



Ministry of Environment



Biodiversity Profile of the Wewalkele Environmentally Sensitive Area

Puttalam District

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Executive Summary

Sri Lanka is considered as a biodiversity hotspot with nationally and globally threatened species that contributes to a high endemism. The country's biodiversity is spread across various ecosystems and pave the way for unique biodiversity clusters in each ecological zone. As such, the wet and dry zones of Sri Lanka comprise of flora and fauna that are distinctly diverse and sometimes restricted to unique habitat types. In Sri Lanka, though the majority of the biodiversity is restricted to protected areas, a considerable portion of flora and fauna can be also encountered outside these protected areas. The concept of Environmentally Sensitive Areas (ESA) can therefore be a pragmatic solution to evaluate and protect bio resources outside of these protected areas.

The Wewalkele Environmentally Sensitive Area (Wewalkele ESA) is located in the Northwestern dry zone of Sri Lanka. Administratively, the ESA area includes three (03) Grama Niladari (GN) divisions viz. New Eluankulama, Old Eluwankulama and Raalmaduwa in the Wanathawilluwa Divisional Secretariat.

The annual precipitation varies between 635 mm and 1,250 mm and dry conditions can often be observed year around. The elevation of the Wewalkele ESA, ranges between 8-12 m asl, approximately. Different types of land uses have been identified, including homegardens, paddy lands, marshes, forests, and reservoirs. Coconut plantations are abundant adjacent to the ESA and proportionately is a prominent form of land cover. The remaining disturbed and semi-natural forest areas are also comparatively prominent.

The biodiversity of the Wewalkele ESA comprises of 345 species including flora and major faunal groups such as mammals, amphibians, reptiles, birds, butterflies and dragonflies. Among them 16 species were identified as nationality threatened with six (06) endangered species and 10 vulnerable (VU) species. Sixteen (16) species were identified as endemic while 16 species belong to the near threatened (NT) category of the IUCN conservation status.

Expansion of human settlements and coconut plantations are gradually causing habitat destruction and environment pollution. Hence, several threats can be identified to the biodiversity of the area. Identified threats include loading of excessive nutrients into the Wewalkele, soil erosion, invasive species and land encroachments. Therefore, to ensure the long-term survival of the biodiversity of the area, future landscape level conservation efforts should be focused on identified critical areas. Mitigatory measures such as active monitoring procedures for detecting and eliminating illegal encroachments, forest clearance for firewood collection and illegal mining; improving the knowledge and awareness of communities, politicians and officers about the importance of the biodiversity in the area; implementing strong policies; and creating strong responsible stakeholder bonds are recommended.

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Acronyms and Abbreviation

*	Endemic
BR	Breeding
CR	Critically Endangered
CR (PE)	Critically Endangered (Potentially Extinct)
DD	Data Deficiency
EN	Endangered
END	Endemic
ESA	Environmentally Sensitive Area
EX	Exotic
EX/MR	Exotic/Migrant
GRL	Global Red List
IND	Indigenous
LC	Least Concern
NAT	Native
NE	Not Evaluated
NRL	National Red List
NT	Near Threatened
SpS	Species Status
VU	Vulnerable

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Ministry of Environment

Chapter 1: Introduction

1.1. Biodiversity of Sri Lanka

Sri Lanka is amongst the 34 global biodiversity hotspots and as such comprises of a high species diversity and endemism (Gunatilleke et al., 2008). Despite the country's small extent, the topography with the influence of coastal climatic variations creates unique clusters of biodiversity within the island nation. Throughout the country, in the different peneplains, there is a wide variety and distribution in terms of the ecosystems resulting from the topographic, edaphic, and climatic variations. The diversity of the ecosystems is classified as aquatic and terrestrial along with a multitude of coastal and marine ecosystems (MoMD&E, 2016). In addition, there are unique human-made ecosystems such as reservoirs and agricultural landscapes (Table 1).

Table 1: Major ecosystem types in Sri Lanka (Modified after MoMD&E, 2016)

Ecosystem	Major Types
Forests (Tree dominated)	Lowland wet evergreen forest, mid-elevation evergreen forest, montane evergreen forest, moist-mixed evergreen forest, dry-mixed evergreen forest, arid-mixed evergreen forest
Grasslands (Herb dominated)	Wet patana, dry patana, savannas, grasslands, flood plain grasslands
Caves	Above-ground and below-ground caves
Lentic (standing) Water Bodies	Fresh and brackish water villus, mangroves, lagoons, reservoirs etc.
Lotic (running) Water Bodies	Rivers and streams
Marshlands	Marshes and paddylands
Beach	Sandy shores, rocky shores, gravelly shores, dead coral beaches
Reefs	Coral reefs, sandstone, rocky reefs
Shallow Marine Water (Less than 200 m)	Seagrass meadows, seaweeds, mud bottoms, sand bottoms
Deep Marine Water (More than 200 m)	Mud bottom, sand bottom, rocky bottom, sandstone bottom, open ocean
Islets	Rocky islets, sandy islets, islets with vegetation cover

The biodiversity of these different ecosystems is unique and unmatched. The knowledge on the biodiversity of the coastal ecosystems are comparatively lesser than that of the inland ecosystems. The major taxa in flora and fauna include Angiosperms, Gymnosperms, vertebrate groups such as herpetofauna, ichthyofauna, mammals, avifauna and some invertebrate groups such as butterflies, freshwater crabs and land snails—all well documented in the inland terrestrial ecosystems (Table 2).

Table 2: An overview of Sri Lanka's species diversity (Source: Goonatilake, 2020)

Taxonomic Group	Recorded from Sri Lanka					
	Total	Native	Endemic	Marine	Migrant	Exotic
Land snails	254	230	203	0	0	24
Scorpions	18	18	14	0	0	NK
Centipedes	23	23	3	0	0	NK
Dragonflies	130	130	56	0	0	0
Butterflies	248	245	31	0	0	0
Bees	130	130	NK	0	0	NK
Crabs	51	51	50	0	0	0
Freshwater fish	138	108	62	0	0	27
Amphibians	121	121	108	0	0	0
Reptiles	237	236	147	21	0	1
Birds	498	221	34	-	276	1
Mammals	141	129	21	33	12	
Angiosperms	4,205	3,105	891	0	0	1,100+
Gymnosperms	35+	2	0	0	0	33+
Pteridophytes	336	321	49	0	0	15+
Mosses	560+	560	66+	0	0	NK
Liverworts	222	222	NK	0	0	NK
Lichens	661	661	NK	0	0	NK
Total	7,828	6,338	1,691	54	276	1,212
*Abbreviations: NK — Not Known						

The coastal environment is biologically highly distinct with inland aquatic and terrestrial habitats. The coastal belt of Sri Lanka, which extends up to 1,585 km, along with coral reefs are among the most diversified ecosystems. There are about 183 species belonging to 68 genera of coral species and more than 1,000 species of associate fish fauna in the Sri Lankan coastal area (Anonymous, 2002). Among the coastal habitats, mangroves play a significant role to enhance the country's biodiversity. Mangroves influenced by tidal amplitudes are scattered and restricted to coastal lagoons and estuaries. Altogether, 21 true mangrove species have been described from Sri Lanka (Arulchelvam, 1968; Jayathissa, 2012) and all these species are adapted to grow under gradient saline conditions and fluctuating water levels. Mangroves, while harbouring rich migrant (amphidromous) and resident fauna such as finfish, shellfish, clams, crabs, oysters, and shrimps, provide nursery grounds for numerous marine organisms and roosting sites for birds (Amarasinghe et al., 2002).

1.2. An Introduction to the Wewalkele Environmentally Sensitive Area (ESA) in the Northwestern Province of Sri Lanka

1.2.1. Biodiversity of Northwestern dry zone of Sri Lanka

Northwestern dry zone of Sri Lanka consists of rich and unique biodiversity forms. The biodiversity is characterized by an extremely high level of ecosystem diversity including rich marine and coastal habitats as well as mangrove habitats. Biodiversity of the region provides a wide range of ecosystem services including carbon sequestration and aiding to mitigate climate change related impacts. Further, various bio-resources such as food, fuel, wood products, medicines and biomedical materials, ornamental species etc. provide subsistence for communities in the region supporting the economic wellbeing. As such, a core feature to note of this area is rapid economic advancement.

The Northwestern dry zone forests, though less diverse than rainforests, are equally important and provide crucial habitats for charismatic large ungulates, carnivores, and primates. Natural wetlands and mangrove ecosystems in the region provide refuge for many aquatic birds and fish species. Furthermore, the irrigation reservoirs and their related ecosystems in the region (>400 tank systems; Marambe et al., 2012) are home for some important species of Ichthyofauna and are feeding grounds for many related faunal groups. The region is also home for some unique species such as *Chamaeleo zeylanicus* (Indian Chameleon), *Sitana* spp. (Fan-throated lizards) and *Echis carinatus* (Saw Scale Viper), which can be considered as range restricted species.

Among the variety of natural ecosystems in the Northwestern dry zone, marsh ecosystems are rather scarce but plays a significant role in both ecological and social aspects. The biodiversity of the marshes is unique, as they comprise of a substantial assemblage of both terrestrial and aquatic species in the same habitat. These marsh ecosystems are dominated by several floral species such as mangrove associates, reeds or rattans and make dense habitats. These dense habitats provide refuge for several cryptic faunal groups such as mammals and reptiles and in addition aids to sustain a high species richness overall in many flora and fauna groups.

1.2.2. Kala-Oya River Basin

The Kala Oya Basin is the third largest river basin in Sri Lanka. It covers an area of 2,870 km² (UNDP, 2017; NSF, 2000). The total length of the Kala Oya is approximately 150 km and is located largely within the North Western Province while the rest is situated within the Central and North Central provinces (Alwis, 2005). The Kala Oya River Basin area is located within two agro ecological regions, which are characterized by comparatively low rainfall with high seasonal and spatial variations. Normally, the average annual rainfall varies between 1,700 mm at high elevations in the Southeastern end of the basin and 1,200 mm towards the Northwestern part (UNDP, 2018). Since the Kala Oya Basin is situated within the dry zone of Sri Lanka, temperature varies between 30.4°C-33.6°C. The average monthly rainfall of the area is 120 mm while the highest rainfall is 225 mm (November-December) and the lowest is 25 mm per month (UNDP, 2018). The geographical locations of the Wewalkele ESA within the Kala Oya River Basin is shown in Figure 1.

