Little Grebe - <i>Tachybaptus ruficollis</i>	L	R
Pelecaniformes: Phalacrocoracidae		
Little Cormorant - <i>Phalacrocorax niger</i>	L,T	VC
Indian Shag (Indian Cormorant) - <i>Phalacrocorax fuscicollis</i>	L,T	VC
Great Cormorant - <i>Phalacrocorax carbo</i> ^T	L	VR
Pelecaniformes: Anhingidae		
Indian Darter (Oriental Darter) - <i>Anhinga melanogaster</i>	L,T	UC
Pelecaniformes: Pelicanidae		
Spot-billed Pelican - <i>Pelecanus philippensis</i> ^T	L,T	C
Ciconiiformes: Ardeidae		
Median Egret (Intermediate Egret) - <i>Mesophoyx intermedia</i>	L,T	VC
Little Egret - <i>Egretta garzetta</i>	L,T	VC
Large Egret (Great White Egret) - <i>Casmerodius albus</i>	L,T	VC
Cattle Egret - <i>Bubulcus ibis</i>	L,T	VC
Grey Heron - <i>Ardea cinerea</i>	L,T	VC
Purple Heron - <i>Ardea purpurea</i>	L,T	C
Indian Pond Heron - <i>Ardeola grayii</i>	L,T	VC
Little Green Heron (Striated Heron) - <i>Butorides striatus</i>	L	C
Night Heron - <i>Nycticorax nycticorax</i>	L	C
Yellow Bittern - <i>Ixobrychus sinensis</i>	L	UC
Black Bittern - <i>Dupetor flavicollis</i>	L	UC
Chestnut Bittern (Cinnamon Bittern) - <i>Ixobrychus cinnamomeus</i>	L	UC
Chinese Pond Heron - <i>Ardeola bacchus</i> ^V	L	VR
Ciconiiformes: Ciconiidae		
Black-necked Stork - <i>Ephippiorhynchus asiaticus</i> ^T	L	VR
White-necked Stork - <i>Ciconia episcopus</i>	L,T	R
Asian Openbill Stork - <i>Anastomus oscitans</i>	L,T	VC
Painted Stork - <i>Mycteria leucocephala</i>	L,T	VC
Lesser Adjutant Stork - <i>Leptoptilus javanicus</i> ^T	L,T	R
Ciconiiformes: Threskiornithidae		
White Ibis - <i>Threskiornis melanocephalus</i>	L,T	VC
Glossy Ibis - <i>Plegadis falcinellus</i> ^M	L	VR
Eurasian Spoonbill - <i>Platalea leucorodia</i>	L,T	C
Phoenicopteriformes: Phoenicopteridae		
Greater Flamingo - <i>Phoenicopterus ruber</i> ^M	L	VC
Anseriformes: Anatidae		
Lesser Whistling Teal - <i>Dendrocygna javanica</i>	L,T	VC
Northern Pintail - <i>Anas acuta</i> ^M	L	R
Garganey - <i>Anas querquedula</i> ^M	L,T	C
Northern Shoveller - <i>Anas clypeata</i> ^M	L,T	UC
Falconiformes: Accipitridae		
Shikra - <i>Accipiter badius</i>	L,T,S,F	VC