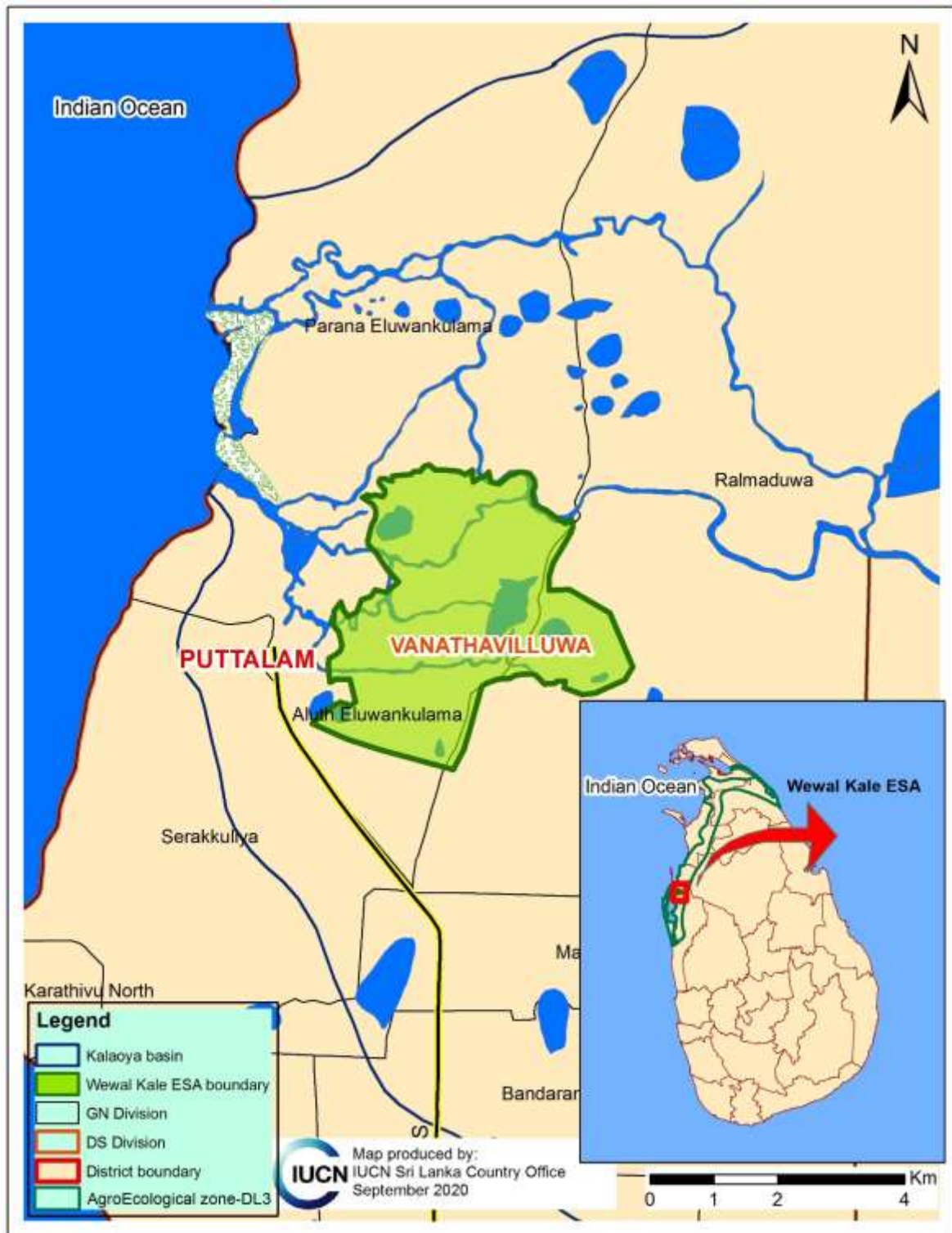


Figure 1: Location of the Kala Oya river basin and the Wewalkele ESA. Inset shows the geographical location of the Wewalkele ESA in Sri Lanka

1.2.3. Wewalkele Environmentally Sensitive Area (ESA)

The Wewalkele ESA is located in the Puttalam District (Wanathawilluwa GS division) and Agro Ecological Zone DL3 in the Northwestern coast of Sri Lanka. The ESA consists of three (03) Grama Niladari divisions viz. New Eluwankulama, Old Eluwankulama and Raalmaduwa (Figure 2). Different types of land uses have been identified within the ESA, including, homegardens, paddy lands, marshes, forests, and reservoirs (Figure 3). Forest land is abundant within the ESA and proportionately they are the most prominent form of land cover while land set aside for agricultural purposes such as paddy and homegardens are the second most prominent form of landcover. Dry mixed evergreen forests are the most frequently encountered forest type within the forest lands. Elevation of the ESA varies between 8-12 m, approximately. The Wewalkele is a unique ecosystem, enriched with a wide-ranging biodiversity along with a complex relationship between adjacent communities.



Figure 2: Location of the Wewalkele ESA with adjacent administrative boundaries

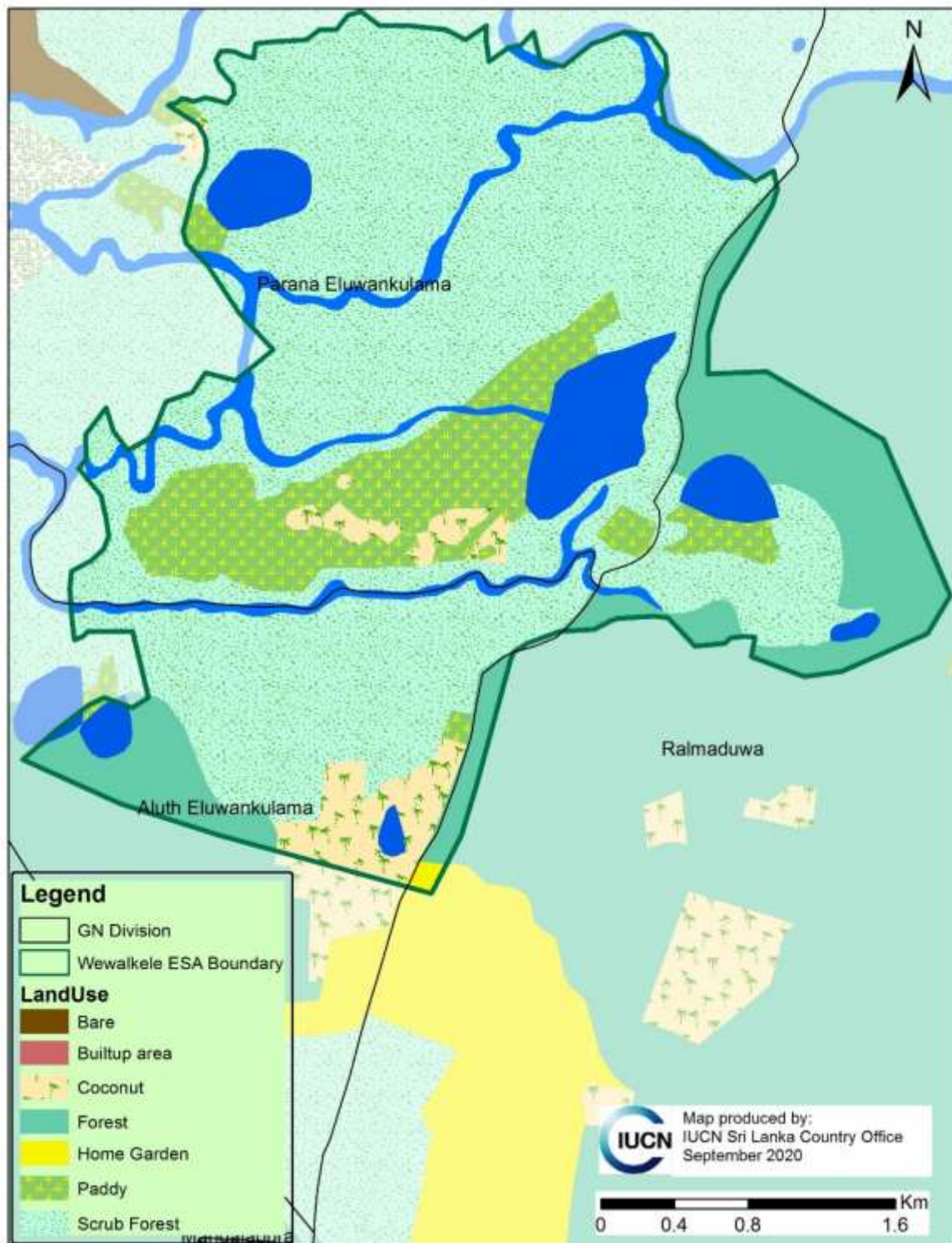


Figure 3: Different types of land uses in the Wewalkele ESA

1.3. Ecosystem diversity of the Wewalkele ESA

Wewalkele is predominantly a marshy habitat that is dominated by mangrove associates and *Calamus*. Several habitat types can be encountered in the Wewalkele such as marshy habitats, scrub forests, riverine forests, lotic aquatic habitats and associate grasslands (Figure 4). The adjacent areas are highly urbanized and marginal habitats are disturbed.

1.3.1. Scrub forests

Dry deciduous thorn scrublands or scrub forests are one of the most abundant forest types in the dry and arid zones, especially within the Wewalkele ESA. This forest is dominated by thorn and scrub bushes. The ground layer of the scrub forest consists of thorny shrubs, herbs, and grasses. Shrub species are the most abundant type and they reach up to approximately 5 m in height. These provide favorable ecosystems to large migratory mammals such as elephants. Scrub forests cover approximately 191.4 ha and these forest types often consist of more open areas. These forests receive about 1,500-2,000 mm of annual rainfall during the North-East Monsoon period from December-March, but are mostly dry during the rest of the year. It is to be noted that these ecosystems are highly degraded due to human activities.

1.3.2. Marsh ecosystems

1.3.2.1. Marsh ecosystem (*Excoecaria* dominated)

This habitat is a semiaquatic area with mud pools and dominated by mangrove associate vegetation, primarily *Excoecaria agallocha*. The maximum height of the trees ranges between 10-15 m. The ground layer receives only a small amount of sunlight. Therefore, no lush vegetation can be observed inside the forest. There are several species such as *Acrostichum aureum*, *Typha agustifolia*, *Cyperus rotundus*, *Mikania cordata* and *Ludwigia adscendens* that can be spotted as dominant herbs in the ground layer. In addition, small tree/shrub species such as *Derris scandens*, *Phoenix pusilla*, *Carissa spinarum* and *Calamus rotang* can be found in this ecosystem. The freshwater pools provide various habitats for several amphibians and fishes (see the Annexures). Furthermore, pug marks were observed, indicating that some mammals fulfill their water requirements using these pools. However, the functional condition of the pools is not promising and as such limited species of fauna survive in these waters. The water of the pools is stagnated and murky. Due to the accumulation of plant detritus and inorganic substances, the turbidity in the water is high. It can be assumed that there is a low dissolved oxygen level due to anaerobic activities.

1.3.2.2. Marsh ecosystem (*Calamus* dominated)

This ecosystem can be seen associated with *Excoecaria* vegetation. The *Calamus rotang* make dense habitats and most likely provide good hiding places for mammals and birds. The ground layer comprises of herbaceous species dominated by *Acrostichum aureum*, *Hygrophila schulli*, *Commelina spp.* and *Cyperus spp.* Stagnated water pools and lotic water bodies can be seen inside the vegetation. This *Calamus* dominated marsh area, located to the south of the ESA, has adjoined coconut plantations, dominated by *Typha agustifolia*. Several streams with aquatic vegetation can be observed in the habitat. This water is less turbid, and several freshwater fishes can be observed associated with the reed habitat.

1.3.3. Riverine forest

Riverine forests are not a dominant forest type in the Wewalkele ESA. A small riverine forest strip can be seen eastward to the ESA, dominated by *Terminalia arjuna*. Water velocity of the river is average and consists of water pools and stagnated areas. No boulders or rocky habitats were observed in the river and the bottom characteristic is predominantly a mixture of sand, gravel, and mud. Common fish species inhabit these waters. The stability of the populations of these common species is marginally good, possibly due to the abundance of food items such as invertebrates and detritus on the mud-bottom of the river.

1.3.4. Grassland

The grasslands are a minor vegetation type in the Wewalkele ESA, and they are located adjacent to the northern boundary. These grasslands are most likely former degraded forest areas that have remained as grasslands as a result of chena cultivations. These grasslands provide habitats for butterflies, odonates and some creeping reptiles such as skinks. The open grassland area is also a good habitat for insectivorous and carnivore bird species such as drongos and kingfishers.

1.3.5. Tank ecosystem

One major tank can be observed in the Wewalkele ESA. The tank with an extent of approximately 54 ha is locally known as the Nelum Wewa. A tank is a unique lentic aquatic habitat, which comprises of a high species diversity. A tank system provides the perfect habitat for aquatic birds including several migratory species. The shore habitats with mudflats provide suitable foraging grounds for aquatic birds. This is also a perfect habitat for mammals and large tetrapod reptiles such as saltwater crocodiles. The littoral area of the tank comprises of submerged aquatic plants, which provide good habitats for aquatic fauna, including fish and invertebrates.

1.3.6. Paddy fields

Paddy cultivation is one of the main types of agricultural lands in the Wewalkele ESA. Paddy fields are located in the middle of the ESA, fed by the Nelum Wewa. Farming is carried out in both *Yala* and *Maha* seasons. Approximately, 394 ha of paddy lands are cultivated in the ESA. These paddy fields and open areas provide good habitats for dragonflies and butterflies. During the plowing season, aquatic birds congregate around the paddy to collect opportunistic foods such as worms and insects.

1.3.7. Coconut plantations

Approximately, 77 ha of coconut plantations can be encountered in the ESA. Coconut plantations are a major commercial plantation type in the area. This homogeneous vegetation is generally with less biodiversity, due to the reduced number of habitats. There is no intercropping system, therefore, the land is directly exposed to rainfall and may lead to soil erosion. The water requirement for the coconut plantations is more or less completely supplemented from the Wewalkele related watershed area.



Figure 4: Types of ecosystems identified in the Wewalkele ESA. (A) Scrub forest; (B) Marsh ecosystem (Excoecaria dominated) (contd.)



Figure 5: Types of ecosystems identified in the Wewalkele ESA. (C) Marsh ecosystem (Calamus dominated); (D) Riverine forest; (E) Grassland; (F) Coconut plantations; (G) Marsh area with *Typha angustifolia* (H) Open Marsh area with Calamus (Photo credit ©IUCN/Sampath de A Goonatilake)

Chapter 2: Biodiversity Profile in the Wewalkele ESA

The Wewalkele ESA consists of 125 plant species (Angiosperms; Annexure 1) and 220 animal species including seven (07) taxonomic groups (e.g. mammals, birds, dragonflies, butterflies, reptiles, amphibians and fishes) (Table 1). Among the recorded native plants species, one species was recorded as endemic and the list includes two (02) endangered, three (03) vulnerable and four (04) near threatened species. Fourteen (14) species were recorded as exotic (Table 3).

Table 3: Summary of the flora and fauna recorded in the Wewalkele ESA

Taxonomy Group	Recorded From Sri Lanka		Recorded in the Site						Conservation Status of the Recorded Species					
	Total	END	Total	END	NAT	EX/MR	OQ	Dom	EN	VU	NT	LC	NE	DD
Angiosperms	3,154	894	125	1	109	14	1		2	3	4	98	17	1
Damselflies and Dragonflies	122	53	28	1	27						4	24		
Butterflies	245	26	60	1	60					2	2	56		
Fishes	141	64	12		10	2			1		1	9		1
Amphibians	119	103	10	1	9					1		9		
Reptiles	214	126	15	5	10					1	1	13		
Birds	492	34	69	5	61	3					2	65		2
Mammals	108	21	25	2	20			3	3	2	2	15	3	
Total	4,595	1321	345	16	306	19	1	3	6	10	16	289	20	4
Abbreviations: CR-Critically Endangered; DD-Data Deficient; Dom- Domestic; EN- Endangered; EX/MR- Exotic/Migrant; END-Endemic; LC- Least Concern; NAT-Native; NE-Not Evaluated; NT-Near Threatened; OQ-Origin Questionable; VU-Vulnerable														

Majority of the exotic plants are introduced for agricultural purposes and there is no sign of invasion in the area. However, two plant species, *Chromolaena odorata* and *Leucaena leucocephala*, are listed in the invasive category. These species have a scattered distribution throughout the ESA.

Dragonfly fauna in the ESA includes 28 total species with one endemic species. Four (04) species are considered as near threatened (Annexure 2) and are restricted to several aquatic areas, comparatively with lesser disturbances.

Sixty (60) butterfly fauna were identified (Annexure 3), including one endemic species, *Appias galane* (Sri Lanka albatross), and two (02) vulnerable specie, *Papilio crino* (banded peacock) and *Byblia ilithyia* (Joker). Near threatened species *Colotis etrida* (little orange tip) and *Amblypodia anita* (purple leafblue), were recorded in association with grassland habitats adjacent to the forest edge.

Freshwater fish diversity is comparatively lower in contrast with other major faunal taxonomic groups. Altogether, eight (08) species were recorded with the endemic endangered *Labeo lankae* (orange-fin labeo) (Annexure 4). The *Lebeo lankae* was associated with the Nelum Wewa and this is a target species of small-scale fishers. The most common species observed were *Rasbora microcephalus* and *Etrplus suratensis* in association with marshy areas.

Ten (10) amphibian species were recorded during the survey (Annexure 5). Among them a single species, *Hydrophylax gracilis*, was considered as endemic while the *Duttaphrynus scaber* was identified as vulnerable. Due to the less rainfall and dryness of the area, arboreal species are scarce and widely distributed. As such, the *Polypedates maculatus* was encountered as the sole tree frog species in the ESA. The species in the family microhylidae were observed burrowing inside mud crevices on the villu banks to overcome the dryness during daytime.

Reptile fauna included 15 species (Annexure 6) with five (05) endemics. A large tetrapod reptile *Crocodylus porosus* (saltwater crocodile) was encountered related to the lake and river environment and can be considered as an apex aquatic predator of the ESA. Vulnerable species such as the *Eutropis madaraszi* also inhabit the ESA and are associated with dry leaf litters and presence of these uncommon species enhance the diversity of the area. These species have a scattered distribution and is scarce in disturbed areas with human interventions.

The highest number of species amongst animal groups were recorded in birds with 69 species (Annexure 7). Five (05) endemic species were recorded and two (02) species were noted as near threatened. Three (03) migrants were recorded and possibly the richness of the migrants may increase during the beginning of the season. Aquatic habitats related to the Nelum Wewa and the dense vegetation associated with the marshy areas provide refuge for birds. Additionally, muddy shore areas and submerged vegetation in the lake environment provide perfect foraging grounds for waders. However, no threatened bird species were recorded during the survey.

Twenty-five (25) species of mammals were recorded during the survey. The timid nature of most mammals contributed to the animals avoiding direct contact with human. Therefore, most of the mammals were recorded using indirect methods. The list includes two (02) endemic species with three domestic species (Annexure 8). The *Elephas maximus* (Asian elephant), *Panthera pardus* (leopard) and *Prionailurus viverrinus* (fishing cat) are considered as endangered. Elephants (*Elephas maximus*) are also an iconic feature of the area, which provides suitable habitats for them to survive. Endemic species such as the *Macaca sinica* (Sri Lanka toque monkey) is widespread in Sri Lanka and *Moschiola meminna* (Sri Lanka mouse-deer) is restricted to the lowland dry zone.

Chapter 3: Diversity of Conservation Important Species in the Wewalkele ESA

Wewalkele ESA consist of five (05) threatened plant species. Proportionately, plants show very less endemism (0.8%) and a low threatened portion (4%) (Table 3.1). Considering the animal taxa, 15 species and five (5) species were recorded as threatened and endemic, respectively. Reptiles showed the highest endemism (33.3%) with respect to all the observed taxa. Furthermore, a high percentage of threatened species was recorded in mammals (20%). The threatened and endemic percentages of amphibians were 10%. Even though there were no endemic species in fishes, 8.3% were recorded as threatened. Birds showcased a 7.2% endemism with no threatened species. No endemic species were recorded among odonates.

Table 4: Percentage of endemic and threatened species in the Wewalkele ESAs

Taxonomy group	% endemic	% threatened
Angiosperms	0.8	4.0
Damselflies and Dragonflies	3.6	-
Butterflies	1.7	3.3
Fishes	-	8.3
Amphibians	10.0	10.0
Reptiles	33.3	6.7
Birds	7.2	-
Mammals	8.0	20.0

Two (02) endangered plant species were recorded from the families, Euphorbiaceae (*Croton caudatus*) and Cyperaceae (*Cyperus compactus*). Four (04) endangered animal species were recorded within the ESA including one fish and three (03) mammal species (Table 5). The distribution of *Labeo lankae* is confined to the lake habitat, river habitat and deep rocky pools. This finding highlights the importance of conserving the Wewalkele ecosystem and also enhancing the degraded habitats in the area.

Table 5: Endangered animal species recorded in the Wewalkele ESA

	Family	Species	Local Name	SpS
1	Cyprinidae	<i>Labeo lankae</i>	Tambalaya	END
2	Felidae	<i>Panthera pardus</i>	Kotiya/ Diviya	IND
3	Felidae	<i>Prionailurus viverrinus</i>	Handun diviya	IND
4	Elephantidae	<i>Elephas maximus</i>	Etha / Aliya	IND

Three (03) plant species were recognized as vulnerable (Table 6). No endemic or vulnerable plant species were recorded. Woody species such as *Manilkara hexandra* has an isolated distribution among different locations.

Table 6: Vulnerable plant species recorded in the Wewalkele ESA

	Family	Species	Local Name	SpS
1	Commelinaceae	<i>Commelina clavata</i>	Gira-pala	IND
2	Fabaceae	<i>Senna auriculata</i>	Ranawara	IND
3	Sapotaceae	<i>Manilkara hexandra</i>	Palu	IND

Among the animal taxa, six (06) species were recorded as vulnerable. The list includes one endemic species *Eutropis madaraszi* (spotted skink). The *Lutra lutra* (otter) is the most elusive mammal in the ESA and was identified using fecal matter. There is no precise idea about their population status due to the lack of information regarding their ecology.

Table 7: The vulnerable animal species recorded in Wewalkele ESA

	Family	Scientific Name	English Name	Sinhala Name	SpS
1	Papilionidae	<i>Papilio crino</i>	Banded peacock	Monara papilia	IND
2	Nymphalidae	<i>Byblia ilithyia</i>	Joker	Kawataya	IND
3	Bufonidae	<i>Duttaphrynus scaber</i>	Ferguson's toad	Fergusonge gemba	IND
4	Scincidae	<i>Eutropis madaraszi</i>	Spotted skink	Pulli hikanala	END
5	Vespertilionidae	<i>Pipistrellus coromandra</i>	Indian pipistrel	Indu koseta-vavula	IND
6	Mustelidae	<i>Lutra lutra</i>	Otter	Diya-balla	IND

3.1. Endemic and Threatened Plant Species Recorded in the Wewalkele ESA

Scientific Name:	<i>Cyperus compactus</i>
Kingdom:	Plantae
Clade:	Tracheophytes
Clade:	Angiosperms
Clade:	Monocots
Clade:	Commelinids
Order:	Poales
Family:	Cyperaceae
Genus:	<i>Cyperus</i>
Conservation Status:	EN
A note on the species: <i>Cyperus compactus</i> is a sedge of the family Cyperaceae, which is native to Sri Lanka. This is an erect perennial with short corn-like rhizome; culms 28-75 cm tall. Spikelets are congested in globose heads. Leaves are rigid and strongly canaliculated.	

Scientific Name:	<i>Commelina clavata</i>
Kingdom:	Plantae
Clade:	Angiosperms
Order:	Commelinales
Family:	Commelinaceae
Tribe:	Commelineae
Genus:	<i>Commelina</i>
Conservation Status:	VU

A note on the species: *Commelina clavata* is a perennial herb with thick, non-tuberous roots. Shoots can grow up to 1 m long. Leaves are narrowly lance-shaped, 2.5-10 cm long, 0.4-1.5 cm wide, with pointed or long pointed tips. Flowers are borne in 2-flowered clusters and are sky-blue. They are about 1.5 cm across, with sepals that are 3 mm long. Paired petals are 7 mm wide, sky-blue. The third petal is 5 mm wide.

Scientific Name:	<i>Manilkara hexandra</i>
Sinhala Name:	Palu
Clade:	Tracheophytes
Clade:	Angiosperms
Clade:	Eudicots
Clade:	Asterids
Order:	Ericales
Family:	Sapotaceae
Genus:	<i>Manilkara</i>
Conservation Status:	VU



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A note on the species: *Manilkara hexandra* is a slow-growing large evergreen species, which grows up to 12-25 m. The bark is grayish and rough. The wood is hard and durable and is used for furniture. The fruit is edible.

Scientific Name:	<i>Senna auriculata</i>
Sinhala Name:	Ranawara
Clade:	Tracheophytes
Clade:	Angiosperms
Clade:	Eudicots
Clade:	Rosids
Order:	Fabales
Family:	Fabaceae
Genus:	<i>Senna</i>
Conservation Status:	VU



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A note on the species: *Senna auriculata* is a leguminous tree. It is common along the seacoast and the dry zone of Sri Lanka. Its flowers are irregular, bisexual, and bright yellow. This plant has some medicinal values and is locally used for the treatment of cardiac glucoside, fevers, and diabetes.

Scientific Name:	<i>Croton caudatus</i>
English Name:	Climbing croton
Sinhala Name:	Wal kappetiya
Clade:	Tracheophytes
Clade:	Angiosperms
Clade:	Eudicots
Clade:	Rosids
Order:	Malpighiales
Family:	Euphorbiaceae
Genus:	<i>Croton</i>
Conservation Status:	EN

A note on the species: *Croton caudatus* is a scandent shrub, but grows up to 25-30 m. The roots are sometimes gathered from the wild for local medicinal use and the stems are used in basketry. The plant is sometimes cultivated for medicinal purposes in southern China.