Brahminy Kite - <i>Haliastur indus</i>	L,T,S,F	VC
Black-winged Kite - <i>Elanus caeruleus</i>	L,T,S,F	UC
Crested Hawk Eagle - <i>Spizaetus cirrhatus</i>	L,T,S,F	VC
Crested Serpent Eagle - <i>Spilornis cheela</i>	L,T,S,F	VC
White-bellied Sea Eagle - <i>Haliaeetus nipalensis</i>	L,T	C
Grey-headed Fishing Eagle - <i>Ichthyophaga ichthyaetus</i>	L,T	C
Marsh Harrier - <i>Circus aeruginosus</i> ^M	L,T	UC
Pallid Harrier - <i>Circus macrourus</i> ^M	L,T	UC
Galliformes: Phasianidae		
Sri Lanka Jungle Fowl - <i>Gallus lafayetti</i> ^E	T,S,F	VC
Indian Peafowl - <i>Pavo cristatus</i>	S,F	VC
Blue-breasted Quail - <i>Coturnix chinensis</i>	S,F	UC
Gruiformes: Turnicidae		
Barred Button Quail - <i>Turnix suscitator</i>	S	UC
Gruiformes: Rallidae		
White-breasted Waterhen - <i>Amaurornis phoenicurus</i>	L,T	VC
Common Moorhen (Indian Moorhen) - <i>Gallinula chloropus</i>	L,T	C
Purple Coot (Purple Swamp Hen) - <i>Porphyrio porphyrio</i>	L,T	C
Common Coot (Black Coot) - <i>Fulica atra</i> ^T	L	R
Charadriiformes: Jacanidae		
Pheasant-tailed Jacana - <i>Hydrophasianus chirurgus</i>	L,T	C
Charadriiformes: Haematopodidae		
Eurasian Oystercatcher - <i>Haematopus ostralegus</i> ^V	L	R
Charadriiformes: Recurvirostridae		
Black-winged Stilt - <i>Himantopus himantopus</i>	L,T	VC
Pied Avocet - <i>Recurvirostra avocetta</i> ^V	L	R
Charadriiformes: Burhinidae		
Stone Curlew (Eurasian Thick-knee) - <i>Burhinus oedicnemus</i>	L,T	C
Great Stone Plover (Great Thick-knee) - <i>Esacus recurvirostris</i> ^T	L,T	C
Charadriiformes: Glareolidae		
Collared Pratincole - <i>Glareola pratincola</i> ^V	L	R
Little Pratincole - <i>Glareola lactea</i>	L	UC
Oriental Pratincole - <i>Glareola maldivarum</i>	L,T	UC
Charadriiformes: Charadriidae		
Red-wattled Lapwing - <i>Vanellus indicus</i>	L,T	VC
Yellow-wattled Lapwing - <i>Vanellus malabaricus</i> ^T	L,T	C
Little ringed Plover - <i>Charadrius dubius</i>	L,T	VC
Ringed Plover (Common ringed Plover) - <i>Charadrius hiaticula</i> ^V	L,T	R
Kentish Plover - <i>Charadrius alexandrinus</i> ^V	L,T	VC
Lesser Sand Plover (Mongolian Plover) - <i>Charadrius mongolus</i> ^M	L,T	VC
Large Sand Plover (Great Sand Plover) - <i>Charadrius leschenaultii</i> ^M	L,T	R
Caspian Plover - <i>Charadrius asiaticus</i> ^V	L,T	R
Asiatic Golden Plover (Pacific Golden Plover) - <i>Pluvialis fulva</i> ^M	L,T	C
Grey Plover - <i>Pluvialis squatarola</i> ^M	L,T	C
Charadriiformes: Scolopacidae		
Eurasian Curlew - <i>Numenius arquata</i> ^M	L,T	UC
Whimbrel - <i>Numenius phaeopus</i> ^M	L,T	UC
Black-tailed Godwit - <i>Limosa limosa</i> ^M	L,T	VC
Bar-tailed Godwit - <i>Limosa lapponica</i> ^V	L,T	R
Common Redshank - <i>Tringa totanus</i> ^M	L,T	C