3.2. Endemic and Threatened Dragonfly and Damselfly Species Recorded in the Wewalkele ESA

Scientific Name:	<i>Prodasineura sita</i> *
English Name:	Stripe-headed threadtail
Phylum:	Arthropoda
Class:	Insecta
Order:	Odonata
Family:	Protoneuridae
Genus:	<i>Prodasineura</i>
Conservation Status:	LC



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A note on the species: *Prodasineura sita* is a species of damselfly in the family Protoneuridae and is endemic to Sri Lanka.

3.3. Endemic and Threatened Butterfly Species Recorded in the Wewalkele ESA

Scientific Name:	<i>Papilio crino</i>
English Name:	Banded peacock
Sinhala Name:	Monara papilia
Phylum:	Arthropoda
Class:	Insecta
Order:	Lepidoptera
Family:	Papilionidae
Genus:	<i>Papilio</i>
Conservation Status:	VU



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A note on the species: This papilionid butterfly is distributed in dry and intermediate zones of Sri Lanka. The wing expanse is about 10 cm. The colour of this butterfly varies from emerald green to royal blue according to the angle of light. This is a migratory species and prefers scrubland patches. The larval food plants are *Chloroxylon swietenia*, *Toddalia asiatica* and *Clausena indica*.

Scientific Name:	<i>Byblia ilithyia</i>	 © IUCN/Naalin Perera
English Name:	Joker	
Sinhala Name:	Kawataya	
Phylum:	Arthropoda	
Class:	Insecta	
Order:	Lepidoptera	
Family:	Nymphalidae	
Genus:	<i>Byblia</i>	
Conservation Status:	VU	

A note on the species: *Byblia ilithyia* is a species of nymphalid butterfly found in parts of Africa and Asia. It has two colour forms in dry and wet seasons. The butterfly is confined to the north and north eastern dry zone of Sri Lanka. The larval food plant is *Tragia plukenetii*.

3.4. Endemic and Threatened Fish Species Recorded in the Wewalkele ESA

Scientific Name:	<i>Labeo lankae</i> *	 © IUCN.Naalin Perera
English Name:	Red fin labeo	
Sinhala Name:	Thambalaya	
Phylum:	Chordata	
Class:	Actinopterygii	
Order:	Cypriniformes	
Family:	Cyprinidae	
Subfamily:	Danioninae	
Genus:	<i>Labeo</i>	
Conservation Status:	VU	

A note on the species: Red fin labeo (*Labeo lankae*), is endemic to Sri Lanka and has a limited distribution. Within the ESA, this species is spread associated with the lake habitat. The population is under threat due to fishing activities of artisanal fishers. The identification features of the *Labeo lankae* are: sclera of eye is red in color, rostral fold developed and overlapping upper lip, maxillary barbels present, 10–12 branched rays on the dorsal fin and 36–39 scales on the lateral line. All fins have a reddish suffusion. Body is rosy grey dorsally with metallic green margins, and with a blotch on the caudal peduncle.

3.5. Endemic and Threatened Amphibian Species Recorded in the Wewalkele ESA

Scientific Name:	<i>Duttaphrynus scaber</i>	 © IUCN/Sandun N. Bandara
English Name:	Schneider's toad	
Sinhala Name:	Schneidage Gemba	
Phylum:	Chordata	
Class:	Amphibia	
Order:	Anura	
Family:	Bufonidae	
Genus:	<i>Duttaphrynus</i>	
Conservation Status:	VU	

A note on the species: *Duttaphrynus scaber* is a widespread and common toad in Sri Lanka that inhabits areas up to elevations of about 300 m asl. It is a terrestrial species that occurs in various habitats: wet evergreen tropical forest, tropical dry forest, dry scrubland, grassland, coastal marshes, and rural farmland areas. Adult toads are generally found under groundcover, except during the breeding season when they are found in grasslands close to waterbodies. The tadpoles develop in stagnant waters. *Duttaphrynus scaber* is seriously threatened by habitat loss caused by deforestation, pollution, and urbanization.

Scientific Name:	<i>Hydrophylax gracilis</i> *	 © IUCN/Sandun N. Bandara
English Name:	Sri Lanka wood frog	
Sinhala Name:	Lanka Diya Madiya	
Phylum:	Chordata	
Class:	Amphibia	
Order:	Anura	
Family:	Ranidae	
Genus:	<i>Hydrophylax</i>	
Conservation Status:	VU	

A note on the species: *Hydrophylax gracilis* is an endemic species to Sri Lanka and occurs in marshes, agricultural land, reservoirs, streams, grasslands, and bush forests at elevations below 600 m. It is a semi-arboreal and semi-aquatic species, which breeds in stagnant water.

3.6. Endemic and Threatened Reptile Species Recorded in the Wewalkele ESA

Scientific Name:	<i>Eutropis madaraszi</i> *
English Name:	Sri Lanka bronze mabuya
Sinhala Name:	Pulli Hikanala
Phylum:	Chordata
Class:	Reptilia
Order:	Squamata
Family:	Scincidae
Genus:	<i>Eutropis</i>
Conservation Status:	VU



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A note on the species: *Eutropis madaraszi* is endemic to the island with a distribution range up to 800 m msl. It inhabits rock crevices, under leaf litter or under logs and can be seen basking in open areas.

Scientific Name:	<i>Eutropis madaraszi</i> *
English Name:	Kandyan gecko
Sinhala Name:	Halige Huna
Phylum:	Chordata
Class:	Reptilia
Order:	Squamata
Family:	Gekkonidae
Genus:	<i>Hemidactylus</i>
Conservation Status:	LC



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A note on the species: *Hemidactylus depressus* is a widespread species endemic to Sri Lanka. It is mainly an arboreal species from the plains, found on trees, boulders and caves and sometimes may enter houses. Its diet comprises of insects. It is known to lay two eggs at a time in rock crevices or tree holes.

Scientific Name:	<i>Lissemys ceylonensis</i> *
English Name:	Sri Lankan flapshell turtle
Sinhala Name:	Kiri ibba
Phylum:	Chordata
Class:	Reptilia
Order:	Testudines
Suborder:	Cryptodira
Family:	Trionychidae
Genus:	<i>Lissemys</i>
Conservation Status:	LC



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A note on the species: *Lissemys ceylonensis* is a freshwater species of turtle endemic to Sri Lanka. It is distributed in the wet zone as well as the dry zone and is associated with rivers, wetlands, streams and reservoirs. The back shell is a leathery structure, unlike that of hard-shell tortoises.

Scientific Name:	<i>Fowlea asperimus*</i>
English Name:	Sri Lankan keelback
Sinhala Name:	Diya bariya
Phylum:	Chordata
Class:	Reptilia
Order:	Squamata
Suborder:	Serpentes
Family:	Colubridae
Genus:	<i>Fowlea</i>
Conservation Status:	LC



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A note on the species: *Fowlea asperimus* is a nonvenomous and common water snake endemic to Sri Lanka and is spread across the dry zone. It can be seen both day and night. Furthermore, it is generally active in water bodies in search of prey, which consists mainly of fish and frogs. It is known to be very aggressive and bites savagely when caught.

Scientific Name:	<i>Eutropis tammanna*</i>
English Name:	Tammanna skink
Sinhala Name:	Tammanna hikanala
Phylum:	Chordata
Class:	Reptilia
Order:	Squamata
Family:	Scincidae
Genus:	<i>Eutropis</i>
Conservation Status:	LC

A note on the species: *Eutropis tammanna* is a species of skink endemic to Sri Lanka. It is a terrestrial skink from the dry and arid regions of the island. The dorsum is medium brown, and the lips are bright orange in males and yellow in females. It prefers dry leaf litter.

3.7. Endemic and Threatened Bird Species Recorded in the Wewalkele ESA

Scientific Name:	<i>Ocyrceros gingalensis*</i>
English Name:	Sri Lanka grey hornbill
Sinhala Name:	Alu kandaththa
Phylum:	Chordata
Class:	Aves
Order:	Bucerotiformes
Family:	Bucerotidae
Genus:	<i>Ocyrceros</i>
Conservation Status:	LC



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A note on the species: The Sri Lanka grey hornbill is a widespread and common endemic resident breeder in Sri Lanka. It is a large bird, approximate 45 cm in length. It has grey wings with black primary flight feathers, a grey back, and a brown crown. Sexes are similar, although the male has a cream-coloured bill, whereas the female's is black with a cream stripe. The female lays up to four white eggs in a tree hole. These birds usually live in pairs or small flocks. They are

omnivores observed consuming berries, fruits, insects, and small lizards. It generally feeds mostly on figs and occasionally on small rodents, reptiles, and insects.

Scientific Name:	<i>Tephrodornis affinis</i> *
English Name:	Sri Lanka Woodshrike
Sinhala Name:	Sri Lanka Wana Saratiththa
Phylum:	Chordata
Class:	Aves
Order:	Passeriformes
Family:	Vangidae
Genus:	Tephrodornis
Conservation Status:	LC

A note on the species: The Sri Lanka wood shrike is endemic to Sri Lanka. It is sometimes considered a subspecies of the common wood shrike. It is dully ashy brown in colour and like other wood shrikes, has a large head with a strong hooked beak. Usually found in pairs, it feeds mainly on insects.

Scientific Name:	<i>Treron pompadora</i> *
English Name:	Sri Lanka green-pigeon
Sinhala Name:	Sri Lanka Batagoya
Phylum:	Chordata
Class:	Aves
Order:	Columbiformes
Family:	Columbidae
Genus:	<i>Treron</i>
Conservation Status:	LC



A note on the species: The Sri Lanka green pigeon is endemic to the island and usually occurs singly or in small groups. Its flight is fast and direct, with regular beats. It feeds on seeds and fruits of a wide variety of plants and builds a stick nest in a tree and lays two white eggs.

Scientific Name:	<i>Cecropis hyperythra</i> *
English Name:	Sri Lanka swallow
Sinhala Name:	Sri Lanka Wahilihiniya
Phylum:	Chordata
Class:	Aves
Order:	Passeriformes
Family:	Hirundinidae
Genus:	<i>Cecropis</i>
Conservation Status:	LC

A note on the species: The Sri Lanka swallow is a large swallow. It is a resident breeder endemic to Sri Lanka. Closely related to the red-rumped swallow, it was formerly considered a subspecies.

Scientific Name:	<i>Gallus lafayetii</i> *
English Name:	Sri Lanka junglefowl
Sinhala Name:	Wali kukula
Phylum:	Chordata
Class:	Aves
Order:	Galliformes
Family:	Phasianidae
Genus:	<i>Gallus</i>
Conservation Status:	LC



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A note on the species: The Sri Lankan junglefowl is a member of the Galliformes bird order, which is endemic to the island. It is the national bird of Sri Lanka. The junglefowl is strongly sexually dimorphic; the male is much larger than the female, with more vivid plumage and a highly exaggerated wattle. The junglefowl is primarily terrestrial and spends most of its time foraging for food by scratching the ground for various seeds, fallen fruit and insects. It is common in forests and scrublands.

3.8. Endemic and Threatened Mammal Species Recorded in the Wewalkele ESA

Scientific Name:	<i>Elephas maximus</i>
English Name:	Asian elephant
Sinhala Name:	Asianu aliya
Phylum:	Chordata
Class:	Mammalia
Order:	Proboscidea
Family:	Elephantidae
Genus:	<i>Elephas</i>
Conservation Status:	EN



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A note on the species: The Asian elephant is the single species in the genus *Elephas*. The current population has declined to almost half, during the last 50 years. It is primarily threatened by loss of habitat, habitat degradation, fragmentation, and poaching. Elephants are classified as mega herbivores and consume up to 150 kg of plant matter per day. Sixty-five percent (65%) of the elephant's range extends outside protected areas.