Marsh Sandpiper - <i>Tringa stagnatilis</i> ^M	L,T	C
Common Greenshank - <i>Tringa nebularia</i> ^M	L,T	C
Green Sandpiper - <i>Tringa ochropus</i> ^M	L,T	UC
Wood Sandpiper - <i>Tringa glareola</i> ^M	L,T	UC
Terek Sandpiper - <i>Tringa cinerea</i> ^M	L	R
Common Sandpiper - <i>Actitis Hypoleucos</i> ^M	L,T	VC
Broad-billed Sandpiper - <i>Limicola falcinellus</i> ^M	L	UC
Curlew Sandpiper - <i>Calidris ferruginia</i> ^M	L	C
Great Knot - <i>Calidris tenuirostris</i> ^V	L	R
Sanderling - <i>Calidris alba</i> ^M	L	C
Little Stint - <i>Calidris canutus</i> ^M	L	VC
Temmininck's Stint - <i>Calidris temminickii</i> ^M	L	R
Ruff - <i>Philomachus pugnax</i> ^M	L	UC
Red-necked Phalarope - <i>Phalaropus lobatus</i> ^V	L	R
Ruddy Turnstone - <i>Arenaria interpres</i> ^M	L,T	C
Pintail Snipe - <i>Gallinago stenura</i> ^M	L,T	UC
Charadriiformes: Laridae		
Brown-headed Gull - <i>Larus brunnicephalus</i> ^M	L	C
Charadriiformes: Sternidae		
Large Crested Tern (Great Crested Tern) - <i>Sterna bergii</i>	L,T	U
Caspian Tern - <i>Sterna caspia</i> ^M	L,T	C
Little Tern - <i>Sterna albifrons</i>	L,T	VC
Gull-billed Tern - <i>Sterna nilotica</i> ^M	L,T	C
Lesser Crested Tern - <i>Sterna bengalensis</i> ^M	L,T	UC
Roseate Tern - <i>Sterna dougalli</i> ^M	L,T	R
Common Tern - <i>Sterna hirundo</i> ^M	L,T	C
Whiskered Tern - <i>Chlidonias hybridus</i> ^M	L,T	VC
White-winged Black Tern - <i>Chlidonias leucopterus</i> ^M	L	VC
Saunders's Tern (Black-shafted Little Tern) - <i>Sterna saundersi</i>	L,T	R
Columbiformes: Columbidae		
Spotted Dove - <i>Streptopelia chinensis</i>	S	VC
Rock Pigeon - <i>Columba livia</i>	S	VC
Orange-breasted Green Pigeon - <i>Treron bicincta</i>	S,F	UC
Emerald Dove - <i>Chalcophaps indica</i>	S,F	UC
Green Imperial Pigeon - <i>Ducula aenea</i>	S,F	UC
Pompadour Green Pigeon - <i>Treron pompadora</i>	S,F	C
Psittaciformes: Psittacidae		
Rose-ringed Parakeet - <i>Psittacula kramerii</i>	S,F	VC
Alexandrine Parakeet - <i>Psittacula eupatria</i>	S,F	R
Cuculiformes: Cuculidae		
Common Coucal (Greater Coucal) - <i>Centropus sinensis</i>	S,F	VC
Blue-faced Malkoha - <i>Phaenicophaeus viridirostris</i>	S,F	C
Sirkeer Cuckoo - <i>Phaenicophaeus leschenaultii</i> ^T	S,F	UC
Indian Koel (Asian Koel) - <i>Eudynamys scolopacea</i>	S,F	C
Pied Crested Cuckoo - <i>Oxylophus jacobinus</i>	S,F	UC
Drongo Cuckoo - <i>Surniculus lugubris</i>	S,F	R
Strigiformes: Strigidae		
Brown Fish Owl - <i>Ketupa zeylonensis</i>	S,F	UC
Collard Scops Owl - <i>Otus bakkamoena</i>	S,F	C
Jungle Owlet - <i>Glaucidium radiatum</i>	S,F	UC
Caprimulgiformes: Caprimulgidae		
Long-tailed Nightjar - <i>Caprimulgus atripennis</i>	S,F	C
Indian Nightjar - <i>Caprimulgus asiaticus</i>	S,F	C

Apodiformes: Hemiprocnidae

Crested Treeswift - <i>Hemiproctne longipennis</i>	L,T,S,F	C
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Apodiformes: Apodidae

Asian Palm Swift - <i>Cypsiurus balasiensis</i>	L,T,S,F	UC
Indian Edible Nest Swift - <i>Aerodramus unicolor</i>	L,T,S,F	C
House Swift (White-rumped Swift) - <i>Apus affinis</i>	L,T,S,F	C