Scientific Name:	<i>Lutra lutra</i>
English Name:	Eurasian otter
Sinhala Name:	Diyaballa
Phylum:	Chordata
Class:	Mammalia
Order:	Carnivora
Family:	Mustelidae
Subfamily:	Lutrinae
Genus:	<i>Lutra</i>
Conservation Status:	VU



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A note on the species: The Eurasian otter (*Lutra lutra*) is a semiaquatic mammal native to Eurasia. This is the most widely distributed member of the otter subfamily (Lutrinae). The Eurasian otter has a diet mainly of fish and is strongly territorial. In general, their varied and adaptable diets enable them to inhabit any unpolluted body of fresh water, including lakes, streams, rivers, canals and ponds. A fairly good population can be encountered in the urban wetlands associated in Colombo.

Scientific Name:	<i>Panthera pardus</i>	 © IUCN/Sampath de A Goonatilake
English Name:	Sri Lankan leopard	
Sinhala Name:	Diviya	
Phylum:	Chordata	
Class:	Mammalia	
Order:	Carnivora	
Family:	Felidae	
Genus:	<i>Panthera</i>	
Conservation Status:	EN	

A note on the species: The Sri Lankan leopard (*Panthera pardus kotiya*) is a subspecies native to Sri Lanka. The wild population is roughly estimated at 700–950 as of 2015. They are solitary hunters and the male maintains a large territory. Its diet includes small mammals, birds, reptiles as well as large mammals such as sambar, wild boar and spotted deer. The survival of the Sri Lankan Leopard is threatened due to habitat loss and fragmentation, primarily with some levels of direct and indirect poaching.

Scientific Name:	<i>Prionailurus viverrinus</i>	
English Name:	Fishing cat	
Sinhala Name:	Handun diviya	
Phylum:	Chordata	
Class:	Mammalia	
Order:	Carnivora	
Family:	Felidae	
Genus:	<i>Prionailurus</i>	
Conservation Status:	EN	

A note on the species: Fishing cat (*Prionailurus viverrinus*) is a medium-sized wild cat living foremost in the vicinity of aquatic habitats such as wetlands, along rivers, streams, and mangroves. It is primarily nocturnal and an expert swimmer. It is threatened by the destruction of aquatic habitats including wetlands, which are increasingly being polluted and converted for agricultural use and human settlements.

Scientific Name:	<i>Macaca sinica</i> *	 © IUCN/Sandun N. Bandara
English Name:	Toque macaque	
Sinhala Name:	Rilawa	
Phylum:	Chordata	
Class:	Mammalia	
Order:	Primates	
Family:	Cercopithecidae	
Genus:	<i>Macaca</i>	
Conservation Status:	LC	

A note on the species: Toque macaque (*Macaca sinica*) is an old-world monkey endemic to Sri Lanka. Three sub species have been described and are spread in the dry zone, wet zone, and highland of Sri Lanka. The most interesting feature is the different orientation of the hair patterns among these three sub species.

Scientific Name:	<i>Moschiola meminna</i> *	
English Name:	Sri Lankan spotted chevrotain	
Sinhala Name:	Meeminna	
Phylum:	Chordata	
Class:	Mammalia	
Order:	Artiodactyla	
Family:	Tragulidae	
Genus:	<i>Moschiola</i>	
Conservation Status:	LC	
A note on the species: <i>Moschiola meminna</i> is endemic to the dry zone of Sri Lanka. It is dull brown in color with three or four dotted white stripes going longitudinally along its flank. Head and body length of the species is 55–60 cm. It is cryptic and mostly nocturnal. It prefers scrub and shaded forests.		

Chapter 4: Significance of the Wewalkele ESA

The Wewalkele ESA is situated in a suburb area that includes village clusters and is fragmented due to the prevailing road network. Therefore, this ESA is a critical area in both ecological and socio-economical aspects. People collect *Calamus* for minor handicraft products that provides economic gains and a livelihood. Wewalkele also has a tourism potential associated with the Nelum Wewa and other natural area. There is a possibility to promote this area among bird waters, as both resident and migrant bird species can be encountered within the lake habitats. Adding importance to the biodiversity, this ESA comprises of a high ecological value and an educational importance. The Nelum Wewa and other tributaries in the ESA increases the water retention of the area. The water retention capacity of the ESA also supports the water security and requirement for agricultural crops, including commercial plantations such as coconuts.

The land encroachment is a major threat in the ESA. Coconut plantations and other crop lands are expanding and invading key forest habitats. Forest clearance was also observed for chena cultivation and the collection of essential timber products (e.g. firewood). Several invasive plants were observed in the marsh environment, viz. *Chromolaena odorata* and *Leucaena leucocephala*. These invasive plants are still in the primary stage and patch-wise distribution is evident. Hence, management options are still feasible to terminate further invasion. Integrated land use planning with civil society participation to obtain maximum benefits for nature and people will ensure the long-term conservation of the ESA.

Wewalkele is home for several important animal species such as the *Labeo lankae*, *Panthera pardus*, *Prionailurus viverrinus*, *Elephas maximus* and *Lutra lutra*. The land encroachment for plantations and other agricultural purposes could be the biggest threat for the survival of these threatened species. Encroachment of natural habitats would trigger an increase in human-wildlife conflicts. Some unique habitat types such as marsh and riverine habitats are important for fishing cats. Therefore, the protection of habitats is essential to ensure the long-term survival of these uncommon species. Poaching is not a prominent issue in Wewalkele, however with rapid social interaction, it could be assumed that poaching might be persistent in the area.

The lack of proper studies on biodiversity has created a significant information gap, which has led to the ecological value of the area been underestimated. Therefore, scientific studies are recommended on natural resources of the entire area to protect and conserve for the future.

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Annexures

Annex 1: Checklist of identified plant species in the Wewalkele ESA

	Family	Species	Local Name	SPS	NRL	GRL
1	Acanthaceae	<i>Dyschoriste erecta</i>		IND	LC	
2	Acanthaceae	<i>Hygrophila schulli</i>	Katu Ikiriya, Neeramulliya, Ekiriya	IND	LC	
3	Acanthaceae	<i>Justicia diffusa</i>		IND	LC	
4	Acanthaceae	<i>Justicia procumbens</i>	Mayani, Maha Nai	IND	LC	
5	Amaranthaceae	<i>Achyranthes aspera</i>	Karal Haba, Gas-Karalheba	IND	LC	
6	Amaranthaceae	<i>Alternanthera paronychiodes</i>		EXO	NE	
7	Amaranthaceae	<i>Alternanthera philoxeroides</i>	Kimbulwenna	EXO	NE	
8	Amaranthaceae	<i>Alternanthera sessilis</i>	Mukunuwenna	IND	LC	LC
9	Apiaceae	<i>Centella asiatica</i>	Gotukola, Hin-Gotukola	IND	LC	
10	Apocynaceae	<i>Carissa spinarum</i>	Heen-Karamba, Karamba	IND	LC	
11	Araceae	<i>Colocasia esculenta</i>	Gahala	IND	LC	LC
12	Araceae	<i>Pistia stratiotis</i>	Diya-Paradel	IND	LC	
13	Arecaceae	<i>Areca catechu</i>	Puwak	EXO	NE	
14	Arecaceae	<i>Calamus rotang</i>	Polonnaru Wewel, Heen We Wel	IND	NT	
15	Arecaceae	<i>Cocos nucifera</i>	Pol , Thembili	EXO	NE	
16	Arecaceae	<i>Phonix pusilla</i>	Indi , Wal Indi	IND	LC	
17	Asteraceae	<i>Chromolaena odorata</i>	Podi Singno Maran, Lekkannattan	EXO	NE	
18	Asteraceae	<i>Epaltes divaricata</i>	Heen Mudu Mahana	IND	LC	
19	Asteraceae	<i>Mikania cordata</i>	Gam Palu, Kehel Palu, Lokapalu	EXO	NE	
20	Asteraceae	<i>Sphaeranthus africanus</i>	Wel-Mudda	IND	LC	
21	Asteraceae	<i>Xanthium indicum</i>	Wal-Rambutang, Uru-Kossa, Awadi	IND	LC	
22	Boraginaceae	<i>Cordia monoica</i>	Lolu	IND	LC	

	Family	Species	Local Name	SPS	NRL	GRL
23	Boraginaceae	<i>Heliotropium indicum</i>	Dimi-Biya, Et-Honda, Et-Setiya	IND	LC	
24	Boraginaceae	<i>Rotula aquatica</i>		IND	DD	
25	Celastraceae	<i>Salacia chinensis</i>	Heen-Himbutu-Wel, Himbutu	IND	NT	
26	Cleomaceae	<i>Cleome viscosa</i>	Wal-Aba, Ran-Manissa	IND	LC	
27	Combretaceae	<i>Terminalia arjuna</i>	Kumbuk, Kumbalu	IND	LC	
28	Commelinaceae	<i>Commelina clavata</i>	Gira-Pala	IND	VU	LC
29	Commelinaceae	<i>Commelina diffusa</i>	Gira-Pala, Tanapala	IND	LC	LC
30	Commelinaceae	<i>Commelina ensifolia</i>		IND	LC	
31	Commelinaceae	<i>Cyanotis axillaris</i>		IND	LC	LC
32	Connvolvulaceae	<i>Ipomoea aquatica</i>	Kankun	IND	LC	
33	Cucurbitaceae	<i>Diplocyclos palmatus</i>	Pasengilla	IND	LC	
34	Cyperaceae	<i>Bulbostylis barbata</i>	Uru Hiri	IND	LC	
35	Cyperaceae	<i>Cyperus compactus</i>		IND	EN	
36	Cyperaceae	<i>Cyperus compressus</i>		IND	LC	
37	Cyperaceae	<i>Cyperus difformis</i>		IND	LC	LC
38	Cyperaceae	<i>Cyperus exaltatus</i>		IND	LC	
39	Cyperaceae	<i>Cyperus javanicus</i>	Ramba	IND	LC	
40	Cyperaceae	<i>Cyperus pilosus</i>		IND	LC	LC
41	Cyperaceae	<i>Cyperus rotundus</i>	Kaladuru	IND	LC	LC
42	Cyperaceae	<i>Cyperus tenuispica</i>		IND	LC	LC
43	Cyperaceae	<i>Eleocharis actangula</i>		IND	LC	
44	Cyperaceae	<i>Eleocharis congesta</i>		IND	NT	
45	Cyperaceae	<i>Fimbristylis cinnamometorum</i>		IND	LC	
46	Cyperaceae	<i>Fimbristylis pubisquama</i>		IND	LC	
47	Cyperaceae	<i>Fimbristylis triflora</i>		IND	LC	
48	Cyperaceae	<i>Fuirena umbellata</i>	Palu Thana	IND	LC	LC

	Family	Species	Local Name	SPS	NRL	GRL
49	Cyperaceae	<i>Cyperus cyperinus</i>		IND	LC	
50	Ebenaceae	<i>Diospyros malabarica</i>	Thimbiri	IND	LC	
51	Ebenaceae	<i>Diospyros ovalifolia</i>	Habara, Kunumella	IND	LC	
52	Ebenaceae	<i>Diospyros vera</i>	Thurana, Pila, Kaluhabaraliya, Jabara	IND	LC	
53	Eriocaulaceae	<i>Eriocaulon quinquangulare</i>	Heen Kokmota	IND	LC	
54	Euphorbiaceae	<i>Croton bonplandianus</i>		EXO	NE	
55	Euphorbiaceae	<i>Croton caudatus</i>	Wel-Keppetiya	IND	EN	
56	Euphorbiaceae	<i>Euphorbia indica</i>	Ela-Dada-Kiriya	IND	LC	
57	Euphorbiaceae	<i>Excoecaria agallocha</i>	Tela Kiriya, Thela	IND	LC	LC
58	Fabaceae	<i>Acacia nilotica</i>	Awusi Wel / Kara Vel / Babbula	EXO	NE	
59	Fabaceae	<i>Derris scandens</i>	Kala-Wel, Ala-Wel, Bo-Kala-Wel	IND	LC	
60	Fabaceae	<i>Desmodium triflorum</i>	Heen-Undupiyaliya	IND	LC	
61	Fabaceae	<i>Leucaena leucocephala</i>	Ipil-Ipil	EXO	NE	
62	Fabaceae	<i>Senna auriculata</i>	Ranawara	IND	VU	
63	Flagellariaceae	<i>Flagellaris indica</i>	Goyi-Wel, Goiwel	IND	LC	
64	Haloragaceae	<i>Myriophyllum aquaticum</i>	Gira Pihatu	EXO	NE	
65	Hydrocharitaceae	<i>Najas indica</i>		IND	NE	
66	Hypoxidaceae	<i>Curculigo orchioides</i>	Bim Thal, Heen-Bin-Tal, Sudu-Kela	IND	LC	
67	Lamiaceae	<i>Clerodendrum inerme</i>	Burende, Gulinda	IND	LC	
68	Lythraceae	<i>Ammannia baccifera</i>		IND	LC	LC
69	Malvaceae	<i>Abutolon hirtum</i>		IND	LC	
70	Malvaceae	<i>Abutolon pannosum</i>		IND	LC	
71	Malvaceae	<i>Berrya coridifolia</i>	Halmilla	IND	LC	
72	Malvaceae	<i>Grewia orientalis</i>	Wel-Keliya, Wel-Mediya	IND	LC	
73	Malvaceae	<i>Pavonia odorata</i>	Suwanda Bebila	IND	LC	
74	Meliaceae	<i>Walsura trifoliolata</i>	Kirikon, Malpetta	IND	LC	

	Family	Species	Local Name	SPS	NRL	GRL
75	Muscaceae	<i>Musa x paradisaca</i>	Kehel	EXO	NE	
76	Myrtaceae	<i>Syzygium cumini</i>	Ma-Dan, Dan	IND	LC	
77	Olacaceae	<i>Olax imbricata</i>	Telatiya	IND	NT	
78	Onagraceae	<i>Ludwigia adscendens</i>	Beru-Diyanilla	IND	LC	
79	Onagraceae	<i>Ludwigia hyssopifolia</i>		IND	LC	LC
80	Passifloraceae	<i>Passiflora suberosa</i>	Thintha	EXO	NE	
81	Phyllanthaceae	<i>Flueggea leucopyrus</i>	Heen Katu Pila, Hen Katu Pila	IND	LC	
82	Picrodendraceae	<i>Mischodon zeylanicus</i>	Thammanna, Tammanna	IND	LC	
83	Plantaginaceae	<i>Bacopa monnieri</i>	Lunuwila	IND	LC	LC
84	Plantaginaceae	<i>Limnophila indica</i>		IND	LC	LC
85	Poaceae	<i>Chloris barbata</i>	Mayuru-Tana	EXO	NE	
86	Poaceae	<i>Chrysopogon aciculatus</i>	Tuttiri	IND	LC	
87	Poaceae	<i>Cynodon dactylon</i>	E Thana / Ruha	IND	LC	
88	Poaceae	<i>Digitaria longiflora</i>		IND	LC	
89	Poaceae	<i>Echinochloa colona</i>	Giri-Tana	IND	LC	
90	Poaceae	<i>Echinochloa crusgalli</i>	Maratu, Wel-Marukk	IND	LC	
91	Poaceae	<i>Eragrostis amabilis</i>	Heen Ala Balal Tana	IND	LC	
92	Poaceae	<i>Eragrostis ciliaris</i>		IND	LC	
93	Poaceae	<i>Eragrostis riparia</i>		IND	LC	
94	Poaceae	<i>Eragrostis unioides</i>		IND	LC	
95	Poaceae	<i>Eriochloa procera</i>		IND	LC	
96	Poaceae	<i>Imperata cylindrica</i>	Iluk	IND	LC	
97	Poaceae	<i>Ischaemum barbatum</i>		IND	LC	
98	Poaceae	<i>Leersia hexandra</i>	Layu, Lev	IND	LC	
99	Poaceae	<i>Panicum repens</i>	Etora	IND	LC	
100	Poaceae	<i>Panicum sumatrense</i>	Heen-Meneri	EXO	NE	

	Family	Species	Local Name	SPS	NRL	GRL
101	Poaceae	<i>Paspalum scrobiculatum</i>	Amu	IND	LC	
102	Poaceae	<i>Sacciolepis interrupta</i>		IND	LC	
103	Poaceae	<i>Sporobolus coromandelianus</i>		IND	LC	
104	Poaceae	<i>Sporobolus diander</i>		IND	LC	
105	Poaceae	<i>Sporobolus virginicus</i>	Mudu-Etora	IND	LC	
106	Poaceae	<i>Stenotaphrum dimidiatum</i>		IND	LC	
107	Poaceae	<i>Urochloa setigera</i>		IND	LC	
108	Poaceae	<i>Zoysia matrella</i>		IND	LC	
109	Pontederiaceae	<i>Monochoria vaginalis</i>	Diya-Habarala, Jabara	IND	LC	LC
110	Potamogetonaceae	<i>Potamogeton octandrus</i>		IND	NE	
111	Pteridaceae	<i>Acrostichum aureum</i>		IND	LC	
112	Rhamnaceae	<i>Scutia myrtina</i>		IND	LC	
113	Rhamnaceae	<i>Zizyphus oenopila</i>	Hin-Eraminia	IND	LC	
114	Rubiaceae	<i>Tarenna asiatica</i>	Tarana, Maha Tarana	IND	LC	
115	Rutaceae	<i>Limonia acidissima</i>	Divul	IND	LC	
116	Salvadoraceae	<i>Azima tetraantha</i>	Wel Dehi, Katu Niyanda	IND	LC	
117	Sapindaceae	<i>Lepisanthes tetraphylla</i>*		END	LC	
118	Sapotaceae	<i>Manilkara hexandra</i>	Palu	IND	VU	
119	Solanaceae	<i>Solanum trilobatum</i>	Wal-Tibbatu	IND	LC	
120	Tamaricaceae	<i>Tamarix indica</i>	Kiri	IND	LC	
121	Typhaceae	<i>Typha agustifolia</i>	Hambu-Pan	IND	LC	LC
122	Urticaceae	<i>Laportea interrupta</i>	Wal-Kahambiliya, Watu-Kahambiliya	IND	LC	
123	Verbenaceae	<i>Phyla nodiflora</i>		IND	LC	
124	Verbenaceae	<i>Stachytarpheta indica</i>	Balunakuta / Nil Nakuta	OQ	NE	
125	Vitaceae	<i>Cayratia trifolia</i>	Wal-Rat-Diyalabu	IND	LC	

Annex 2: Checklist of identified dragonfly and damselfly species in the Wewalkele ESA

	Family	Scientific Name	English Name	SpS	NRL
1	Lestidae	<i>Lestes elatus</i>	White-tipped Spreadwing	IND	LC
2	Coenagrionidae	<i>Agriocnemis pygmaea</i>	Wandering Wisp	IND	LC
3	Coenagrionidae	<i>Ceriagrion coromandelianum</i>	Yellow Waxtail	IND	LC
4	Coenagrionidae	<i>Paracercion malayanum</i>	Malay lilysquater	IND	LC
5	Coenagrionidae	<i>Ischnura senegalensis</i>	Common Bluetail	IND	LC
6	Coenagrionidae	<i>Pseudagrion malabaricum</i>	Malabar Sprite	IND	LC
7	Coenagrionidae	<i>Pseudagrion microcephalum</i>	Blue Sprite	IND	LC
8	Coenagrionidae	<i>Pseudagrion rubriceps</i>	Red-headed Sprite	IND	LC
9	Platycnemididae	<i>Prodasineura sita</i>*	Stripe-headed Threadtail	END	LC
10	Platycnemididae	<i>Copera marginipes</i>	Yellow Featherleg	IND	LC
11	Aeshnidae	<i>Anax indicus</i>	Elephant Emperor	IND	LC
12	Gomphidae	<i>Ictinogomphus rapax</i>	Rapacious Flangetail	IND	LC
13	Libellulidae	<i>Orthetrum luzonicum</i>	Marsh Skimmer	IND	NT
14	Libellulidae	<i>Orthetrum sabina</i>	Green Skimmer	IND	LC
15	Libellulidae	<i>Potamarcha congener</i>	Blue Pursuer	IND	LC
16	Libellulidae	<i>Brachythemis contaminata</i>	Asian Groundling	IND	LC
17	Libellulidae	<i>Diplacodes trivialis</i>	Blue Percher	IND	LC
18	Libellulidae	<i>Indothemis carnatica</i>	Light tipped Demon	IND	NT
19	Libellulidae	<i>Neurothemis intermedia</i>	Paddyfield Paraspl	IND	NT
20	Libellulidae	<i>Rhyothemis variegata</i>	Varigated Flutter	IND	LC
21	Libellulidae	<i>Pantala flavescens</i>	Wandering Glider	IND	LC
22	Libellulidae	<i>Tholymis tillarga</i>	Foggy-winged Twister	IND	LC
23	Libellulidae	<i>Brachydiplax sobrina</i>	Sombre Lieutenant	IND	LC
24	Libellulidae	<i>Crocothemis servilia</i>	Oriental Scarlet	IND	LC
25	Libellulidae	<i>Neurothemis tullia</i>	Pied Parasol	IND	LC
26	Libellulidae	<i>Rhodothemis rufa</i>	Spine legged Redbolt	IND	NT
27	Libellulidae	<i>Trithemis aurora</i>	Crimson Dropwing	IND	LC
28	Libellulidae	<i>Tramea limbata</i>	Sociable Glider	IND	LC

Annex 3: Checklist of identified butterfly species in Wewalkele ESA

	Family	Scientific Name	English Name	Sinhala Name	SpS	NRL
1	Papilionidae	<i>Graphium agamemnon</i>	Green Jay / Tailed Jay	Kola Papilia	IND	LC
2	Papilionidae	<i>Pachliopta aristolochiae</i>	Common Rose	Podu Rosa Papilia	IND	LC
3	Papilionidae	<i>Pachliopta hector</i>	Crimson Rose	Maha Rosa Papilia	IND	LC
4	Papilionidae	<i>Papilio crino</i>	Banded Peacock	Monara Papilia	IND	VU
5	Papilionidae	<i>Papilio demoleus</i>	Lime Butterfly	Kaha Papilia	IND	LC
6	Papilionidae	<i>Papilio polymnestor</i>	Blue Mormon	Maha Nilaya	IND	LC
7	Papilionidae	<i>Papilio polytes</i>	Common Mormon	Kalu Papilia	IND	LC
8	Pieridae	<i>Catopsilia pomona</i>	Lemon Emigrant	Kaha Piyasariya	IND	LC
9	Pieridae	<i>Catopsilia pyranthe</i>	Mottled Emigrant / African Emigrant	Thith-Piya Piyasariya	IND	LC
10	Pieridae	<i>Cepora nerissa</i>	Common Gull	Podu Punduru-Sudana	IND	LC
11	Pieridae	<i>Colotis amata</i>	Small Salmon Arab	Punchi Rosa Sudana	IND	LC
12	Pieridae	<i>Delias eucharis</i>	Jezebel	Podu Maha-Sudda	IND	LC
13	Pieridae	<i>Eurema hecabe</i>	Common Grass Yellow	Maha Kahakolaya	IND	LC
14	Pieridae	<i>Hebomoia glaucippe</i>	Great Orange Tip / Giant Orange Tip	Yoda Sudana	IND	LC
15	Pieridae	<i>Ixias marianne</i>	White Orange Tip	Sudu Maha Sudana	IND	LC
16	Pieridae	<i>Leptosia nina</i>	Psyche	Kalu-Thith Sudda	IND	LC
17	Pieridae	<i>Appias galane</i>*	Sri Lanka Albatross	Kuda Sudana	END	LC
18	Pieridae	<i>Pareronia ceylanica</i>	Blue Wanderer / Dark Wanderer	Anduru Nil Piyasariya	IND	LC
19	Nymphalidae	<i>Acraea violae</i>	Tawny Costor	Thambily Panduru-Boraluwa	IND	LC
20	Nymphalidae	<i>Ariadne ariadne</i>	Angled Castor	Ruthu Pathan-Sariya	IND	LC
21	Nymphalidae	<i>Danaus chrysippus</i>	Plain Tiger	Podu Koti-Thambiliya	IND	LC
22	Nymphalidae	<i>Danaus genutia</i>	Common Tiger	Iri Koti-Thambiliya	IND	LC
23	Nymphalidae	<i>Elymnias hypermnestra</i>	Common Palmfly	Podu Thal-Dumburuwa	IND	LC
24	Nymphalidae	<i>Euploea core</i>	Common Crow	Podu Kaka-Kotithiyaya	IND	LC
25	Nymphalidae	<i>Euthalia aconthea</i>	Baron	Achchilaya	IND	LC