Coraciiformes: Alcedinidae

White-breasted Kingfisher - <i>Halcyon smyrnensis</i>	L,T	VC
Common Kingfisher - <i>Alcedo atthis</i>	L,T	C
Pied Kingfisher - <i>Ceryle rudis</i>	L,T	C
Stork-billed Kingfisher - <i>Pelargopsis capensis</i>	L,T	R

Coraciiformes: Meropidae

Blue-tailed Bee-eater - <i>Merops philippinus</i> ^M	T,S,F	VC
Green Bee-eater - <i>Merops orientalis</i>	T,S,F	VC
Chestnut-headed Bee-eater - <i>Merops leschenaulti</i>	T,S,F	UC

Coraciiformes: Coraciidae

Indian Roller - <i>Coracias benghalensis</i>	S,F	C
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Coraciiformes: Upupidae

Eurasian Hoopoe - <i>Upupa epops</i>	S,F	UC
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Coraciiformes: Bucerotidae

Malabar Pied Hornbill - <i>Anthracoeros coronatus</i>	S,F	R
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Piciformes: Capitonidae

Brown-headed Barbet - <i>Megalaima zeylanica</i>	S,F	VC
Crimson-Breasted Barbet - <i>Megalaima haemacephala</i>	S,F	C
Small Barbet (Crimson-fronted Barbet) - <i>Megalaima rubricapilla</i> ^E	S,F	C

Piciformes: Picidae

Red-backed Woodpecker - <i>Dinopium benghalense</i>	S,F	C
Yellow-Fronted Pied Woodpecker - <i>Dendrocopos mahrattensis</i>	S,F	UC
Brown-capped Pygmy Woodpecker - <i>Dendrocopos nanus</i>	S,F	UC
Black-backed Yellow Woodpecker - <i>Chrysocolaptes festivus</i> ^T	S,F	R

Passeriformes: Pittidae

Indian Pitta - <i>Pitta brachyura</i> ^M	S,F	VC
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Passeriformes: Alaudidae

Rufous-winged Bush Lark - <i>Mirafra assamica</i>	L,S	VC
Indian Sky Lark (Oriental Skylark) - <i>Alauda gulgula</i>	L,S	UC
Ashy-crowned Finch Lark - <i>Eremopterix grisea</i>	L,S	UC

Passeriformes: Hirundinidae

Common Swallow (Barn Swallow) - <i>Hirundo rustica</i> ^M	L,T,S,F	VC
Red-rumped Swallow - <i>Hirundo daurica</i>	L,T,S,F	UC
Sand Martin (Pale Martin) - <i>Riparia diluta</i> ^M	L,T,S,F	R

Passeriformes: Motacillidae

Indian Pipit - <i>Anthus rufulus</i>	L,T,S	VC
Forest Wagtail - <i>Dendronanthus indicus</i> ^M	S,F	UC
Yellow Wagtail - <i>Motacillia flava</i> ^M	L,T	UC

Passeriformes: Campephagidae

Little Minivet - <i>Pericrocotus cinnamomeus</i>	F	UC
Common Woodshrike - <i>Tephrodornis pondicerianus</i>	S,F	C
Black-headed Cuckoo-shrike - <i>Coracina melanoptera</i>	S,F	UC

Pied Flycatcher Shrike - <i>Hemipus picatus</i>	S,F	R
Passeriformes: Pycnonotidae		
Red-vented Bulbul - <i>Pycnonotus cafer</i>	S,F	VC
White-browed Bulbul - <i>Pycnonotus luteolus</i>	S,F	VC
Passeriformes: Chloropseidae		
Common Iora - <i>Aegithina tiphia</i>	S,F	VC
Jerdon's Chloropsis - <i>Chloropsis cochinchinensis</i>	S,F	UC
Gold-fronted Chloropsis - <i>Chloropsis aurifrons</i>	S,F	R
Passeriformes: Turdidae		
Magpie Robin - <i>Copsychus saularis</i>	S,F	C
Black Robin - <i>Saxicoloides fulicata</i>	S,F	VC
White-rumped Shama - <i>Copsychus malabaricus</i>	S,F	C
Passeriformes: Sylviidae		
Common Tailorbird - <i>Orthotomus sutorius</i>	S,F	VC
White-browed Prinia (Plain Prinia) - <i>Prinia inornata</i>	L,T,S	C
Clamorous Reed Warbler - <i>Acrocephalus stentoreus</i>	L,T,S	UC
Streaked Fantail Warbler - <i>Cisticola juncidis</i>	L,T,S	C
Ashy Prinia - <i>Prinia socialis</i>	L,T,S	C
Large Prinia - <i>Prinia silvatica</i>	F	UC
Franklin's Prinia (<i>Prinia hodgsonii</i>)	S,F	UC
Passeriformes: Muscicapidae		
Asian Brown Flycatcher - <i>Muscicapa dauurica</i> ^M	S,F	UC
Passeriformes: Rhipiduridae		
White-browed Fantail Flycatcher - <i>Rhipidura aureola</i>	S,F	C
Passeriformes: Monarchidae		
Asian Paradise Flycatcher - <i>Terpsiphone paradisi</i>	S,F	C
Passeriformes: Timaliidae		
Common Babbler (Yellow-billed Babbler) - <i>Turdoides affinis</i>	S,F	VC
White-throated Babbler - <i>Dumetia hyperythra</i>	S,F	UC
Yellow-eyed Babbler - <i>Chrysomma sinense</i>	S,F	UC
Brown-capped Babbler - <i>Pellorneum fuscicapillum</i> ^{E,T}	S,F	UC
Black-fronted Babbler - <i>Rhopocichla atriceps</i>	S,F	UC
Passeriformes: Nectariniidae		
Purple Sunbird - <i>Nectarinia asiatica</i>	S,F	VC
Purple-rumped Sunbird - <i>Nectarinia zeylonica</i>	S,F	VC
Loten's Sunbird - <i>Nectarinia lotenia</i>	S,F	UC
Passeriformes: Dicaeidae		
Tickell's Flowerpecker - <i>Dicaeum erythrorhynchos</i>	S,F	VC
Passeriformes: Zosteropidae		
Small White-eye - <i>Zosterops palpebrosa</i>	S,F	C
Passeriformes: Oriolidae		
Black-headed Oriole - <i>Oriolus xanthornus</i>	S,F	C
Passeriformes: Lanidae		
Brown Shrike - <i>Lanius cristatus</i> ^M	S,F	VC
Passeriformes: Artamidae		
Ashy Swallow-Shrike - <i>Artamus leucorhynchus</i>	S,F	UC

Passeriformes: Corvidae

House Crow - <i>Corvus splendens</i>	S,F	VC
Jungle Crow - <i>Corvus macrorhynchos</i>	S,F	VC

Passeriformes: Sturnidae

Common Mynah - <i>Acridotheres tristis</i>	S	VC
Rosy Starling - <i>Sturnus roseus</i> ^M	S	C
Brahminy Mynah - <i>Sturnus pagodarum</i> ^V	S	UC

Passeriformes: Passeridae

House Sparrow - <i>Passer domesticus</i>	T,S	C
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Passeriformes: Ploceidae

Baya Weaver - <i>Ploceus philippinus</i>	S,F	C
Striated Weaver (Streaked Weaver) - <i>Ploceus manyar</i>	S,F	UC

Passeriformes: Estrildidae

White-backed Munia - <i>Lonchura striata</i>	S	C
Spotted Munia - <i>Lonchura punctulata</i>	S	VC
White-throated Munia - <i>Lonchura malabarica</i>	S	UC
Black-headed Munia - <i>Lonchura malacca</i>	S	UC

Appendix 4.5: List of mammals recorded at Bundala National Park

Status: ^E Endemic; ^T Threatened

Habitats: S - Sand dune; Sc - Scrubland; G - Grassland; F - Evergreen Forest; W - Water holes