	Family	Scientific Name	English Name	Sinhala Name	SpS	NRL
26	Nymphalidae	<i>Hypolimnas bolina</i>	Great Eggfly	Maha Alankarikya	IND	LC
27	Nymphalidae	<i>Hypolimnas misippus</i>	Danaid Eggfly	Kela Alankarikya	IND	LC
28	Nymphalidae	<i>Junonia almana</i>	Peacock Pansy	Monera Alankarikya	IND	LC
29	Nymphalidae	<i>Junonia atlites</i>	Grey Pansy	Aluwan Alankarikya	IND	LC
30	Pieridae	<i>Colotis etrida</i>	Little Orange Tip	Heen Sudana	IND	NT
31	Nymphalidae	<i>Junonia iphita</i>	Chocolate Soldier	Podu Alankarikya	IND	LC
32	Nymphalidae	<i>Junonia lemonias</i>	Lemon Pansy	Dumburuwan Alankarikya	IND	LC
33	Nymphalidae	<i>Mycalesis perseus</i>	Common Bushbrown	Podu Panduru-Dumburuwa	IND	LC
34	Nymphalidae	<i>Neptis hylas</i>	Common Sailor	Gomara Selaruwa	IND	LC
35	Nymphalidae	<i>Neptis jumbah</i>	Chestnut-Streaked Sailor	Thambala-Iri Selaruwa	IND	LC
36	Nymphalidae	<i>Parantica aglea</i>	Glassy Tiger	Suduwan Nil-Kotithiya	IND	LC
37	Nymphalidae	<i>Phalantha phantha</i>	Leopard	Podu Thith-Thambiliya	IND	LC
38	Nymphalidae	<i>Tirumala limniace</i>	Blue Tiger	Podu Nil-Kotithiya	IND	LC
39	Nymphalidae	<i>Ypthima ceylonica</i>	White Four-Ring	Podu Heen-Dumburuwa	IND	LC
40	Lycaenidae	<i>Amblypodia anita</i>	Purple Leafblue	Dam Gas-Nilaya	IND	NT
41	Lycaenidae	<i>Azanus jesous</i>	African Babul Blue	Apricanu Neelaya	IND	LC
42	Lycaenidae	<i>Catochrysops strabo</i>	Forger-Me-Not	Kela Mal-Nilaya	IND	LC
43	Lycaenidae	<i>Chilades lajus</i>	Lime Blue	Podu Panu-Nilaya	IND	LC
44	Lycaenidae	<i>Chilades pandava</i>	Plains Cupid	Lanka Panu-Nilaya	IND	LC
45	Lycaenidae	<i>Chilades putli</i>	Grass Jewel	Ran Thruna-Nilaya	IND	LC
46	Lycaenidae	<i>Curetis thetis</i>	Indian Sunbeam	Maha Hiru-Nilaya	IND	LC
47	Lycaenidae	<i>Jamides celeno</i>	Common Cerulean	Podu Seru-Nilaya	IND	LC
48	Lycaenidae	<i>Leptotes plinius</i>	Zebra Blue	Raja Iri-Neelaya	IND	LC
49	Nymphalidae	<i>Byblia ilithyia</i>	Joker	Kawataya	IND	VU
50	Lycaenidae	<i>Rathinda amor</i>	Monkey-Puzzle	Visituru Vanduru Nilaya	IND	LC
51	Lycaenidae	<i>Spindasis ictis</i>	Ceylon Silverline	Lanka Ridee-Nilaya	IND	LC

	Family	Scientific Name	English Name	Sinhala Name	SpS	NRL
52	Lycaenidae	<i>Tajuria cippus</i>	Peacock Royal	Monara Raja-Nilaya	IND	LC
53	Lycaenidae	<i>Virachola isocrates</i>	Common Guava Blue	Podu Pera-Nilaya	IND	LC
54	Lycaenidae	<i>Zizina otis</i>	Lesser Grass Blue	Podu Thruna-Nilaya	IND	LC
55	Lycaenidae	<i>Zizula hylax</i>	Tiny Grass Blue	Punchi Thruna-Nilaya	IND	LC
56	Hesperiidae	<i>Suastus gremius</i>	Indian Palm Bob	Indu Talagobaya	IND	LC
57	Lycaenidae	<i>Anthene lycaenina</i>	Pointed Ciliate Blue	UI Kirana-Nilaya	IND	LC
58	Lycaenidae	<i>Euchrysops cnejus</i>	Gram Blue	Maha Panu-Nilaya	IND	LC
59	Lycaenidae	<i>Zizeeria karsandra</i>	Dark Grass Blue	Anduruwan Thruna-Nilaya	IND	LC
60	Hesperiidae	<i>Ampittia dioscorides</i>	Bush Hopper	Paduru-Pimma	IND	LC

Annex 4: Checklist of identified fish species in the Wewalkale ESA

	Family	Scientific Name	English Name	Sinhala Name	SpS	NRL	GRL
1	Adrianichthyidae	<i>Oryzias dancena</i>	Spotted Ricefish	Tit Handaya	NAT	DD	LC
2	Aplocheilidae	<i>Aplocheilus parvus</i>	Dwarf Panchax	Kalapu Handeya	NAT	LC	LC
3	Channidae	<i>Channa kelaartii</i>	Brown Snakehead	Paradel Kanaya	NAT	NT	NT
4	Channidae	<i>Channa striata</i>	Murrel	Loola	NAT	LC	LC
5	Cichlidae	<i>Etilopius suratensis</i>	Green Chromide	Koraliya	NAT	LC	LC
6	Cobitidae	<i>Lepidocephalichthys thermalis</i>	Common Spiny Loach	Wairan Ahirawa	NAT	LC	LC
7	Cyprinidae	<i>Dawkinsia filamentosa</i>	Filamented Barb	Dankola Petiya	NAT	LC	LC
8	Cyprinidae	<i>Labeo lankae</i>*	Orange-Fin Labeo	Tambalaya	END	EN	EN
9	Cyprinidae	<i>Puntius bimaculatus</i>	Redside Barb	Ipili-Kadaya	NAT	LC	LC
10	Cyprinidae	<i>Puntius thermalis</i>*	Swamp Barb	Kota Petiya	END	LC	LC
11	Cyprinidae	<i>Rasbora microcephalus</i>	Common Rasbora	Dandiya	NAT	LC	LC
12	Cyprinidae	<i>Systomus sarana</i>	Olive Barb	Mas Petiya	NAT	LC	LC

Annex 5: Checklist of identified amphibian species in the Wewalkela ESA

	Family	Scientific Name	English Name	Sinhala Name	SpS	NRL	GRL
1	Dicroglossidae	<i>Euphlyctis mudigere</i>	Skipper Frog	Utpatana Madiya	IND	LC	NE
2	Dicroglossidae	<i>Minervarya agricola</i>	Common Paddy Field Frog	Sulaba Vel Madiya	IND	LC	NE
3	Dicroglossidae	<i>Hoplobatrachus crassus</i>	Jerdon's Bull Frog	Jerdonge Hala Madiya	IND	LC	LC
4	Bufonidae	<i>Duttaphrynus scaber</i>	Ferguson's Toad	Fergusonge Gemba	IND	VU	LC
5	Rhacophoridae	<i>Polypedates maculatus</i>	Spotted Tree Frog	Pulli Gas Madiya	IND	LC	LC
6	Ranidae	<i>Hydrophylax gracilis</i>*	Sri Lanka Wood Frog	Lanka Bandi Madiya	END	LC	LC
7	Microhylidae	<i>Microhyla ornata</i>	Ornate Narrow Mouth Frog	Visituru Muwapatu Madiya	IND	LC	LC
8	Microhylidae	<i>Uperodon taprobanicus</i>	Common Bull Frog	Visituru Ratu Madiya	IND	LC	LC
9	Microhylidae	<i>Uperodon systoma</i>	Balloon Frog	Balun Madiya	IND	LC	LC
10	Dicroglossidae	<i>Euphlyctis hexadactylus</i>	Sixtoe Green Frog	Saeangili Pala Madiya	IND	LC	LC

Annex 6: Checklist of identified reptile species in the Wewalkale ESA

	Family	Scientific Name	English Name	Sinhala Name	SpS	NRL	GRL
1	Crocodylidae	<i>Crocodylus porosus</i>	Saltwater Crocodile / Estuarine Crocodile	Hala Kimbula	IND	NT	LR/cd
2	Bataguridae	<i>Melanochelys trijuga</i>	Parker's Black Turtle	Parkerge Gal Ibba	IND	LC	LR/cd
3	Trionychidae	<i>Lissemys ceylonensis</i> *	Flapshell Turtle	Kiri Ibba	END	LC	NE
4	Agamidae	<i>Calotes calotes</i>	Green Garden Lizard	Pala Katussa	IND	LC	LC
5	Agamidae	<i>Calotes versicolor</i>	Common Garden Lizard	Gara Katussa	IND	LC	NE
6	Gekkonidae	<i>Gehyra mutilata</i>	Four-Claw Gecko	Caturanguli Huna	IND	LC	NE
7	Gekkonidae	<i>Hemidactylus depressus</i> *	Kandyan Gecko	Hali Gehuna	END	LC	LC
8	Gekkonidae	<i>Hemidactylus frenatus</i>	Common House-Gecko	Sulaba Gehuna	IND	LC	LC
9	Gekkonidae	<i>Hemidactylus triedrus</i>	Termite Hill Gecko	Humbas Huna	IND	LC	NE
10	Gekkonidae	<i>Hemidactylus leschenaultii</i>	Bark Gecko / Sycamore Gecko	Kimbul Huna / Gas Huna	IND	LC	NE
11	Scincidae	<i>Eutropis madaraszi</i> *	Spotted Skink	Pulli Hikanala	END	VU	NE
12	Scincidae	<i>Eutropis tammanna</i> *	Tmmanna Skink	Tammanna Hikanala	END	LC	NE
13	Varanidae	<i>Varanus bengalensis</i>	Land Monitor	Talagoya	IND	LC	LC
14	Colubridae	<i>Ptyas mucosa</i>	Rat Snake	Gerandiya.	IND	LC	NE
15	Natricidae	<i>Fowlea asperimus</i> *	The Checkered Keelback	Diya Polonga / Diya Bariya	END	LC	NE

Annex 7: Checklist of identified bird species in the Wewalkele ESA

	Family	Scientific Name	English Name	Sinhala Name	SpS	NRL	GRL
1	Phasianidae	<i>Francolinus pondicerianus</i>	Grey Francolin	Alu Ussawatuva	BrR	NT	LC
2	Phasianidae	<i>Gallus lafayettii*</i>	Sri Lanka Junglefowl	Sri Lanka Vali-kukla	END	LC	LC
3	Phasianidae	<i>Pavo cristatus</i>	Indian Peafowl	Monora	BrR	LC	LC
4	Columbidae	<i>Columba livia</i>	Feral Pigeon	Podu Paraviya	BrR	LC	LC
5	Columbidae	<i>Ducula aenea</i>	Green Imperial-pigeon	Nil Mahagoya	BrR	LC	LC
6	Columbidae	<i>Spilopelia suratensis</i>	Western Spotted Dove	Alu Kobeiyya	BrR	LC	LC
7	Columbidae	<i>Treron bicinctus</i>	Orange-breasted Green-pigeon	Laya-ran Batagoya	BrR	LC	LC
8	Columbidae	<i>Treron pompadora*</i>	Sri Lanka Green-pigeon	Sri Lanka Batagoya	END	LC	LC
9	Picidae	<i>Dinopium benghalense</i>	Black-rumped Flameback	Kaha-ginipita Pili-karela	BrR	LC	LC
10	Megalaimidae	<i>Psilopogon zeylanicus</i>	Brown-headed Barbet	Polos Kottoruwa	BrR	LC	LC
11	Megalaimidae	<i>Psilopogon haemacephalus</i>	Coppersmith Barbet	Rathlaye Kottoruwa	BrR	LC	LC
12	Bucerotidae	<i>Ocyrceros gingalensis*</i>	Sri Lanka Grey Hornbill	Sri Lanka Alu Kandaththa	END	LC	LC
13	Coraciidae	<i>Coracias benghalensis</i>	Indian Roller	Dumbonna	BrR	LC	LC
14	Alcedinidae	<i>Alcedo atthis</i>	Common Kingfisher	Mal Pilihuduwa	BrR	LC	LC
15	Alcedinidae	<i>Pelargopsis capensis</i>	Stork-billed Kingfisher	Manathudu Maha-pilihuduwa	BrR	LC	LC
16	Alcedinidae	<i>Halcyon smyrnensis</i>	White-breasted Kingfisher	Gelasudu Madi-pilihuduwa	BrR	LC	LC
17	Meropidae	<i>Merops orientalis</i>	Asian Green Bee-eater	Punchi Binguharaya	BrR	LC	LC
18	Meropidae	<i>Merops philippinus</i>	Blue-tailed Bee-eater	Nilpenda Binguharaya	VCWV	LC	LC
19	Cuculidae	<i>Eudynamys scolopacea</i>	Western Koel	Koha	BrR	LC	LC
20	Cuculidae	<i>Centropus sinensis</i>	Greater Coucal	Maha Ati-kukula	BrR	LC	LC
21	Psittacidae	<i>Psittacula krameri</i>	Rose-ringed Parakeet	Rana Girawa	BrR	LC	LC
22	Apodidae	<i>Aerodramus unicolor</i>	Indian Swiftlet	Indu Upa-thurithaya	BrR	LC	LC
23	Apodidae	<i>Cypsiurus balasiensis</i>	Asian Palm-swift	Asia Thal-thurithaya	BrR	LC	LC
24	Apodidae	<i>Apus affinis</i>	Little Swift	Punchi Thurithaya	BrR	LC	LC