Abundance: VC - Very Common, C - Common, UC - Uncommon, R - Rare, VR - Very Rare

Family	Species	Habitats	Abundance
Soricidae	Musk Shrew - <i>Suncus murinus</i>	Sc	C
Cricetidae	Gerbil - <i>Tatera indica</i>	Sc, F	VC
Muridae	House Rat - <i>Rattus rattus</i>	Sc, F	VC
	House Mouse - <i>Mus musculus</i>	Sc, F	VC
	Mole Rat - <i>Bandicota bengalensis</i>	Sc, F	C
	Bush Rat - <i>Golunda ellioti</i>	Sc, F, S	UC
Hystriidae	Indian Crested Porcupine - <i>Hystrix indica</i>	Sc, F	UC
Sciuridae	Giant Squirrel - <i>Ratufa macroura</i>	F	R
	Palm Squirrel - <i>Funambulus palmarum</i>	Sc, F	VC
Hipposideridae	Schneider's Leaf-nosed Bat - <i>Hipposideros speoris</i>	Sc,F	C
	Ceylon Bi-coloured Leaf-nosed Bat - <i>Hipposideros bicolor</i>	Sc,F	C
Pteropodidae	Common Flying Fox - <i>Pteropus giganteus</i>	F	C
Leporidae	Black Naped Hare - <i>Lepus nigricollis</i>	Sc,F,G	VC
Cercopithecidae	Grey Langur - <i>Semnopithecus entellus</i>	S,Sc,F	VC
	Toque Monkey - <i>Macaca sinica</i> ^E	Sc,F	UC
Herpestidae	Brown Mongoose - <i>Herpestes fuscus</i>	Sc,F	C
	Grey Mongoose - <i>Herpestes edwardsii</i>	Sc,F	UC
	Striped-Necked Mongoose - <i>Herpestes vitticollis</i> ^T	Sc,F	UC
	Ruddy Mongoose - <i>Herpestes smithii</i>	Sc,F	UC
Viverridae	Small Civet Cat - <i>Viverricula indica</i>	Sc,F	C
	Indian Palm Cat - <i>Paradoxurus hermaphroditus</i>	Sc,F	C
Bovidae	Indian Water Buffalo - <i>Bubalus bubalis</i>	Sc,F,W	VC
Felidae	Fishing Cat - <i>Prionailurus viverrina</i> ^T	Sc,F,W	R
	Rusty Spotted Cat - <i>Prionailurus rubiginosa</i> ^T	S,Sc,F	R
Canidae	Sri Lanka Jackal - <i>Canis aureus</i>	Sc,F,W	UC
Mustellidae	Indian Otter - <i>Lutra lutra</i> ^T	W	R
Cervidae	Spotted Deer - <i>Cervus axis</i>	Sc,F,G	C
	Sambhur - <i>Cervus unicolor</i>	Sc,F	VR
Tragulidae	Mouse Deer - <i>Tragulus meminna</i>	Sc,F,G	UC
Suidae	Wild Boar - <i>Sus scrofa</i>	Sc,F,G,W	C
Proboscidae	Elephant - <i>Elephas maximus</i> ^T	Sc,F,G	UC
Manidae	Indian Pangolin - <i>Manis crassicaudata</i>	Sc	R

Appendix 4.6: List of butterflies in the Bundala National Park

Status:^EEndemic, ^TThreatened

Habitats: S - Sand dune; Sc - Scrubland; G - Grassland; F - Evergreen Forest; P - Prosopis stands

Abundance: VC - Very Common, C - Common, UC - Uncommon, R - Rare, VR - Very Rare

FAMILY	NAME	HABITATS	ABUNDANCE
Papilionidae	Common Birdwing - <i>Troides darsius</i> ^{E,T}	Sc	VR
	Crimson Rose - <i>Pachliopta hector</i>	S,Sc,G,F	UC
	Common Rose - <i>Pachliopta aristolochiae</i>	Sc	R
	Banded Peacock - <i>Papilio crino</i>	Sc	VR
	Lime Butterfly - <i>Papilio demoleus</i>	S,Sc	R
	Common Mormon - <i>Papilio polytes</i>	Sc	R
	Blue Mormon - <i>Papilio polymnestor</i>	Sc,F	R
Pieridae	Psyche - <i>Leptosia nina</i>	S,Sc,G,F,P	C
	Jezebel - <i>Delias eucharis</i>	S	R
	Pioneer - <i>Belenois aurota</i>	Sc	R
	Common Gull - <i>Cepora nerissa</i>	S,Sc,G,F,P	UC
	Striped Albatross - <i>Appias libythea</i>	Sc	R
	Lesser Albatross - <i>Appias paulina</i>	S,Sc,G,F,P	VC
	White Orange Tip - <i>Ixias marianne</i>	Sc, G	UC
	Yellow Orange Tip - <i>Ixias pyrene</i>	S,Sc,G,F,P	VC
	Mottled Immigrant - <i>Catopsilia pyranthe</i>	S,Sc	UC
	Lemon Migrant - <i>Catopsilia pomona</i>	Sc	R
	Dark Wanderer - <i>Pareronia ceylanica</i>	Sc	R
	Small Salmon Arab - <i>Colotis amata</i>	S,Sc,G,F,P	VC
	Little Orange Tip - <i>Colotis etrida</i>	S,Sc,G,F	UC
	Small Grass Yellow - <i>Eurema brigitta</i>	Sc,G	R
	Common Grass Yellow - <i>Eurema hecabe</i>	S,Sc,G,F	UC
Three-spot Grass Yellow - <i>Eurema blanda</i>	Sc,G	R	
Danaidae	Blue Tiger - <i>Tirumala limniace</i>	F,Sc	VR
	Glassy Tiger - <i>Parantica aglea</i>	Sc	R
	Plain Tiger - <i>Danaus chrysippus</i>	S,Sc,G,F,P	C
	Common Tiger - <i>Danaus genutia</i>		UC
	Common Crow - <i>Euploea core</i>	S,Sc,G,F,P	UC
Nymphalidae	Lemon Pansy - <i>Junonia lemonias</i>	S,Sc,G	UC
	Chocolate Soldier - <i>Junonia iphita</i>	Sc	R
	Peacock Pansy - <i>Junonia almana</i>	Sc	R
Acraeidae	Tawny Coster - <i>Acraea violae</i>	S,Sc	UC
Satyridae	Common Evening Brown - <i>Melanitis leda</i>	F,Sc	R
	Common Palmfly - <i>Elymnias hypermnestra</i>	F,Sc	R
Lycaenidae	Redspot - <i>Zesius chrysomallus</i>	G	R
	Plumbeous Silverline - <i>Spindasis schistscea</i>	S	R
	Ceylon Silverline - <i>Spindasis ictis</i>	Sc	R
	Slate Flash - <i>Rapala manea</i>	S	R
	Common Cerulean - <i>Jamides celeno</i>	Sc	R
	Forget-me-not - <i>Catochrysops strabo</i>	Sc	C
	Pea blue - <i>Lamides boeticus</i>	Sc	R
	Zebra Blue - <i>Syntrucus plinius</i>	Sc,S	UC
	Common Pierrot - <i>Castalius rosimon</i>	Sc,S	UC
	Butler's Spotted Pierrot - <i>Tarucus callinara</i>	Sc	R
	Grass Jewel - <i>Freyeria trochilus</i>	Sc,S,G,F	UC
	Dark Grass Blue - <i>Zizeeria karsandra</i>	Sc	UC
	Lesser Grass Blue - <i>Zizina otis</i>	S,Sc,F,P	C
	Tiny Grass Blue - <i>Zizula hylax</i>	G,Sc	UC
	African Babul Blue - <i>Azanus jesous</i>	S,Sc,F,P	UC
	Lime Blue - <i>Chilades tajus</i>	F,Sc	R
	Small Cupid - <i>Chilades parrhasius</i>	Sc	R
Hesperiidae	Skipper - <i>Pelopidas mathias</i>	G	R

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