	Family	Scientific Name	English Name	Sinhala Name	SpS	NRL	GRL
25	Rallidae	<i>Amaurornis phoenicurus</i>	White-breasted Waterhen	Laya-sudu Korawakka	BrR	LC	LC
26	Charadriidae	<i>Vanellus indicus</i>	Red-wattled Lapwing	Rath-yatimal Kirella	BrR	LC	LC
27	Accipitridae	<i>Haliastur indus</i>	Brahminy Kite	Bamunu Piyakussa	BrR	LC	LC
28	Accipitridae	<i>Spilornis cheela</i>	Crested Serpent-eagle	Silu Sarapakussa	BrR	LC	LC
29	Accipitridae	<i>Accipiter badius</i>	Shikra	Kurulugoya	BrR	LC	LC
30	Accipitridae	<i>Nisaetus cirrhatus</i>	Changeable Hawk-eagle	Perali Kondakussa	BrR	LC	LC
31	Phalacrocoracidae	<i>Microcarbo niger</i>	Little Cormorant	Punchi Diyakaputa	BrR	LC	LC
32	Ardeidae	<i>Egretta garzetta</i>	Little Egret	Punchi Anu-koka	BrR	LC	LC
33	Ardeidae	<i>Ardea cinerea</i>	Grey Heron	Alu Koka	BrR	LC	LC
34	Ardeidae	<i>Ardea purpurea</i>	Purple Heron	Karawal Koka	BrR	LC	LC
35	Ardeidae	<i>Ardea intermedia</i>	Intermediate Egret	Sudu Madi-koka	BrR	LC	LC
36	Ardeidae	<i>Bubulcus ibis</i>	Cattle Egret	Geri-koka	BrR	LC	LC
37	Ardeidae	<i>Ardeola grayii</i>	Indian Pond-heron	Kana-koka	BrR	LC	LC
38	Ciconiidae	<i>Anastomus oscitans</i>	Asian Openbill	Vivarathuduwa	BrR	LC	LC
39	Ciconiidae	<i>Ciconia episcopus</i>	Asian Woollyneck	Padili Manawa	BrR	NT	VU
40	Chloropseidae	<i>Chloropsis jerdoni</i>	Jerdon's Leafbird	Jerdon Kolarisiya	BrR	LC	LC
41	Oriolidae	<i>Oriolus xanthornus</i>	Black-hooded Oriole	Kahakurulla	BrR	LC	LC
42	Dicruidae	<i>Dicrurus caeruleus</i>	White-bellied Drongo	Kawuda	BrR	LC	LC
43	Corvidae	<i>Corvus splendens</i>	House Crow	Kolamba Kaputa	BrR	LC	LC
44	Corvidae	<i>Corvus macrorhynchos</i>	Large-billed Crow	Kalu Kaputa	BrR	LC	LC
45	Campephagidae	<i>Pericrocotus cinnamomeus</i>	Small Minivet	Punchi Miniviththa	BrR	LC	LC
46	Vangidae	<i>Tephrodornis affinis</i>*	Sri Lanka Wood-shrike	Sri Lanka Wana-saratiththa	END	LC	LC
47	Aegithinidae	<i>Aegithina tiphia</i>	Common Iora	Podu Iorawa	BrR	LC	LC
48	Muscicapidae	<i>Copsychus saularis</i>	Oriental Magpie-robin	Polkichcha	BrR	LC	LC
49	Muscicapidae	<i>Kittacincla malabarica</i>	White-rumped Shama	Wana Polkichcha	BrR	LC	LC
50	Muscicapidae	<i>Saxicoloides fulicatus</i>	Indian Robin	Kalukichcha	BrR	LC	LC

	Family	Scientific Name	English Name	Sinhala Name	SpS	NRL	GRL
51	Sturnidae	<i>Acridotheres tristis</i>	Common Myna	Myna	BrB	LC	LC
52	Hirundinidae	<i>Hirundo rustica</i>	Barn Swallow	Atu Wahilihiniya	CWV	NE	LC
53	Hirundinidae	<i>Cecropis hyperythra</i>*	Sri Lanka Swallow	Sri Lanka Laklihiniya	END	LC	LC
54	Pycnonotidae	<i>Pycnonotus cafer</i>	Red-vented Bulbul	Kondaya	BrR	LC	LC
55	Pycnonotidae	<i>Pycnonotus luteolus</i>	White-browed Bulbul	Bamasudu Kondaya	BrR	LC	LC
56	Cisticolidae	<i>Prinia sylvatica</i>	Jungle Prinia	Wana Priniya	BrR	LC	LC
57	Cisticolidae	<i>Prinia socialis</i>	Ashy Prinia	Alu Priniya	BrR	LC	LC
58	Cisticolidae	<i>Prinia inornata</i>	Plain Prinia	Sarala Priniya	BrR	LC	LC
59	Cisticolidae	<i>Orthotomus sutorius</i>	Common Tailorbird	Battichcha	BrR	LC	LC
60	Leiotrichidae	<i>Turdoides affinis</i>	Yellow-billed Babbler	Demalichcha	BrR	LC	LC
61	Dicaeidae	<i>Dicaeum erythrorhynchos</i>	Pale-billed Flowerpecker	Lathudu Pililichcha	BrR	LC	LC
62	Nectariniidae	<i>Leptocoma zeylonica</i>	Purple-rumped Sunbird	Nithamba Dam Sutikka	BrR	LC	LC
63	Nectariniidae	<i>Cinnyris asiatica</i>	Purple Sunbird	Dam Sutikka	BrR	LC	LC
64	Nectariniidae	<i>Cinnyris lotenius</i>	Loten's Sunbird	Digthudu Dam Sutikka	BrR	LC	LC
65	Motacillidae	<i>Motacilla flava</i>	Western Yellow Wagtail	Kaha Halapenda	CWV	NE	LC
66	Motacillidae	<i>Anthus rufulus</i>	Paddyfield Pipit	Keth Varatichcha	BrR	LC	LC
67	Estrididae	<i>Lonchura striata</i>	White-rumped Munia	Nithamba Sudu Weekurulla	BrR	LC	LC
68	Estrididae	<i>Lonchura punctulata</i>	Scaly-breasted Munia	Laya Kayuru Weekurulla	BrR	LC	LC
69	Estrididae	<i>Lonchura malacca</i>	Tricoloured Munia	Thepaha Weekurulla	BrR	LC	LC

Annex 8: Checklist of identified mammal species in the Wewalkele ESA

	Family	Scientific Name	English Name	Sinhala Name	SpS	NRL	GRL
1	Pteropodidae	<i>Pteropus medius</i>	Flying fox	Ma-vavula	IND	LC	LC
2	Vespertilionidae	<i>Kerivoula picta</i>	Painted bat	Visithuru Kehel-vavula	IND	NT	LC
3	Vespertilionidae	<i>Pipistrellus coromandra</i>	Indian pipistrel	Indu Koseta-vavula	IND	VU	LC
4	Cercopithecidae	<i>Macaca sinica</i>*	Sri Lanka toque monkey	Sri Lanka Rilawa	END	LC	EN
5	Cercopithecidae	<i>Semnopithecus priam</i>	Grey langur	Eli-wdura	IND	LC	NT
6	Canidae	<i>Canis familiaris</i>	Doestic dog	Balla	Dom	NE	NE
7	Felidae	<i>Felis cattus</i>	Domestic cat	Balala/ Pusa	Dom	NE	NE
8	Herpestidae	<i>Herpestes edwardsii</i>	Grey mongoose	Alu Mugatiya	IND	LC	LC
9	Herpestidae	<i>Herpestes smithii</i>	Black-tipped or Ruddy mongoose	Rath Mugatiya / Hothambuwa	IND	LC	LC
10	Mustelidae	<i>Lutra lutra</i>	Otter	Diya-balla	IND	VU	NT
11	Viverridae	<i>Viverricula indica</i>	Ring-tailed civet	Urulewa	IND	LC	LC
12	Bovidae	<i>Bos indicus</i>	Domestic hump-backed cattle	Sinhala Elaharaka/ Batu Haraka	Feral/ dom	NE	NE
13	Cervidae	<i>Axis axis</i>	Spotted deer	Tith Muwa	IND	LC	LC
14	Suidae	<i>Sus scrofa</i>	Wild boar	Wal Ura	IND	LC	LC
15	Tragulidae	<i>Moschiola meminna</i>	Sri Lanka mouse-deer	Sri Lanka Meminna	END	LC	LC
16	Hystriidae	<i>Hystrix indica</i>	Porcupine	Ittewa	IND	LC	LC
17	Muridae	<i>Tatera indica</i>	Antelope rat	Weli-miya	IND	LC	LC
18	Sciuridae	<i>Funambulus palmarum</i>	Palm squirrel	Leena	IND	LC	LC
19	Sciuridae	<i>Ratufa macroura</i>	Giant squirrel	Dandu-leena	IND	LC	NT
20	Leporidae	<i>Lepus nigricollis</i>	Black-naped hare	Wal Hawa	IND	LC	LC
21	Felidae	<i>Panthera pardus</i>	Leopard	Kotiya/ Diviya	IND	EN	VU
22	Felidae	<i>Prionailurus viverrinus</i>	Fishing cat	Handun Diviya	IND	EN	VU
23	Elephantidae	<i>Elephas maximus</i>	Elephant	Etha / Aliya	IND	EN	EN
24	Cervidae	<i>Rusa unicolor</i>	Sambur	Gōna	IND	NT	VU
25	Muridae	<i>Rattus rattus</i>	Common rat	Podu Ge Miya	POT_IAS	LC	LC

Abbreviations: CR-Critically Endangered; DD-Data Deficiency; Dom-Domestic; END-Endemic; EN-Endangered; EX-Exotic; GRL-Global Red List; IND-Indigenous; LC-Least Concern; NRL-National Red List; NT-Near Threatened; NE-Not Evaluated; NAT-Native; POT_IAS –Potential Invasive Alien Species; SpS-Species status; VU-Vulnerable; *- Endemic

Piloting ESA in Sri Lanka

Funded by Global Environment Facility (GEF) the Ministry of Environment together with the United Nations Development Programme (UNDP) are implementing a project to pilot ESAs in Sri Lanka. Five ESA sites have been identified in Puttalam and Anuradhapura districts outside protected areas. Communities are being empowered and trained through local implementing partners to carryout sustainable practices in tourism, agriculture and fishing to optimize social-economic benefits with minimal harm to the environment. The project is also working to increase the knowledge and understanding of the ESA concept among national level stakeholders to inform policymaking and planning decisions.

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